NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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September 25, 2018

Arno Bebernitz
GW Lisk Company Inc.
2 South Street
Clifton Springs, NY 14432

Subject: **Site Characterization Report**
G.W. Lisk NYSDEC Site No. 835026
Clifton Springs (V), Ontario County

Dear Mr. Bebernitz:

The New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH), collectively referred to as the Departments, have reviewed the Revised Site Characterization Report (SCR) dated September 18, 2018 and prepared by ERM for the G.W. Lisk site. In accordance with 6 NYCRR 375-1.6, the Departments have determined that the SCR substantially addresses the requirements of the Order. The SCR is hereby approved.

By October 10, 2018, please provide copies of the SCR as follows:

- Danielle Miles (NYSDEC – Avon, 1 bound hard copy); and,
- Renata Ockerby (NYSDOH – Albany, electronic file/CD).

Please contact me at (585) 226-5349 or danielle.miles@dec.ny.gov if you have any questions.

Sincerely,

Danielle Miles, EIT
Assistant Engineer

ec: Jon Fox, ERM
Ernie Rossano, ERM
Leslie Mauro, Harter Secrest & Emery LLP
Renata Ockerby, NYSDOH
Justin Deming, NYSDOH
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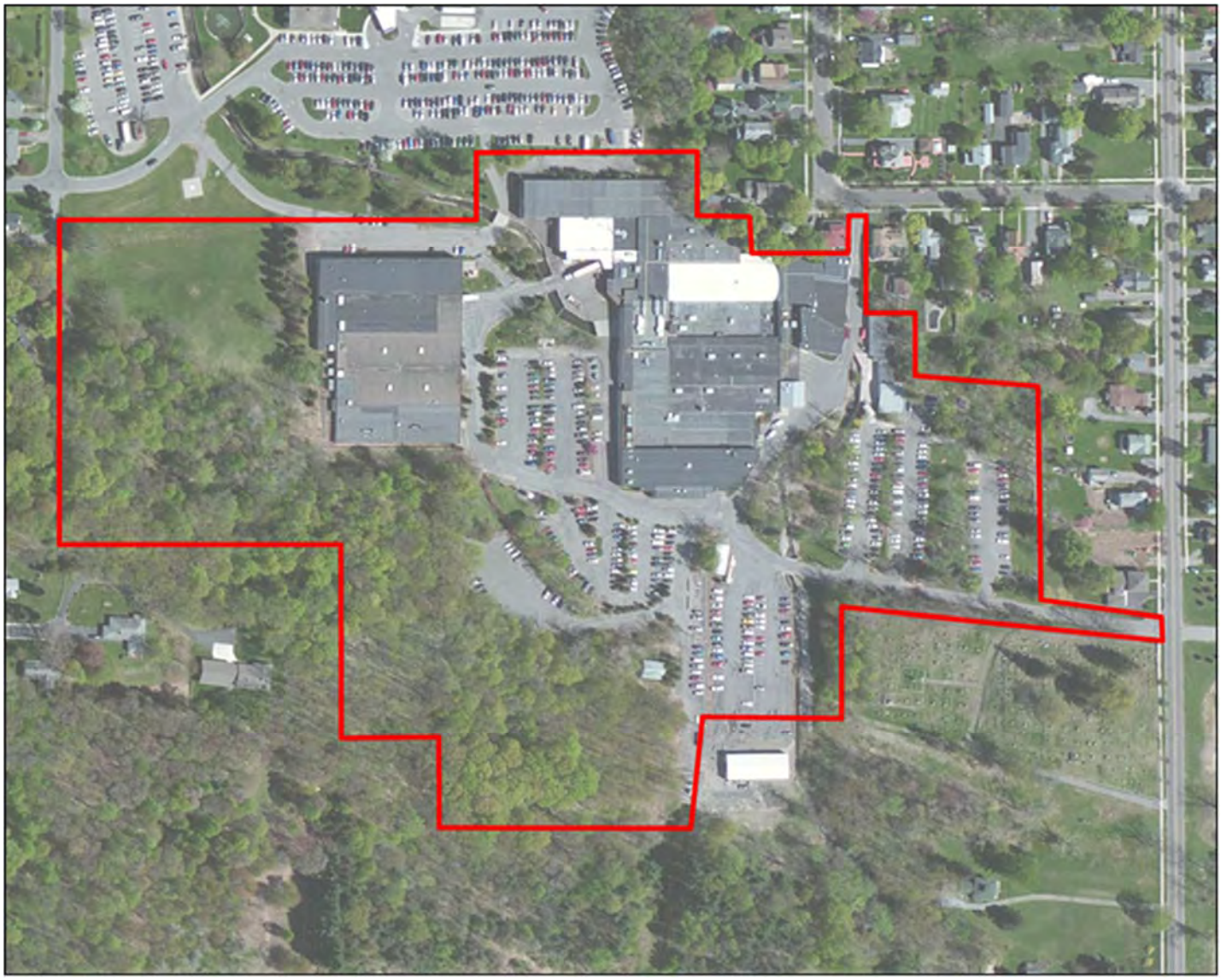

G.W. Lisk Company, Inc.

Final Site Characterization Report

September 2018

G.W. Lisk Facility – 2 South Street
Village of Clifton Springs,
Ontario County, New York
NYSDEC Site Number 835026

Final Site Characterization Report

G.W. Lisk Facility – 2 South Street
Village of Clifton Springs, Ontario County, New York
NYSDEC Site Number 835026

September 2018

Prepared for:

G.W. Lisk Company, Inc.

Prepared by:

ERM Consulting & Engineering, Inc.
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FINAL SITE CHARACTERIZATION REPORT
G.W. LISK FACILITY – 2 SOUTH STREET
VILLAGE OF CLIFTON SPRINGS, ONTARIO COUNTY, NEW YORK
NYSDEC SITE NUMBER 835026

I, Jon S. Fox, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Site Characterization Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Jon S. Fox, P.G.
ERM Consulting & Engineering, Inc.

Date: 18 September 2018

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

amsl	above mean sea level
ASP	Analytical Services Protocol
AOPC	Area of Potential Concern
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
BCP	Brownfield Cleanup Program
bgs	below ground surface
°C	Degrees Celsius
CAMP	Community Air Monitoring Plan
CBS	Chemical Bulk Storage
COPC	Compound of Potential Concern
CSHC	Clifton Springs Hospital and Clinic
DCA	Dichloroethane
DCE	Dichloroethene
DER	Division of Environmental Remediation
DO	Dissolved Oxygen
DQO	Data Quality Objective
DSNY	Dig Safely New York
DTW	Depth to Water
DUSR	Data Usability Summary Report
DVR	Data Validation Report
EDB	Ethylene Dibromide
EDS	Electronic Data Summary
ERM	ERM Consulting & Engineering, Inc.
ESA	Environmental Site Assessment
ft	feet
GPS	Global Positioning System
GWL	G.W. Lisk Company Inc.
HASP	Health and Safety Plan
HDPE	High-Density Polyethylene
IDW	Investigation-Derived Waste
MEK	Methyl Ethyl Ketone
mg/kg	Milligrams per kilogram
mg/l	Milligrams per liter
MGP	Manufactured Gas Plant
MW	Monitoring Well
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSGS	New York State Geological Survey
ORP	Oxidation-Reduction Potential
PARCC	Precision, Accuracy, Reproducibility, Completeness, and Comparability
PBS	Petroleum Bulk Storage
PCE	Tetrachloroethene
PFAS	Per-and Polyfluoroalkyl Substances

PID	Photoionization detector
POTW	Publicly-Owned Treatment Works
PPE	Personal Protective Equipment
ppm	Parts per million
PTFE	Polytetrafluoroethylene
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance / Quality Control
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
SCGs	Standards, Criteria and Guidance
SCOs	Soil Cleanup Objectives
STARS-#1	Spill Technology and Remediation Series Memorandum Number One
SVOCs	Semivolatile Organic Compounds
TAL	Target Analyte List
TCA	Trichloroethane
TCE	Trichloroethene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TIC	Tentatively Identified Compound
TOGS	Technical Operations Guidance Series
µg/kg	Micrograms per Kilogram (parts per billion)
µg/L	Micrograms per Liter (parts per billion)
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION

G.W. Lisk Company, Inc. (G.W. Lisk) entered into an Order on Consent and Administrative Settlement with the New York State Department of Environmental Conservation (NYSDEC) dated 27 May 2015 (the Order, Index Number R8-0852-15-04). The Order required the performance of a Site Characterization (SC) at the G.W. Lisk Facility located at 2 South Street in the Village of Clifton Springs, Ontario County, New York (the Site). The location of the Site is shown in Figure 1. The NYSDEC has identified the Site as Site Number 835026.

This SC Report describes the field efforts and associated analytical results for environmental media samples. The current use and contemplated future use of the Site is Industrial.

G.W. Lisk is preparing an application to enter the Site into the NYSDEC's Brownfield Cleanup Program (BCP).

1.1 PURPOSE AND OBJECTIVES

The work presented in this report was based on the following NYSDEC-approved work plan:

- Draft Final Site Characterization Work Plan dated January 2016 (ERM, 2016).

As outlined in NYSDEC's Technical Guidance on Site Investigation and Remediation (NYSDEC, 2010a), the SC was performed to meet the following goals:

- Perform a Records Search to identify and review documentation on site histories; and
- If necessary, perform field characterization to identify potentially-impacted areas.

1.2 DESCRIPTION AND HISTORY

The Site is located in the south-central portion of the Village of Clifton Springs in Ontario County, New York. Figure 1 shows the location of the Site and adjacent areas. Figure 2 show the layout and land use of the Site including the parcel boundary and surrounding areas. The parcel

currently contains approximately 26.654 acres. The Site is located within a mixed industrial, commercial, and residential use area.

The Site was originally developed in the mid-1800s for agricultural use. The G.W. Lisk facility is privately owned and has been operating since the early-1900s. The facility originally operated as a manufacturer of tin cake pans, pails, and spraying devices from 1910 until the late-1940s. The facility began solenoid manufacturing operations in 1948 and continues to operate as a manufacturer of solenoids and valves for industrial and commercial markets.

After originally consisting of a single chicken coop in 1910, the facility currently occupies approximately 225,000 square feet of building space. There are two main clusters of attached buildings where facility operations occur (Figure 2). Paved parking areas are located on the central, southern, and eastern portions of the Site. Paved driveways and shipping areas are also located throughout the Site. The western and southern portions of the Site are primarily wooded.

2.0 PROJECT BACKGROUND

2.1 GEOLOGIC SETTING

The Site is located within the Erie-Ontario Lowlands physiographic province (Bloom, 1978). The Site is positioned directly on the Onondaga Escarpment where it intersects the Sulphur Creek outwash valley. Topography generally slopes towards the northeast (towards Sulphur Creek) on the western part of the Site, and generally towards the northwest (towards Sulphur Creek) on the eastern part of the Site. Topographic relief across the site is approximately 90 feet with the highest elevations in the southwestern portion of the Site and the lowest elevations along Sulphur Creek in the north-central portion of the Site. Examination of topography shown in Figure 1 suggests that regional groundwater flow in the mapped area may be north to northwest towards the Canandaigua Outlet.

Native soil at the Site is predominantly of Palmyra gravelly loam, derived from glacial outwash deposits or bedrock (Caldwell, 1988; USDA, 2017). The glacial outwash deposits consist predominantly of gravel with sand and are generally thin or not present in the southeastern portion of the Site and increase in thickness towards the north and west. Diamictons encountered are interpreted as glacial till (Caldwell, 1988). Overburden deposits underlying the facility generally consists of clean fill, including fine sand and gravel. Total overburden thickness in the area is generally less than 20 feet, with overburden thinning towards the southeast to thicknesses of generally less than 3 feet.

Bedrock at the Site consists of the Middle Devonian Onondaga Limestone, which consists predominantly of gray, fine-grained limestone that is locally cherty (Rickard and Fisher, 1970). Depth to bedrock in the vicinity of the Site is typically 2 to 20 feet below ground surface (bgs).

The natural geochemical constituents in groundwater are obtained primarily from the solution of rock materials and/or overburden. The major mineral constituent of limestone is calcite ($CaCO_3$), but other dissolved minerals are also picked up as groundwater passes through bedrock, including dolomite [$CaMg(CO_3)_2$], gypsum (CaSO4.2H2O), pyrite (FeS_2), and halite (NaCl). Due to the likelihood that groundwater will encounter these various minerals as it passes through the bedrock or overburden, significant concentrations of these minerals are typically present in groundwater in this area.

2.2 PREVIOUS INVESTIGATIONS AND AREAS OF POTENTIAL CONCERN

Several volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and inorganic (metal) compounds were detected in one or more groundwater samples previously collected by others at the adjacent property to the north (the Clifton Springs Hospital and Clinic property or CSHC). Chlorinated VOCs were detected in some groundwater samples at the CSHC property at concentrations above the ambient water quality standards and guidance values (NYSDEC, 1998). At least one on-site source of VOCs, SVOCs, and metals detected in soil and/or groundwater at the CSHC property has been confirmed via subsurface investigation previously performed by others as part of the evaluation of a former manufactured gas plant (MGP) at the CSHC property.

The NYSDEC contacted G.W. Lisk in February 2015 (NYSDEC, 2015) and identified the following points of interest and outfall locations at the Site:

- degreasers;
- 1,1,1-trichloroethane (TCA) tanks;
- tank area;
- plating discharge and boiler blowdown;
- tumbler machine rinses; and
- other outfall locations, if any.

These points of interest and outfall locations were reviewed by G.W. Lisk and ERM during the Records Search effort. The results of the Records Search are summarized below in Section 3.2. With one exception, degreaser locations were eliminated from further consideration because:

- the degreasers and associated piping, controls, and valves were above floor level;
- the degreasers did not contain sub-floor penetrations, sumps or other apparent conduits that may have allowed the release of fluids or vapors into the subsurface;
- spills of solvents to the land or water from these degreasers reportedly did not occur; and
- inspection of the current and former degreaser locations did not produce visual or other evidence of a spill or release in these areas.

The 1,1,1-TCA tanks were 275-gallon steel aboveground storage tanks (ASTs) that were secondarily contained. No spills from these ASTs were reported to ERM by G.W. Lisk personnel and visual or other evidence of a release at these locations was not observed by ERM during Site inspections. These ASTs were registered under the NYSDEC's Chemical

Bulk Storage (CBS) regulations and were taken out of service in 1997 and were removed from the Site by the vendor that provided the ASTs.

The current petroleum storage tank area contains several ASTs used primarily for the storage of lubricating oils and cutting oils and is secondarily contained. No spills from these ASTs were reported to ERM by G.W. Lisk personnel and visual or other evidence of a spill or release in this area was not observed by ERM during the Site inspection. These ASTs are registered under the NYSDEC's Petroleum Bulk Storage (PBS) regulations and are currently in service.

G.W. Lisk historically held permits from NYSDEC to discharge wastewater into Sulphur Creek. All industrial discharges into Sulphur Creek were terminated in 1988 when an updated plating and wastewater treatment system was installed at the Site and industrial wastewaters were connected to the Village of Clifton Springs Publicly-Owned Treatment Works (POTW).

Bedrock is typically exposed in the streambed of Sulphur Creek. The streambed of Sulphur Creek near the facility was lined with concrete in 1993 for erosion and sediment control purposes to protect the structural integrity of the G.W. Lisk building. Concrete lining of the streambed also occurred on the adjacent CSHC property.

Nine areas of potential concern (AOPCs) were identified in the Final SC Work Plan (ERM, 2016). These AOPCs are summarized below.

2.2.1 AOPC-1: Former Outfall 001

G.W. Lisk historically held a permit from the NYSDEC to discharge wastewater into Sulphur Creek at this location. The facility subsequently expanded and this former outfall is now located beneath the current building.

2.2.2 AOPC-2: Former Outfall 006

The facility was previously permitted to discharge boiler blow down into Sulphur Creek at this location. The facility subsequently expanded and this former outfall is now located beneath the current building.

2.2.3 AOPC-3: Former Outfall 009

Occasional discharges of wastewater from salt spray corrosion tests may have occurred at this location. It is believed based on interviews with G.W. Lisk personnel that this outfall primarily discharged storm water

from the roof onto the ground surface. The facility subsequently expanded and this former outfall is now located beneath the current building.

2.2.4 AOPC-4: Former Outfall 011

Plating and solvent wastes were previously discharged for a period of time to a former septic tank at this location. The former septic tank was constructed of concrete and had an associated leach field. The location and design/construction of the leach field is unknown. The former septic tank was removed in 1982 during building expansion activities.

2.2.5 AOPC-5: Former Outfall 012

Plating and solvent wastes were previously discharged for a period of time to a former septic tank at this location. The former septic tank was constructed of concrete and had an associated leach field. The location and design/construction of the leach field is unknown. The former septic tank was removed in 1987 during building expansion activities.

2.2.6 AOPC-6: Southwestern Parking Lot

The former septic tanks associated with former outfalls 011 and 012 were crushed and the concrete was reused as sub-base material in this parking area. Some soil excavated during removal of the former septic tanks and some unknown debris from the CSHC may have been reused in this location as well.

2.2.7 AOPC-7: Former Tank Area

Prior to implementation of the NYSDEC's Petroleum Bulk Storage regulations, storage of petroleum in ASTs historically occurred in this area, and the area did not have secondary containment. The stored petroleum consisted primarily of cutting and lubricating oils.

2.2.8 AOPC-8: Former TCE Degreaser with Sump

A former degreaser that utilized TCE that was stored in a former nearby AST designated B4CT1 was located in this area. According to historical information review, no spills or leaks were associated with this degreaser. However, a sump that penetrates the thickness of floor in this area is present at this location, which may have provided a conduit for the release of TCE vapors or liquids to the subsurface.

2.2.9 AOPC-9: Former Water Supply Wells

Two water supply wells located at the Site are used to supply water to the CSHC for non-potable purposes. The two water supply wells were observed at the Site during the Site inspection. An NYSDEC spill report form from 1991 (NYSDEC Spill Number 9103956) alleged that in 1982 and for three years prior, a five-gallon pail of TCE was "dumped" into an old water well located at the Site. VOCs were detected in water samples collected from two wells in this area in 1991; however, follow-up investigation by the NYSDEC, including additional water sampling and analysis, resulted in the spill file being closed without further action required.

3.0 SITE CHARACTERIZATION METHODS

The SC was performed using environmental investigation methods outlined in the NYSDEC-approved Final Site Characterization Work Plan (ERM, 2016). All samples were analyzed by Alpha Analytical Inc. (Alpha) of Westborough, Massachusetts. Alpha is a New York State Department of Health (NYSDOH)-approved environmental Laboratory (ID number 11148).

3.1 STANDARDS, CRITERIA AND GUIDANCE

The following standards and criteria apply to this project.

- 6 NYCRR Part 375 - Environmental Remediation Programs
- 6 NYCRR Part 608 - Use and Protection of Waters
- 6 NYCRR Parts 700-706 - Water Quality Standards
- 29 CFR Part 1910.120 - Hazardous Waste Operations and Emergency Response

The following guidance applies to this project.

- DER-10 – Technical Guidance for Site Investigation and Remediation (May 2010)
- NYSDEC Division of Spills Management - Sampling Guidelines and Protocols: Technologies Background and Quality Control/Quality Assurance for the NYSDEC Spill Response Program (NYSDEC, 1992)
- TOGS 1.1.1 - Ambient Water Quality Standards & Guidance Values and Groundwater Effluent Limitations (NYSDEC, 1998)
- NYSDOH Guidance for Evaluating Soil Vapor Intrusion in New York State (NYSDOH, 2006) and the May 2017 Updates to Soil Vapor/Indoor Air Decision Matrices

Sample results were compared to applicable NYSDEC standards, criteria and guidance (SCGs) by media as summarized below.

<u>Groundwater</u>

Groundwater results are compared to NYSDEC's ambient water quality standards and guidance values (NYSDEC, 1998) for groundwater (Class GA).

Surface Water

Sulphur Creek has been designated as a Class D stream by NYSDEC. Therefore, surface water results are compared to NYSDEC's ambient water quality standards and guidance values (NYSDEC, 1998) for Class D surface water using type W values (wildlife protection).

Soil

Soil results are compared to 6 NYCRR Part 375 Soil Cleanup Objectives (SCOs; NYSDEC, 2006) for the current and anticipated future land use (industrial).

Sub-Slab Soil Vapor, Indoor Air, and Outdoor (Ambient) Air

Sub-slab soil vapor, indoor air, and outdoor (ambient) air sample results are compared to the NYSDOH's Guidance for the Evaluation of Soil Vapor Intrusion in New York State, including the May 2017 Updates to the Soil Vapor/Indoor Air Decision Matrices.

3.2 RECORDS SEARCH

In accordance with Appendix 3A of DER-10 (NYSDEC, 2010a), a Records Search was conducted to evaluate Site history and operations. In addition to correspondence from the NYSDEC to G.W. Lisk dated 23 February 2015 which identified preliminary "points of interest" at the Site (NYSDEC, 2015), available historical documentation pertaining to the Site was obtained and reviewed, as were federal, state, and local agency environmental databases. Freedom of Information Law requests were submitted by ERM to the NYSDEC, the NYSDOH, Ontario County, and the Village of Clifton Springs in an attempt to gather additional information relevant to environmental conditions at the Site.

A Site visit was performed to verify the findings of the Records Search, review additional Site documentation, and evaluate access, operational, and other potential logistical limitations for potential environmental sampling procedures. The Site visit was conducted on 21 July 2015. ERM was accompanied during the Site visit by Mr. Arno Bebernitz of G.W. Lisk. An interview with Mr. Bebernitz was also conducted at that time to obtain additional information related to past operations and waste handling and management at the Site. A follow-up Site visit was performed on 3 August 2015 to review property deed information and analytical data related to storm water and industrial wastewater discharges. ERM visited the NYSDEC's office in Avon, New York on 27 July 2015 to obtain and review additional information that was provided by NYSDEC.

Additional details from the Records Search effort including summary tables of salient findings, a photographic log, and documentation obtained and reviewed during the Records Search effort are presented in Appendix A of the SC Work Plan (ERM, 2016). Additionally, the Records Search results were previously provided to the NYSDEC by G.W. Lisk via e-mail correspondence on 20 August 2015.

3.3 INDOOR AIR AND SOIL VAPOR SAMPLING

Passive soil vapor samples were collected and analyzed in 2016 as a screening method for VOCs on a semi-quantitative basis (i.e., results are reported as mass in micrograms). ERM deployed samplers in a grid pattern across the Site as shown in Figure 9. A 1-inch diameter hole was hammer-drilled three feet into the ground surface, the module was deployed and the surface sealed with a cork. Modules were recovered two weeks after deployment. The analysis was performed by Amplified Geochemical Imaging LLC (AGI) and the results were used to identify AOPCs and inform subsequent SC activities. Following module retrieval, holes were patched with concrete and holes in lawn and other outdoor locations were filled with topsoil.

A round of quantitative soil vapor sampling was completed in May 2017 to assess indoor air, sub-slab soil vapor, and outdoor ambient air. Five co-located sub-slab and indoor air locations were selected based on the passive screening results (Figure 9). Sub-slab soil vapor samples were collected using helium-tested Vapor Pin™ sample ports and SUMMA™ Canisters. Following sample collection, Vapor Pin™ sample ports were removed and the concrete slab was patched and sealed.

3.4 SOIL SAMPLING

Soil borings were installed between May and October 2017 and were advanced to the top of bedrock or refusal using direct-push or hollow-stem auger drilling methods. Soil core was collected continuously using dedicated sample liners. Reusable sampling equipment was cleaned between each borehole location by washing in a phosphate-free detergent and potable water solution followed by rinsing with distilled water.

Retrieved soil samples were visually examined by an ERM geologist and field-screened to assess subsurface conditions and physical properties including color, texture, composition, moisture content, odor, and visual evidence of staining, discoloration, or product/sheen. If necessary, companion boreholes explorations were made adjacent to the original sample location to obtain sufficient sample volume from selected depth intervals.

All soil cores were field screened for VOCs using a calibrated PID equipped with an 11.7 eV lamp. Sample descriptions and other field data and observations were documented in field notes and in soil boring logs (Appendix A). Soil samples were placed into a pre-chilled cooler for transport under proper chain-of-custody procedures to the project laboratory for analysis.

3.5 MONITORING WELL INSTALLATIONS AND GROUNDWATER SAMPLING

3.5.1 Monitoring Well Installations

Overburden monitoring wells were constructed using 2-inch diameter polyvinyl chloride (PVC) threaded well screen (0.010-inch slots) and flush-jointed threaded well riser pipe. Washed quartz sand (Morie #00 or #0, see well construction logs in Appendix B) was installed as a filter pack to a depth of approximately 1 foot above the top of the screen. A one foot bentonite seal was hydrated above the filter pack. The remaining well annulus was sealed with cement-bentonite grout. Well screens were placed at depths deemed sufficient by the field geologist to intersect the groundwater table and capture zones of visual, olfactory, or PID evidence of possible contamination. Bedrock monitoring wells were constructed by cementing steel casing a minimum of one foot into bedrock followed by an open-hole well completion using rock coring techniques to a target depth of approximately 20 feet into bedrock. Rock matrix inconsistencies (i.e. quartz chert nodules) and limitations on drilling equipment for work inside the facility resulted in decreased coring depth at MW-02D, MW-03D, and MW-04D (see Appendix B). Rock cores were collected during bedrock drilling to evaluate of Site geology and groundwater flow. Overburden geology at the Site from soil borings and well installation activities informed the development of a representative typical stratigraphic section (Figure 4) identifying major geologic units and screened intervals. Confirmed depth to bedrock was used to generate an interpretation of the bedrock surface at the Site (Figure 5).

Monitoring wells were developed to facilitate collection of representative groundwater samples. Groundwater levels were measured in each well using an electronic water level indicator. Wells were developed using the surging/bailing technique with dedicated high-density polyethylene (HDPE) tubing with a stainless steel check valve and inertial lift pump. The volume of water removed during well development was measured and recorded. After completion of well development, each well was fitted with a locking expansion cap.

3.5.2 Groundwater Sampling

A water reservoir building located south of the main facility collects groundwater from two production wells (PW-A and PW-B; see Figure 3). The water is reportedly used in water fountains on the CSHC property. Two groundwater samples were collected from within the reservoir building from different valves that reportedly are associated with production wells PW-A and PW-B. ERM's utility location subcontractor was unable to determine which valve is associated with which production well using electromagnetic tracing techniques. Production well samples were collected on 9 May 2017.

Six water supply wells were reportedly located near the existing water supply wells. ERM geologists searched for additional water supply wells in the area but were not able to locate any additional wells.

Depth to water in monitoring wells was measured and top of casing elevations measured by a licensed surveyor to generate:

1. a representative water table contour map from overburden wells screened across the water table (Figure 6); and
2. a potentiometric surface map of groundwater in underlying bedrock (Figure 7).

Overburden and bedrock groundwater samples were collected from monitoring wells on 20 November 2017. Groundwater samples were collected using low-flow/minimal drawdown purging and sampling techniques. Field parameters including dissolved oxygen (DO), pH, oxidation-reduction potential (ORP), conductivity, turbidity, and temperature were measured and recorded on groundwater sampling records during sampling activities (Appendix C). Samples were placed into a pre-chilled cooler for transport under proper chain-of-custody to the project laboratory for analysis.

3.6 SURFACE WATER SAMPLING

Surface water samples SW-01 and SW-02 were collected on 9 May 2017 near the up-stream (up-gradient) parcel boundary (SW-01) and at the down-stream (down-gradient) parcel boundary (SW-02; see Figure 3). Field parameters DO, pH, ORP, conductivity, turbidity, and temperature were measured and recorded during sampling activities at a location immediately down-gradient of sampling location. These data were recorded on water sampling records (Appendix C). Flow rate, channel bathymetry, and water level were measured at the sample locations and two other locations in Sulphur Creek to facilitate evaluation of stream discharge and flux following sample collection (Figure 8). Stream gauging was completed using a Marsh-McBirney Flow Mate 2000™

electromagnetic flow meter. Samples were collected downstream first to prevent dislodgement of streambed material up-gradient that would potentially be present in samples later collected downstream. Sampling personnel also stood down-gradient of each sampling location during sample collection. Samples were placed into a pre-chilled cooler for transport under proper chain-of-custody procedures to the project laboratory for analysis.

There are no industrial or process discharge locations into Sulphur Creek; all discharges have been directed to the Publicly-Owned Treatment Works since 1988. Storm water piping discharges into Sulphur Creek at various points within the property boundary. G.W. Lisk performs sampling within the property as required by the State Pollution Discharge Elimination System permit.

An additional surface water sample (SW-03) was collected from an 18-inch diameter culvert pipe on 27 June 2017 to assist in the evaluation of preliminary laboratory analytical results from location SW-02.

3.7 DECONTAMINATION

Re-usable drilling equipment was washed between sample locations. Disposable plastic sample liners were used for sampling direct-push borings. During monitoring well construction, split-spoon samplers were washed between all samples, and drilling equipment was pressure-washed/steam cleaned between monitoring well clusters. Similarly, bedrock-coring equipment was also pressure washed/steam cleaned between each bedrock core location. Water generated from decontamination activities was captured and placed into labeled steel drums and temporarily staged on Site with other investigation-derived waste (IDW).

Decontamination of water level sensors was completed using a potable water/Alconox™ solution and distilled water rinses between well measurements. All surface water sampling was performed using new HDPE tubing and a peristaltic pump; therefore, decontamination between sample locations was not required. Similarly, groundwater sampling was completed using dedicated HDPE tubing that was not re-used in other locations. All personnel protective equipment (PPE) waste generated during investigation and/or sampling activities was containerized with other IDW for subsequent characterization and disposal.

3.8 DEVIATIONS FROM THE WORK PLAN

ERM was unable to complete soil boring B-05 due to subsurface and overhead utilities inside the facility due to impacts to production operations, equipment use, and configuration within the facility.

Soil samples collected during monitoring well installations were collected using split-spoon samplers in some locations (MW-01 and MW-04 clusters) where direct-push technology was not feasible.

Morie #00 sand or equivalent was not used at all well locations due to the predominantly sandy nature of the overburden material encountered. ERM used coarser #0 sand in monitoring wells MW-04S and MW-03S.

Bedrock coring was completed to a depth of 20 feet into bedrock only at location MW-01D. Drilling progress was slowed considerably due to a significant amount of hard chert (microcrystalline quartz) in the limestone bedrock. Groundwater within bedrock was encountered within 5- to 10-feet from the top of bedrock, and therefore MW-02D, MW-03D, and MW-04D were installed to depths of approximately 10-feet into bedrock.

Well development was completed with HDPE tubing and a stainless steel foot valve based on a request from NYSDEC to apply PFAS sampling considerations (NYSDEC, 2018a) after approval of the SC Work Plan (ERM, 2016).

Surface water sample analysis was expanded to include PFAS and 1,4-dioxane based on a subsequent request for emerging contaminant sampling from NYSDEC.

An additional sample of water was collected at an 18-inch storm water outfall discharge into Sulphur Creek to assist with evaluation of the detection of PCBs at location SW-02.

4.0 SITE CHARACTERIZATION RESULTS

This section summarizes findings from implementation of the NYSDEC-approved SC Work Plan (ERM, 2016).

4.1 GEOLOGY AND HYDROGEOLOGY

Figure 4 summarizes typical geological lithologies encountered during SC activities. Unconsolidated overburden units underlying the Hundreds Building consist of a shallow sandy fill-like unit immediately below the concrete slab. Native materials underlying the fill are comprised of interbedded silt and clay with some discontinuous lenses of sand and gravel. The silt and clay unit is typically underlain by brown to gray diamicton (interpreted as glacial till) of various thicknesses. The basal overburden unit consists of fine-grained lithic sand and silt with interbedded gravel. The basal sand unit is commonly thin and laterally variable and is superimposed on weathered or competent bedrock.

Geologic materials encountered southwest of the facility (i.e., borings B-01 through B-03) consist of fill-like materials of varying thicknesses which are underlain by native sorted lithic sands. The underlying sand unit is consistent with glacial outwash sand.

Bedrock consists of medium gray limestone of the Devonian Onondaga Formation. The limestone encountered at the Site is consistent with a mudstone based on the limestone classification of Dunham (1962). The top of bedrock was encountered at depths ranging from 13.3 to 23 feet below ground (or floor) surface (Table 1). The limestone also contains bedding partings with concentrations of dark gray to black chert. Figure 5 presents an interpolated subsurface topography of bedrock surface, demonstrating the west-northwest oriented grade of the overburden-bedrock surface.

Groundwater was encountered in the overburden units on top of the bedrock at depths ranging from 10.91 to 21.22 feet below ground (or floor) surface. Figure 6 shows groundwater contours for the overburden units. Estimated groundwater flow direction in overburden across the Site is generally towards the west-northwest towards and along Sulphur Creek. This estimated flow direction is consistent with the interpolated bedrock surface topography (Figure 5).

Groundwater was also encountered within the bedrock unit. Figure 7 shows groundwater contours for the bedrock unit. Estimated groundwater flow direction in shallow bedrock across the Site is generally towards the west-northwest.

Hydraulic head measurements from the bedrock wells indicate that the bedrock unit groundwater elevations occur within the overburden unit at depths ranging from 0.32 to 7.76 feet above the top of the bedrock surface. Comparison of overburden and bedrock groundwater levels from all four monitoring well couplets indicate that vertical hydraulic gradient is downwards (from overburden into bedrock) in all monitoring well clusters with the exception of MW-03 where it is upwards (from bedrock into overburden). These data suggest that vertical groundwater flow direction at the Site can be either downwards or upwards depending on the specific location and depth.

Sulphur Creek flows generally from the south towards the north and northwest through the Site and has been designated as Class D surface water body by NYSDEC. Bathymetric cross sections were prepared at four stream gauging stations established at the Site (Figure 8). The stream channel has been influenced by development and construction activities over the years and the channel morphology is variable. Bedrock locally crops out in the stream channel. Stream depth was typically less than one foot on the date measured (10 May 2017) and calculated stream discharge was consistently approximately seven cubic feet per second at all stream gauge stations (Figure 8).

4.2 SAMPLE RESULTS

4.2.1 Air and Soil Vapor

Passive soil vapor sampling was performed in May 2016. This initial screening method was used to identify areas for further investigation later during the SC. The passive soil vapor results were contoured and are summarized in Figure 9.

Locations for co-located indoor air and sub-slab soil vapor sample collection were proposed based on the passive soil vapor results. These locations are shown in Figure 3 and laboratory analytical results are presented in Table 2.

The following VOCs were detected in outdoor ambient air collected upwind of the G.W. Lisk facility:

- Acetone;
- Carbon tetrachloride;
- Chloromethane;
- Freon 11; and
- Freon 12.

TCE was detected in indoor air at locations VI-03 and VI-04 at concentrations above the NYSDOH's current Indoor Air Guideline value

of 2 µg/m^3. Other VOCs were not detected at concentrations above current NYSDOH air guideline values. As outlined in documentation contained in Appendix D, TCE is a component of some industrial products used within the Main Building.

The following VOCs were detected in sub-slab vapor samples at concentrations above potential sub-slab vapor action levels contained in NYSDOH (2006) and/or in subsequent on-line updates:

- 1,1-DCE;
- cis-1,2-DCE;
- PCE;
- 1,1,1-TCA; and
- TCE.

Based on these data, G.W. Lisk promptly increased (doubled) the flow of fresh air into the Main Building, has initiated a comprehensive inventory of currently-used products that may contain TCE or other chlorinated VOCs, and has prepared a SVI Interim Remedial Measure (IRM) Work Plan (ERM, 2018) to further reduce concentrations of TCE in indoor air and to address potential SVI in the Main Building. The SVI IRM Work Plan was approved by NYSDEC and NYSDOH in correspondence dated 24 May 2018 (NYSDEC, 2018b) and SVI IRM site work was initiated in August 2018. G.W. Lisk has also notified employees of these results and actions taken to address TCE concentrations in indoor air.

Figure 10 provides an illustration of the relative concentrations of several VOCs detected in indoor air and sub-slab soil vapor samples at selected locations within the Main Building. Review of Figure 10 indicates that the relative concentrations of these VOCs are similar at locations VI-03 and VI-04. Several VOCs were detected in the sub-slab vapor sample at location VI-02 that were not detected in the co-located indoor air sample.

4.2.2 Soil

Thirteen soil samples were collected from eight soil borings during the SC (not including QA/QC samples). Analytical results are summarized in Table 3.

VOCs

VOCs detected in one or more soil samples at concentrations above NYSDEC's Unrestricted use SCOs include:

- Acetone;
- Benzene;
- Ethylbenzene;
- Naphthalene;

- TCE; and
- Xylenes.

VOCs detected in one or more soil samples at concentrations above NYSDEC's Protection of Groundwater SCOs include:

- Acetone;
- Benzene;
- Ethylbenzene;
- Naphthalene;
- TCE; and
- Xylenes.

VOCs were not detected in soil samples at concentrations above NYSDEC's Industrial use SCOs.

Twelve soil samples were also collected and analyzed for 1,4-dioxane, which was not detected in any of the 12 samples.

Figure 11 provides an illustration of the relative concentrations of several VOCs detected in soil samples. Review of Figure 11 indicates that the relative concentrations of these VOCs in soil are similar at locations MW-01 through MW-03 and B-04. VOCs detected in soil at location MW-04 appear to be distinct proportionally relative to the VOCs detected in soil at locations MW01 through MW-03 and B-04. Additionally, the chlorinated VOCs listed in Figure 11 were not detected in soil samples collected in the Southwestern Parking Lot area (soil borings B-01 through B-03; AOPC-6).

SVOCs

SVOCs detected in one or more soil samples at concentrations above NYSDEC's Unrestricted use SCOs include:

- Benzo(a)anthracene;
- Benzo(a)pyrene;
- Benzo(b)fluoranthene;
- Benzo(k)fluoranthene;
- Chrysene;
- Dibenzo(a,h)anthracene;
- Indeno(1,2,3-cd)pyrene; and
- Naphthalene.

SVOCs detected in one or more soil samples at concentrations above NYSDEC's Unrestricted use SCOs include:

- Benzo(a)anthracene;
- Benzo(b)fluoranthene;

- Benzo(k)fluoranthene;
- Chrysene; and
- Naphthalene.

SVOCs detected in one or more soil samples at concentrations above NYSDEC's Industrial use SCOs include:

- Benzo(a)pyrene.

Figure 12 shows locations where one or more SVOCs exceed the Industrial SCOs. The exceedance of benzo(a)pyrene is limited to one location (B-01) in the Southwestern Parking Lot (AOPC-6). These SVOCs may be related to the reuse of asphalt pavement in AOPC-6.

PCBs

Ten soil samples were collected and analyzed for PCBs, which were not detected in any of the 10 samples.

Inorganics

Inorganics detected in one or more soil samples at concentrations above NYSDEC's Unrestricted use SCOs include:

- Arsenic;
- Chromium;
- Lead;
- Mercury; and
- Zinc.

Inorganics detected in one or more soil samples at concentrations above NYSDEC's Protection of Groundwater SCOs include:

- Arsenic; and
- Mercury.

Inorganics detected in one or more soil samples at concentrations above NYSDEC's Industrial use SCOs include:

- Arsenic; and
- Mercury.

Figure 12 shows locations where one or more inorganics exceed the Industrial SCOs. There are two locations:

- Location MW-03 near Former Outfall 11 (AOPC-4); and
- Location B-03 in the Southwestern Parking Lot (AOPC-6).

4.2.3 Groundwater

Laboratory analytical results for groundwater samples are summarized in Table 4. Compounds of potential concern (COPCs) that exceed the NYSDEC's ambient water quality standards and guidance values (NYSDEC, 1998) are summarized in Figure 13.

VOCs

VOCs detected in one or more groundwater samples at concentrations above ambient groundwater quality standards or guidance values include:

- cis-1,2-DCE;
- 1,1-DCA;
- 1,1-DCE;
- Freon-12;
- Freon-113;
- PCE;
- 1,1,1-TCA; and
- TCE.

All groundwater samples were also analyzed for 1,4-dioxane, which was typically not detected in groundwater samples at reporting limits of approximately 0.16 µg/l. Detected concentrations range from a minimum of 0.429 µg/l at MW-03S to a maximum of 3.64 µg/l at MW-02S.

VOC concentrations in overburden groundwater are generally higher than bedrock groundwater concentrations in samples collected south of Sulphur Creek. Conversely, VOC concentrations in bedrock groundwater are generally higher than overburden groundwater concentrations in samples collected north of Sulphur Creek.

VOCs exceedances were not detected in groundwater samples from the three monitoring wells located north of the Site (on CSHC property).

Figures 14 and 15 provide illustrations of the relative concentrations of several VOCs detected in overburden and bedrock groundwater samples, respectively. Review of Figure 14 indicates that the relative concentrations of these VOCs in groundwater are generally similar with the exception that cis-1,2-DCE and Freon-113 were detected to the south of Sulphur Creek but not to the north. Review of Figure 15 indicates there is greater variability in relative concentrations of VOCs in bedrock groundwater across the Site. Also, bedrock groundwater from locations PW-A and PW-B, which are located close to the property line and may be located hydraulically up-gradient from the Site, contain relatively low concentrations of cis-1,2-DCE, Freon-113, and TCE.

SVOCs

SVOCs detected at concentrations above ambient groundwater quality standards or guidance values were limited to one J-flagged detection of phenol in one sample of bedrock groundwater (MW-04D). The detected concentration of 2.6 µg/l is slightly higher than its standard of 1.0 µg/l.

PCBs

PCBs were not detected in any groundwater samples collected at the Site.

Inorganics

Inorganics detected in groundwater samples at concentrations above ambient groundwater quality standards or guidance values include:

- Antimony
- Iron;
- Magnesium;
- Manganese; and
- Sodium.

Figure 13 shows locations where one or more inorganics in groundwater exceed the ambient groundwater quality standards or guidance values. Antimony exceeds at only one location (MW-03D) and is only very slightly above its standard. The other metals are naturally occurring and are considered as possibly raising only aesthetic and not environmental concerns.

PFAS

Review of PFAS data in Table 4 indicates that individual PFAS were either not detected in groundwater samples or they were detected at very low concentrations. Detected concentrations of individual PFAS ranged from a minimum of 0.238 J to a maximum of 8.36 nanograms-per-liter.

4.2.4 Surface Water

Sample results for surface water samples are summarized in Table 5 and Figure 12.

VOCs (including 1,4-dioxane), SVOCs, metals, and PFAS were not detected in surface water samples at concentrations above SCGs. The PCB Aroclor 1260 was detected at a concentration above the Class D surface water standard at location SW-02.

4.3 ASSESSMENT OF DATA QUALITY

4.3.1 Data Quality Objectives

Data Quality Objectives (DQOs) are qualitative and quantitative criteria used to support the decision making process. DQOs define the uncertainty in analytical data and consider precision, accuracy, representatives, completeness, and comparability (PARCC):

- Precision is a measure of mutual agreement among measurements of the same property usually under prescribed similar conditions. Precision is best expressed in terms of the standard deviation.
- Accuracy is the degree of agreement of a measurement (or an average of measurements) with an accepted reference of "true value". Accuracy is an estimate of potential numerical bias (i.e., low or high) in analytical data.
- Representativeness expresses the degree to which data parameter variations at a sampling point indicate a process condition, or an environmental condition.
- Completeness is a measure of the amount of valid data obtained compared to the amount that was expected to be obtained under correct normal conditions.
- Comparability expresses the confidence with which one data set can be compared with another. Comparability is a qualitative measurement. Comparability is assessed by reviewing results or procedures for analytical data that do not agree with expected results.

NYSDEC Analytical Services Protocol (ASP) Category B deliverables were provided for all data. The Quality Assurance Officer performed a preliminary review of the data packages. The data were validated by an independent third party, Environmental Data Services, Inc. (EDS) of Newport News, Virginia. EDS's review was performed in accordance with:

- analytical methods;
- NYSDEC ASP (NYSDEC, 2010b);
- USEPA CLP National Functional Guidelines for Organic Superfund Data Review (USEPA, 2017a);
- USEPA CLP National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2017b);
- applicable USEPA Data Review Standard Operating Procedures; and
- the reviewer's professional judgment.

The order listed above does not imply a hierarchy of reliance. The most comprehensive reference sources were used to perform a complete data validation.

4.3.2 Data Usability

Data validation reports (DVRs) were prepared for all samples based upon the data review. The DVRs consist of a section that contains an assessment of the deliverables, followed by a section that describes the analytical results and any qualifications that should be considered when using the data. The DVRs highlight the data results that did not meet quality control (QC) limits and therefore required data qualification. These tables include information such as, blank contamination, surrogate recoveries, and internal standard area counts that did not meet QC criteria.

The following items/criteria were reviewed for organics:

- Case narrative and deliverables compliance;
- Holding times both technical and procedural and sample preservation (including pH and temperature);
- System Monitoring Compound (Surrogate) recoveries and summaries;
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) results, recoveries and summaries;
- Laboratory Control Sample (LCS) or Blank spike (BS) results, recoveries and summaries;
- Method blank results and summaries;
- Gas Chromatography (GC)/Mass Spectroscopy (MS) tuning and performance;
- Initial and continuing calibration summaries;
- Internal standard areas, retention times and summaries;
- Field and Trip Blank Data when applicable;
- Blind Field Duplicate sample results when applicable
- Organic analysis data sheets (Form I);
- GC/MS chromatograms, mass spectra and quantitation reports

- Quantitation/detection limits; and
- Qualitative and quantitative compound identification.

The following items/criteria were reviewed for the Inorganics:

- Case narrative and deliverable requirements;
- Holding times and sample preservation;
- Detection limits;
- Inorganic analysis data sheets (Form I);
- Initial and continuing calibration verifications;
- Contract-Required Detection Limit (CRDL) standard analysis;
- Lab blank data;
- Inductively Coupled Plasma Spectroscopy (ICP) interference check sample (ICS) analysis;
- Matrix Spike analysis;
- Matrix Duplicate analysis;
- LCS results;
- ICP serial dilution analysis;
- Field Blank results when applicable; and
- Blind Field Duplicate results when applicable.

Qualification of data, where appropriate, was made by the use of qualifier codes based upon the data validation process. These qualifiers serve as an indication of the qualitative and quantitative reliability of the data. The qualifier codes utilized are as follows:

- No qualifier – Positive Detect. The compound was analyzed for and was positively identified above the sample reporting limit. The reported value is valid and useable.
- U – Non Detect. The compound was analyzed for, but not detected. The associated numerical value is the reporting limit (RL). The value is valid and useable as a non-detect at the reporting limit.

- J - Positive Detect at an estimated value. The compound was analyzed for and was positively identified; the associated numerical value is the approximate concentration of the compound in the sample. The value was designated as estimated as a result of the data validation criteria or when an organic compound is present (mass spectral identification criteria are met), but the concentration is less than the RL. The value is valid and useable as an estimated result.

- UJ – Non Detect at an estimated value. The compound was analyzed for, but not detected above the RL. The associated numerical value is the RL; however, the RL is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the compound in the sample. The value is valid and useable as a non-detect at the estimated RL.

- R - The sample results are rejected due to deficiencies in the ability to analyze the sample and meet quality control criteria. The data are unusable. The presence or absence of the analyte cannot be verified.

The final review of the all DVRs was performed by the ERM Quality Assurance Officer. The validation indicated that all data are valid and usable for the purposes of the SC with the few exceptions described in the DVRs. Of over 189 analyses performed, none were rejected for a completeness of 100%. The rejected analyses were not used for data interpretation. Tables 2 to 5 present final validated data.

4.4 INVESTIGATION DERIVED WASTES

Investigation-derived waste (IDW) generated during the SC consisted of the following:

- Water: monitoring well purge water, wireline-core drilling fluids, and decontamination fluids;
- Solids: soil cuttings and drilling mud; and
- Disposables: personal protective equipment (PPE), HDPE sheeting, HDPE tubing used for water sampling, and other disposable sampling equipment and supplies.

IDW was placed into United States Department of Transportation (USDOT)-approved 55-gallon steel drums. Drums were labeled with generator name, address, contents, waste determination status, and accumulation start date and were temporarily staged on Site in a secure

area for waste characterization sampling and analysis. A total of 30 drums of IDW were generated as follows:

- 20 drums of soil cuttings/drilling mud;
- 8 drums of wastewater; and
- 2 drums of disposables.

Samples of soil cuttings, drilling mud, and wastewater were collected on 21 November 2017 for waste characterization analyses. Solid samples were analyzed for VOCs, SVOCs, metals, pesticides, and herbicides by USEPA's Toxicity Characteristic Leaching Procedure (TCLP). The wastewater sample was analyzed for the same parameters. These samples were also analyzed for ignitability and reactivity. The waste characterization analytical results are included in Table 6.

Analytical results from individual soil and groundwater samples collected during the SC as well as the waste characterization sample results referenced above were provided to Environmental Waste Minimization, Inc. (EWMI) for review and waste profiling in consultation with G.W. Lisk and the facility receiving the wastes. All IDW was determined to be non-hazardous waste. The IDW was picked-up from the Site on 12 February 2018 and transported under an approved waste profile to the EQ Detroit, Inc. disposal facility in Detroit, Michigan (soil and drilling muds) or the Envirite of Pennsylvania disposal facility located in York, Pennsylvania (disposables and wastewater). Copies of the waste transport and disposal documentation are provided in Appendix E.

4.5 EVALUATION OF AREAS OF POTENTIAL CONCERN

Nine AOPCs were identified in the Final SC Work Plan (ERM, 2016). The AOPCs and the results of SC sampling efforts are summarized in Table 7. Based on SC results, AOPCs 3 and 9 are proposed for deletion from further evaluation. Other AOPCs will be further evaluated during a Remedial Investigation (RI).

4.6 RECOMMENDATIONS

COPCs including several VOCs, SVOCs, and metals have been detected in soil, groundwater, and/or surface water at concentrations above applicable SCGs. Additional investigation of these media is recommended and will be proposed in a RI Work Plan that will be submitted to NYSDEC for review and approval. The goals of the RI will be to further:

- delineate the extent of COPCs in environmental media at or emanating from the Site, including whether or not COPCs may be migrating from off-Site properties onto the Site;
- determine the surface and subsurface characteristics of the Site;

- identify the sources of COPCs, migration pathways, and actual or potential receptors with regards to the protection of human health and the environment;
- perform an assessment of ecological resources; and
- collect data necessary to evaluate potential remedial alternatives.

If appropriate, the RI should also identify removal, treatment, containment, or other interim remedial measures (IRMs) to:

- remove, treat, or contain any source areas identified; and
- prevent, mitigate, or remedy potential exposure to COPCs while remedial alternatives are being evaluated.

TCE was detected at two indoor air sample locations at concentrations above its Indoor Air Guideline value. To this end, a SVI IRM Work Plan (ERM, 2018) was provided by G.W. Lisk to NYSDEC and NYSDOH for review to address potential SVI at the Main Building. The SVI Work Plan was approved by NYSDEC and NYSDOH in correspondence dated 24 May 2018 (NYSDEC, 2018b). G.W. Lisk is currently implementing the SVI IRM under Department oversight, and G.W. Lisk is also currently preparing a BCP application for Department review.

Results from implementation of the NYSDEC-approved RI Work Plan will be combined with the SC investigations outlined in this report to fulfill the requirements for an RI.

COPCs in soil, groundwater, or surface water are limited to one or more VOCs, SVOCs, and metals. The following analytes were either not detected or they were not detected in any SC samples at concentrations above potentially applicable SCGs:

- Cyanide
- Sulfite

Therefore, it is recommended that these analytes be removed from future sampling and analysis programs at the Site.

The emerging contaminants 1,4-dioxane and PFAS were either not detected in groundwater samples or were detected at very low concentrations.

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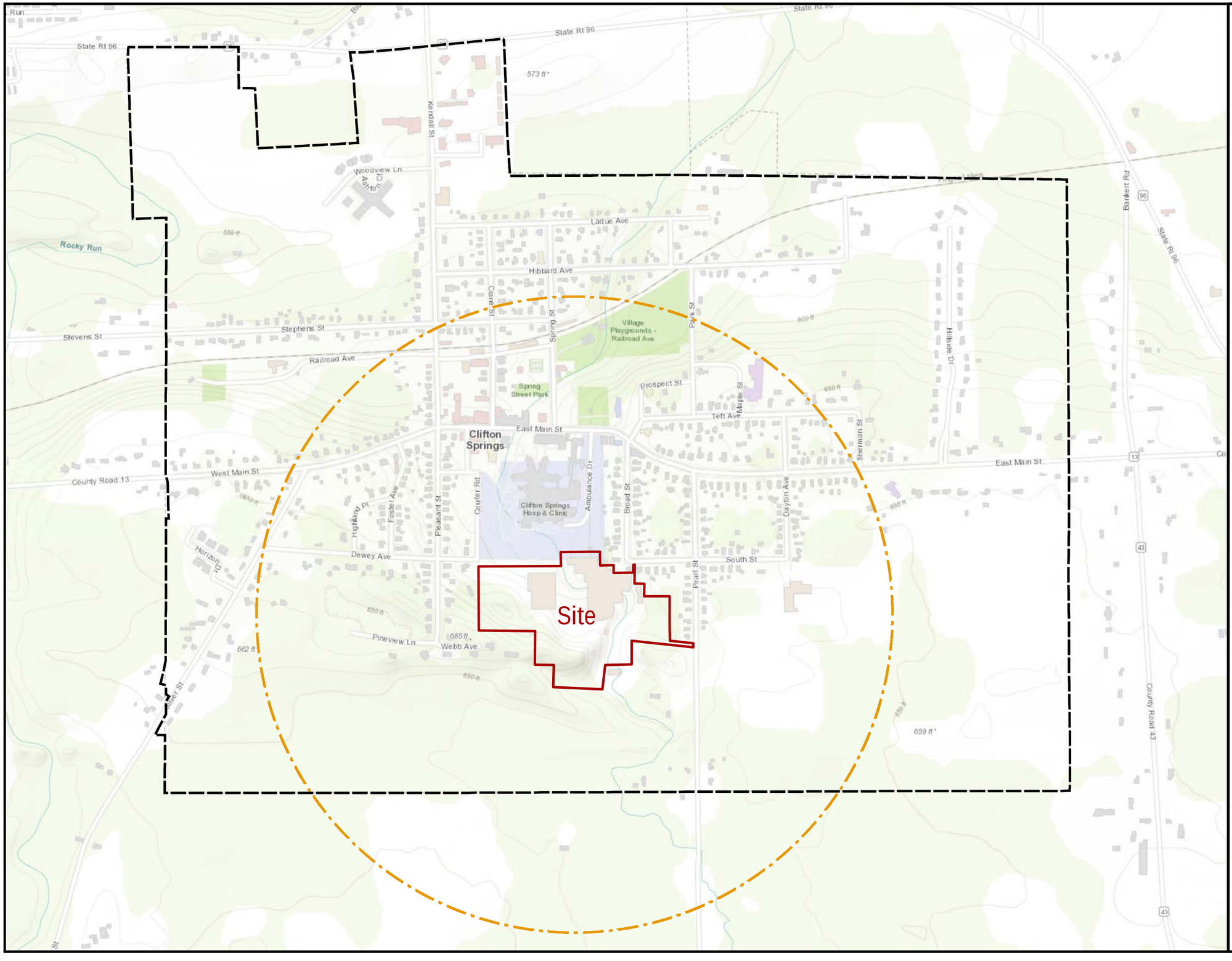
Figures



Legend

- Site Property Boundary
- 1/2 Mile Radius Site Buffer
- Village of Clifton Springs

N

0 125 250 500 750 1,000
Feet

Figure 1: Site Location
G.W. Lisk Company, Inc.
2 South Street, Clifton Springs, NY

ERM

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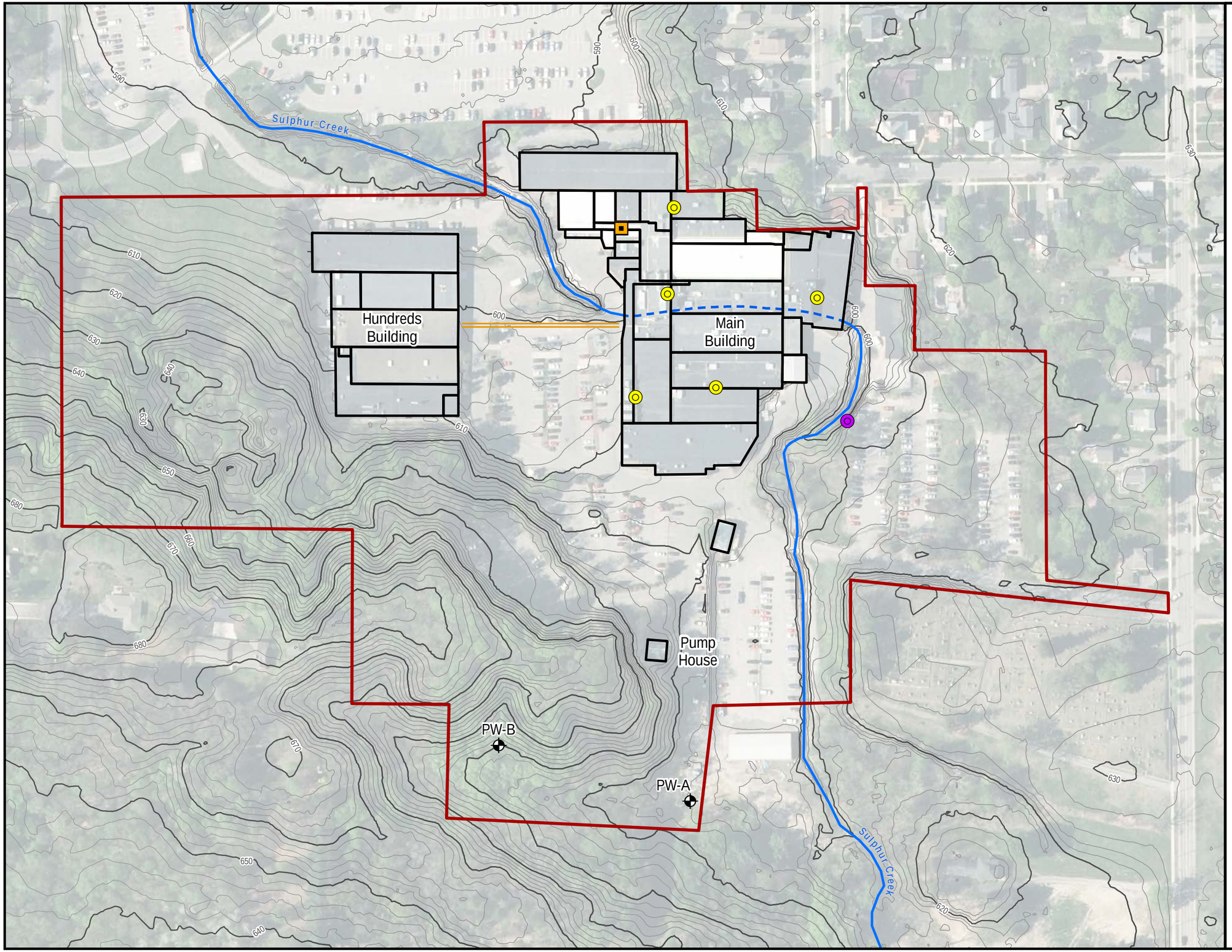

Legend

- Property Parcel Boundary
- Facility Outline
- Water Supply Wells
- Stormwater Outfall Location
- Former Degreaser Sump
- Former Outfall Location
- Former Trench (Approximate)
- Surface Stream
- Inferred Stream Path
- 10 ft. Elevation Contour
- 2 ft. Elevation Contour

NOTES:

- Facility room outlines are approximate in location and converted from AutoCAD models.
- Surface elevation contours are modified from Ontario County, 2017.
- Elevation is reported as feet above Mean Sea Level (MSL).
- Aerial imagery was captured in 2015 by New York State.

N

0 25 50 100 150 200
Feet

Figure 2: Site Topography and Facility Layout
G.W. Lisk Company, Inc.
2 South Street, Clifton Springs, NY

ERM

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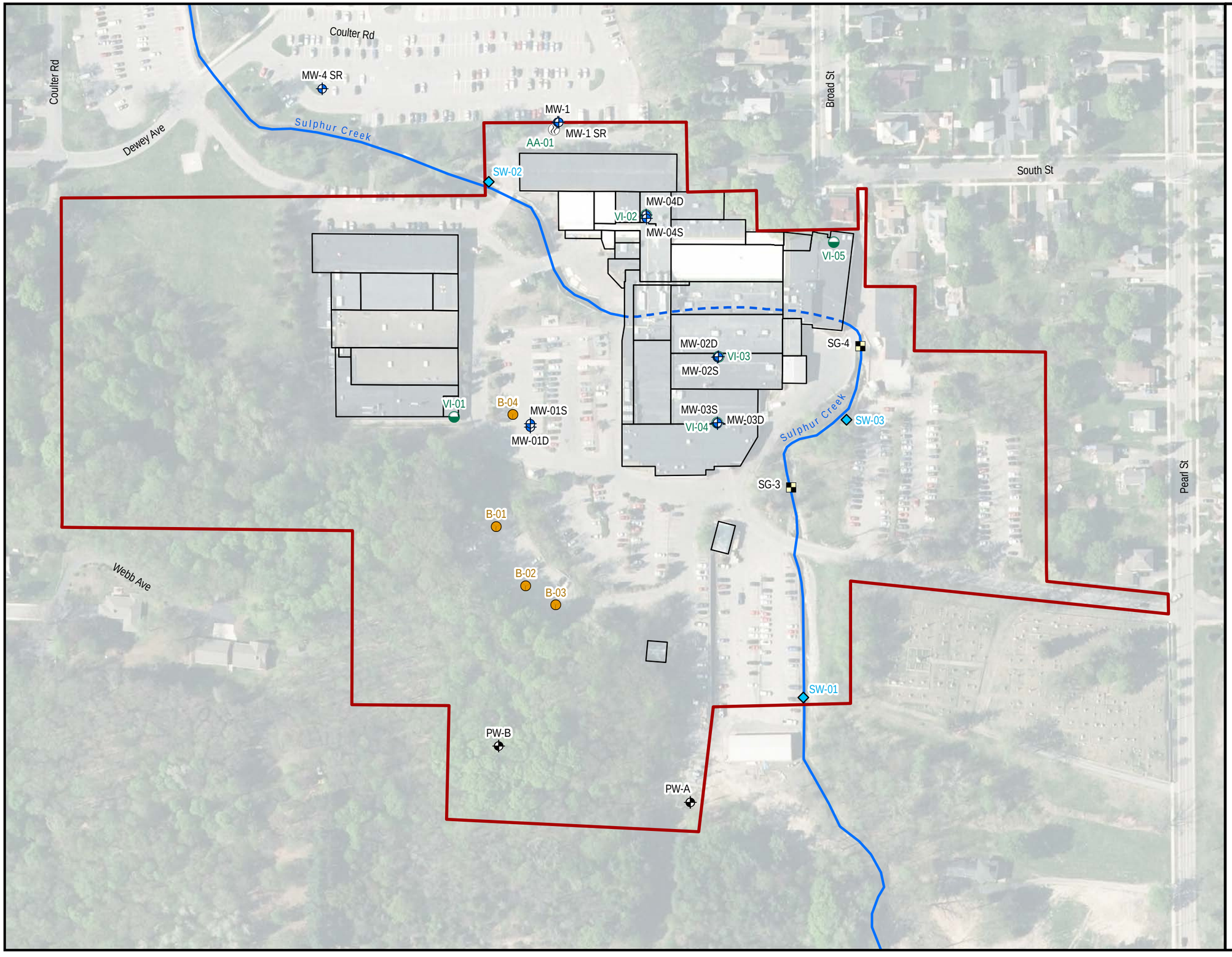

Legend

Site Characterization Sample Location

- Monitoring Well
- Production Well
- Soil Boring
- Surface Water
- Indoor Air/Sub-Slab Soil Vapor
- Ambient
- Stream Gauge Location
- Tax Parcel Boundary
- Facility Outline
- Surface Stream
- Inferred Stream Path

NOTES:

- Off-property location data (MW-1, MW-1SR, and MW-4SR) was obtained from Haley and Aldrich, 2015.
- Facility room outlines are approximate in location and converted from AutoCAD models.
- Aerial imagery was captured in 2015 by New York State.

N

0 25 50 100 150 200

Feet

Figure 3: SC Sample Locations

G.W. Lisk

2 South Street, Clifton Springs, NY

ERM

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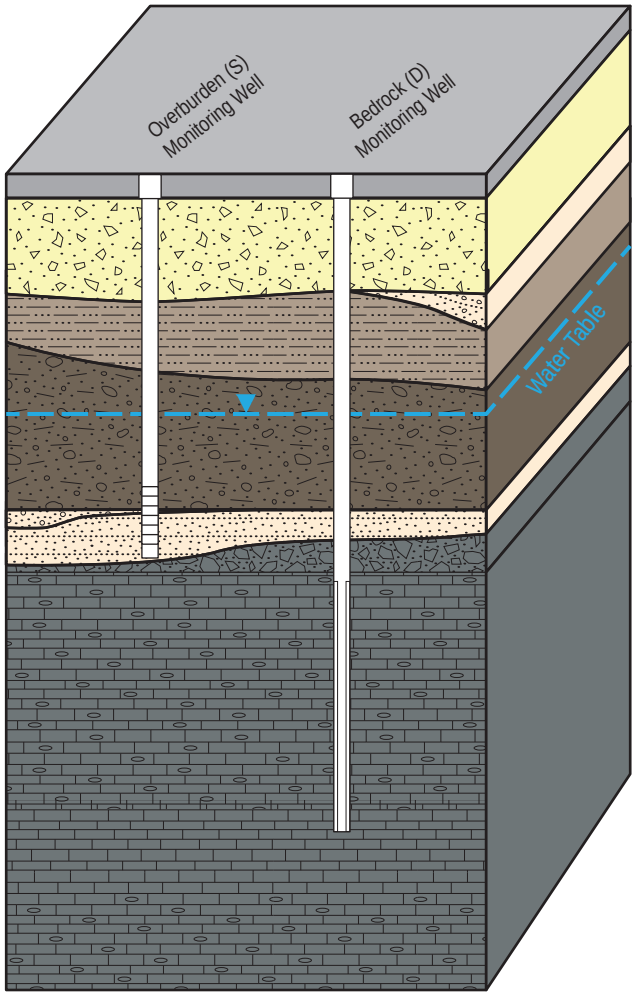
Hydrogeological Unit	*Geological Unit* [1]	*Lithology (Thickness)*
Overburden	Fill	Cement Floor (0 - 1') Fill: Mixed Sand & Gravel (4.25 - 8.0') Fine to coarse angular gravel in sand and silt matrix.
	Lacustrine Silt and Clay (lsc)	Interbedded Silt & Clay (1.5 - 5.0 ') Thinly bedded silt and clay, variable thickness. Local incisions of lithic sand and gravel.
	Till (t)	Diamicton (2.0 - 9.5') Fine subangular gravel and sand suspended in silt and clay matrix. Local inclusions of peat.
	Outwash Sand & Gravel (osg)	Fine Silty Sand (1.0 - 3.5') Fine lithic sand and silt with thin gravel interbeds.
		Weathered Limestone (0 - 1.25') Cherty mudstone fragments in sandy clay matrix.
Bedrock	Onondaga Limestone (Don)	Cherty Mudstone Medium gray mudstone with thin wackestone and packstone interbeds of crinoid columnals and rugose coral. Dark gray to black chert nodules along bedding.



Explanation

- Cement Floor
- Diamicton
- Cherty Limestone (Bedrock)
- Previously Disturbed Gravel & Debris
- Sorted Sand and Gravel
- Monitoring Well Riser
- Sandy Silt
- Weathered Limestone
- Monitoring Well Screen Interval
- Open Bore hole

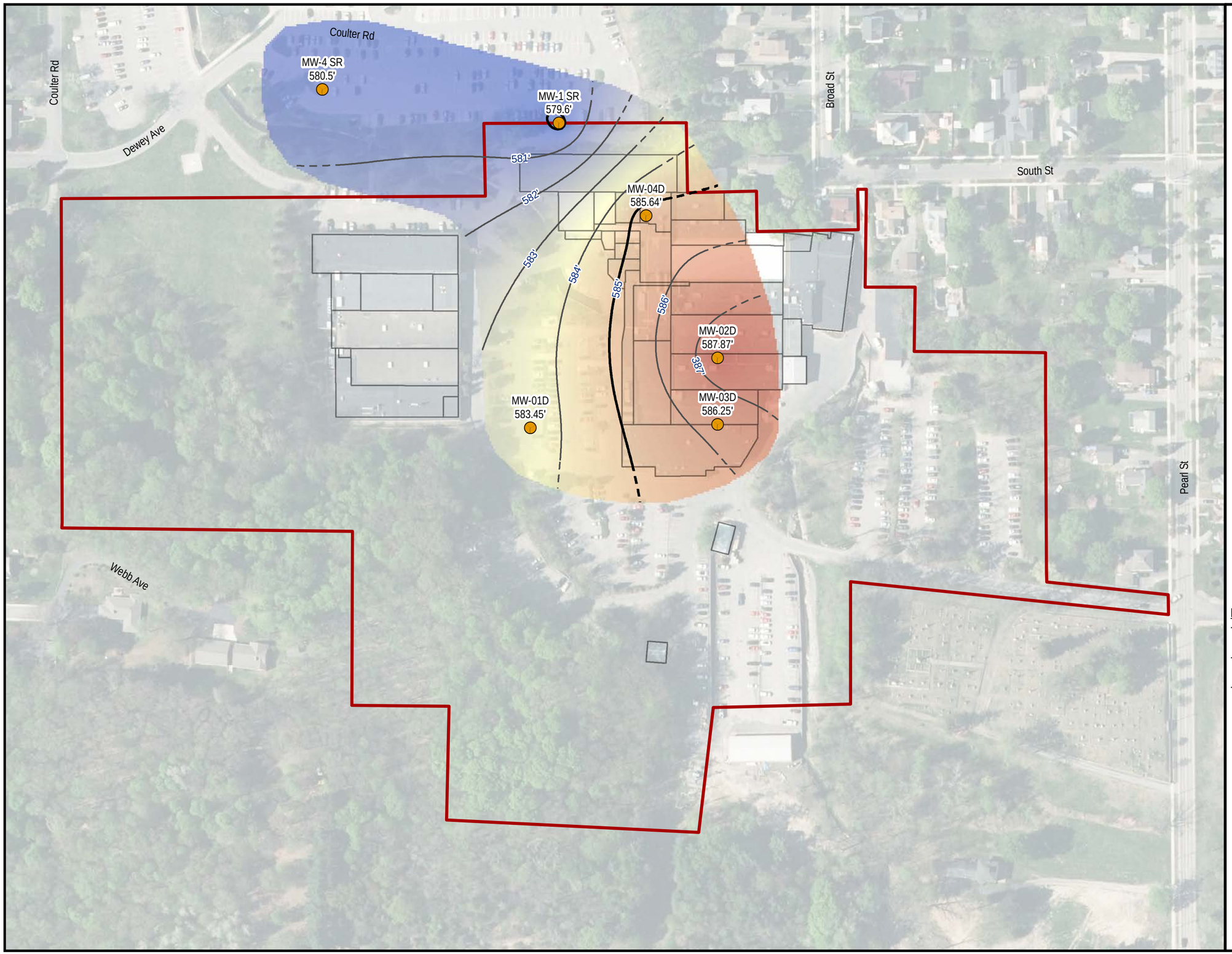
Notes:

1 - Except for fill, geological unit nomencure is from the Surficial Geologic Map of New York, Finger Lakes Sheet (Caldwell and others, 1986).

2 - Lithological descriptions, thickness ranges, and approximate water table depth are from ERM's on-site boring logs.

Figure 4: Stratigraphic Type Section
G.W. Lisk Company, Inc.
Clifton Springs, NY

ERM



Legend

- Core Boring Location and Bedrock Elevation
- Bedrock Elevation Contour - 5 ft. (dashed where inferred)
- Bedrock Elevation Contour - 1 ft. (dashed where inferred)
- Property Parcel Boundary
- Facility Outline

Interpolated Bedrock Surface Elevation

588'

584'

579'

NOTES:

- Facility room outlines are approximate in location and converted from AutoCAD models.
- Bedrock elevations are derived from ERM core logs and Haley and Aldrich, 2015.
- Aerial imagery was captured in 2015 by New York State.

N

0 25 50 100 150 200

Feet

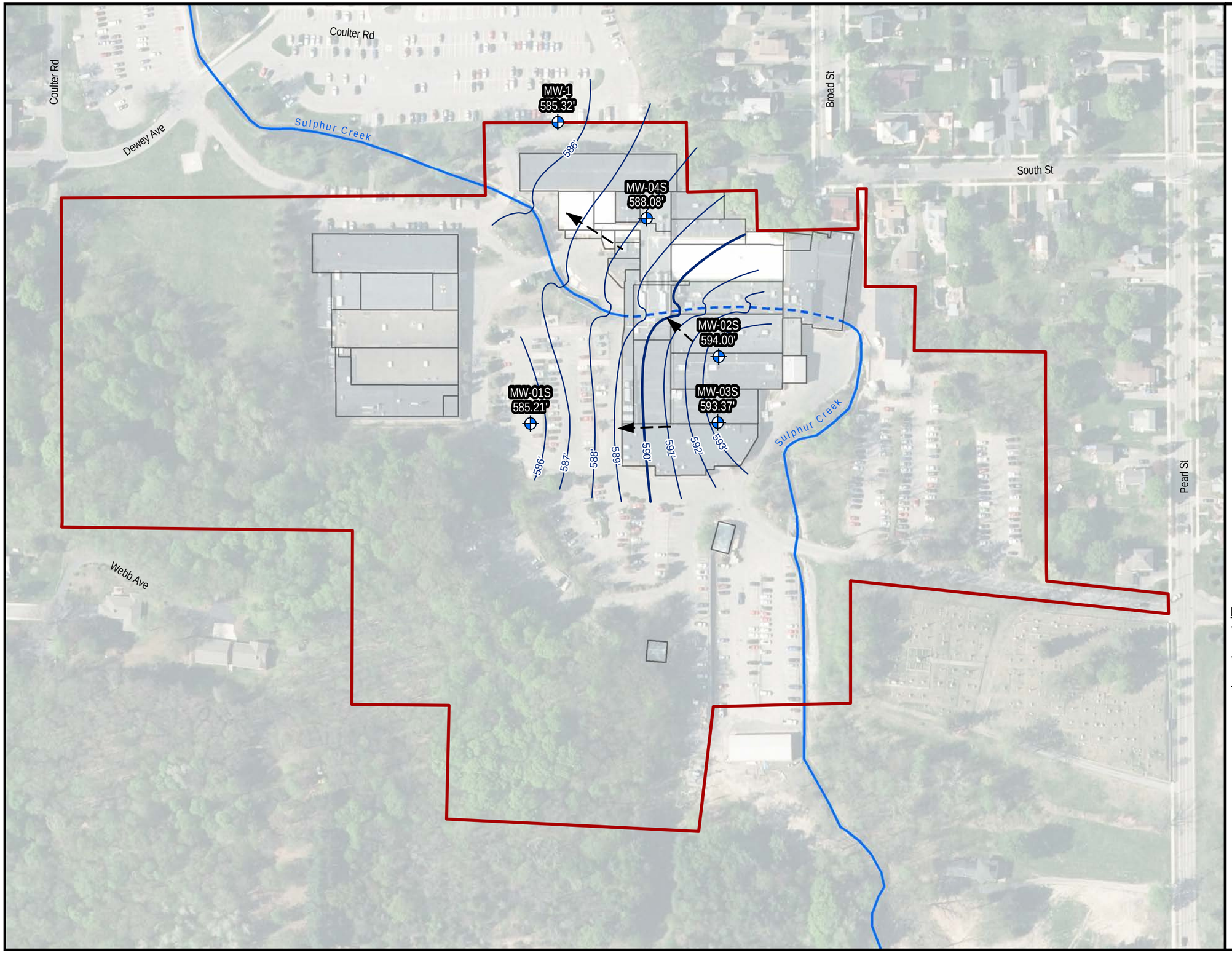
Figure 5: Interpolated Top of Bedrock Elevation Map

G.W. Lisk

2 South Street, Clifton Springs, NY

ERM

Q:\Team\DMMV\Clients_F_K\GWLisk\CliftonSprings_NY\MXD\SC-Report 2018\Figures_Topo\Bedrock_Interp_20172418.mxd - Dana.Heisinkveld - 9/19/2018



Legend

- Overburden Monitoring Well
- Groundwater Elevation Contour - 5 ft.
- Groundwater Elevation Contour - 1 ft.
- Property Parcel Boundary
- Facility Outline
- Surface Stream
- Inferred Stream Path
- Estimated Groundwater Flow Direction

NOTES:

- Facility room outlines are approximate in location and converted from AutoCAD models.
- Groundwater elevations were measured on 11/21/2017 and are reported as feet above mean sea level.
- Aerial imagery was captured in 2015 by New York State.

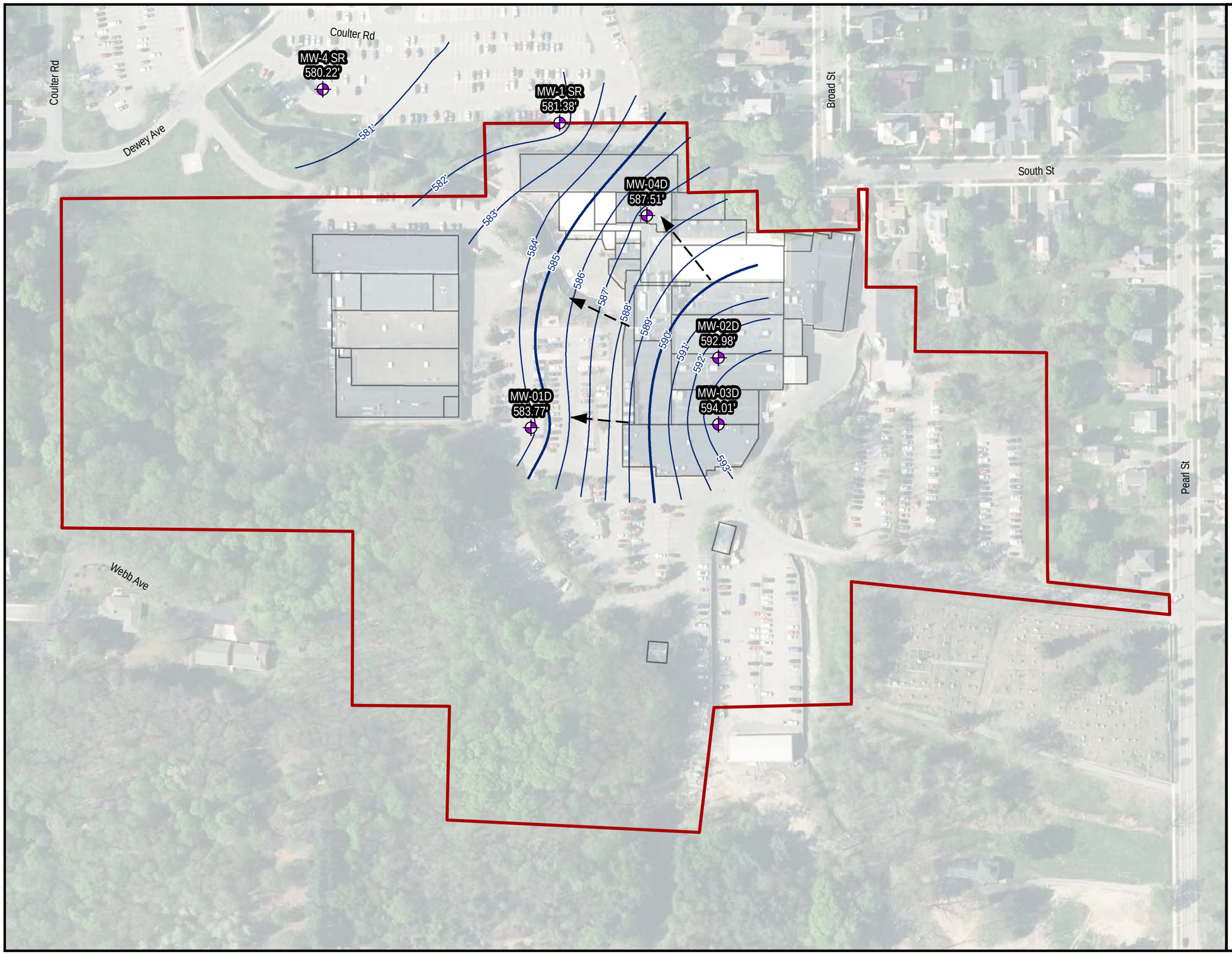
N

0 25 50 100 150 200
Feet

Figure 6: Overburden Groundwater Contours
G.W. Lisk
2 South Street, Clifton Springs, NY

ERM

Q:\Team\DMMV\Clients_F_K\GWLisk\Clifton Springs_NY\MXD\SC Report 2018\Figure6_WaterTable_Contour_20180525.mxd - Dana.Hauskriveld - 9/18/2018



Legend

- Bedrock Monitoring Well
- Groundwater Elevation Contour - 5 ft.
- Groundwater Elevation Contour - 1 ft.
- Property Parcel Boundary
- Facility Outline
- Estimated Groundwater Flow Direction

NOTES:

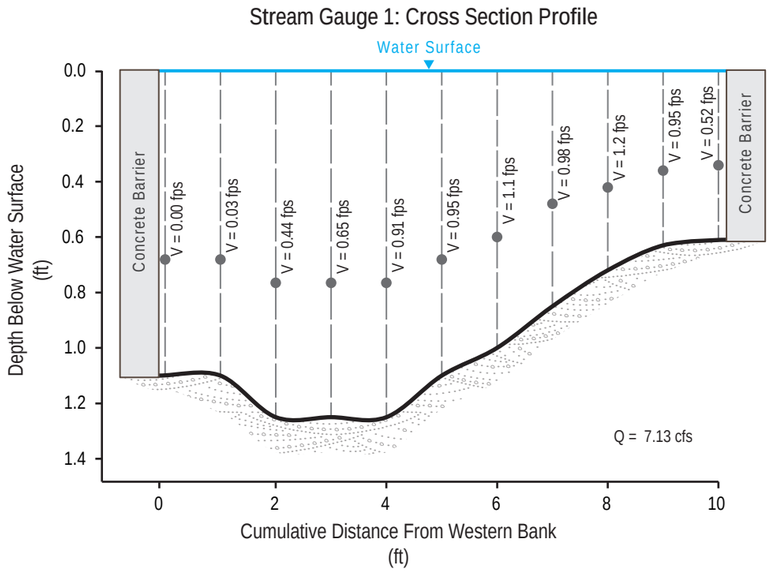
- Facility room outlines are approximate in location and converted from AutoCAD models.
- Groundwater elevations were measured on 11/21/2017 and are reported as feet above mean sea level.
- Aerial imagery was captured in 2015 by New York State.

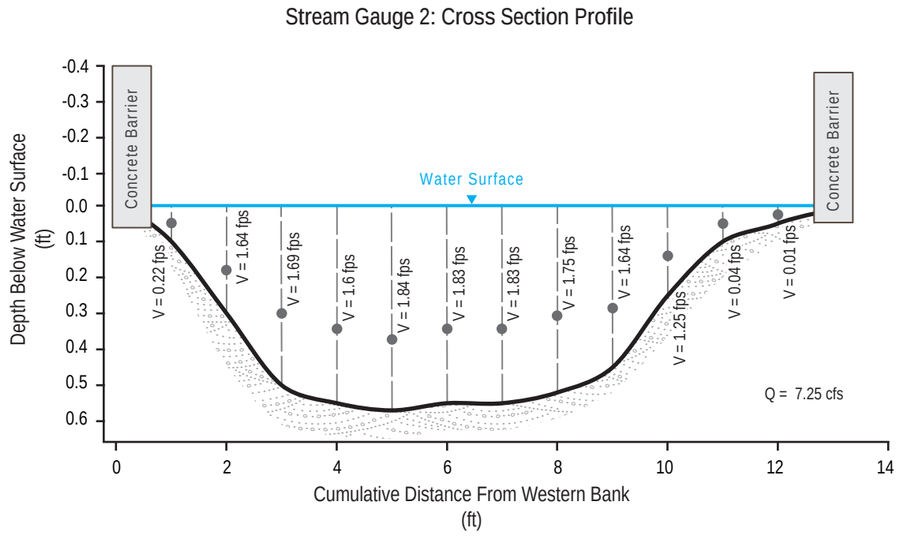
0 25 50 100 150 200
Feet

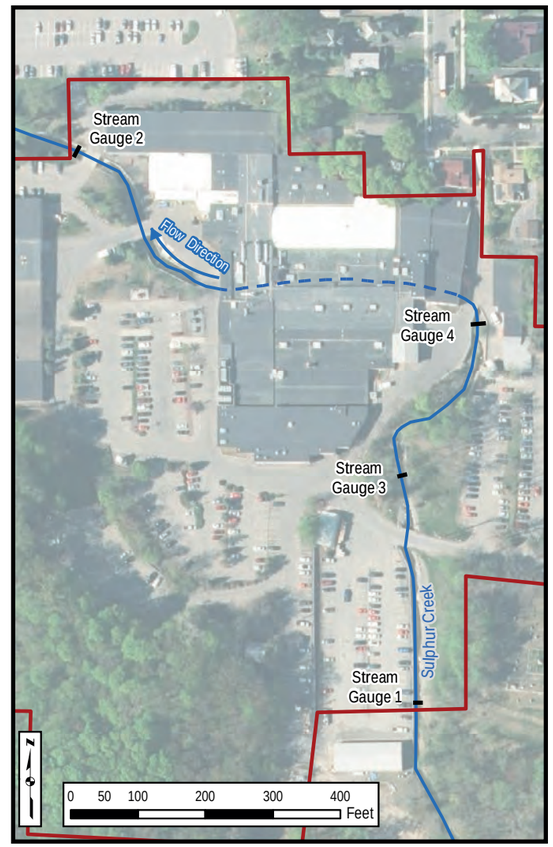
Figure 7: Shallow Bedrock Groundwater Potentiometric Contours
Contours
G.W. Lisk
2 South Street, Clifton Springs, NY

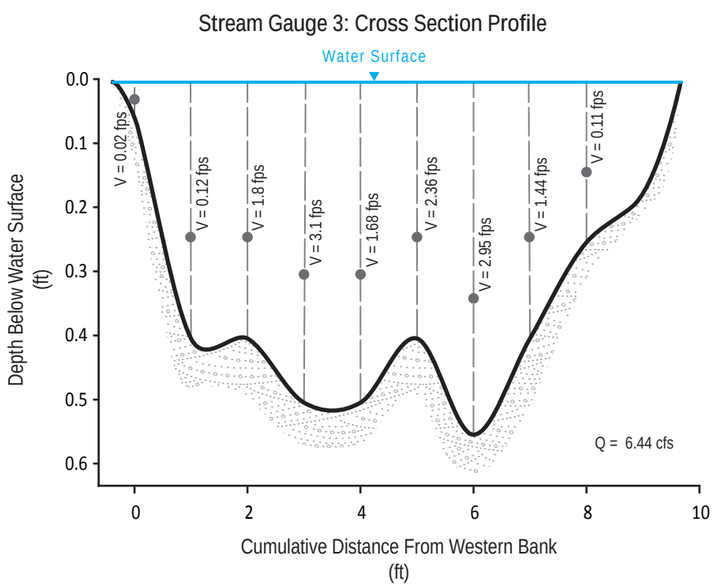
ERM

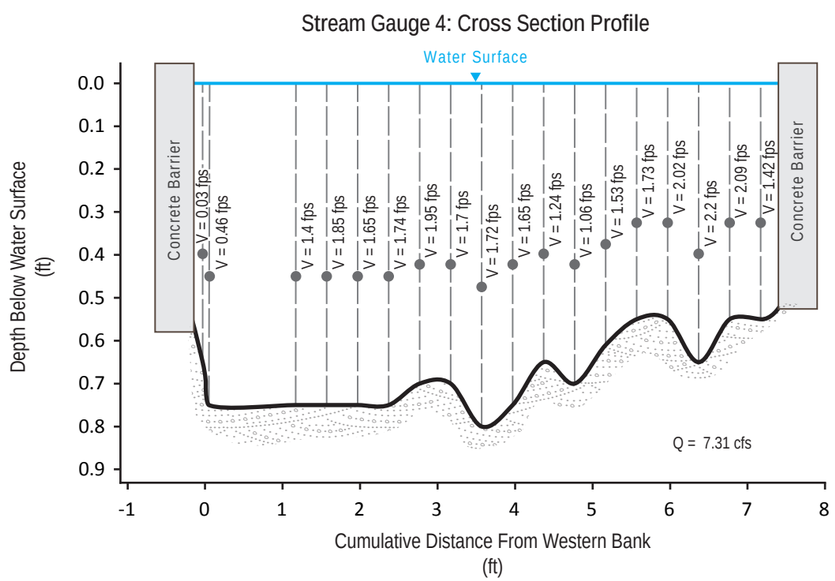
Q:\Team\DMW\Clients_F_K\GWLisk\CliftonSprings_NY\MXD\SC Report 2018\Figure7_Bedrock_Potentiometric_20180525.mxd - Dana.Heuerkeveld - 6/18/2018





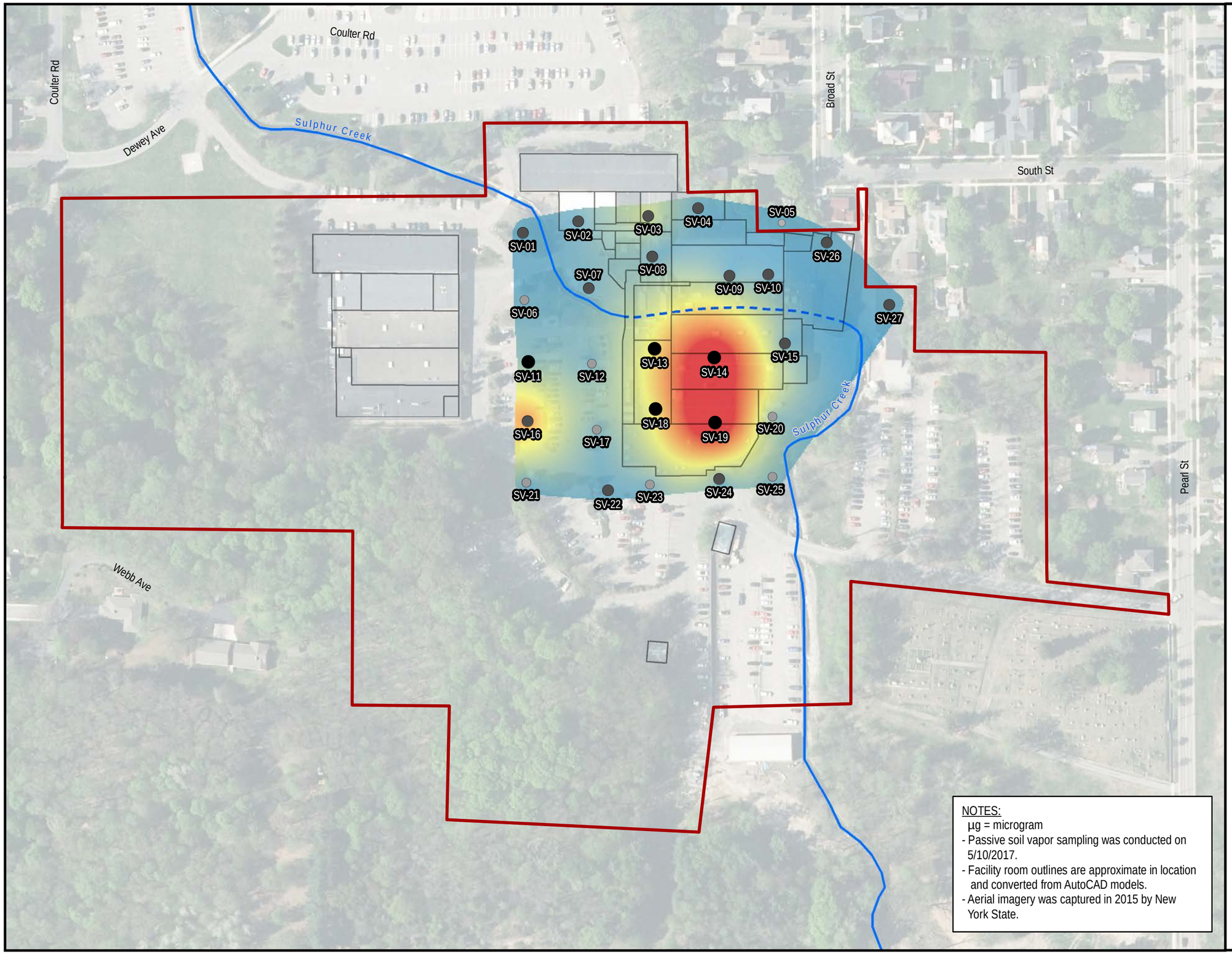






Notes:
- V = flow velocity in feet per second (fps)
- Q = discharge in cubic feet per second (cfs)
- Streams were profiled on 5/10/2017
- Velocity measurements were collected at 60% depth

Figure 8: Sulphur Creek Cross Sections
G.W. Lisk Company, Inc.
Clifton Springs, NY



Legend

Passive Soil Vapor Sample Locations

Relative VOC Mass (µg)

- 0.00 - 1.00
- 1.00 - 10.00
- 10.00 - 100.00
- > 100.00

Relative TCE Mass (µg)

- 68.0 - 90.4
- 58.5 - 68.0
- 48.5 - 58.5
- 39.0 - 48.5
- 30.0 - 39.0
- 21.5 - 30.0
- 14.0 - 22.0
- 7.5 - 14.0
- 2.0 - 7.5
- 0.02 - 2.0
- Property Parcel Boundary
- Facility Outline
- Surface Stream
- Inferred Stream Path

0 25 50 100 150 200
Feet

N

NOTES:
µg = microgram
- Passive soil vapor sampling was conducted on 5/10/2017.
- Facility room outlines are approximate in location and converted from AutoCAD models.
- Aerial imagery was captured in 2015 by New York State.

Figure 9: Passive Soil Vapor Screening Results and Relative TCE Mass
G.W. Lisk
2 South Street, Clifton Springs, NY

ERM

Soil Vapor Matrix:	A				B			C
Analyte:	Trichloroethene	cis-1,2-Dichloroethene	1,1-Dichloroethene	Carbon Tetrachloride	Tetrachloroethene	1,1,1-Trichloroethane	Methylene chloride	Vinyl Chloride
Location ID Unit:	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
VI-02-SS	499	ND	ND	ND	318	214	30.4	ND
VI-03-SS	90,300	864	5,470	ND	4,610	7,910	ND	ND
VI-04-SS	51,100	1,190	3,010	ND	3,850	11,000	ND	ND

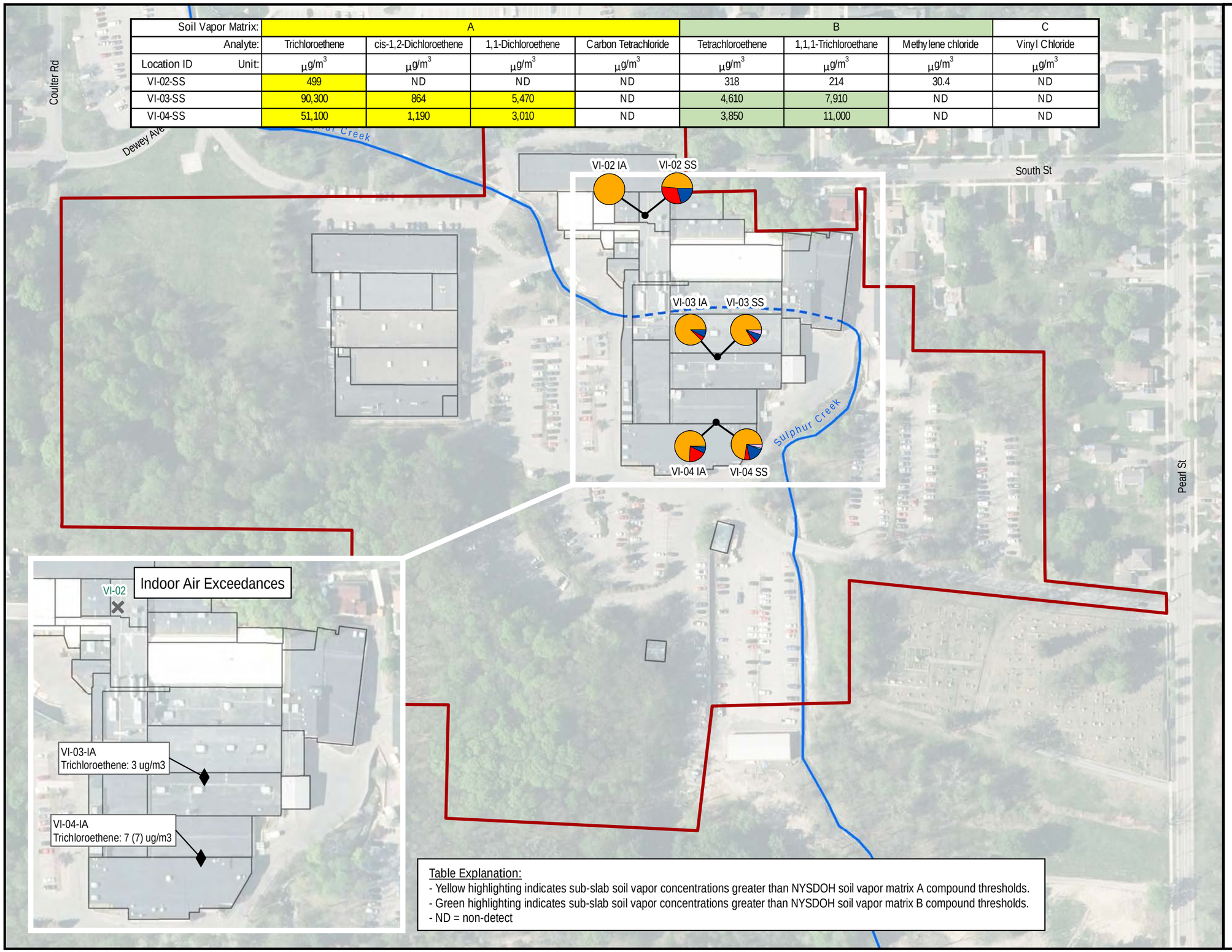


Table Explanation:
- Yellow highlighting indicates sub-slab soil vapor concentrations greater than NYSDOH soil vapor matrix A compound thresholds.
- Green highlighting indicates sub-slab soil vapor concentrations greater than NYSDOH soil vapor matrix B compound thresholds.
- ND = non-detect

Legend

VOC Composition - Compounds of Concern

- Displayed VOC ratios are relative to the listed compounds only.
- Trichloroethene
- Tetrachloroethene
- 1,1,1-TCA
- cis-1,2 Dichloroethene
- 1,1 Dichloroethene
- Air Guidance Value Exceedance
- No Exceedance
- Collocated Sample Point
- Property Parcel Boundary
- Facility Outline
- Surface Stream
- Inferred Stream Path

NOTES:
IA = Indoor air sample
SS = Sub-slab sample
VOC = Volatile Organic Compound
COC = Compound of Concern
µg/m3 = microgram per cubic meter
- Facility room outlines are approximate in location and converted from AutoCAD models.
- Aerial imagery was captured in 2015 by New York State.

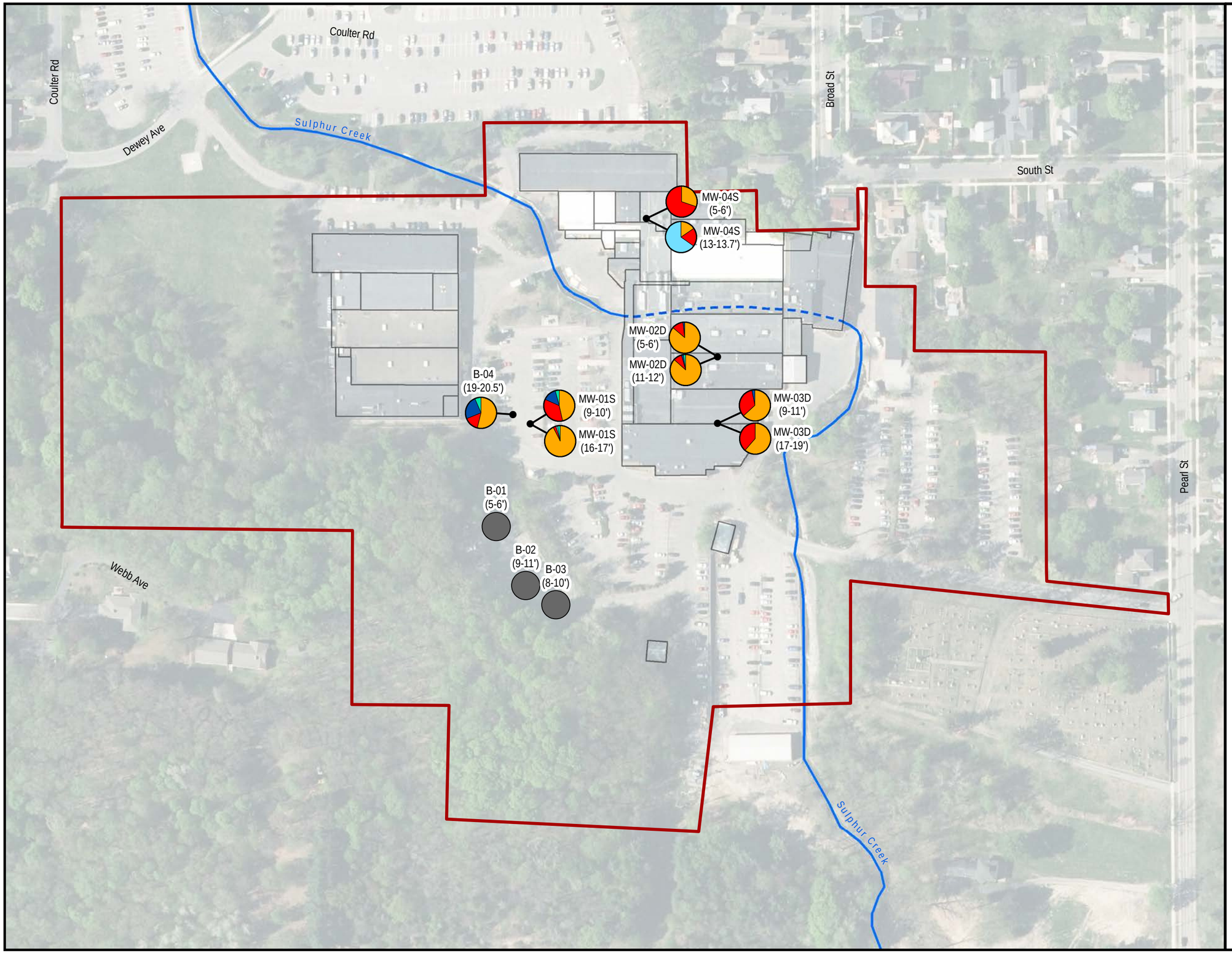
N

0 25 50 100 150 200
Feet

Figure 10: Sub-Slab Soil Vapor and Indoor Air VOC Composition
G.W. Lisk
2 South Street, Clifton Springs, NY

ERM

Q:\Team\DMMV\Clients_F_K\GWLisk\CliftonSprings_NY\MXD\SC Report 2018\Figure10_Selected_SoilVOC_20180524.mxd - Data.Hauenkveld - 9/18/2018



Legend

VOC Composition - Compounds of Concern

- Displayed VOC ratios are relative to the listed compounds only.
- Trichloroethene
- Tetrachloroethene
- 1,1,1-Trichloroethane
- cis-1,2 Dichloroethene
- Freon-113
- No COC Detected
- Soil Boring Location
- Property Parcel Boundary
- Facility Outline
- Surface Stream
- Inferred Stream Path

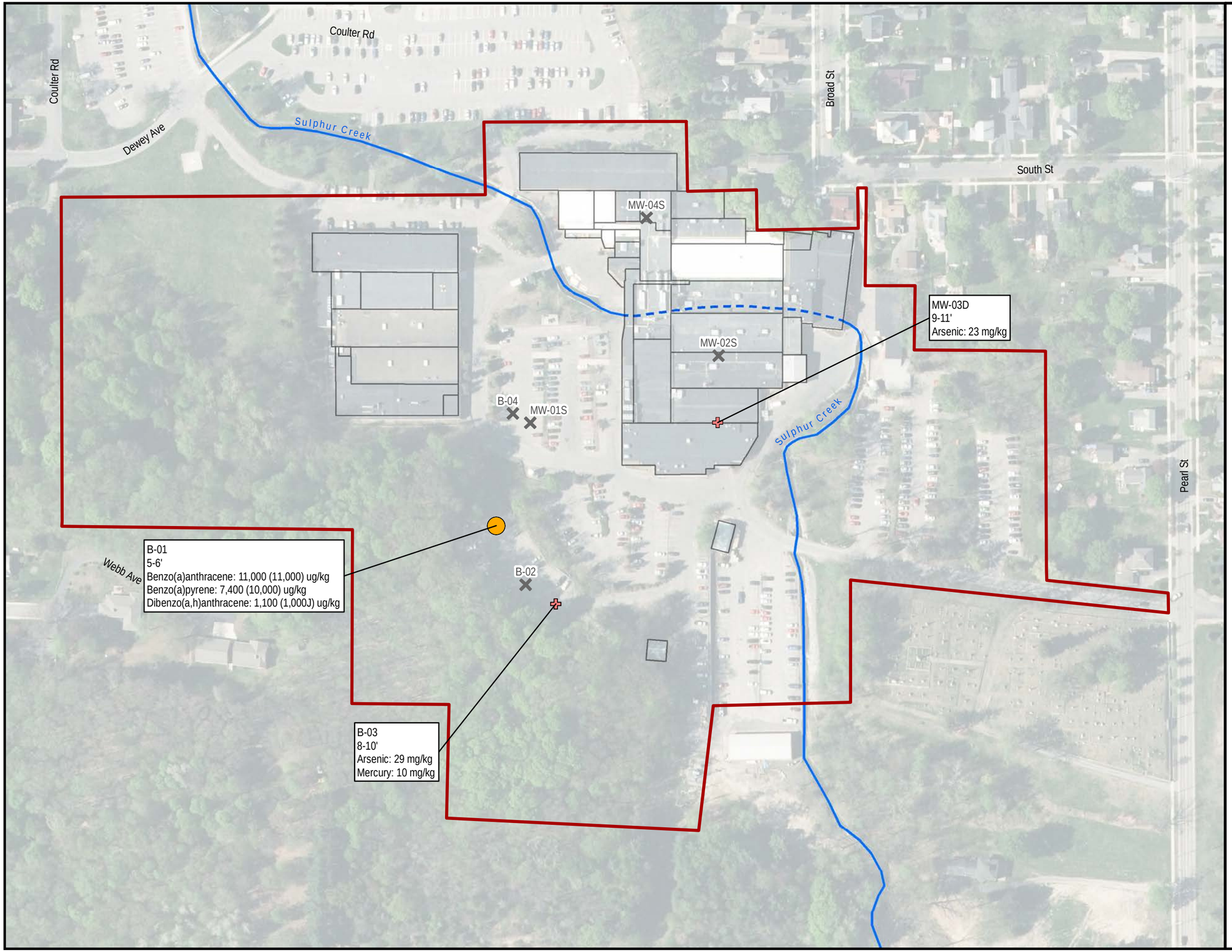
NOTES:
VOC = Volatile Organic Compound
COC = Compound of Concern
- Facility room outlines are approximate in location and converted from AutoCAD models.
- Aerial imagery was captured in 2015 by New York State.

N

0 25 50 100 150 200
Feet

Figure 11: Soil Sample
VOC Composition
G.W. Lisk
2 South Street, Clifton Springs, NY

ERM



Legend

Restricted Industrial SCO Exceedance

Exceedance Compound

- VOC
- SVOC
- PCB
- Metals
- No Exceedance
- Property Parcel Boundary
- Facility Outline
- Surface Stream
- Inferred Stream Path

NOTES:

- Values in parantheses represent field duplicate results.
- J = The analyte was positively identified; associated numerical value is the approximate concentration of the analyte in the sample.
- Facility room outlines are approximate in location and converted from AutoCAD models.
- Aerial imagery was captured in 2015 by New York State.

0 25 50 100 150 200

Feet

N

Figure 12: Soil Sample Exceedances - Restricted Industrial SCOs

G.W. Lisk

2 South Street, Clifton Springs, NY

ERM

Q:\Team\DM\V\Clients_F_K\GWLisk\CliftonSprings_NY\MXD\SC Report 2018\Figure12_Soil_RestIndustrial_Exceedances_20180524.mxd - Caldwell-Payne - 8/1/2018

Coulter Rd

Dewey Ave

Sulphur Creek

Broad St

South St

Pearl St

Webb Ave

MW-04D

MW-04S

B-04

MW-01S
16 - 17'
Trichloroethene: 4,000 (4,300) ug/kg

B-01
5 - 6'
Benzene: 490J (390J) ug/kg
Ethylbenzene: 1,000 (1,000) ug/kg
Naphthalene: 97,000 (120,000) ug/kg

Benzo(a)anthracene: 10,000 (10,000) ug/kg
Benzo(b)fluoranthene: 9,400 (9,200) ug/kg
Benzo(k)fluoranthene: 2,700 (3,100) ug/kg
Chrysene: 9,000 (9,000) ug/kg

B-02
9 - 11'
Acetone: 95 ug/kg

B-03
8 - 10'
Acetone: 340J ug/kg

Arsenic: 29J mg/kg
Mercury: 10 mg/kg

MW-02D
5 - 6'
Trichloroethene: 1,900 ug/kg

11 - 12'
Trichloroethene: 9,400 ug/kg

MW-03D
9 - 11'
Trichloroethene: 1,300 ug/kg

Arsenic: 23 mg/kg

Legend

Protection of Groundwater SCO Exceedance

Exceedance Compound

- VOC
- SVOC
- PCB
- Metals
- No Exceedance
- Property Parcel Boundary
- Facility Outline
- Surface Stream
- Inferred Stream Path

NOTES:

- Values in parantheses represent field duplicate results.
- J = The analyte was positively identified; associated numerical value is the approximate concentration of the analyte in the sample.
- Facility room outlines are approximate in location and converted from AutoCAD models.
- Aerial imagery was captured in 2015 by New York State.

N

0 25 50 100 150 200

Feet

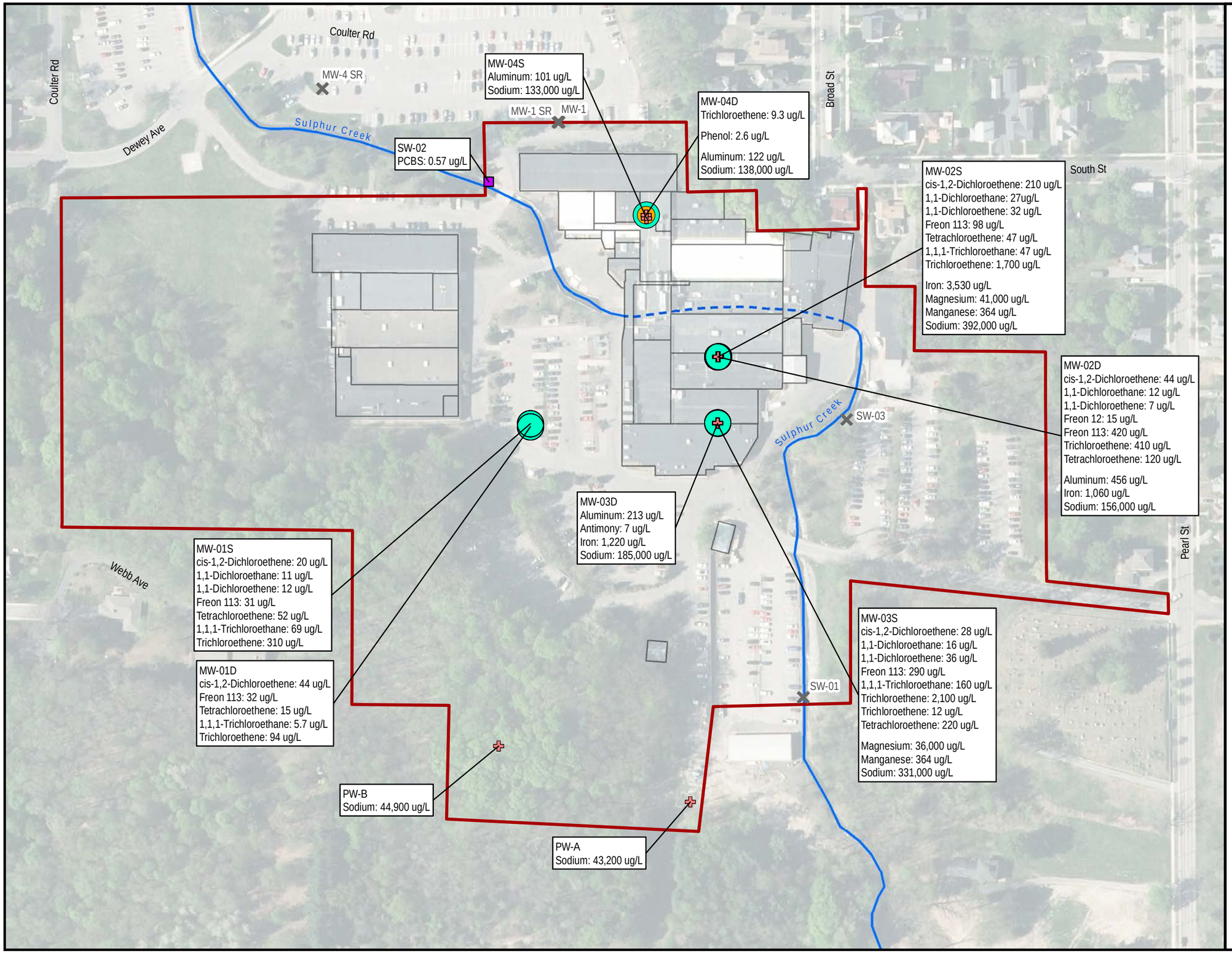
Figure 13: Soil Sample Exceedances - Protection of Groundwater SCOs

G.W. Lisk

2 South Street, Clifton Springs, NY

ERM

Q:\Team\DMM\Clients_F_K\GWLisk\CliftonSprings_NY\MXD\SC Report 2018\Figure13_Soil_ProtGW_Exceedances_20180731.mxd - Caldwell Payne - 8/1/2018



Legend

NYS GA or D Standard Exceedance

Exceedance Compound

- VOCs
- SVOCs
- PCBs
- Metals
- No Exceedance
- Property Parcel Boundary
- Facility Outline
- Surface Stream
- Inferred Stream Path

NOTES:

- Groundwater results were compared to NYS Class GA standards.
- Surface water results were compared to NYS Class D standards.
- Facility room outlines are approximate in location and converted from AutoCAD models.
- Aerial imagery was captured in 2015 by New York State.

0 25 50 100 150 200

Feet

N

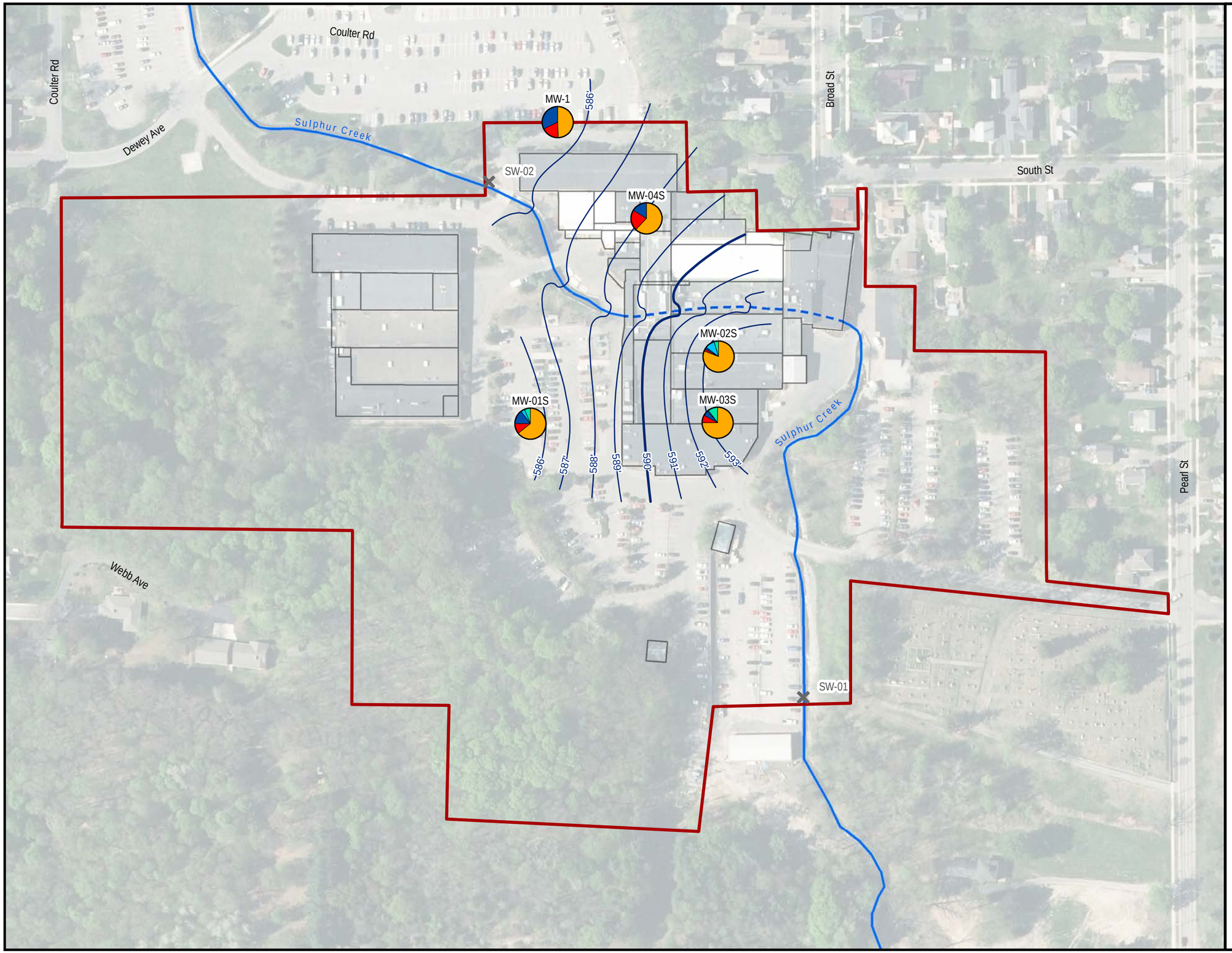
Figure 14: Groundwater and Surface Water Samples that Exceed Class GA or D Standards

G.W. Lisk

2 South Street, Clifton Springs, NY

ERM

Q:\Team\DMMV\Clients_P_K\GWLisk\Clifton Springs_NY\MXD\SC Report 2018\Figure13_GW_Exceedances_20180524.mxd - Caldwell,Payne - 8/1/2018



Legend

VOC Composition - Compounds of Concern

- Displayed VOC ratios are relative to the listed compounds only.
- Trichloroethene
- Tetrachloroethene
- 1,1,1-Trichloroethane
- cis-1,2 Dichloroethene
- Freon-113
- Non-Detect
- Property Parcel Boundary
- Facility Outline
- Surface Stream
- Inferred Stream Path
- Overburden Groundwater Elevation Contour - 5 ft.
- Overburden Groundwater Elevation Contour - 1 ft.

NOTES:
VOC = Volatile Organic Compound
- Facility room outlines are approximate in location and converted from AutoCAD models.
- Aerial imagery was captured in 2015 by New York State.

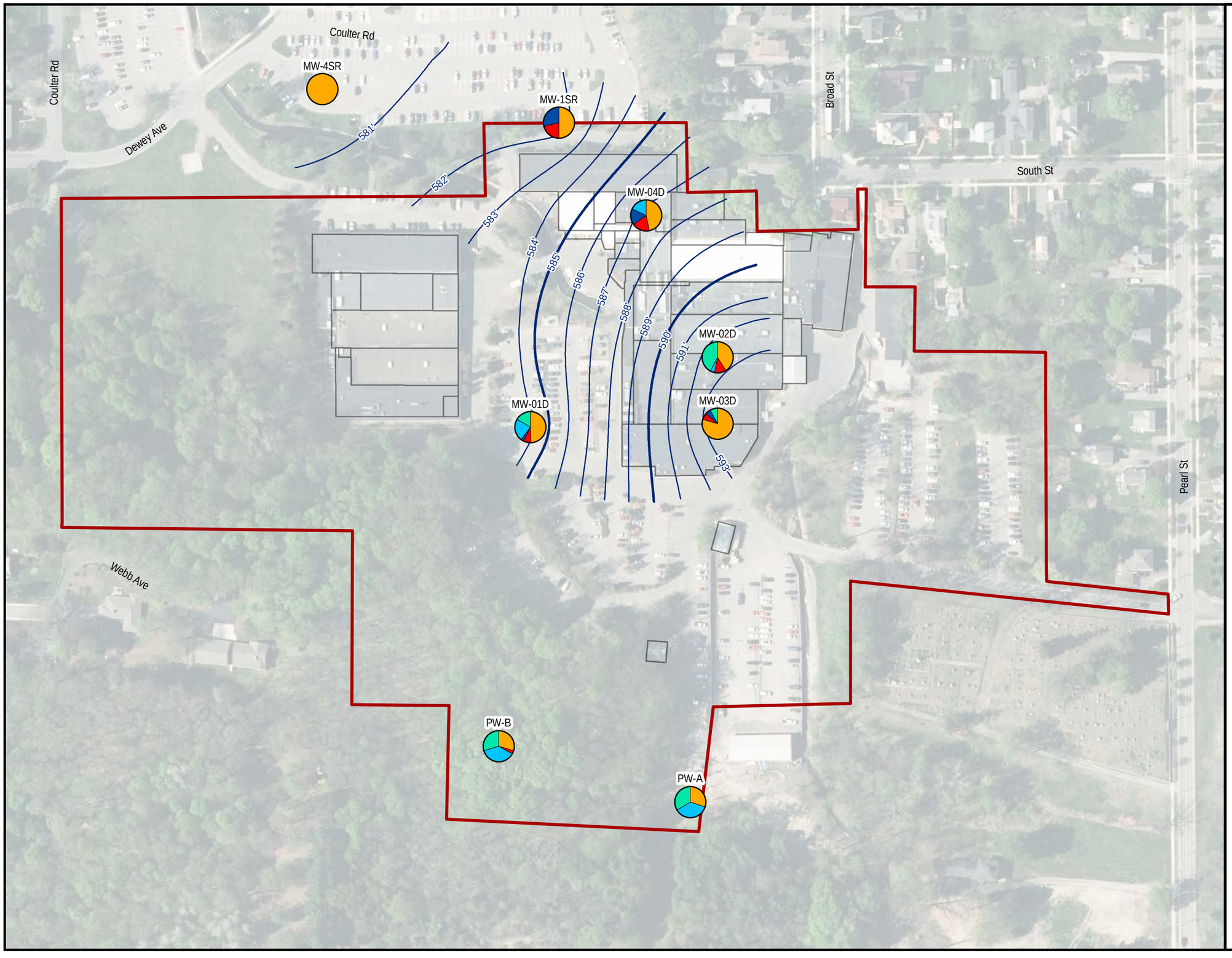
0 25 50 100 150 200
Feet

N

Figure 15: Overburden Groundwater VOC Composition
G.W. Lisk
2 South Street, Clifton Springs, NY

ERM

Q:\Team\DMMV\Clients_F_K\GWLisk\Clifton Springs_NY\MXD\SC Report 2018\Figure15_Water_OverburdenVOCs_COCpre_20180625.mxd - Caldwell Payne - 8/9/2018



Legend

VOC Composition - Compounds of Concern

- Displayed VOC ratios are relative to the listed compounds only.

- Trichloroethene
- Tetrachloroethene
- 1,1,1-Trichloroethane
- cis-1,2 Dichloroethene
- Freon-113
- Property Parcel Boundary
- Facility Outline
- Shallow Bedrock Groundwater Elevation Contour - 5 ft.
- Shallow Bedrock Groundwater Elevation Contour - 1 ft.

NOTES:

VOC = Volatile Organic Compound

- Facility room outlines are approximate in location and converted from AutoCAD models.
- Aerial imagery was captured in 2015 by New York State.

N

0 25 50 100 150 200

Feet

Figure 16: Shallow Bedrock Groundwater VOC Composition

G.W. Lisk

2 South Street, Clifton Springs, NY

ERM

Q:\Team\DMM\Clients_F_K\GWLisk\CliftonSprings_NY\MXD\SC Report 2018\Figure16_Water_Bedrock\VOCs_COCpie_20180525.mxd - Joseph.Hakam - 9/18/2018

Tables

Table 1
Summary of Monitoring Well Construction
G.W Lisk Facility
2 South Street, Clifton Springs, New York

Well ID	Casing Diameter (inches)	Total Depth (feet)	Screen Top Depth (feet bgs)	Surface Elevation (feet ASL)	TOC Elevation (feet ASL)	Screen Top Elevation (feet ASL)	Screen Bottom Elevation (feet ASL)	Depth to Rock (feet)
MW-01S	2	22.0	17.0	606.43	606.02	589.0	584.0	--
MW-01D	5	45.0	25.0	606.45	606.2	581.2	561.2	23.0
MW-02S	2	20.0	8.0	607.37	606.9	598.9	586.9	--
MW-02D	5	30.5	20.5	607.37	607.22	586.7	576.7	19.5
MW-03S	2	17.0	8.0	607.26	607.01	599.0	590.0	--
MW-03D	5	29.0	22.0	607.25	606.95	585.0	578.0	21.0
MW-04S	2	13.4	8.3	598.99	598.6	590.3	585.2	--
MW-04D	5	23.5	14.0	598.94	598.5	584.5	575.0	13.3

Notes and Abbreviations:

-- = Bedrock not encountered.

ASL = above mean sea level.

bgs = below ground surface.

All wells installed in 2017.

Table 2
Summary of Ambient Air, Indoor Air and Sub-Slab Soil Gas Data
GW Lisk Clifton Springs Facility
2 South Street, Clifton Springs, New York

Analyte	Unit	Location ID:	GWL-AA	VI-01 - IA	VI-01 - SS	VI-02 - IA	VI-02 - SS	VI-03 - IA	VI-03 - SS	VI-04 - IA	VI-04 - SS	VI-04 - IA	VI-05 - IA	VI-05 - SS
		Sample Date:	10-May-17	10-May-17	10-May-17	10-May-17	10-May-17	10-May-17	10-May-17	10-May-17	10-May-17	10-May-17	10-May-17	10-May-17
		Sample Type:	N	N	N	N	N	N	N	N	N	FD	N	N
		Air Guideline Value												
Ambient Air														
Volatile Organic Compounds (VOCs)														
Acetone	µg/m3	NS	**6.03**	**158**	**618**	**96.4**	**4,920**	**23.5**	**725**	**85**	**5,580**	**90.7**	**11.4**	**556**
Allyl chloride	µg/m3	NS	*0.626 U*	*0.626 U*	*3.13 U*	*0.626 U*	*6.26 U*	*0.626 U*	*146 U*	*0.626 U*	*127 U*	*0.626 U*	*0.626 U*	*3.13 U*
Benzene	µg/m3	NS	*0.639 U*	*0.639 U*	**8.53**	**0.764**	**25.3**	*0.639 U*	*149 U*	**2.24**	*130 U*	**2.26**	*0.639 U*	**66.4**
Benzyl chloride	µg/m3	NS	*1.04 U*	*1.04 U*	*5.18 U*	*1.04 U*	*10.4 U*	*1.04 U*	*242 U*	*1.04 U*	*210 U*	*1.04 U*	*1.04 U*	*5.18 U*
Bromodichloromethane	µg/m3	NS	*1.34 U*	*1.34 U*	*6.70 U*	*1.34 U*	*13.4 U*	*1.34 U*	*313 U*	*1.34 U*	*272 U*	*1.34 U*	*1.34 U*	*6.70 U*
Bromoform	µg/m3	NS	*2.07 U*	*2.07 U*	*10.3 U*	*2.07 U*	*20.7 U*	*2.07 U*	*483 U*	*2.07 U*	*420 U*	*2.07 U*	*2.07 U*	*10.3 U*
Bromomethane	µg/m3	NS	*0.777 U*	*0.777 U*	*3.88 U*	*0.777 U*	*7.77 U*	*0.777 U*	*181 U*	*0.777 U*	*158 U*	*0.777 U*	*0.777 U*	*3.88 U*
2-Butanone	µg/m3	NS	*1.47 U*	**1.75**	*7.37 U*	**2.28**	**74**	**2.13**	*345 U*	**9.88**	*301 U*	**9.47**	*1.47 U*	**28.4**
1,3-Butadiene	µg/m3	NS	*0.442 U*	*0.442 U*	*2.21 U*	*0.442 U*	*4.42 U*	*0.442 U*	*103 U*	*0.442 U*	*89.8 U*	*0.442 U*	*0.442 U*	**6.95**
Carbon disulfide	µg/m3	NS	*0.623 U*	*0.623 U*	*3.11 U*	**23.1**	**21.3**	**1.1**	*145 U*	**1.08**	*126 U*	**1.12**	*0.623 U*	**23.4**
Carbon tetrachloride	µg/m3	NS	**0.346**	**0.403**	*6.29 U*	**0.39**	*12.6 U*	**0.409**	*294 U*	**0.447**	*255 U*	**0.484**	**0.384**	*6.29 U*
Chlorobenzene	µg/m3	NS	*0.921 U*	*0.921 U*	*4.61 U*	*0.921 U*	*9.21 U*	*0.921 U*	*215 U*	*0.921 U*	*187 U*	*0.921 U*	*0.921 U*	*4.61 U*
Chloroethane	µg/m3	NS	*0.528 U*	*0.528 U*	*2.64 U*	*0.528 U*	*5.28 U*	*0.528 U*	*123 U*	*0.528 U*	*107 U*	*0.528 U*	*0.528 U*	*2.64 U*
Chloromethane	µg/m3	NS	**1.21**	**1.33**	*2.07 U*	**1.27**	*4.13 U*	**1.19**	*96.4 U*	**1.16**	*83.8 U*	**1.26**	**1.14**	**2.75**
Chloroform	µg/m3	NS	*0.977 U*	*0.977 U*	*4.88 U*	*0.977 U*	*9.77 U*	*0.977 U*	**242**	*0.977 U*	*198 U*	*0.977 U*	*0.977 U*	*4.88 U*
cis-1,2-Dichloroethene	µg/m3	NS	*0.079 U*	**0.079**	*3.96 U*	*0.079 U*	*7.93 U*	**0.131**	**864**	**0.119**	**1,190**	**0.111**	*0.079 U*	*3.96 U*
cis-1,3-Dichloropropene	µg/m3	NS	*0.908 U*	*0.908 U*	*4.54 U*	*0.908 U*	*9.08 U*	*0.908 U*	*212 U*	*0.908 U*	*184 U*	*0.908 U*	*0.908 U*	*4.54 U*
Cyclohexane	µg/m3	NS	*0.688 U*	*0.688 U*	**15.4**	*0.688 U*	**185**	*0.688 U*	*161 U*	*0.688 U*	*140 U*	*0.688 U*	*0.688 U*	**100**
Dibromochloromethane	µg/m3	NS	*1.70 U*	*1.70 U*	*8.52 U*	*1.70 U*	*17.0 U*	*1.70 U*	*398 U*	*1.70 U*	*346 U*	*1.70 U*	*1.70 U*	*8.52 U*
1,2-Dichlorobenzene	µg/m3	NS	*1.20 U*	*1.20 U*	*6.01 U*	*1.20 U*	*12.0 U*	*1.20 U*	*281 U*	*1.20 U*	*244 U*	*1.20 U*	*1.20 U*	*6.01 U*
1,3-Dichlorobenzene	µg/m3	NS	*1.20 U*	*1.20 U*	*6.01 U*	*1.20 U*	*12.0 U*	*1.20 U*	*281 U*	*1.20 U*	*244 U*	*1.20 U*	*1.20 U*	*6.01 U*
1,4-Dichlorobenzene	µg/m3	NS	*1.20 U*	*1.20 U*	*6.01 U*	*1.20 U*	*12.0 U*	*1.20 U*	*281 U*	*1.20 U*	*244 U*	*1.20 U*	*1.20 U*	*6.01 U*
1,2-Dichloroethane	µg/m3	NS	*0.809 U*	*0.809 U*	*4.05 U*	*0.809 U*	*8.09 U*	*0.809 U*	*189 U*	*0.809 U*	*164 U*	*0.809 U*	*0.809 U*	*4.05 U*
1,1-Dichloroethane	µg/m3	NS	*0.809 U*	*0.809 U*	*4.05 U*	*0.809 U*	*8.09 U*	*0.809 U*	**882**	*0.809 U*	**334**	*0.809 U*	*0.809 U*	*4.05 U*
1,1-Dichloroethene	µg/m3	NS	*0.079 U*	*0.079 U*	*3.96 U*	*0.079 U*	*7.93 U*	*0.079 U*	**5,470**	**0.119**	**3,010**	**0.123**	*0.079 U*	*3.96 U*
1,2-Dichloropropane	µg/m3	NS	*0.924 U*	*0.924 U*	*4.62 U*	*0.924 U*	*9.24 U*	*0.924 U*	*216 U*	*0.924 U*	*188 U*	*0.924 U*	*0.924 U*	*4.62 U*
Ethanol	µg/m3	NS	*9.42 U*	**34.1**	**245**	**28.6**	**748**	**42**	*2,200 U*	**168**	*1,920 U*	**194**	**54.1**	**754**
Ethyl acetate	µg/m3	NS	*1.80 U*	*1.80 U*	*9.01 U*	*1.80 U*	*18.0 U*	*1.80 U*	*422 U*	*1.80 U*	*368 U*	*1.80 U*	*1.80 U*	*9.01 U*
Ethylbenzene	µg/m3	NS	*0.869 U*	**20.5**	**14.2**	*0.869 U*	*8.69 U*	**1.53**	*203 U*	**5.95**	*176 U*	**5.43**	*0.869 U*	**6.52**
Ethylene dibromide	µg/m3	NS	*1.54 U*	*1.54 U*	*7.69 U*	*1.54 U*	*15.4 U*	*1.54 U*	*359 U*	*1.54 U*	*312 U*	*1.54 U*	*1.54 U*	*7.69 U*
4-Ethyltoluene	µg/m3	NS	*0.983 U*	*0.983 U*	*4.92 U*	**1.77**	*9.83 U*	**1.68**	*230 U*	**1.86**	*200 U*	**1.69**	*0.983 U*	*4.92 U*
Freon 11	µg/m3	NS	**1.35**	**11.4**	**6.97**	**1.3**	*11.2 U*	**5.1**	*262 U*	**9.78**	*228 U*	**10**	**1.9**	*5.62 U*
Freon 12	µg/m3	NS	**2.13**	**1.93**	**12.7**	**1.86**	*9.89 U*	**2.13**	**354**	**2.46**	**870**	**2.36**	**2.52**	*4.94 U*
Freon 113	µg/m3	NS	*1.53 U*	**1.56**	**1,120**	*1.53 U*	**88.9**	**2.02**	**53,500**	**3.86**	**205,000**	**3.76**	*1.53 U*	*7.66 U*
Freon 114	µg/m3	NS	*1.40 U*	*1.40 U*	*6.99 U*	*1.40 U*	*14.0 U*	*1.40 U*	*326 U*	*1.40 U*	*284 U*	*1.40 U*	*1.40 U*	*6.99 U*
Heptane	µg/m3	NS	*0.820 U*	*0.820 U*	**44.3**	*0.820 U*	**561**	*0.820 U*	*191 U*	*0.820 U*	*166 U*	*0.820 U*	*0.820 U*	**184**
n-Hexane	µg/m3	NS	*0.705 U*	*0.705 U*	**66.6**	*0.705 U*	**578**	**0.909**	*165 U*	*0.705 U*	**212**	*0.705 U*	*0.705 U*	**259**
2-Hexanone	µg/m3	NS	*0.820 U*	*0.820 U*	*4.10 U*	*0.820 U*	*8.20 U*	*0.820 U*	*191 U*	*0.820 U*	*166 U*	*0.820 U*	*0.820 U*	*4.10 U*
Isopropyl alcohol	µg/m3	NS	*1.23 U*	**349**	**62.7**	**102**	**398**	**300**	*288 U*	**376**	**403**	**410**	**12.5**	**58.7**
4-Methyl-2-pentanone	µg/m3	NS	*2.05 U*	*2.05 U*	*10.2 U*	*2.05 U*	*20.5 U*	*2.05 U*	*479 U*	**16.5**	*418 U*	**17.6**	*2.05 U*	*10.2 U*
Methyl tert-butyl ether	µg/m3	NS	*0.721 U*	*0.721 U*	*3.61 U*	*0.721 U*	*7.21 U*	*0.721 U*	*168 U*	*0.721 U*	*146 U*	*0.721 U*	*0.721 U*	*3.61 U*
Methylene chloride	µg/m3	60	*1.74 U*	**20**	**11.9**	**2.39**	**30.4**	**11.9**	*406 U*	**19**	*354 U*	**20.2**	**6.74**	*8.69 U*
o-Xylene	µg/m3	NS	*0.869 U*	**11.8**	**8.12**	**1.61**	*8.69 U*	**2.1**	*203 U*	**9.69**	*176 U*	**8.9**	*0.869 U*	**9.56**
Styrene	µg/m3	NS	*0.852 U*	**63.9**	**43**	*0.852 U*	*8.52 U*	*0.852 U*	*199 U*	*0.852 U*	*173 U*	*0.852 U*	*0.852 U*	*4.26 U*
tert-Butyl alcohol	µg/m3	NS	*1.52 U*	*1.52 U*	*7.58 U*	*1.52 U*	**162**	*1.52 U*	*355 U*	*1.52 U*	*309 U*	*1.52 U*	*1.52 U*	**24.1**
Tetrachloroethene	µg/m3	30	*0.136 U*	**0.448**	*6.78 U*	*0.136 U*	**318**	**0.549**	**4,640**	**1.81**	**3,850**	**1.78**	*0.136 U*	*6.78 U*
Tetrahydrofuran	µg/m3	NS	*1.47 U*	*1.47 U*	*7.37 U*	*1.47 U*	*14.7 U*	*1.47 U*	*345 U*	*1.47 U*	*301 U*	*1.47 U*	*1.47 U*	*7.37 U*
Toluene	µg/m3	NS	*0.754 U*	*0.754 U*	**11.2**	**9.27**	**60.7**	**1.81**	*176 U*	**2.59**	*153 U*	**2.44**	**1.82**	**113**
trans-1,2-Dichloroethene	µg/m3	NS	*0.793 U*	**110**	**60.3**	*0.793 U*	*7.93 U*	**43.6**	*185 U*	**51.5**	*161 U*	**50.4**	*0.793 U*	*3.96 U*
trans-1,3-Dichloropropene	µg/m3	NS	*0.908 U*	*0.908 U*	*4.54 U*	*0.908 U*	*9.08 U*	*0.908 U*	*212 U*	*0.908 U*	*184 U*	*0.908 U*	*0.908 U*	*4.54 U*
1,1,1-Trichloroethane	µg/m3	NS	*0.109 U*	**0.3**	*5.46 U*	*0.109 U*	**214**	**0.24**	**7,910**	**0.589**	**11,000**	**0.622**	*0.109 U*	*5.46 U*
1,1,2,2-Tetrachloroethane	µg/m3	NS	*1.37 U*	*1.37 U*	*6.87 U*	*1.37 U*	*13.7 U*	*1.37 U*	*321 U*	*1.37 U*	*279 U*	*1.37 U*	*1.37 U*	*6.87 U*
1,1,2-Trichloroethane	µg/m3	NS	*1.09 U*	*1.09 U*	*5.46 U*	*1.09 U*	*10.9 U*	*1.09 U*	*255 U*	*1.09 U*	*222 U*	*1.09 U*	*1.09 U*	*5.46 U*
1,3,5-Trimethylbenzene	µg/m3	NS	*0.983 U*	*0.983 U*	*4.92 U*	**5.01**	*9.83 U*	**3.99**	*230 U*	**4.62**	*200 U*	**4.27**	**1.32**	**5.31**
2,2,4-Trimethylpentane	µg/m3	NS	*0.934 U*	*0.934 U*	*4.67 U*	**1.15**	*9.34 U*	**1.05**	*218 U*	**1.08**	*190 U*	**1.06**	*0.934 U*	*4.67 U*
1,2,4-Trichlorobenzene	µg/m3	NS	*1.48 U*	*1.48 U*	*7.42 U*	*1.48 U*	*14.8 U*	*1.48 U*	*347 U*	*1.48 U*	*301 U*	*1.48 U*	*1.48 U*	*7.42 U*
1,2,4-Trimethylbenzene	µg/m3	NS	*0.983 U*	*0.983 U*	*4.92 U*	**11.3**	*9.83 U*	**9.68**	*230 U*	**11.1**	*200 U*	**10.5**	**3.32**	**7.57**
Trichloroethene	µg/m3	2	*0.107 U*	**0.306**	*5.37 U*	**0.161**	**499**	**2.86**	**90,300**	**7.2**	**51,100**	**7.42**	**0.118**	**39.8**
Vinyl bromide	µg/m3	NS	*0.874 U*	*0.874 U*	*4.37 U*	*0.874 U*	*8.74 U*	*0.874 U*	*204 U*	*0.874 U*	*178 U*	*0.874 U*	*0.874 U*	*4.37 U*
Vinyl chloride	µg/m3	NS	*0.051 U*	*0.051 U*	*2.56 U*	*0.051 U*	*5.11 U*	*0.051 U*	*119 U*	*0.051 U*	*104 U*	*0.051 U*	*0.051 U*	*2.56 U*
Xylenes, m/p	µg/m3	NS	*1.74 U*	**74.7**	**50.4**	**3.08**	**21.7**	**6.6**	*406 U*	**26.5**	*353 U*	**24.7**	*1.74 U*	**37.4**

Notes:
- - = Not analyzed
NS = No Standard
µg/m3 = micrograms per cubic meter
Results shown in bold font indicate a compound was detectedabove the laboratory reporting detection limit.
U = Compound not detected at concentrations above the laboratory reporting detection limit, the laboratory reporting detection limit is shown.
No standards for sub-slab sample concentrations
All analyses performed by Alpha Woods Hole Laboratories.
Exceedance of Air Guideline Value contained in NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion or as updated on NYSDOH website.

Table 3
Summary of Soil Analytical Data
GW Lisk Clifton Springs Facility
2 South Street, Clifton Springs, New York

Analyte	Unit	NY-375-CP51-UNRESTRICTED USE	NY-375-CP51-PROTECT GROUND WATER	Location ID: Sample Date: Sample Type: Sample Depth: NY-375-CP51-RESTRICTED INDUSTRIAL	B-01 11-May-17 N 5 - 6 ft	B-01 11-May-17 FD 5 - 6 ft	B-01 12-May-17 N 5 - 6 ft	B-01 12-May-17 FD 5 - 6 ft	B-02 12-May-17 N 9 - 11 ft	B-03 12-May-17 N 8 - 10 ft	B-04 17-Jul-17 N 19 - 20.5 ft	MW-01S 18-Jul-17 N 9 - 10 ft	MW-01S 19-Jul-17 N 16 - 17 ft	MW-01S 19-Jul-17 FD 16 - 17 ft	MW-02D 23-Sep-17 N 5 - 6 ft	MW-02D 23-Sep-17 N 11 - 12 ft	MW-03D 30-Sep-17 N 9 - 11 ft	MW-03D 30-Sep-17 N 17 - 19 ft	MW-04S 25-Jul-17 N 5 - 6 ft	MW-04S 25-Jul-17 N 13 - 13.7 ft
Volatile Organic Compounds (VOCs)																				
Acenaphthene	µg/kg	20,000	98,000	1,000,000	9,180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	µg/kg	**50**	**50**	1,000,000	*5,600 U*	*9,400 U*	-	-	**95**	**340 J**	*16 U*	*8.2 U*	*580 U*	*660 U*	*560 U*	*980 U*	*510 U*	*490 U*	3.4 J	3.9 J
Benzene	µg/kg	**60**	**60**	89,000	**490 J**	**390 J**	-	-	5.5	0.54 J	*1.6 U*	*0.82 U*	*58 U*	*66 U*	*56 U*	*98 U*	*51 U*	*49 U*	*0.86 U*	*1.1 U*
Bromodichloromethane	µg/kg	NS	NS	NS	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 U*	*1.6 U*	*0.82 U*	*58 U*	*66 U*	*56 U*	*98 U*	*51 U*	*49 U*	*0.86 U*	*1.1 U*
Bromoform	µg/kg	NS	NS	NS	*2,200 U*	*3,800 U*	-	-	*3.2 U*	*3.8 U*	*6.4 UJ*	*3.3 U*	*230 U*	*260 U*	*220 U*	*390 U*	*200 U*	*200 U*	*3.4 U*	*4.2 U*
Bromomethane	µg/kg	NS	NS	NS	*1,100 U*	*1,900 U*	-	-	*1.6 U*	*1.9 U*	*3.2 U*	*1.6 U*	*120 U*	*130 U*	*110 U*	*200 U*	*100 U*	*98 U*	*1.7 U*	*2.1 U*
2-Butanone	µg/kg	NS	300	1,000,000	*5,600 U*	*9,400 U*	-	-	18	78 J	*16 U*	*8.2 U*	*580 U*	*660 U*	*560 U*	*980 U*	*510 U*	*490 U*	*8.6 U*	*11 U*
Carbon disulfide	µg/kg	NS	2,700	NS	*5,600 U*	*9,400 U*	-	-	*8.0 U*	3.6 J	*16 UJ*	*8.2 UJ*	*580 U*	*660 U*	*560 U*	*980 U*	*510 U*	*490 U*	*8.6 U*	*11 U*
Carbon tetrachloride	µg/kg	760	760	44,000	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 U*	*1.6 U*	*0.82 U*	*58 U*	*66 U*	*56 U*	*98 U*	*51 U*	*49 U*	*0.86 U*	*1.1 U*
Chlorobenzene	µg/kg	1,100	1,100	1,000,000	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 UJ*	*1.6 U*	*0.82 U*	*58 U*	*66 U*	*56 U*	*98 U*	*51 U*	*49 U*	*0.86 U*	*1.1 U*
Chlorobromomethane	µg/kg	NS	NS	NS	*2,800 U*	*4,700 U*	-	-	*4.0 U*	*4.7 U*	*8.0 U*	*4.1 U*	*290 U*	*330 U*	*280 U*	*490 U*	*250 U*	*240 U*	*4.3 U*	*5.3 U*
Chloroethane	µg/kg	NS	NS	NS	*1,100 U*	*1,900 U*	-	-	*1.6 U*	*1.9 U*	*3.2 U*	*1.6 U*	*120 U*	*130 U*	*110 U*	*200 U*	*100 U*	*98 U*	*1.7 U*	*2.1 U*
Chloromethane	µg/kg	NS	NS	NS	*2,800 U*	*4,700 U*	-	-	*4.0 U*	*4.7 U*	*8.0 U*	*4.1 U*	*290 U*	*330 U*	*280 U*	*490 U*	*250 U*	*240 U*	*4.3 U*	*5.3 U*
Chloroform	µg/kg	370	370	700,000	*840 U*	*1,400 U*	-	-	*1.2 U*	*1.4 U*	*2.4 U*	*1.2 U*	*87 U*	*98 U*	*85 U*	*150 U*	*76 U*	*73 U*	*1.3 U*	*1.6 U*
cis-1,2-Dichloroethene	µg/kg	250	250	1,000,000	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 U*	*1.6 U*	*0.82 U*	76	76	*56 U*	52 J	*51 U*	*49 U*	2.6	*1.1 U*
cis-1,3-Dichloropropene	µg/kg	NS	300	NS	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 UJ*	*1.6 UJ*	*0.82 U*	*58 U*	*66 U*	*56 U*	*98 U*	*51 U*	*49 U*	*0.86 U*	*1.1 U*
Cyclohexane	µg/kg	NS	NS	NS	*11,000 U*	*19,000 U*	-	-	*16 U*	1.2 J	*32 U*	*16 U*	*1,200 U*	*1,300 U*	*1,100 U*	*2,000 U*	*1,000 U*	150 J	*17 U*	*21 U*
Dibromochloromethane	µg/kg	NS	NS	NS	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 U*	*1.6 U*	*0.82 U*	*58 U*	*66 U*	*56 U*	*98 U*	*51 U*	*49 U*	*0.86 U*	*1.1 U*
1,2-Dibromo-3-chloropropane	µg/kg	NS	NS	NS	*2,800 U*	*4,700 U*	-	-	*4.0 U*	*4.7 U*	*8.0 UJ*	*4.1 U*	*290 U*	*330 U*	*280 U*	*490 U*	*250 U*	*240 U*	*4.3 U*	*5.3 U*
1,2-Dichlorobenzene	µg/kg	1,100	1,100	1,000,000	*2,800 U*	*4,700 U*	-	-	*4.0 U*	*4.7 UJ*	*8.0 UJ*	*4.1 U*	*290 U*	*330 U*	*280 U*	*490 U*	*250 U*	*240 U*	*4.3 U*	*5.3 U*
1,3-Dichlorobenzene	µg/kg	2,400	2,400	560,000	*2,800 U*	*4,700 U*	-	-	*4.0 U*	*4.7 UJ*	*8.0 UJ*	*4.1 U*	*290 U*	*330 U*	*280 U*	*490 U*	*250 U*	*240 U*	*4.3 U*	*5.3 U*
1,4-Dichlorobenzene	µg/kg	1,800	1,800	250,000	*2,800 U*	*4,700 U*	-	-	*4.0 U*	*4.7 UJ*	*8.0 UJ*	*4.1 U*	*290 U*	*330 U*	*280 U*	*490 U*	*250 U*	*240 U*	*4.3 U*	*5.3 U*
1,2-Dichloroethane	µg/kg	20	20	60,000	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 U*	*1.6 U*	*0.82 U*	*58 U*	*66 U*	*56 U*	*98 U*	*51 U*	*49 U*	*0.86 U*	*1.1 U*
1,1-Dichloroethane	µg/kg	270	270	480,000	*840 U*	*1,400 U*	-	-	*1.2 U*	*1.4 U*	*2.4 U*	*1.2 U*	55 J	42 J	*85 U*	46 J	*76 U*	*73 U*	*1.3 U*	*1.6 U*
1,1-Dichloroethene	µg/kg	330	330	1,000,000	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 U*	*1.6 U*	*0.82 U*	50 J	43 J	*56 U*	68 J	*51 U*	*49 U*	*0.86 U*	*1.1 U*
1,2-Dichloropropane	µg/kg	NS	NS	NS	*1,900 U*	*3,300 U*	-	-	*2.8 U*	*3.3 U*	*5.6 U*	*2.8 U*	*200 U*	*230 U*	*200 U*	*340 U*	*180 U*	*170 U*	*3.0 U*	*3.7 U*
1,4-Dioxane	µg/kg	100	100	250,000	*22,000 U*	*38,000 U*	-	-	*32 U*	*38 U*	*64 U*	*33 U*	*2,300 U*	*2,600 U*	*2,200 U*	*3,900 U*	*2,000 U*	*2,000 U*	*34 U*	*42 U*
Ethylbenzene	µg/kg	**1,000**	**1,000**	780,000	**1,100**	**1,300**	-	-	0.97	0.18 J	*1.6 U*	*0.82 U*	*58 U*	*66 U*	*56 U*	*98 U*	*51 U*	*49 U*	*0.86 U*	*1.1 U*
Ethylene dibromide	µg/kg	NS	NS	NS	*2,200 U*	*3,800 U*	-	-	*3.2 U*	*3.8 U*	*6.4 U*	*3.3 U*	*230 U*	*260 U*	*220 U*	*390 U*	*200 U*	*200 U*	*3.4 U*	*4.2 U*
Freon 11	µg/kg	NS	NS	NS	*2,800 UJ*	*4,700 UJ*	-	-	*4.0 U*	*4.7 U*	*8.0 U*	*4.1 U*	*290 U*	*330 U*	*280 U*	*490 U*	*250 U*	*240 U*	*4.3 U*	*5.3 U*
Freon 12	µg/kg	NS	NS	NS	*5,600 U*	*9,400 U*	-	-	*8.0 U*	*9.4 U*	*16 U*	*8.2 U*	*580 U*	*660 U*	*560 U*	*980 U*	*510 U*	*490 U*	*8.6 U*	*11 U*
Freon 113	µg/kg	NS	6,000	NS	*11,000 U*	*19,000 U*	-	-	*16 U*	*19 U*	1.3 J	0.68 J	120 J	*1,300 U*	*1,100 U*	250 J	*1,000 U*	*980 U*	*17 U*	*21 U*
2-Hexanone	µg/kg	NS	NS	NS	*5,600 U*	*9,400 U*	-	-	*8.0 U*	*9.4 U*	*16 UJ*	*8.2 U*	*580 U*	*660 U*	*560 U*	*980 U*	*510 U*	*490 U*	*8.6 U*	*11 U*
Isopropylbenzene (Cumene)	µg/kg	NS	2,300	NS	200 J	260 J	-	-	0.20 J	*0.94 UJ*	*1.6 U*	*0.82 U*	*58 U*	*66 U*	*56 U*	*98 U*	*51 U*	*49 U*	*0.86 U*	*1.1 U*
4-Isopropyltoluene	µg/kg	NS	10,000	NS	160 J	210 J	-	-	*0.80 U*	*0.94 UJ*	-	-	-	-	*56 U*	*98 U*	-	-	-	-
Methyl acetate	µg/kg	NS	NS	NS	*11,000 U*	*19,000 U*	-	-	*16 U*	*19 U*	*32 U*	*16 U*	*1,200 U*	*1,300 U*	*1,100 U*	*2,000 U*	*1,000 U*	*980 U*	*17 U*	*21 U*
4-Methyl-2-pentanone	µg/kg	NS	NS	NS	*5,600 U*	*9,400 U*	-	-	*8.0 U*	*9.4 U*	*16 U*	*8.2 U*	*580 U*	*660 U*	*560 U*	*980 U*	*510 U*	*490 U*	*8.6 U*	*11 U*
Methyl tert-butyl ether	µg/kg	930	930	1,000,000	*1,100 U*	*1,900 U*	-	-	*1.6 U*	*1.9 U*	*3.2 U*	*1.6 UJ*	*120 U*	*130 U*	*110 U*	*200 U*	*100 U*	*98 U*	*1.7 U*	*2.1 U*
Methylcyclohexane	µg/kg	NS	NS	NS	180 J	*3,800 U*	-	-	0.57 J	1.9 J	0.48 J	*3.3 U*	35 J	*260 U*	*220 U*	*390 U*	*200 U*	320	*3.4 U*	0.36 J
Methylene chloride	µg/kg	50	50	1,000,000	*5,600 U*	*9,400 U*	-	-	*8.0 U*	*9.4 U*	*16 U*	*8.2 U*	*580 U*	*660 U*	*560 U*	*980 U*	*510 U*	*490 U*	*8.6 U*	*11 U*
Naphthalene	µg/kg	**12,000**	**12,000**	1,000,000	**97,000**	**120,000**	-	-	52	1.5 J	-	-	-	-	*280 U*	*490 U*	-	-	-	-
n-Butylbenzene	µg/kg	12,000	12,000	1,000,000	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 UJ*	-	-	-	-	*56 U*	*98 U*	-	-	-	-
n-Propylbenzene	µg/kg	3,900	3,900	1,000,000	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 UJ*	-	-	-	-	*56 U*	*98 U*	-	-	-	-
sec-Butylbenzene	µg/kg	11,000	11,000	1,000,000	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 UJ*	-	-	-	-	*56 U*	*98 U*	-	-	-	-
o-Xylene	µg/kg	**260**	**1,600**	1,000,000	**620 J**	**770 J**	-	-	3.0	0.36 J	*3.2 U*	*1.6 U*	*120 U*	*130 U*	*110 U*	*200 U*	*100 U*	*98 U*	*1.7 U*	*2.1 U*
Styrene	µg/kg	NS	NS	NS	*1,100 U*	*1,900 U*	-	-	*1.6 U*	*1.9 UJ*	*3.2 UJ*	*1.6 U*	*120 U*	*130 U*	*110 U*	*200 U*	*100 U*	*98 U*	*1.7 U*	*2.1 U*
tert-Butylbenzene	µg/kg	5,900	5,900	1,000,000	*2,800 U*	*4,700 U*	-	-	*4.0 U*	*4.7 UJ*	-	-	-	-	*280 U*	*490 U*	-	-	-	-
Tetrachloroethene	µg/kg	1,300	1,300	300,000	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 UJ*	3.1	5.6	130	320	270	980	690	20 J	0.77 J	1.2
Toluene	µg/kg	700	700	1,000,000	410 J	350 J	-	-	0.28 J	1.4	*2.4 U*	*1.2 U*	*87 U*	*98 U*	*85 U*	*150 U*	*76 U*	*73 U*	*1.3 U*	0.28 J
trans-1,2-Dichloroethene	µg/kg	190	190	1,000,000	*840 U*	*1,400 U*	-	-	*1.2 U*	*1.4 U*	*2.4 U*	*1.2 U*	*87 U*	*98 U*	*85 U*	*150 U*	*76 U*	*73 U*	*1.3 U*	*1.6 U*
trans-1,3-Dichloropropene	µg/kg	NS	NS	NS	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 UJ*	*1.6 U*	*0.82 U*	*58 U*	*66 U*	*56 U*	*98 U*	*51 U*	*49 U*	*0.86 U*	*1.1 U*
1,1,1-Trichloroethane	µg/kg	680	680	1,000,000	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 U*	5.1	2.2	20 J	82	42 J	220	65	*49 U*	*0.86 U*	*1.1 U*
1,1,2,2-Tetrachloroethane	µg/kg	NS	600	NS	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 U*	*1.6 U*	*0.82 U*	*58 U*	*66 U*	*56 U*	*98 U*	*51 U*	*49 U*	*0.86 U*	*1.1 U*
1,1,2-Trichloroethane	µg/kg	NS	NS	NS	*840 U*	*1,400 U*	-	-	*1.2 U*	*1.4 U*	*2.4 U*	*1.2 U*	*87 U*	*98 U*	*85 U*	*150 U*	*76 U*	*73 U*	*1.3 U*	*1.6 U*
1,3,5-Trimethylbenzene	µg/kg	8,400	8,400	380,000	690 J	920 J	-	-	0.99 J	0.32 J	-	-	-	-	*280 U*	*490 U*	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	NS	NS	NS	*2,800 U*	*4,700 U*	-	-	*4.0 U*	*4.7 UJ*	*8.0 UJ*	*4.1 U*	*290 U*	*330 U*	*280 U*	*490 U*	*250 U*	*240 U*	*4.3 U*	*5.3 U*
1,2,4-Trichlorobenzene	µg/kg	NS	3,400	NS	*2,800 U*	*4,700 U*	-	-	*4.0 U*	*4.7 UJ*	*8.0 UJ*	*4.1 U*	*290 U*	*330 U*	*280 U*	*490 U*	*250 U*	*240 U*	*4.3 U*	*5.3 U*
1,2,4-Trimethylbenzene	µg/kg	3,600	3,600	380,000	1,600 J	2,200 J	-	-	1.4 J	0.48 J	-	-	-	-	*280 U*	*490 U*	-	-	-	-
Trichloroethene	µg/kg	**470**	**470**	400,000	*560 U*	*940 U*	-	-	*0.80 U*	*0.94 U*	11	7.4	**4,000**	**4,300**	**1,900**	**9,400**	**1,300**	32 J	0.61 J	0.52 J
Vinyl chloride	µg/kg	20	20	27,000	*1,100 U*	*1,900 U*	-	-	*1.6 U*	*1.9 U*	*3.2 U*	*1.6 U*	*120 U*	*130 U*	*110 U*	*200 U*	*100 U*	*98 U*	*1.7 U*	*2.1 U*
Xylenes, m/p	µg/kg	NS	NS	NS	740 J	890 J	-	-	2.4	0.90 J	*3.2 U*	*1.6 U*	*120 U*	*130 U*	*110 U*	*200 U*	*100 U*	*98 U*	*1.7 U*	*2.1 U*
Total TICs (Calculated)	µg/kg	NS	NS	NS	107,000	133,000	-	-	40.3	42.4	-	-	-	-	-	312	-	5,260	11.0	14.0

Notes and Abbreviations:
- - = Not analyzed
NS = No Standard
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
ft = feet
Results shown in bold font indicate a compound was detectedabove the laboratory reporting detection limit.
N = Field sample
FD = Field Duplicate
J = The analyte was positively identified; associated numerical value is the approximate concentration of the analyte in the sample.
U = Compound not detected at concentrations above the laboratory reporting detection limit, the laboratory reporting detection limit is shown.
UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.
All analyses performed by Alpha Woods Hole Laboratories.
Exceedance of NY-375-CP51-UNRESTRICTED USE
Exceedance of NY-375-CP51-PROTECTION OF GROUNDWATER
Exceedance of NY-375-CP51-RESTRICTED INDUSTRIAL

Table 3
Summary of Soil Analytical Data
GW Lisk Clifton Springs Facility
2 South Street, Clifton Springs, New York

Analyte	Unit	NY-375-CP51-UNRESTRICTED USE	NY-375-CP51-PROTECT GROUND WATER	Location ID: Sample Date: Sample Type: Sample Depth: NY-375-CP51-RESTRICTED INDUSTRIAL	B-01 11-May-17 N 5 - 6 ft	B-01 11-May-17 FD 5 - 6 ft	B-01 12-May-17 N 5 - 6 ft	B-01 12-May-17 FD 5 - 6 ft	B-02 12-May-17 N 9 - 11 ft	B-03 12-May-17 N 8 - 10 ft	B-04 17-Jul-17 N 19 - 20.5 ft	MW-01S 18-Jul-17 N 9 - 10 ft	MW-01S 19-Jul-17 N 16 - 17 ft	MW-01S 19-Jul-17 FD 16 - 17 ft	MW-02D 23-Sep-17 N 5 - 6 ft	MW-02D 23-Sep-17 N 11 - 12 ft	MW-03D 30-Sep-17 N 9 - 11 ft	MW-03D 30-Sep-17 N 17 - 19 ft	MW-04S 25-Jul-17 N 5 - 6 ft	MW-04S 25-Jul-17 N 13 - 13.7 ft
Semi-Volatile Organic Compounds (SVOCs)																				
Acenaphthene	µg/kg	20,000	98,000	1,000,000	-	-	18,000	19,000	190	-	-	-	-	-	-	-	-	-	*140 U*	*160 U*
Acenaphthylene	µg/kg	100,000	107,000	1,000,000	-	-	4,800	6,000	290	-	-	-	-	-	-	-	-	-	*140 U*	*160 U*
Acetophenone	µg/kg	NS	NS	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Anthracene	µg/kg	100,000	1,000,000	1,000,000	-	-	11,000	13,000	460	-	-	-	-	-	-	-	-	-	*100 U*	*120 U*
Atrazine	µg/kg	NS	NS	NS	-	-	*150 U*	*1,500 U*	*150 U*	-	-	-	-	-	-	-	-	-	*140 U*	*160 U*
Benzaldehyde	µg/kg	NS	NS	NS	-	-	*250 U*	*2,500 U*	*250 U*	-	-	-	-	-	-	-	-	-	*230 U*	*270 U*
Benzo(a)anthracene	µg/kg	**1,000**	**1,000**	**11,000**	-	-	**11,000**	**11,000**	980	-	-	-	-	-	-	-	-	-	130	34 J
Benzo(a)pyrene	µg/kg	**1,000**	22,000	**1,100**	-	-	**7,400**	**10,000**	930	-	-	-	-	-	-	-	-	-	130 J	*160 U*
Benzo(b)fluoranthene	µg/kg	**1,000**	**1,700**	**11,000**	-	-	**9,400**	**9,200**	**1,000**	-	-	-	-	-	-	-	-	-	180	*120 U*
Benzo(g,h,i)perylene	µg/kg	100,000	1,000,000	1,000,000	-	-	4,100	4,300	550	-	-	-	-	-	-	-	-	-	72 J	*160 U*
Benzo(k)fluoranthene	µg/kg	**800**	**1,700**	110,000	-	-	**2,700**	**3,100**	360	-	-	-	-	-	-	-	-	-	59 J	*120 U*
Benzyl butyl phthalate	µg/kg	NS	122,000	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Biphenyl	µg/kg	NS	NS	NS	-	-	2,000	2,000 J	44 J	-	-	-	-	-	-	-	-	-	*400 U*	*460 U*
Bis(2-chloroethoxy)methane	µg/kg	NS	NS	NS	-	-	*210 U*	*2,100 U*	*200 U*	-	-	-	-	-	-	-	-	-	*190 U*	*220 U*
Bis(2-ethylhexyl)phthalate	µg/kg	NS	435,000	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	150 J	*200 U*
4-Bromophenyl phenyl ether	µg/kg	NS	NS	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Caprolactam	µg/kg	NS	NS	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Carbazole	µg/kg	NS	NS	NS	-	-	690 J	650 J	150 J	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
4-Chloro-3-methylphenol	µg/kg	NS	NS	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
2-Chloronaphthalene	µg/kg	NS	NS	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
2-Chlorophenol	µg/kg	NS	NS	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
4-Chlorophenyl phenyl ether	µg/kg	NS	NS	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
2,2-Oxybis(1-chloropropane)	µg/kg	NS	NS	NS	-	-	*230 U*	*2,300 U*	*230 U*	-	-	-	-	-	-	-	-	-	*210 U*	*240 U*
Chrysene	µg/kg	**1,000**	**1,000**	110,000	-	-	**9,000**	**8,800**	920	-	-	-	-	-	-	-	-	-	110	28 J
Dibenzo(a,h)anthracene	µg/kg	**330**	1,000,000	**1,100**	-	-	**1,100**	**1,000 J**	140	-	-	-	-	-	-	-	-	-	*100 U*	*120 U*
Dibenzofuran	µg/kg	NS	NS	1,000,000	-	-	3,900	4,500	150 J	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Dibutyl phthalate	µg/kg	NS	8,100	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
2,4-Dichlorophenol	µg/kg	NS	400	NS	-	-	*170 U*	*1,700 U*	*170 U*	-	-	-	-	-	-	-	-	-	*160 U*	*180 U*
2,4-Dimethylphenol	µg/kg	NS	NS	NS	-	-	92 J	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
3,3'-Dichlorobenzidine	µg/kg	NS	NS	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Dichloroethyl ether	µg/kg	NS	NS	NS	-	-	*170 U*	*1,700 U*	*170 U*	-	-	-	-	-	-	-	-	-	*160 U*	*180 U*
Diethyl phthalate	µg/kg	NS	7,100	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Dimethyl phthalate	µg/kg	NS	27,000	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Dinitro-o-cresol	µg/kg	NS	NS	NS	-	-	*500 U*	*5,000 U*	*490 U*	-	-	-	-	-	-	-	-	-	*460 U*	*530 U*
2,4-Dinitrophenol	µg/kg	NS	200	NS	-	-	*920 U*	*9,300 U*	*910 U*	-	-	-	-	-	-	-	-	-	*840 U*	*970 U*
2,4-Dinitrotoluene	µg/kg	NS	NS	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
2,6-Dinitrotoluene	µg/kg	NS	1,000	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Di-n-octyl phthalate	µg/kg	NS	120,000	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Fluoranthene	µg/kg	100,000	1,000,000	1,000,000	-	-	22,000	22,000	2,000	-	-	-	-	-	-	-	-	-	190	76 J
Fluorene	µg/kg	30,000	386,000	1,000,000	-	-	13,000	14,000	410	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Hexachlorobenzene	µg/kg	NS	1,400	12,000	-	-	*120 U*	*1,200 U*	*110 U*	-	-	-	-	-	-	-	-	-	*100 U*	*120 U*
Hexachlorobutadiene	µg/kg	NS	NS	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Hexachlorocyclopentadiene	µg/kg	NS	NS	NS	-	-	*550 U*	*5,500 U*	*540 U*	-	-	-	-	-	-	-	-	-	*500 U*	*580 U*
Hexachloroethane	µg/kg	NS	NS	NS	-	-	*150 U*	*1,500 U*	*150 U*	-	-	-	-	-	-	-	-	-	*140 U*	*160 U*
Indeno(1,2,3-cd)pyrene	µg/kg	**500**	8,200	11,000	-	-	**4,700**	**4,100**	**550**	-	-	-	-	-	-	-	-	-	91 J	*160 U*
Isophorone	µg/kg	NS	4,400	NS	-	-	*170 U*	*1,700 U*	*170 U*	-	-	-	-	-	-	-	-	-	*160 U*	*180 U*
m-Cresol	µg/kg	NS	NS	1,000,000	-	-	220 J	310 J	66 J	-	-	-	-	-	-	-	-	-	*250 U*	*290 U*
2-Methylnaphthalene	µg/kg	NS	36,400	NS	-	-	14,000	13,000	270	-	-	-	-	-	-	-	-	-	*210 U*	*240 U*
Naphthalene	µg/kg	**12,000**	**12,000**	1,000,000	-	-	**36,000**	**37,000**	800	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
2-Nitroaniline	µg/kg	NS	400	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
3-Nitroaniline	µg/kg	NS	500	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Nitrobenzene	µg/kg	NS	170	140,000	-	-	*170 U*	*1,700 U*	*170 U*	-	-	-	-	-	-	-	-	-	*160 U*	*180 U*
2-Nitrophenol	µg/kg	NS	300	NS	-	-	*420 U*	*4,200 U*	*410 U*	-	-	-	-	-	-	-	-	-	*380 U*	*440 U*
4-Nitrophenol	µg/kg	NS	100	NS	-	-	*270 U*	*2,700 U*	*260 U*	-	-	-	-	-	-	-	-	-	*240 U*	*280 U*
n-Nitrosodi-n-propylamine	µg/kg	NS	NS	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
n-Nitrosodiphenylamine	µg/kg	NS	NS	NS	-	-	*150 U*	*1,500 U*	*150 U*	-	-	-	-	-	-	-	-	-	*140 U*	*160 U*
o-Cresol	µg/kg	NS	NS	1,000,000	-	-	86 J	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
p-Chloroaniline	µg/kg	NS	220	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Pentachlorophenol	µg/kg	800	800	55,000	-	-	*150 U*	*1,500 U*	*150 U*	-	-	-	-	-	-	-	-	-	*140 U*	*160 U*
Phenanthrene	µg/kg	100,000	1,000,000	1,000,000	-	-	41,000	45,000	2,000	-	-	-	-	-	-	-	-	-	63 J	58 J
Phenol	µg/kg	330	330	1,000,000	-	-	160 J	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
p-Nitroaniline	µg/kg	NS	NS	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
Pyrene	µg/kg	100,000	1,000,000	1,000,000	-	-	22,000	24,000	2,000	-	-	-	-	-	-	-	-	-	170	61 J
1,2,4,5-Tetrachlorobenzene	µg/kg	NS	NS	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
2,3,4,6-Tetrachlorophenol	µg/kg	NS	NS	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
2,4,5-Trichlorophenol	µg/kg	NS	100	NS	-	-	*190 U*	*1,900 U*	*190 U*	-	-	-	-	-	-	-	-	-	*180 U*	*200 U*
2,4,6-Trichlorophenol	µg/kg	NS	NS	NS	-	-	*120 U*	*1,200 U*	*110 U*	-	-	-	-	-	-	-	-	-	*100 U*	*120 U*
Total TICs (Calculated)	µg/kg	NS	NS	NS	-	-	61,200	112,000	6,280	-	-	-	-	-	-	-	-	-	357	-

Notes and Abbreviations:
- - = Not analyzed
NS = No Standard
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
ft = feet
Results shown in bold font indicate a compound was detectedabove the laboratory reporting detection limit.
N = Field sample
FD = Field Duplicate
J = The analyte was positively identified; associated numerical value is the approximate concentration of the analyte in the sample.
U = Compound not detected at concentrations above the laboratory reporting detection limit, the laboratory reporting detection limit is shown.
UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.
All analyses performed by Alpha Woods Hole Laboratories.
Exceedance of NY-375-CP51-PROTECTION OF GROUNDWATER
Exceedance of NY-375-CP51-UNRESTRICTED USE
Exceedance of NY-375-CP51-RESTRICTED INDUSTRIAL

Table 3
Summary of Soil Analytical Data
GW Lisk Clifton Springs Facility
2 South Street, Clifton Springs, New York

Analyte	Unit	NY-375-CP51-UNRESTRICTED USE	NY-375-CP51-PROTECT GROUND WATER	NY-375-CP51-RESTRICTED INDUSTRIAL	B-01 11-May-17 N 5 - 6 ft	B-01 11-May-17 FD 5 - 6 ft	B-01 12-May-17 N 5 - 6 ft	B-01 12-May-17 FD 5 - 6 ft	B-02 12-May-17 N 9 - 11 ft	B-03 12-May-17 N 8 - 10 ft	B-04 17-Jul-17 N 19 - 20.5 ft	MW-01S 18-Jul-17 N 9 - 10 ft	MW-01S 19-Jul-17 N 16 - 17 ft	MW-01S 19-Jul-17 FD 16 - 17 ft	MW-02D 23-Sep-17 N 5 - 6 ft	MW-02D 23-Sep-17 N 11 - 12 ft	MW-03D 30-Sep-17 N 9 - 11 ft	MW-03D 30-Sep-17 N 17 - 19 ft	MW-04S 25-Jul-17 N 5 - 6 ft	MW-04S 25-Jul-17 N 13 - 13.7 ft
Polychlorinated Biphenyls (PCB)																				
Aroclor 1016	µg/kg	NS	NS	NS	*37.3 U*	*37.2 U*	-	-	*37.5 U*	*37.3 U*	-	-	-	-	*35.5 U*	*35.3 U*	*33.8 U*	*35.9 U*	*34.6 U*	*40.3 U*
Aroclor 1221	µg/kg	NS	NS	NS	*37.3 U*	*37.2 U*	-	-	*37.5 U*	*37.3 U*	-	-	-	-	*35.5 U*	*35.3 U*	*33.8 U*	*35.9 U*	*34.6 U*	*40.3 U*
Aroclor 1232	µg/kg	NS	NS	NS	*37.3 U*	*37.2 U*	-	-	*37.5 U*	*37.3 U*	-	-	-	-	*35.5 U*	*35.3 U*	*33.8 U*	*35.9 U*	*34.6 U*	*40.3 U*
Aroclor 1242	µg/kg	NS	NS	NS	*37.3 U*	*37.2 U*	-	-	*37.5 U*	*37.3 U*	-	-	-	-	*35.5 U*	*35.3 U*	*33.8 U*	*35.9 U*	*34.6 U*	*40.3 U*
Aroclor 1248	µg/kg	NS	NS	NS	*37.3 U*	*37.2 U*	-	-	*37.5 U*	*37.3 U*	-	-	-	-	*35.5 U*	*35.3 U*	*33.8 U*	*35.9 U*	*34.6 U*	*40.3 U*
Aroclor 1254	µg/kg	NS	NS	NS	*37.3 U*	*37.2 U*	-	-	*37.5 U*	*37.3 U*	-	-	-	-	*35.5 U*	*35.3 U*	*33.8 U*	*35.9 U*	*34.6 U*	*40.3 U*
Aroclor 1260	µg/kg	NS	NS	NS	*37.3 U*	*37.2 U*	-	-	*37.5 U*	*37.3 U*	-	-	-	-	*35.5 U*	*35.3 U*	*33.8 U*	*35.9 U*	*34.6 U*	*40.3 U*
Aroclor 1262	µg/kg	NS	NS	NS	*37.3 U*	*37.2 U*	-	-	*37.5 U*	*37.3 U*	-	-	-	-	*35.5 U*	*35.3 U*	*33.8 U*	*35.9 U*	*34.6 U*	*40.3 U*
Aroclor 1268	µg/kg	NS	NS	NS	*37.3 U*	*37.2 U*	-	-	*37.5 U*	*37.3 U*	-	-	-	-	*35.5 U*	*35.3 U*	*33.8 U*	*35.9 U*	*34.6 U*	*40.3 U*
Total PCBs	µg/kg	NS	NS	NS	*37.3 U*	*37.2 U*	-	-	*37.5 U*	*37.3 U*	-	-	-	-	*35.5 U*	*35.3 U*	*33.8 U*	*35.9 U*	*34.6 U*	*40.3 U*
Metals, Total																				
Aluminum	mg/kg	NS	NS	NS	2,800	3,300	-	-	4,700	3,200	-	-	-	-	4,350	1,600	2,600	2,130	4,000	2,520
Antimony	mg/kg	NS	NS	NS	*4.3 U*	*4.5 U*	-	-	0.64 J	1.2 J	-	-	-	-	*4.17 U*	*4.15 U*	*4.14 U*	*4.43 U*	*4.17 U*	*4.91 U*
Arsenic	mg/kg	**13**	**16**	**16**	6.0	6.0	-	-	5.0	**29 J**	-	-	-	-	2.06	1.20	**23.0**	2.08	5.90	4.11
Barium	mg/kg	NS	NS	10,000	30	35	-	-	41	29	-	-	-	-	39.7	8.36	32.1	7.96	28.0	11.0
Beryllium	mg/kg	7.2	47	2,700	0.19 J	0.21 J	-	-	0.23 J	0.15 J	-	-	-	-	0.133 J	*0.415 U*	0.108 J	0.071 J	0.183 J	0.137 J
Cadmium	mg/kg	2.5	7.5	60	1.5	1.8	-	-	0.73 J	1.1	-	-	-	-	0.450 J	0.316 J	0.489 J	0.505 J	0.450 J	0.285 J
Calcium	mg/kg	NS	NS	NS	34,000	40,000	-	-	27,000	24,000	-	-	-	-	50,100	148,000	108,000	179,000	36,000	30,300
Chromium	mg/kg	**30**	NS	6,800	6.2	7.3	-	-	7.0	**39 J**	-	-	-	-	7.28	2.88	4.52	3.70	9.44	4.85
Cobalt	mg/kg	NS	NS	NS	3.0	2.8	-	-	4.4	3.7	-	-	-	-	4.25	2.79	5.64	5.30	3.95	6.12
Copper	mg/kg	50	1,720	10,000	16	16	-	-	14	11	-	-	-	-	10.2	5.71	8.80	10.7	11.5	14.4
Cyanide CN-	mg/kg	NS	NS	10,000	1.2 J	0.92 J	-	-	*2.2 U*	*2.2 U*	-	-	-	-	*1.1 U*	*1.0 U*	*0.96 U*	*1.0 U*	0.41 J	*1.2 U*
Iron	mg/kg	NS	NS	NS	6,200	7,100	-	-	11,000	8,300 J	-	-	-	-	9,590	4,380	9,360	4,970	9,180	11,000
Lead	mg/kg	63	450	3,900	37	33	-	-	31	**200**	-	-	-	-	4.73	2.41 J	3.98 J	3.48 J	14.3	5.32
Magnesium	mg/kg	NS	NS	NS	9,900	8,400	-	-	7,700	9,600 J	-	-	-	-	14,600	11,200	13,900	12,600	7,470	8,670
Manganese	mg/kg	NS	NS	NS	200	230	-	-	620	330	-	-	-	-	264	214	421	310	343	338
Mercury	mg/kg	**0.18**	0.73	**5.7**	**0.45**	**0.48**	-	-	0.13	**10**	-	-	-	-	0.01 J	*0.07 U*	0.02 J	0.02 J	**0.28**	0.02 J
Nickel	mg/kg	30	130	10,000	8.4	9.0	-	-	10	8.4	-	-	-	-	10.2	5.96	10.0	11.7	9.61	17.9
Potassium	mg/kg	NS	NS	NS	320	360	-	-	460	330	-	-	-	-	589	275	530	464	349	354
Selenium	mg/kg	3.9	4	6,800	0.58 J	0.79 J	-	-	*1.8 U*	0.26 J	-	-	-	-	*1.67 U*	*1.66 U*	*1.66 U*	*1.77 U*	*1.67 U*	*1.96 U*
Silver	mg/kg	2	8.3	6,800	*0.86 U*	0.25 J	-	-	*0.88 U*	*0.89 U*	-	-	-	-	*0.834 U*	*0.831 U*	*0.829 U*	*0.887 U*	*0.834 U*	*0.982 U*
Sodium	mg/kg	NS	NS	NS	350	560	-	-	360	880	-	-	-	-	89.2 J	124 J	157 J	189	70.4 J	98.3 J
Thallium	mg/kg	NS	NS	NS	*1.7 U*	*1.8 U*	-	-	*1.8 U*	*1.8 U*	-	-	-	-	*1.67 U*	*1.66 U*	*1.66 U*	*1.77 U*	*1.67 U*	0.452 J
Vanadium	mg/kg	NS	NS	NS	8.5	9.5	-	-	10	8.9	-	-	-	-	10.3	5.26	7.98	5.85	9.46	7.63
Zinc	mg/kg	**109**	2,480	10,000	76	66	-	-	65	**130**	-	-	-	-	37.7	51.9	25.1	73.1	44.7	47.9

Notes and Abbreviations:
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mg/kg = milligrams per kilogram
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Exceedance of NY-375-CP51-PROTECTION OF GROUNDWATER
Exceedance of NY-375-CP51-UNRESTRICTED USE
Exceedance of NY-375-CP51-RESTRICTED INDUSTRIAL

Table 4
Summary of Groundwater Analytical Data
GW Lisk Clifton Springs Facility
2 South Street, Clifton Springs, New York

Analyte	Unit	Location ID:	MW-01D	MW-01S	MW-02D	MW-02S	MW-03D	MW-03S	MW-04D	MW-04S	MW-1	MW-1 SR	MW-4 SR	PW-A	PW-B
		Sample Date:	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	09-May-17	08-May-17
		Sample Type:	N	N	N	N	N	N	N	N	N	N	N	N	N
		NY-TOGS 1.1.1-GW													
Volatile Organic Compounds (VOCs)															
Acetone	µg/L	50	*5.0 U*	*12 U*	**18 J**	*100 U*	**10**	*100 U*	**13**	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*
Benzene	µg/L	1	*0.50 U*	*1.2 U*	**0.65 J**	*10 U*	*0.50 U*	*10 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*
Bromodichloromethane	µg/L	50	*0.50 U*	*1.2 U*	*2.0 U*	*10 U*	*0.50 U*	*10 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*
Bromoform	µg/L	50	*2.0 U*	*5.0 U*	*8.0 U*	*40 U*	*2.0 U*	*40 U*	*2.0 U*	*2.0 U*	*2.0 U*	*2.0 U*	*2.0 U*	*2.0 U*	*2.0 U*
Bromomethane	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	**1.1 J**	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
2-Butanone	µg/L	5	*5.0 U*	*12 U*	*20 U*	*100 U*	*5.0 U*	*100 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*
Carbon disulfide	µg/L	5	*5.0 U*	*12 U*	*20 U*	*100 U*	*5.0 U*	*100 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*
Carbon tetrachloride	µg/L	5	*0.50 U*	*1.2 U*	*2.0 U*	*10 U*	*0.50 U*	*10 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*
Chlorobenzene	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
Chlorobromomethane	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
Chloroethane	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
Chloromethane	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	**1.0 J**	*2.5 U*	*2.5 U*	*2.5 U*	**0.74 J**	*2.5 U*	*2.5 U*
Chloroform	µg/L	7	*2.5 U*	*6.2 U*	**5.2 J**	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
cis-1,2-Dichloroethene	µg/L	**5**	**44**	**20**	**44**	**210**	*2.5 U*	**28 J**	**3.6**	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	**4.1**	**4**
cis-1,3-Dichloropropene	µg/L	5	*0.50 U*	*1.2 U*	*2.0 U*	*10 U*	*0.50 U*	*10 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*
Cyclohexane	µg/L	NS	*10 U*	*25 U*	*40 U*	*200 U*	*10 U*	*200 U*	*10 U*	*10 U*	*10 U*	*10 U*	*10 U*	*10 U*	*10 U*
Dibromochloromethane	µg/L	50	*0.50 U*	*1.2 U*	*2.0 U*	*10 U*	*0.50 U*	*10 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*
1,2-Dibromo-3-chloropropane	µg/L	0.04	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
1,2-Dichlorobenzene	µg/L	3	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
1,3-Dichlorobenzene	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
1,4-Dichlorobenzene	µg/L	3	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
1,2-Dichloroethane	µg/L	0.6	*0.50 U*	*1.2 U*	*2.0 U*	*10 U*	*0.50 U*	*10 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*
1,1-Dichloroethane	µg/L	**5**	**3.5**	**11**	**12**	**27 J**	*2.5 U*	**16 J**	**2.7**	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
1,1-Dichloroethene	µg/L	**5**	**2.5**	**12**	**7**	**32**	**0.19 J**	**36**	**0.32 J**	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*
1,2-Dichloropropane	µg/L	1	*1.0 U*	*2.5 U*	*4.0 U*	*20 U*	*1.0 U*	*20 U*	*1.0 U*	*1.0 U*	*1.0 U*	*1.0 U*	*1.0 U*	*1.0 U*	*1.0 U*
Ethylbenzene	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
Ethylene dibromide	µg/L	1	*2.0 U*	*5.0 U*	*8.0 U*	*40 U*	*2.0 U*	*40 U*	*2.0 U*	*2.0 U*	*2.0 U*	*2.0 U*	*2.0 U*	*2.0 U*	*2.0 U*
Freon 11	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
Freon 12	µg/L	**5**	**1.7 J**	*12 U*	**15 J**	*100 U*	*5.0 U*	*100 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*
Freon 113	µg/L	**5**	**32**	**31**	**420**	**98**	**1.2 J**	**290**	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	**3.8**	**3.2**
2-Hexanone	µg/L	50	*5.0 U*	*12 U*	*20 U*	*100 U*	*5.0 U*	*100 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*
Isopropylbenzene (Cumene)	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
4-Isopropyltoluene	µg/L	5	--	--	--	--	--	--	--	--	--	--	--	*2.5 U*	*2.5 U*
Methyl acetate	µg/L	NS	*2.0 U*	*5.0 U*	*8.0 U*	*40 U*	*2.0 U*	*40 U*	*2.0 U*	*2.0 U*	*2.0 U*	*2.0 U*	*2.0 U*	*2.0 U*	*2.0 U*
4-Methyl-2-pentanone	µg/L	5	*5.0 U*	*12 U*	*20 U*	*100 U*	*5.0 U*	*100 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*
Methyl tert-butyl ether	µg/L	10	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
Methylcyclohexane	µg/L	NS	**0.99 J**	**3.5 J**	**5.4 J**	**18 J**	**0.46 J**	**22 J**	*10 U*	*10 U*	*10 U*	*10 U*	*10 U*	*10 U*	*10 U*
Methylene chloride	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
Naphthalene	µg/L	10	--	--	--	--	--	--	--	--	--	--	--	*2.5 U*	*2.5 U*
n-Butylbenzene	µg/L	5	--	--	--	--	--	--	--	--	--	--	--	*2.5 U*	*2.5 U*
n-Propylbenzene	µg/L	5	--	--	--	--	--	--	--	--	--	--	--	*2.5 U*	*2.5 U*
sec-Butylbenzene	µg/L	5	--	--	--	--	--	--	--	--	--	--	--	*2.5 U*	*2.5 U*
o-Xylene	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
Styrene	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
tert-Butylbenzene	µg/L	5	--	--	--	--	--	--	--	--	--	--	--	*2.5 U*	*2.5 U*
Tetrachloroethene	µg/L	**5**	**15**	**52**	**120**	**47**	**0.95**	**220**	**3.6**	**1.3**	**0.56**	**1.1**	*0.50 U*	*0.50 U*	**0.40 J**
Toluene	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
trans-1,2-Dichloroethene	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
trans-1,3-Dichloropropene	µg/L	0.4	*0.50 U*	*1.2 U*	*2.0 U*	*10 U*	*0.50 U*	*10 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*
1,1,1-Trichloroethane	µg/L	**5**	**5.7**	**69**	**4.0 J**	**47 J**	**0.90 J**	**160**	**3.3**	**0.96 J**	**0.98 J**	**1.5 J**	*2.5 U*	*2.5 U*	*2.5 U*
1,1,2,2-Tetrachloroethane	µg/L	5	*0.50 U*	*1.2 U*	*2.0 U*	*10 U*	*0.50 U*	*10 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*	*0.50 U*
1,1,2-Trichloroethane	µg/L	1	*1.5 U*	*3.8 U*	*6.0 U*	*30 U*	*1.5 U*	*30 U*	*1.5 U*	*1.5 U*	*1.5 U*	*1.5 U*	*1.5 U*	*1.5 U*	*1.5 U*
1,3,5-Trimethylbenzene	µg/L	5	--	--	--	--	--	--	--	--	--	--	--	*2.5 U*	*2.5 U*
1,2,3-Trichlorobenzene	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
1,2,4-Trichlorobenzene	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
1,2,4-Trimethylbenzene	µg/L	5	--	--	--	--	--	--	--	--	--	--	--	*2.5 U*	*2.5 U*
Trichloroethene	µg/L	**5**	**94**	**310**	**410**	**1,700**	**12**	**2,100**	**9.3**	**3.7**	**1.5**	**2.6**	**0.19 J**	**3.4**	**3.2**
Vinyl chloride	µg/L	2	**0.12 J**	*2.5 U*	**0.32 J**	*20 U*	*1.0 U*	*20 U*	*1.0 U*	*1.0 U*	*1.0 U*	*1.0 U*	*1.0 U*	*1.0 U*	*1.0 U*
Xylenes, m/p	µg/L	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
1,4-Dioxane	µg/l	50	**1.36**	*620 U*	**2.59**	**3.64**	*0.155 U*	**0.429**	*0.170 U*	*0.161 U*	*0.156 U*	*0.160 U*	*0.158 U*	*0.153 U*	*0.153 U*

Table 4
Summary of Groundwater Analytical Data
GW Lisk Clifton Springs Facility
2 South Street, Clifton Springs, New York

Analyte	Unit	Location ID:	MW-01D	MW-01S	MW-02D	MW-02S	MW-03D	MW-03S	MW-04D	MW-04S	MW-1	MW-1 SR	MW-4 SR	PW-A	PW-B
		Sample Date:	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	09-May-17	08-May-17
		Sample Type:	N	N	N	N	N	N	N	N	N	N	N	N	N
		NY-TOGS 1.1.1-GW													
Semi-Volatile Organic Compounds (SVOCs)															
Acenaphthene	µg/l	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
Acenaphthylene	µg/l	5	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
Acetophenone	µg/l	NS	**1.36**	*620 U*	**2.59**	**3.64**	*0.155 U*	**0.429**	*0.170 U*	*0.161 U*	*0.156 U*	*0.160 U*	*0.158 U*	*0.153 U*	*0.153 U*
Anthracene	µg/l	50	--	--	--	--	--	--	*2.0 U*	*2.0 U*	--	--	--	--	--
Atrazine	µg/l	7.5	--	--	--	--	--	--	*5.0 U*	*5.0 U*	--	--	--	--	--
Benzo(a)anthracene	µg/l	0.002	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
Benzo(a)pyrene	µg/l	0.002	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
Benzo(b)fluoranthene	µg/l	0.002	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
Benzo(g,h,i)perylene	µg/l	NS	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
Benzo(k)fluoranthene	µg/l	0.002	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
Benzyl butyl phthalate	µg/l	NS	--	--	--	--	--	--	*5.0 U*	*5.0 U*	--	--	--	--	--
Bis(2-chloroethoxy)methane	µg/l	5	--	--	--	--	--	--	*5.0 U*	*5.0 U*	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	µg/l	5	--	--	--	--	--	--	*3.0 U*	*3.0 U*	--	--	--	--	--
4-Bromophenyl phenyl ether	µg/l	NS	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
Carbazole	µg/l	NS	--	--	--	--	--	--	*2.0 U*	*2.0 U*	--	--	--	--	--
4-Chloro-3-methylphenol	µg/l	NS	--	--	--	--	--	--	*5.0 U*	*5.0 U*	--	--	--	--	--
p-Chloroaniline	µg/l	5	--	--	--	--	--	--	*5.0 U*	*5.0 U*	--	--	--	--	--
2-Chloronaphthalene	µg/l	5	--	--	--	--	--	--	*5.0 U*	*5.0 U*	--	--	--	--	--
2-Chlorophenol	µg/l	5	--	--	--	--	--	--	*5.0 U*	*5.0 U*	--	--	--	--	--
4-Chlorophenyl phenyl ether	µg/l	50	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
m-Cresol	µg/l	NS	--	--	--	--	--	--	**1.6 J**	*5.0 U*	--	--	--	--	--
Chrysene	µg/l	0.002	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
Dibenzo(a,h)anthracene	µg/l	NS	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
Dibenzofuran	µg/l	NS	--	--	--	--	--	--	*2.0 U*	*2.0 U*	--	--	--	--	--
Dibutyl phthalate	µg/l	50	--	--	--	--	--	--	*5.0 U*	*5.0 U*	--	--	--	--	--
1,2-Dichlorobenzene	µg/l	3	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
1,3-Dichlorobenzene	µg/l	5	--	--	--	--	--	--	*5.0 U*	*5.0 U*	--	--	--	--	--
1,4-Dichlorobenzene	µg/l	3	*2.5 U*	*6.2 U*	*10 U*	*50 U*	*2.5 U*	*50 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*	*2.5 U*
3,3'-Dichlorobenzidine	µg/l	NS	--	--	--	--	--	--	*10 U*	*10 U*	--	--	--	--	--
Dichloroethyl ether	µg/l	1	--	--	--	--	--	--	*2.0 U*	*2.0 U*	--	--	--	--	--
2,4-Dichlorophenol	µg/l	10	--	--	--	--	--	--	*0.20 U*	*0.20 U*	--	--	--	--	--
Diethyl phthalate	µg/l	50	--	--	--	--	--	--	*5.0 U*	*5.0 U*	--	--	--	--	--
2,4-Dimethylphenol	µg/l	NS	--	--	--	--	--	--	*2.0 U*	*2.0 U*	--	--	--	--	--
Dimethyl phthalate	µg/l	50	--	--	--	--	--	--	*5.0 U*	*5.0 U*	--	--	--	--	--
Dinitro-o-cresol	µg/l	NS	--	--	--	--	--	--	*10 U*	*10 U*	--	--	--	--	--
2,4-Dinitrophenol	µg/l	4.7	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
2,4-Dinitrotoluene	µg/l	5	--	--	--	--	--	--	*5.0 U*	*5.0 U*	--	--	--	--	--
2,6-Dinitrotoluene	µg/l	NS	--	--	--	--	--	--	*10 U*	*10 U*	--	--	--	--	--
Di-n-octyl phthalate	µg/l	50	--	--	--	--	--	--	*5,0 U*	*5,0 U*	--	--	--	--	--
Fluoranthene	µg/l	50	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
Fluorene	µg/l	50	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
Hexachlorobenzene	µg/l	5	--	--	--	--	--	--	*0.80 U*	*0.80 U*	--	--	--	--	--
Hexachlorobutadiene	µg/l	0.5	--	--	--	--	--	--	*0.50 U*	*0.50 U*	--	--	--	--	--
Hexachlorocyclopentadiene	µg/l	5	--	--	--	--	--	--	*20 U*	*20 U*	--	--	--	--	--
Hexachloroethane	µg/l	5	--	--	--	--	--	--	*0.80 U*	*0.80 U*	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	µg/l	0.002	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
Isophorone	µg/l	50	--	--	--	--	--	--	*5,0 U*	*5,0 U*	--	--	--	--	--
2-Methylnaphthalene	µg/l	NS	--	--	--	--	--	--	*2.0 U*	*2.0 U*	--	--	--	--	--
Naphthalene	µg/l	10	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	*2.5 U*	*2.5 U*
2-Nitroaniline	µg/l	NS	--	--	--	--	--	--	*2,0 U*	*2,0 U*	--	--	--	--	--
3-Nitroaniline	µg/l	20	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
p-Nitroaniline	µg/l	5	--	--	--	--	--	--	*5,0 U*	*5,0 U*	--	--	--	--	--
Nitrobenzene	µg/l	0.4	--	--	--	--	--	--	*2,0 U*	*2,0 U*	--	--	--	--	--
2-Nitrophenol	µg/l	NS	--	--	--	--	--	--	*2.0 U*	*2.0 U*	--	--	--	--	--
4-Nitrophenol	µg/l	NS	--	--	--	--	--	--	*10 U*	*10 U*	--	--	--	--	--
n-Nitrosodiphenylamine	µg/l	50	--	--	--	--	--	--	*2.0 U*	*2.0 U*	--	--	--	--	--
n-Nitrosodi-n-propylamine	µg/l	NS	--	--	--	--	--	--	*5.0 U*	*5.0 U*	--	--	--	--	--
2,2-Oxybis(1-chloropropane)	µg/l	10	--	--	--	--	--	--	*20 U*	*20 U*	--	--	--	--	--
Pentachlorophenol	µg/l	1	--	--	--	--	--	--	*0.80 U*	*0.80 U*	--	--	--	--	--
Phenanthrene	µg/l	50	--	--	--	--	--	--	**0.02 J**	*0.10 U*	--	--	--	--	--
Phenol	µg/l	**1**	--	--	--	--	--	--	**2.6 J**	*5.0 U*	--	--	--	--	--
Pyrene	µg/l	50	--	--	--	--	--	--	*0.10 U*	*0.10 U*	--	--	--	--	--
1,2,4-Trichlorobenzene	µg/l	NS	--	--	--	--	--	--	*5.0 U*	*5.0 U*	--	--	--	--	--
2,4,5-Trichlorophenol	µg/l	5	--	--	--	--	--	--	*5,0 U*	*5,0 U*	--	--	--	--	--
2,4,6-Trichlorophenol	µg/l	0.07	--	--	--	--	--	--	*5,0 U*	*5,0 U*	--	--	--	--	--

Table 4
Summary of Groundwater Analytical Data
GW Lisk Clifton Springs Facility
2 South Street, Clifton Springs, New York

Analyte	Unit	Location ID:	MW-01D	MW-01S	MW-02D	MW-02S	MW-03D	MW-03S	MW-04D	MW-04S	MW-1	MW-1 SR	MW-4 SR	PW-A	PW-B
		Sample Date:	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	20-Nov-17	09-May-17	08-May-17
		Sample Type:	N	N	N	N	N	N	N	N	N	N	N	N	N
		NY-TOGS 1.1.1-GW													
Polychlorinated Biphenyl (PCB)															
Aroclor 1016	µg/L	NS	--	--	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	--	--	--	--	--
Aroclor 1221	µg/L	NS	--	--	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	--	--	--	--	--
Aroclor 1232	µg/L	NS	--	--	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	--	--	--	--	--
Aroclor 1242	µg/L	NS	--	--	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	--	--	--	--	--
Aroclor 1248	µg/L	NS	--	--	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	--	--	--	--	--
Aroclor 1254	µg/L	NS	--	--	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	--	--	--	--	--
Aroclor 1260	µg/L	NS	--	--	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	--	--	--	--	--
Aroclor 1262	µg/L	NS	--	--	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	--	--	--	--	--
Aroclor 1268	µg/L	NS	--	--	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	--	--	--	--	--
Total PCBs	µg/L	0.09	--	--	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	*0.083 U*	--	--	--	--	--
Metals, Total															
Aluminum	mg/L	**0.1**	--	--	**0.456**	**0.035 J**	**0.213**	*0.100 U*	**0.122**	**0.101**	--	--	--	*0.0100 U*	*0.0100 U*
Antimony	mg/L	**0.003**	--	--	*0.050 U*	*0.050 U*	**0.007 J**	*0.050 U*	*0.050 U*	*0.050 U*	--	--	--	*0.00400 U*	*0.00400 U*
Arsenic	mg/L	0.025	--	--	*0.005 U*	**0.002 J**	*0.005 U*	*0.005 U*	**0.003 J**	*0.005 U*	--	--	--	*0.00050 U*	*0.00050 U*
Barium	mg/L	1	--	--	**0.119**	**0.251**	**0.161**	**0.146**	**0.203**	**0.069**	--	--	--	**0.06101**	**0.0606**
Beryllium	mg/L	0.003	--	--	*0.005 U*	*0.005 U*	*0.005 U*	*0.005 U*	*0.005 U*	*0.005 U*	--	--	--	*0.00050 U*	*0.00050 U*
Cadmium	mg/L	0.005	--	--	*0.005 U*	*0.005 U*	*0.005 U*	*0.005 U*	*0.005 U*	*0.005 U*	--	--	--	*0.00020 U*	*0.00020 U*
Calcium	mg/L	NS	--	--	**159**	**158**	**92**	**146**	**55.3**	**112**	--	--	--	**106**	**108**
Chromium	mg/L	0.05	--	--	*0.010 U*	*0.010 U*	*0.010 U*	*0.010 U*	*0.010 U*	**0.002 J**	--	--	--	*0.00100 U*	*0.00100 U*
Cobalt	mg/L	0.005	--	--	*0.020 U*	**0.002 J**	*0.020 U*	*0.020 U*	*0.020 U*	*0.020 U*	--	--	--	*0.00050 U*	*0.00050 U*
Copper	mg/L	0.2	--	--	*0.010 U*	*0.010 U*	**0.003 J**	*0.010 U*	**0.002 J**	*0.010 U*	--	--	--	**0.00421**	**0.01515**
Cyanide	mg/L	0.4	--	--	*0.00050 U*	*0.00050 U*	*0.00050 U*	*0.00050 U*	*0.00050 U*	*0.00050 U*	--	--	--	*0.00050 U*	*0.00050 U*
Iron	mg/L	**0.3**	--	--	**1.06**	**3.53**	**1.22**	**0.013 J**	**0.117**	**0.176**	--	--	--	*0.0500 U*	*0.0500 U*
Lead	mg/L	0.025	--	--	*0.010 U*	**0.003 J**	**0.003 J**	**0.003 J**	*0.010 U*	**0.003 J**	--	--	--	*0.00050 U*	**0.00218**
Magnesium	mg/L	**35**	--	--	**0.378**	**41**	**1.05**	**36**	**2.02**	**24.2**	--	--	--	**20.8**	**21.5**
Manganese	mg/L	**0.3**	--	--	**0.012**	**0.364**	**0.012**	**0.029**	**0.006 J**	**0.02**	--	--	--	**0.00058 J**	*0.00100 U*
Mercury	mg/L	0.0007	--	--	*0.00020 U*	*0.00020 U*	*0.00020 U*	*0.00020 U*	*0.00020 U*	*0.00020 U*	--	--	--	**0.00006 J**	*0.00020 U*
Nickel	mg/L	0.1	--	--	*0.025 U*	**0.004 J**	**0.002 J**	**0.002 J**	**0.006 J**	*0.025 U*	--	--	--	**0.00150 J**	**0.00689**
Potassium	mg/L	NS	--	--	**15.1**	**6.63**	**13.4**	**5.99**	**21**	**5.98**	--	--	--	**2.63**	**2.69**
Selenium	mg/L	0.01	--	--	*0.010 U*	*0.010 U*	*0.010 U*	*0.010 U*	*0.010 U*	*0.010 U*	--	--	--	*0.00500 U*	*0.00500 U*
Silver	mg/L	0.05	--	--	*0.007 U*	*0.007 U*	*0.007 U*	*0.007 U*	*0.007 U*	*0.007 U*	--	--	--	*0.00040 U*	*0.00040 U*
Sodium	mg/L	**20**	--	--	**156**	**392**	**185**	**331**	**138**	**133**	--	--	--	**43.2**	**44.9**
Thallium	mg/L	0.0005	--	--	*0.020 U*	*0.020 U*	*0.020 U*	*0.020 U*	*0.020 U*	*0.020 U*	--	--	--	*0.00050 U*	*0.00050 U*
Vanadium	mg/L	0.014	--	--	*0.010 U*	*0.010 U*	*0.010 U*	*0.010 U*	*0.010 U*	*0.010 U*	--	--	--	*0.00500 U*	*0.00500 U*
Zinc	mg/L	2	--	--	*0.050 U*	*0.050 U*	*0.050 U*	**0.005 J**	*0.050 U*	**0.006 J**	--	--	--	**0.00935 J**	**0.00526 J**
Per- and Polyfluoroalkyl Substances (PFAS)															
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/l	NS	*2.08 U*	*2.08 U*	*2.08 U*	*2.08 U*	*1.72 U*	*1.72 U*	*1.92 U*	*1.72 U*	*1.72 U*	*2.00 U*	*1.72 UJ*	*2.01 U*	*1.93 U*
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/l	NS	*2.08 U*	*2.08 U*	*2.08 U*	*2.08 U*	*1.72 U*	*1.72 U*	*1.92 U*	*1.72 U*	*1.72 U*	*2.00 U*	*1.72 U*	*2.01 U*	*1.93 U*
Perfluorobutanesulfonic Acid (PFBS)	ng/l	NS	*2.08 U*	**1.21 J**	**0.808 J**	*2.08 U*	**2.49**	**0.683 J**	**4.89**	**5.88**	**2.09**	**2.2**	**0.703 J**	*2.01 U*	*1.93 U*
Perfluorodecanoic Acid (PFDA)	ng/l	NS	*2.08 U*	*2.08 U*	*2.08 U*	*2.08 U*	**0.248 J**	*1.72 U*	*1.92 U*	*1.72 U*	*1.72 U*	*2.00 U*	*1.72 U*	*2.01 U*	*1.93 U*
Perfluorododecanoic Acid (PFDoA)	ng/l	NS	*2.08 U*	*2.08 U*	**0.333 J**	*2.08 U*	*1.72 U*	*1.72 U*	*1.92 U*	*1.72 U*	*1.72 U*	*2.00 U*	*1.72 U*	*2.01 U*	*1.93 U*
Perfluoroheptanoic Acid (PFHpA)	ng/l	NS	*2.08 U*	**1.35 J**	**0.433 J**	*2.08 U*	**1.48 J**	**0.500 J**	**0.769 J**	**0.310 J**	**2.45**	**1.57 J**	**0.355 J**	*2.01 U*	*1.93 U*
Perfluorohexane Sulfonic Acid (PFHxS)	ng/l	NS	*2.08 U*	**0.767 J**	*2.08 U*	*2.08 U*	**0.762 J**	*1.72 U*	**1.47 J**	**1.23 J**	**0.603 J**	**0.340 J**	**0.452 J**	*2.01 U*	*1.93 U*
Perfluorohexanoic Acid (PFHxA)	ng/l	NS	*2.08 U*	**1.77 J**	**0.529 J**	*2.08 U*	**1.91**	**1.36 J**	**1.84 J**	**0.621 J**	**8.36**	**4.86**	**0.493 J**	*2.01 U*	*1.93 U*
Perfluorononanoic Acid (PFNA)	ng/l	NS	*2.08 U*	*2.08 U*	*2.08 U*	*2.08 U*	**0.634 J**	*1.72 U*	*1.92 U*	*1.72 U*	*1.72 U*	*2.00 U*	*1.72 U*	*2.01 U*	*1.93 U*
Perfluorooctanesulfonic Acid (PFOS)	ng/l	NS	**0.312 J**	*2.08 U*	**0.238 J**	*2.08 U*	**3.13 J**	*1.72 U*	**1.92 J**	**1.43 J**	**0.324 J**	**0.324 J**	**0.448 J**	*2.01 U*	*1.93 U*
Perfluorooctanoic Acid (PFOA)	ng/l	NS	*2.08 U*	*3.16 U*	*2.08 U*	*2.08 U*	**5.31 J**	*1.72 U*	*3.32 U*	*1.72 U*	*3.19 U*	*2.68 U*	*1.72 U*	*2.01 U*	*1.93 U*
Perfluorotetradecanoic Acid (PFTA)	ng/l	NS	*2.08 U*	*2.08 U*	*2.08 U*	*2.08 U*	*1.72 U*	*1.72 U*	*1.92 U*	*1.72 U*	*1.72 U*	*2.00 U*	*1.72 U*	*2.01 U*	*1.93 U*
Perfluorotridecanoic Acid (PFTrDA)	ng/l	NS	*2.08 U*	*2.08 U*	*2.08 U*	*2.08 U*	*1.72 U*	*1.72 U*	*1.92 U*	*1.72 U*	*1.72 U*	*2.00 U*	*1.72 U*	*2.01 U*	*1.93 U*
Perfluoroundecanoic Acid (PFUnA)	ng/l	NS	*2.08 U*	*2.08 U*	*2.08 U*	*2.08 U*	*1.72 U*	*1.72 U*	*1.92 U*	*1.72 U*	*1.72 U*	*2.00 U*	*1.72 U*	*2.01 U*	*1.93 U*

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Results shown in bold font indicate a compound was detectedabove the laboratory reporting detection limit.
N = Field sample
FD = Field Duplicate
J = The analyte was positively identified; associated numerical value is the approximate concentration of the analyte in the sample.
U = Compound not detected at concentrations above the laboratory reporting detection limit, the laboratory reporting detection limit is shown.
UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.
All analyses performed by Alpha Woods Hole Laboratories.
Exceedance of NY-TOGS 1.1.1-GW

Table 5
Summary of Surface Water Analytical Data
GW Lisk Clifton Springs Facility
2 South Street, Clifton Springs, New York

Analyte	Unit	NY-TOGS 1.1.1-SW_WILDLIFE PROTECTION	SW-01 10-May-17 N	SW-01 18-Jul-17 N	SW-02 10-May-17 N	SW-02 10-May-17 FD	SW-02 18-Jul-17 N	SW-02 18-Jul-17 FD	SW-03 27-Jun-17 N
Volatile Organic Compounds (VOCs)									
Acetone	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Benzene	µg/L	NS	*0.50 U*	--	*0.50 U*	*0.50 U*	--	--	--
Bromodichloromethane	µg/L	NS	*0.50 U*	--	*0.50 U*	*0.50 U*	--	--	--
Bromoform	µg/L	NS	*2.0 U*	--	*2.0 U*	*2.0 U*	--	--	--
Bromomethane	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
2-Butanone	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Carbon disulfide	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Carbon tetrachloride	µg/L	NS	*0.50 U*	--	*0.50 U*	*0.50 U*	--	--	--
Chlorobenzene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
Chlorobromomethane	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
Chloroethane	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
Chloromethane	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
Chloroform	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
cis-1,2-Dichloroethene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
cis-1,3-Dichloropropene	µg/L	NS	*0.50 U*	--	*0.50 U*	*0.50 U*	--	--	--
Cyclohexane	µg/L	NS	*10 U*	--	*10 U*	*10 U*	--	--	--
Dibromochloromethane	µg/L	NS	*0.50 U*	--	*0.50 U*	*0.50 U*	--	--	--
1,2-Dibromo-3-chloropropane	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
1,2-Dichlorobenzene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
1,3-Dichlorobenzene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
1,4-Dichlorobenzene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
1,2-Dichloroethane	µg/L	NS	*0.50 U*	--	*0.50 U*	*0.50 U*	--	--	--
1,1-Dichloroethane	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
1,1-Dichloroethene	µg/L	NS	*0.50 U*	--	*0.50 U*	*0.50 U*	--	--	--
1,2-Dichloropropane	µg/L	NS	*1.0 U*	--	*1.0 U*	*1.0 U*	--	--	--
Ethylbenzene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
Ethylene dibromide	µg/L	NS	*2.0 U*	--	*2.0 U*	*2.0 U*	--	--	--
Freon 11	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
Freon 12	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Freon 113	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
2-Hexanone	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Isopropylbenzene (Cumene)	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
4-Isopropyltoluene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
Methyl acetate	µg/L	NS	*2.0 U*	--	*2.0 U*	*2.0 U*	--	--	--
4-Methyl-2-pentanone	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Methyl tert-butyl ether	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
Methylcyclohexane	µg/L	NS	*10 U*	--	*10 U*	*10 U*	--	--	--
Methylene chloride	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
Naphthalene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
n-Butylbenzene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
n-Propylbenzene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
sec-Butylbenzene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
o-Xylene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
Styrene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
tert-Butylbenzene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
Tetrachloroethene	µg/L	NS	*0.50 U*	--	*0.50 U*	*0.50 U*	--	--	--
Toluene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
trans-1,2-Dichloroethene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
trans-1,3-Dichloropropene	µg/L	NS	*0.50 U*	--	*0.50 U*	*0.50 U*	--	--	--
1,1,1-Trichloroethane	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
1,1,2,2-Tetrachloroethane	µg/L	NS	*0.50 U*	--	*0.50 U*	*0.50 U*	--	--	--
1,1,2-Trichloroethane	µg/L	NS	*1.5 U*	--	*1.5 U*	*1.5 U*	--	--	--
1,3,5-Trimethylbenzene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
1,2,3-Trichlorobenzene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
1,2,4-Trichlorobenzene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
1,2,4-Trimethylbenzene	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
Trichloroethene	µg/L	NS	*0.50 U*	--	*0.50 U*	*0.50 U*	--	--	--
Vinyl chloride	µg/L	NS	*1.0 U*	--	*1.0 U*	*1.0 U*	--	--	--
Xylenes, m/p	µg/L	NS	*2.5 U*	--	*2.5 U*	*2.5 U*	--	--	--
1,4-Dioxane	ng/l	NS	*155 U*	--	*153 U*	*158 U*	--	--	--

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NY-TOGS 1.1.1-SW_WILDFIRE PROTECTION

Table 5
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GW Lisk Clifton Springs Facility
2 South Street, Clifton Springs, New York

Analyte	Unit	NY-TOGS 1.1.1-SW_WILDLIFE PROTECTION	SW-01 10-May-17 N	SW-01 18-Jul-17 N	SW-02 10-May-17 N	SW-02 10-May-17 FD	SW-02 18-Jul-17 N	SW-02 18-Jul-17 FD	SW-03 27-Jun-17 N
Semi-Volatile Organic Compounds (SVOCs)									
Acenaphthene	µg/L	NS	*0.10 U*	--	*0.10 U*	*0.10 U*	--	--	--
Acenaphthylene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
Acetophenone	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Anthracene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
Atrazine	µg/L	NS	*10 U*	--	*10 U*	*10 U*	--	--	--
Benzaldehyde	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Benzo(a)anthracene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
Benzo(a)pyrene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
Benzo(b)fluoranthene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
Benzo(g,h,i)perylene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
Benzo(k)fluoranthene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
Benzyl butyl phthalate	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Biphenyl	µg/L	NS	*2.0 U*	--	*2.0 U*	*2.0 U*	--	--	--
Bis(2-chloroethoxy)methane	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Bis(2-ethylhexyl)phthalate	µg/L	NS	**3.5**	--	**5.4**	**5**	--	--	--
4-Bromophenyl phenyl ether	µg/L	NS	*2.0 U*	--	*2.0 U*	*2.0 U*	--	--	--
Caprolactam	µg/L	NS	*10 U*	--	*10 U*	*10 U*	--	--	--
Carbazole	µg/L	NS	*2.0 U*	--	*2.0 U*	*2.0 U*	--	--	--
p-Chloroaniline	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
4-Chloro-3-methylphenol	µg/L	NS	*2.0 U*	--	*2.0 U*	*2.0 U*	--	--	--
2-Chloronaphthalene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
2-Chlorophenol	µg/L	NS	*2.0 U*	--	*2.0 U*	*2.0 U*	--	--	--
o-Cresol	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
m-Cresol	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
4-Chlorophenyl phenyl ether	µg/L	NS	*2.0 U*	--	*2.0 U*	*2.0 U*	--	--	--
Chrysene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
Dibenzo(a,h)anthracene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
Dibenzofuran	µg/L	NS	*2.0 U*	--	*2.0 U*	*2.0 U*	--	--	--
Dibutyl phthalate	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
3,3'-Dichlorobenzidine	µg/L	NS	*5.0 UJ*	--	*5.0 U*	*5.0 U*	--	--	--
Dichloroethyl ether	µg/L	NS	*2.0 U*	--	*2.0 U*	*2.0 U*	--	--	--
2,4-Dichlorophenol	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
2,4-Dimethylphenol	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Diethyl phthalate	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Dimethyl phthalate	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Dinitro-o-cresol	µg/L	NS	*10 U*	--	*10 U*	*10 U*	--	--	--
2,4-Dinitrophenol	µg/L	NS	*20 U*	--	*20 U*	*20 U*	--	--	--
2,4-Dinitrotoluene	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
2,6-Dinitrotoluene	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Di-n-octyl phthalate	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Fluoranthene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
Fluorene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
Hexachlorobenzene	µg/L	NS	*0.80 U*	--	*0.80 U*	*0.80 U*	--	--	--
Hexachlorobutadiene	µg/L	NS	*0.50 U*	--	*0.50 U*	*0.50 U*	--	--	--
Hexachlorocyclopentadiene	µg/L	NS	*20 U*	--	*20 U*	*20 U*	--	--	--
Hexachloroethane	µg/L	NS	*0.80 U*	--	*0.80 U*	*0.80 U*	--	--	--
Indeno(1,2,3-cd)pyrene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
Isophorone	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
2-Methylnaphthalene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
2-Nitroaniline	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
3-Nitroaniline	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
p-Nitroaniline	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Nitrobenzene	µg/L	NS	*2.0 U*	--	*2.0 U*	*2.0 U*	--	--	--
2-Nitrophenol	µg/L	NS	*10 U*	--	*10 U*	*10 U*	--	--	--
4-Nitrophenol	µg/L	NS	*10 U*	--	*10 U*	*10 U*	--	--	--
n-Nitrosodi-n-propylamine	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
n-Nitrosodiphenylamine	µg/L	NS	*2.0 U*	--	*2.0 U*	*2.0 U*	--	--	--
2,2-Oxybis(1-chloropropane)	µg/L	NS	*2.0 U*	--	*2.0 U*	*2.0 U*	--	--	--
Pentachlorophenol	µg/L	NS	*0.80 U*	--	*0.80 U*	*0.80 U*	--	--	--
Phenanthrene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
Phenol	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
Pyrene	µg/L	NS	*0.20 U*	--	*0.20 U*	*0.20 U*	--	--	--
1,2,4,5-Tetrachlorobenzene	µg/L	NS	*10 U*	--	*10 U*	*10 U*	--	--	--
2,3,4,6-Tetrachlorophenol	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
2,4,5-Trichlorophenol	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--
2,4,6-Trichlorophenol	µg/L	NS	*5.0 U*	--	*5.0 U*	*5.0 U*	--	--	--

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Polychlorinated Biphenyl (PCB)									
Aroclor 1016	µg/L	NS	*0.083 U*	--	*0.083 U*	*0.083 U*	--	--	*0.083 U*
Aroclor 1221	µg/L	NS	*0.083 U*	--	*0.083 U*	*0.083 U*	--	--	*0.083 U*
Aroclor 1232	µg/L	NS	*0.083 U*	--	*0.083 U*	*0.083 U*	--	--	*0.083 U*
Aroclor 1242	µg/L	NS	*0.083 U*	--	*0.083 U*	*0.083 U*	--	--	*0.083 U*
Aroclor 1248	µg/L	NS	*0.083 U*	--	*0.083 U*	*0.083 U*	--	--	*0.083 U*
Aroclor 1254	µg/L	NS	*0.083 U*	--	*0.083 U*	*0.083 U*	--	--	*0.083 U*
Aroclor 1260	µg/L	NS	*0.083 U*	--	**0.57**	**0.194**	--	--	*0.083 U*
Aroclor 1262	µg/L	NS	*0.083 U*	--	*0.083 U*	*0.083 U*	--	--	*0.083 U*
Aroclor 1268	µg/L	NS	*0.083 U*	--	*0.083 U*	*0.083 U*	--	--	*0.083 U*
Total PCBs	µg/L	**0.00012**	*0.083 U*	--	**0.57**	**0.194**	--	--	*0.083 U*
Metals, Total									
Aluminum	mg/L	NS	*0.0261 U*	--	*0.0193 U*	*0.0204 U*	--	--	--
Antimony	mg/L	NS	*0.00400 U*	--	*0.00400 U*	*0.00400 U*	--	--	--
Arsenic	mg/L	NS	**0.00049 J**	--	**0.00039 J**	**0.00054**	--	--	--
Barium	mg/L	NS	**0.06442**	--	**0.06078**	**0.0604**	--	--	--
Beryllium	mg/L	NS	*0.00050 U*	--	*0.00050 U*	*0.00050 U*	--	--	--
Cadmium	mg/L	NS	*0.00020 U*	--	*0.00020 U*	*0.00020 U*	--	--	--
Calcium	mg/L	NS	**92.8**	--	**91.4**	**93.5**	--	--	--
Chromium	mg/L	NS	*0.00100 U*	--	*0.00100 U*	*0.00100 U*	--	--	--
Cobalt	mg/L	NS	*0.00050 U*	--	*0.00050 U*	*0.00050 U*	--	--	--
Copper	mg/L	NS	**0.00159**	--	**0.00159**	**0.0014**	--	--	--
Cyanide	mg/L	NS	*0.250 U*	--	*0.005 U*	**0.003 J**	--	--	--
Hardness	mg/L	NS	--	**363.5**	--	--	**360.4**	**358**	--
Iron	mg/L	NS	**0.0558**	--	**0.0562**	**0.0542**	--	--	--
Lead	mg/L	NS	*0.00100 U*	--	*0.00100 U*	*0.00100 U*	--	--	--
Magnesium	mg/L	NS	**18.2**	--	**17.4**	**18**	--	--	--
Manganese	mg/L	NS	**0.01432**	--	**0.01383**	**0.0139**	--	--	--
Mercury	mg/L	0.0000026	*0.00020 U*	--	*0.00020 U*	*0.00020 U*	--	--	--
Nickel	mg/L	NS	**0.00098 J**	--	**0.00097 J**	**0.00104 J**	--	--	--
Potassium	mg/L	NS	**2.89**	--	**2.71**	**2.83**	--	--	--
Selenium	mg/L	NS	*0.00500 U*	--	*0.00500 U*	*0.00500 U*	--	--	--
Silver	mg/L	NS	*0.00040 U*	--	*0.00040 U*	*0.00040 U*	--	--	--
Sodium	mg/L	NS	**32**	--	**40.2**	**40.9**	--	--	--
Thallium	mg/L	NS	*0.00050 U*	--	*0.00050 U*	*0.00050 U*	--	--	--
Vanadium	mg/L	NS	*0.00500 U*	--	*0.00500 U*	*0.00500 U*	--	--	--
Zinc	mg/L	NS	**0.00342 J**	--	*0.01000 U*	*0.01000 U*	--	--	--
Per- and Polyfluoroalkyl Substances (PFAS)									
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFO	ng/l	NS	*1.98 U*	--	*1.94 U*	*1.92 U*	--	--	--
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMe	ng/l	NS	*1.98 U*	--	*1.94 U*	*1.92 U*	--	--	--
Perfluorobutanesulfonic Acid (PFBS)	ng/l	NS	*1.98 U*	--	*1.94 U*	*1.92 U*	--	--	--
Perfluorodecanoic Acid (PFDA)	ng/l	NS	*1.98 U*	--	*1.94 U*	*1.92 U*	--	--	--
Perfluorododecanoic Acid (PFDoA)	ng/l	NS	*1.98 U*	--	*1.94 U*	*1.92 U*	--	--	--
Perfluoroheptanoic Acid (PFHpA)	ng/l	NS	*1.98 U*	--	*1.94 U*	*1.92 U*	--	--	--
Perfluorohexane Sulfonic Acid (PFHxS)	ng/l	NS	*1.98 U*	--	*1.94 U*	*1.92 U*	--	--	--
Perfluorohexanoic Acid (PFHxA)	ng/l	NS	*1.98 U*	--	*1.94 U*	*1.92 U*	--	--	--
Perfluorononanoic Acid (PFNA)	ng/l	NS	*1.98 U*	--	*1.94 U*	*1.92 U*	--	--	--
Perfluorooctanesulfonic Acid (PFOS)	ng/l	NS	*1.98 U*	--	*1.94 U*	*1.92 U*	--	--	--
Perfluorooctanoic Acid (PFOA)	ng/l	NS	*1.98 U*	--	*1.94 U*	*1.92 U*	--	--	--
Perfluorotetradecanoic Acid (PFTA)	ng/l	NS	*1.98 U*	--	*1.94 U*	*1.92 U*	--	--	--
Perfluorotridecanoic Acid (PFTrDA)	ng/l	NS	*1.98 U*	--	*1.94 U*	*1.92 U*	--	--	--

Notes and Abbreviations:
-- = Not analyzed
NS = No Standard
µg/L = micrograms per liter
µg/l = micrograms per liter
mg/L = milligrams per liter
ng/l = nanogram per liter
Results shown in bold font indicate a compound was detectedabove the laboratory reporting detection limit.
N = Field sample
FD = Field Duplicate
U = Compound not detected at concentrations above the laboratory reporting detection limit, the laboratory reporting detection limit is shown.
UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.
All analyses performed by Alpha Woods Hole Laboratories.
NY-TOGS 1.1.1-SW_WILDLIFE PROTECTION

Table 6
Summary of TCLP Waste Characterization Results for Investigation-Derived Wastes
G.W. Lisk Clifton Springs Facility
2 South Street, Clifton Springs, New York

			Sample ID:	DM-WC-01(11212017)	PW-WC-01(11212017)	SC-WC-01(11212017)
			Sample Date:	21-Nov-17	21-Nov-17	21-Nov-17
			Matrix:	Drilling Mud	Purge Water	Soil Cuttings
Analyte	**CAS No.**	**TCLP RL**	**Units**			
Solids, Total		-		-	-	66.5
Cyanide, Reactive		250	mg/kg	< 1.0	< 1.0	< 10.
Sulfide, Reactive		500	mg/kg	< 1.0	< 1.0	< 10
Ignitability		-		-	-	NI
TCLP Metals by USEPA Method 6010C/7470A						
Arsenic	7440-38-2	5	mg/l	< 1.00	< 1.00	< 1.00
Barium	7440–39–3	100	mg/l	0.127 J	< 0.500	0.415 J
Cadmium	7440–43–9	1	mg/l	< 0.100	< 0.100	< 0.100
Chromium	7440–47–3	5	mg/l	< 0.200	< 0.200	0.021 J
Lead	7439–92–1	5	mg/l	< 0.500	< 0.500	< 0.500
Mercury	7439–97–6	0.2	mg/l	0.0008 J	0.0007 J	0.0008 J
Selenium	7782–49–2	1	mg/l	< 0.500	< 0.500	0.044 J
Silver	7440–22–4	5	mg/l	< 0.100	< 0.100	< 0.100
TCLP Volatile Organic Compounds (VOCs) by USEPA Method 8260C						
Chloroform	67–66–3	6	mg/l	0.0034	0.0052	< 0.0075
Carbon tetrachloride	56–23–5	0.5	mg/l	< 0.0005	< 0.0005	< 0.005
Tetrachloroethene	127–18–4	0.7	mg/l	0.0027	0.0043	< 0.005
Chlorobenzene	108–90–7	100	mg/l	< 0.0005	< 0.0005	< 0.005
1,2-Dichloroethane	107–06–2	0.5	mg/l	< 0.0005	< 0.0005	< 0.005
Benzene	71–43–2	0.5	mg/l	0.00022 J	0.0004 J	< 0.005
Vinyl chloride	75–01–4	0.2	mg/l	< 0.001	< 0.001	< 0.01
1,1-Dichloroethene	75–35–4	0.7	mg/l	0.0012	0.0002 J	< 0.005
Trichloroethene	79–01–6	0.5	mg/l	0.12	0.025	0.015
1,4-Dichlorobenzene	106–46–7	7.5	mg/l	< 0.0025	< 0.0025	< 0.025
2-Butanone (MEK)	78–93–3	200	mg/l	0.0049 J	0.012	< 0.05
TCLP Herbicides by USEPA Method 8151A						
2,4-D	94–75–7	10	mg/l	< 0.011	< 0.01	< 0.245
2,4,5-T	93-76-5	-	mg/l	< 0.0022	< 0.002	< 0.245
2,4,5-TP (Silvex)	93–72–1	1	mg/l	< 0.0022	< 0.002	< 0.245
TCLP Semi-Volatile Organic Compounds (SVOCs) by USEPA Method 8270D						
Hexachlorobenzene	118–74–1	0.13	mg/l	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	121–14–2	0.13	mg/l	< 0.025	< 0.025	< 0.025
Hexachlorobutadiene	87–68–3	0.5	mg/l	< 0.01	< 0.01	< 0.01
Hexachloroethane	67–72–1	3	mg/l	< 0.01	< 0.01	< 0.01
Nitrobenzene	98–95–3	2	mg/l	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	88–06–2	2	mg/l	< 0.025	< 0.025	< 0.025
Pentachlorophenol	87–86–5	100	mg/l	< 0.05	< 0.05	< 0.05
2-Methylphenol	95–48–7	200	mg/l	< 0.025	< 0.025	< 0.025
3-Methylphenol/4-Methylphenol	108–39–4 / 106–44–5	200	mg/l	< 0.025	< 0.025	< 0.025
2,4,5-Trichlorophenol	95–95–4	400	mg/l	< 0.025	< 0.025	< 0.025
Pyridine	110–86–1	5	mg/l	< 0.018	< 0.018	< 0.018
TCLP Organochlorine Pesticides by USEPA Method 8081B						
Delta-BHC	319-68-8	-	mg/l	< 0.00002	< 0.00002	< 0.00235
Lindane	58–89–9	0.4	mg/l	< 0.00002	< 0.00002	< 0.00098
Alpha-BHC	319-84-6	-	mg/l	< 0.00002	< 0.00002	< 0.00098
Beta-BHC	31-85-7	-	mg/l	< 0.00002	< 0.00002	< 0.00235
Heptachlor	76–44–8	0.008	mg/l	< 0.00002	< 0.00002	< 0.00118
Aldrin	309-00-2	-	mg/l	< 0.00002	< 0.00002	< 0.00235
Heptachlor epoxide	76–44–8	0.008	mg/l	< 0.00002	< 0.00002	< 0.00441
Endrin	72–20–8	0.02	mg/l	< 0.00004	< 0.00004	< 0.00098
Endrin aldehyde	7421-93-4	-	mg/l	< 0.00004	< 0.00004	< 0.00294
Endrin ketone	53494-70-5	-	mg/l	< 0.00004	< 0.00004	< 0.00235
Dieldrin	60-57-1	-	mg/l	< 0.00004	< 0.00004	< 0.00147
4,4'-DDE	72-55-9	-	mg/l	< 0.00004	< 0.00004	< 0.00235
4,4'-DDD	72-54-8	-	mg/l	< 0.00004	< 0.00004	< 0.00235
4,4'-DDT	50-29-3	-	mg/l	0.000009 J	< 0.00004	< 0.00441
Endosulfan I	115-29-7	-	mg/l	< 0.00002	< 0.00002	< 0.00235
Endosulfan II	33213-65-9	-	mg/l	< 0.00004	< 0.00004	0.00314
Endosulfan sulfate	1031-07-8	-	mg/l	< 0.00004	< 0.00004	< 0.00098
Methoxychlor	72–43–5	10	mg/l	< 0.0002	< 0.0002	< 0.00441
Toxaphene	8001–35–2	0.5	mg/l	< 0.0002	< 0.0002	< 0.0441
cis-Chlordane	5103-71-9	-	mg/l	< 0.00002	< 0.00002	< 0.00294
trans-Chlordane	5103-74-2	-	mg/l	< 0.00002	< 0.00002	< 0.00294
Chlordane	57–74–9	0.03	mg/l	< 0.0002	< 0.0002	< 0.0191

Notes:

mg/L - milligram per liter

mg/kg - milligram per kilogram

NI - no ignition

J - Estimated value. The target analyte concentration is below the quantitation limi (RL), but above the Method Detection Limit (MDL)

TCLP - Toxicity characteristic leaching procedure

RL - regulatory limit

Table 7
Summary of SC Results by Area of Potenital Concern
G.W Lisk Facility
2 South Street, Clifton Springs, New York

AOPC	Description	Soil Samples	Groundwater	Air	AOPC Closed	Rationale
1	Former Outfall 001	MW-04S	MW-04S	VI-02	No	No exceedances of applicable SCOs. One VOC and one SVOC exceedance in bedrock groundwater.
			MW-04D	VI-05		
2	Former Outfall 006	MW-04S	MW-04S	VI-02	No	No exceedances of applicable SCOs. One VOC and one SVOC exceedance in bedrock groundwater.
			MW-04D			
3	Former Outfall 009	NS	NS	NS	Unknown	Unable to safely access B-05 location due to overhead and subsurface utilities
4	Former Outfall 011	MW-02D	MW-02S	VI-02, VI-03	No	Some soil and groundwater exceedances of VOCs and metals.
			MW-02D			
		MW-03D	MW-03S			
			MW-03D			
5	Former Outfall 012	MW-1S	MW-01S	VI-01	No	No exceedances of applicable SCOs. Some VOC exceedances in groundwater.
		B-04	MW-01D			
6	Southwestern Parking Lot	B-01	NS	NS	No	Some SVOC and metal exceedances in soil.
		B-02				
		B-03				
7	Former Tank Area	MW-04S	MW-04S	VI-02	No	No exceedances of applicable SCOs. One VOC and one SVOC exceedance in bedrock groundwater.
			MW-04D			
8	Former TCE Degreaser with Sump	MW-04S	MW-04S	VI-02	No	No exceedances of applicable SCOs. One VOC and one SVOC exceedance in bedrock groundwater.
			MW-04D			
9	Former Water Supply Wells	NS	PW-A	NS	Yes	No exceedances of applicable groundwater standards.
			PW-B			

Notes and Abbreviations:

NS = Not Sampled.

SCOs = 6 NYCRR Part 375 Industrial Soil Cleanup Objectives

SVOCs = semivolatile organic compounds

VOCs = volatile organic compounds

Appendix A
Soil Boring Logs

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-01**
ERM PROJECT # 0346372
SHEET 1 OF 6

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ C.Payne
DRILLING FOREMAN	L. Petch	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/11/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	05/12/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	51 ft
NORTHING	1077848.39	BOREHOLE DIAMETER	2 in
EASTING	672305.99		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	638.52 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[asphalt]							
		GRAVELLY SAND (GP-SP) poorly graded, fine grained SAND; subangular, fine to medium grained GRAVEL; loose, trace silt, dry to moist, grayish brown (10YR 5/2)	0.3	GP-SP					
		SILTY GRAVEL (GM) subangular, fine to coarse grained GRAVEL; loose, trace fine sand, dry to moist, grayish brown (10YR 5/2)	1	GM					
2		SANDY SILT (MLS) fine grained SAND; medium dense, little cobbles, some roots, some fine to medium gravel; moist to wet, mottled, brown to dark brown (10YR 4/3)	2	MLS			60/60	0	
	635	SANDY SILT (MLS) fine grained SAND; soft, some medium to coarse gravel, moist to wet, grayish brown (10YR 5/2)	3	MLS					
4		SANDY SILT (MLS) fine grained SAND; medium dense, some fine to medium subround gravel, moist to wet, reddish brown (5YR 5/4)	4	MLS				0.1	
		SANDY SILT (MLS) fine grained SAND; medium dense, moist, grayish brown (10YR 5/2), [light gray sand at top]	5	MLS				21.7	GWL-B-01(5-6) [(5-6ft)]
6		SANDY SILT (MLS) fine grained SAND; medium dense, some fine to medium subangular gravel, moist to dry, mottled, dark gray to light gray (10YR 5/1), organic-like odor, [some dark staining]	6	MLS			38/36	3.1	
		GRAVELLY SAND (GP-SP) fine grained SAND; loose, some rock fragments, dry, dark gray to light gray (10YR 5/1)	7	GP-SP					
		SANDY SILT (MLS) fine grained SAND; medium dense, trace wood, dry, reddish brown (5YR 5/4), organic-like odor	7.5	MLS				0.4	
8		SANDY SILT (MLS) fine grained SAND; medium dense, some rock fragments, dry to moist, dark reddish brown (5YR 2.5/2), organic-like odor	8	MLS			48/48	3.4	
	630	SANDY SILT (MLS) fine grained SAND; medium dense, some fine to medium subround gravel, moist, brown (10YR 4/3), organic-like odor, [some dark staining, trace oxidation]	9	MLS				6.7	

REMARKS:

Hand Auger

Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-01**
ERM PROJECT # 0346372
SHEET 2 OF 6

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ C.Payne
DRILLING FOREMAN	L. Petch	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/11/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	05/12/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	51 ft
NORTHING	1077848.39	BOREHOLE DIAMETER	2 in
EASTING	672305.99		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	638.52 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (MLS) fine grained SAND; medium dense, some fine to medium subangular gravel, trace cobbles, some wood; moist to wet, grayish brown (10YR 5/2), organic-like odor, [trace oxidation]		MLS			48/48	3.5	
		SANDY SILT (MLS) fine grained SAND; medium dense, some fine to medium subangular gravel, some roots, moist, mottled, grayish brown (10YR 5/2), organic-like odor	11	MLS				2.2	
12		SANDY SILT (MLS) fine grained SAND; medium dense, some fine to medium subangular gravel, moist, mottled, dark gray to reddish brown (5YR 3/2), organic-like odor	12	MLS				4.2	
	625	CLAYEY SILT (MH) firm, trace fine to medium subangular gravel, moist, reddish brown (5YR 4/3), organic-like odor	13.5	MH				0.2	
14		SANDY SILT (MLS) fine grained SAND; medium dense, moist, mottled, reddish brown (5YR 4/3), organic-like odor	14	MLS			48/48		
		SAND (SP) fine to medium grained SAND; medium dense, moist, reddish brown (5YR 4/3), [sand lense]	14.8 14.9 15	SP MLS SM					
		SANDY SILT (MLS) fine grained SAND; medium dense, some fine to coarse subangular gravel, moist, reddish brown (5YR 4/3)	15.5	CL-ML					
16		SILTY SAND (SM) fine grained SAND; dense, some wood, some fine to medium subangular gravel, moist, reddish brown (5YR 4/3), [trace dark staining]	16	MLS					
		SILTY CLAY (CL-ML) low plasticity, dense, trace roots, dry to moist, light gray (10YR 7/1)	17					0	
		SANDY SILT (MLS) fine grained SAND; loose, some fine to coarse subangular gravel, moist to wet, dark brown (10YR 3/3), organic-like odor	17.3	MLS					
		COBBLES							
18		SANDY SILT (MLS) fine grained SAND; medium dense, trace clay, some fine to medium	18	MLS			42/48		
	620	subround gravel, moist, reddish brown (5YR 4/3)							
		SANDY SILT (MLS) fine grained SAND; medium dense, some brick fragments, some wood, trace cobbles; moist, reddish brown (5YR 4/3), organic-like odor	19						
		COBBLES	19.3	MLS					
		SANDY SILT (MLS) fine grained SAND; medium dense, moist to wet, mottled, reddish							

REMARKS:

Hand Auger

Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-01**
ERM PROJECT # 0346372
SHEET 3 OF 6

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ C.Payne
DRILLING FOREMAN	L. Petch	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/11/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	05/12/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	51 ft
NORTHING	1077848.39	BOREHOLE DIAMETER	2 in
EASTING	672305.99		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	638.52 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		brown (5YR 4/3), organic-like odor, [some oxidation]	20						
		COBBLES	20.3						
		SILTY SAND (SM) fine grained SAND; soft, some roots, moist, dark brown (10YR 3/3)		SM					
		SAND (SP) poorly graded, fine grained SAND; loose, trace silt, trace fine subangular gravel, moist, mottled, dark brown (10YR 3/3)	21	SP					
			21.5						
22		SAND (SP) fine grained SAND; loose, moist, pale brown (10YR 6/3)					45/48		
				SP					
	615								
24		SAND (SP) fine grained SAND; loose, moist, light brown (10YR 6/3)	24						
				SP					
		SAND (SW) well graded, fine to medium grained SAND; loose, dry to moist, light brown (10YR 6/3)	25					0	
26							44/48		
				SW					
28									
	610						42/48		

REMARKS:

Hand Auger

Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-01**
ERM PROJECT # 0346372
SHEET 4 OF 6

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ C.Payne
DRILLING FOREMAN	L. Petch	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/11/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	05/12/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	51 ft
NORTHING	1077848.39	BOREHOLE DIAMETER	2 in
EASTING	672305.99		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	638.52 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SAND (SW) well graded, fine to medium grained SAND; loose, dry to moist, light brown (10YR 6/3)*(Continued)*		SW			42/48		
32									
		SAND (SP) fine grained SAND; loose, moist, light brown (10YR 6/3)	33	SP					
	605	GRAVELLY SAND (GP-SP) well graded, fine to medium grained SAND; subangular, fine to medium grained GRAVEL; loose, moist, light brown (10YR 6/3)	33.3	GP-SP			48/48		
34									
		SAND (SP) well graded, fine to medium grained SAND; loose, moist, light brown (10YR 6/3)	35	SP				0	
36		SAND (SP) well graded, fine to coarse grained SAND; loose, some fine subround gravel, moist, light brown (10YR 6/3)	36	SP			45/48		
38		SAND (SP) fine grained SAND; medium dense, trace chert, trace fine gravel, moist, reddish brown (5YR 4/3)	38	SP					
	600	CLAY (CL) low plasticity, stiff, moist, reddish brown (5YR 4/3)	38.2	CL					
		GRAVELLY SAND (GP-SP) fine to medium grained SAND; subrounded, fine to medium grained GRAVEL; medium dense, moist, reddish brown (5YR 4/3)	38.6	GP-SP					
		CLAY (CL) low plasticity, dense, some fine sand lenses, dry to moist, mottled, reddish	39	CL					
			39.5	SP					

REMARKS:

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Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-01**
ERM PROJECT # 0346372
SHEET 5 OF 6

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ C.Payne
DRILLING FOREMAN	L. Petch	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/11/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	05/12/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	51 ft
NORTHING	1077848.39	BOREHOLE DIAMETER	2 in
EASTING	672305.99		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	638.52 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		brown (5YR 4/3)	40						
		SAND (SP) fine to medium grained SAND; loose, moist, reddish brown (5YR 4/3)		GP-SP					
		GRAVELLY SAND (GP-SP) poorly graded, fine to medium grained SAND; subangular, fine to coarse grained GRAVEL; medium dense, wet, brown (10YR 4/3)	40.7	CL					
		CLAY (CL) medium dense, moist, reddish brown (5YR 4/3)	40.9						
42		SAND (SP) poorly graded, fine to medium grained SAND; loose, trace fine subround gravel, wet, brown (10YR 4/3)		SP			48/48		
		SAND (SP) fine grained SAND; medium dense, trace fine subround gravel, wet, brown (10YR 4/3)	43	SP					
595		SANDY SILT (MLS) firm, wet, light brown (10YR 6/3)	43.5	MLS					
			43.8	SP					
44		SAND (SP) fine grained SAND; firm, wet, brown (10YR 4/3), [some dark discoloration]	44						
		SAND (SP) fine grained SAND; dense, moist to wet, light brown (10YR 6/3)		SP					
		SAND (SP) fine grained SAND; medium dense, some fine to medium subround gravel, moist to wet, light brown (10YR 6/3)	45	SP				0	
46		GRAVELLY SAND (GP-SP) poorly graded, fine to medium grained SAND; subangular, fine to coarse grained GRAVEL; medium dense, trace silt, moist, mottled, brown (10YR 4/3), [trace oxidation]	46	GP-SP			15/48		
48									
590		GRAVELLY SILT (GM) dense, some fine sand, some fine to coarse subangular gravel, some cobbles; wet, brown (10YR 4/3)	49	GM			18/36		

REMARKS:

Hand Auger

Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-01**
ERM PROJECT # 0346372
SHEET 6 OF 6

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ C.Payne
DRILLING FOREMAN	L. Petch	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/11/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	05/12/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	51 ft
NORTHING	1077848.39	BOREHOLE DIAMETER	2 in
EASTING	672305.99		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	638.52 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SILTY SAND (SM) fine grained SAND; dense, some fine to coarse subangular gravel, some rock fragments, saturated, brown (10YR 4/3), [EOB @ 51ft.]	50	SM			18/36	0	
			51						
52									
	585								
54									
56									
58									
	580								

REMARKS:

Hand Auger

Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-02**
ERM PROJECT # 0346372
SHEET 1 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ C.Payne
DRILLING FOREMAN	L. Petch	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/11/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	05/12/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	28 ft
NORTHING	1077753.3	BOREHOLE DIAMETER	2 in
EASTING	672353.35		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	639.42 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[asphalt]							
		SANDY GRAVEL (GP-SP) fine grained SAND; subangular, fine to coarse grained GRAVEL; loose, trace silt, moist, reddish brown (5YR 4/3)	0.3	GP-SP				0	
		SANDY SILT (MLS) fine grained SAND; medium dense, some clay, some roots, some fine to medium subangular gravel; moist, dark reddish brown (5YR 3/3), organic-like odor	1	MLS				0.5	
2		SANDY SILT (MLS) fine grained SAND; loose, trace asphalt, some roots, some rock fragments; moist, reddish brown (5YR 4/3), organic-like odor	2	MLS			60/60	0.2	
		SILT (ML) loose, some wood, some asphalt, moist, dark reddish brown (5YR 3/3), organic-like odor	3	ML				1.8	
4		CLAYEY SILT (CL-ML) medium dense, some fine sand, some fine to coarse subangular gravel, some cobbles	4	CL-ML				0.9	
	635	GRAVELLY SAND (GP-SP) fine grained SAND; fine grained GRAVEL; medium dense, some silt, saturated, gray (10YR 5/1)	5	GP-SP				1.9	
6		SANDY SILT (MLS) fine grained SAND; medium dense, some fine to coarse subangular gravel, moist, gray (10YR 5/1), organic-like odor	6	MLS			36/36	2	
		SANDY SILT (MLS) fine grained SAND; medium dense, trace clay, some fine to medium subangular gravel, moist, grayish brown (10YR 5/2), organic-like odor	7	MLS					
		SANDY SILT (MLS) fine grained SAND; dense, some clay, some fine to medium subangular gravel, moist, reddish brown (5YR 4/3), organic-like odor	7.5	MLS				2.1	
8		SANDY SILT (MLS) fine to coarse grained SAND; medium dense, some clay, some fine to medium subangular gravel, some wood; moist, mottled, grayish brown (10YR 5/2), organic-like odor, [some dark discloloration]	8	MLS			30/48		
	630							2.9	GWL-B-02(9-11) [(9-11ft)]

REMARKS:

Hand Auger

Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-02**
ERM PROJECT # 0346372
SHEET 2 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ C.Payne
DRILLING FOREMAN	L. Petch	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/11/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	05/12/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	28 ft
NORTHING	1077753.3	BOREHOLE DIAMETER	2 in
EASTING	672353.35		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	639.42 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SILTY SAND (SM) fine grained SAND; medium dense, trace fine to coarse gravel, moist to wet, grayish brown (10YR 5/2), organic-like odor		SM				2.9	GWL-B-02(9-11) [(9-11ft)]
		SILTY SAND (SM) fine grained SAND; medium dense, trace fine to coarse subangular gravel, some wood, trace cobbles; moist to wet, grayish brown (10YR 5/2), organic-like odor	11	SM			30/48	2.6	
12		SANDY SILT (MLS) fine grained SAND; medium dense, some fine to medium subangular gravel, some asphalt, some roots; dry to moist, dark brown (10YR 3/3), [some glass, some wire debris, some wood]	12	MLS				0.6	
								2	
14		SANDY SILT (MLS) fine grained SAND; medium dense, some fine subangular gravel, moist to dry, mottled, grayish brown (10YR 5/2)	14	MLS			47/48	1.5	
	625	SILTY SAND (SM) fine grained SAND; medium dense, trace fine to medium subangular gravel, dry to moist, light brown (10YR 6/3)	15	SM				1.4	
		SANDY SILT (MLS) fine grained SAND; medium dense, trace clay, trace fine subangular gravel, dry to moist, mottled, brown (10YR 4/3), [some oxidation]	15.5	MLS					
16		SAND (SP) fine grained SAND; medium dense, trace silt, moist to dry, mottled, light brown (10YR 6/3)	16	SP				1.1	
		SAND (SP) poorly graded, fine to medium grained SAND; medium dense, trace silt, moist to dry, grayish brown (10YR 5/2)	16.5	SP					
		SANDY SILT (MLS) fine grained SAND; dense, some fine to medium subround gravel, moist, mottled, reddish brown (5YR 4/3), [some oxidation]	17	MLS				1.5	
18		SAND (SP) fine grained SAND; medium dense, moist to dry, light brown (10YR 6/3)	18	SP			42/48	0.8	
		SAND (SP) fine grained SAND; medium dense, moist to dry, light brown (10YR 6/3)	19	SP				0.1	
	620								

REMARKS:

Hand Auger

Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-02**
ERM PROJECT # 0346372
SHEET 3 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ C.Payne
DRILLING FOREMAN	L. Petch	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/11/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	05/12/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	28 ft
NORTHING	1077753.3	BOREHOLE DIAMETER	2 in
EASTING	672353.35		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	639.42 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SAND (SP) poorly graded, fine to medium grained SAND; medium dense, dry to moist, light brown (10YR 6/3)	20	SP			36/48	0	
22									
24	615								
26		SAND (SP) well graded, fine to coarse grained SAND; medium dense, some fine to medium subround gravel, dry to moist, light brown to gray (10YR 5/2), [EOB @ 28ft]	26	SP			47/48		
28			28						
	610								

REMARKS:

Hand Auger

Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-03**
ERM PROJECT # 0346372
SHEET 1 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ C.Payne
DRILLING FOREMAN	L. Petch	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/11/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	05/11/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	24 ft
NORTHING	1077722.3	BOREHOLE DIAMETER	2 in
EASTING	672401.76		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	637.70 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[asphalt]							
		SANDY GRAVEL (GP-SP) fine grained SAND; angular, fine to coarse grained GRAVEL; loose, trace silt, dry to moist, grayish brown (10YR 5/2)	0.3	GP-SP				0.4	
		CLAYEY SILT (CL-ML) medium dense, some roots, trace asphalt, some fine to coarse subangular gravel; moist, reddish brown (5YR 4/3)	1	CL-ML					
2		CLAYEY SILT (CL-ML) non plastic, medium dense, some roots, trace asphalt, little coarse subround gravel; moist, reddish brown (5YR 4/3)	2	CL-ML			60/60		
	635	SILTY SAND (MLS) fine grained SAND; medium dense, trace fine to medium subround gravel, trace roots, moist to wet, reddish brown (5YR 4/3)	3	MLS				0	
4		SANDY SILT (SM) fine grained SAND; medium dense, some fine to medium subround gravel, moist to wet, reddish brown (5YR 4/3)	4	SM					
		SANDY SILT (MLS) fine grained SAND; dense, some fine to coarse subangular gravel, trace roots, moist, dark gray (10YR 4/1)	5	MLS					
6		SANDY SILT (MLS) fine grained SAND; medium dense, some fine to coarse subangular gravel, moist to wet, mottled, brown (10YR 4/3)	6	MLS			25/36	0.4	
		SILTY SAND (SM) fine grained SAND; medium dense, some fine to coarse subangular gravel, wet, mottled, brown to dark brown (10YR 3/3), [trace oxidation]	7	SM					
	630								
8		SANDY SILT (MLS) fine grained SAND; medium dense, trace organics, some fine to coarse subangular gravel, moist to wet, mottled, grayish brown to dark brown (10YR 4/2)	8	MLS			46/48	1.2	GWL-B-03(8-10) [(8-10ft)]
								1.3	

REMARKS:

Hand Auger

Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-03**
ERM PROJECT # 0346372
SHEET 2 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ C.Payne
DRILLING FOREMAN	L. Petch	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/11/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	05/11/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	24 ft
NORTHING	1077722.3	BOREHOLE DIAMETER	2 in
EASTING	672401.76		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	637.70 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SILTY SAND (SM) fine grained SAND; medium dense, some fine to medium subangular gravel, some cobbles, moist, reddish brown (5YR 4/3)		SM				0.9	
		SAND (SP) fine grained SAND; medium dense, trace organics, moist to wet, light brown (10YR 6/3), [trace oxidation]	10.7	SP			46/48	0.3	
12		GRAVELLY SAND (GP-SP) fine grained SAND; subrounded, fine to medium grained GRAVEL; medium dense, trace silt, moist to wet, light brown (10YR 6/3)	12	GP-SP				1.1	
	625	SILTY SAND (SM) fine grained SAND; medium dense, some fine to medium subround gravel, some clay, moist to wet, light brown (10YR 6/3)	13	SM				0.9	
		GRAVELLY SAND (GP-SP) fine grained SAND; coarse grained GRAVEL; loose, moist, brown (10YR 4/3)	13.5	GP-SP					
14		SAND (SP) fine grained SAND; dense, trace silt, moist, mottled, brown (10YR 4/3)	13.7	SP			43/48		
		SANDY SILT (MLS) fine grained SAND; dense, trace fine gravel, moist, mottled, light brown (10YR 6/3)	14	MLS				0.5	
		SAND (SP) fine grained SAND; medium dense, trace silt, moist, light brown (10YR 6/3)	14.5	SP				0.3	
16		SAND (SP) fine grained SAND; medium dense, dry to moist, light brown (10YR 6/3)	16					0.8	
	620							0.3	
18				SP			43/48		
								0	

REMARKS:

Hand Auger

Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
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PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-03**
ERM PROJECT # 0346372
SHEET 3 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ C.Payne
DRILLING FOREMAN	L. Petch	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/11/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	05/11/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	24 ft
NORTHING	1077722.3	BOREHOLE DIAMETER	2 in
EASTING	672401.76		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	637.70 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
				SP					
		SANDY SILT (MLS) fine grained SAND; dense, some clay, some fine to medium subangular gravel, moist, reddish brown (5YR 4/3)	20.3	MLS					
		SAND (SP) fine grained SAND; medium dense, moist, light brown (10YR 6/3), [EOB @ 24ft.]	21.5	SP			47/48	0	
22	615								
24			24						
26									
28	610								

REMARKS:

Hand Auger

Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
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PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-04**
ERM PROJECT # 0346372
SHEET 1 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	R. Trask	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	07/17/2017

HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	20.5 ft
NORTHING	1078028.61	BOREHOLE DIAMETER	2 in
EASTING	672332.97		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	605.93 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	SPT	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[asphalt]	0.3							
	605	GRAVELLY SAND (GP-SP) poorly graded, fine to medium grained SAND; rounded, fine to coarse grained GRAVEL; loose, dry, brown (10YR 4/3)		GP-SP					0.5	
		GRAVELLY SAND (GP-SP) fine grained SAND; subrounded, fine to medium grained GRAVEL; loose, trace silt, dry to moist, brown (10YR 4/3)	1	GP-SP					0.8	
2		GRAVELLY SAND (GP-SP) fine grained SAND; subangular, fine to medium grained GRAVEL; loose, some silt, some cobbles, some construction debris; dry to moist, brown (10YR 4/3)	2	GP-SP				60/60	0.1	
		SILTY SAND (SM) fine grained SAND; loose, trace fine to medium subround gravel, dry to moist, light brown (10YR 6/3)	3	SM						
4		SILTY SAND (SM) fine grained SAND; loose, some cobbles, some fine to medium subround gravel, dry to moist, brown to light brown (10YR 4/3)	4	SM						
		GRAVELLY SAND (GP-SP) poorly graded, fine grained SAND; subangular, fine to medium grained GRAVEL; loose, dry, brown (10YR 4/3)	5	GP-SP					0	
6	600							24/36	0.1	
8		SILTY SAND (SM) fine grained SAND; loose, some fine to medium subangular gravel, dry, reddish brown (5YR 4/3)	8	SM			5 22 15 15	15/24	0.2	
		GRAVELLY SAND (GP-SP) fine grained SAND; subangular, fine to medium grained GRAVEL; loose, dry to moist, brown (10YR 4/3)	9	GP-SP					0.1	

REMARKS:

Hand Auger Split Spoon

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-04**
ERM PROJECT # 0346372
SHEET 2 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	R. Trask	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	07/17/2017

HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	20.5 ft
NORTHING	1078028.61	BOREHOLE DIAMETER	2 in
EASTING	672332.97		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	605.93 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	SPT	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		GRAVELLY SAND (GP-SP) fine grained SAND; subangular, fine to medium grained GRAVEL; loose, some silt, moist, brown (10YR 4/3)		GP-SP			4 5 3 3	9/24		
	595	GRAVELLY SAND (GP-SP) fine grained SAND; subrounded, fine to medium grained GRAVEL; loose, some silt, moist, brown (10YR 4/3)	11	GP-SP						
12		SANDY SILT (MLS) fine grained SAND; firm, trace clay, some fine subangular gravel, moist, reddish brown (5YR 4/3)	12	MLS			5 12 17 20	6/24		
14		SANDY SILT (MLS) fine grained SAND; firm, trace coarse subangular, wet, grayish brown (10YR 5/2)	14	MLS			10 40 40 38	12/24	0	
		SILTY SAND (SM) fine grained SAND; firm, wet, grayish brown (10YR 5/2)	15	SM						
		SILTY SAND (SM) fine grained SAND; firm, some fine to coarse angular gravel,	15.5	SM						
16	590	wet, brown (10YR 4/3)	16							
		SILTY SAND (SM) fine grained SAND; soft, saturated, brown (10YR 4/3)		SM			15 18 18 24	24/24		
		SANDY SILT (MLS) fine grained SAND; firm, wet, brown (10YR 4/3)	17	MLS						
		SAND (SP) poorly graded, fine to medium grained SAND; firm, wet, brown (10YR 4/3)	17.2	SP						
			17.5	MLS						
18		SANDY SILT (MLS) fine grained SAND; firm, wet, brown (10YR 4/3)	18							
		CLAY (CL) stiff, trace fine sand, moist, grayish brown (10YR 5/2)		CL			9 10 20 38	24/24		B-4(19-20.5) [(19-20.5ft)]
		SAND (SP) fine to medium grained SAND; soft, trace silt, trace coarse	19.8	SP						

REMARKS:

Hand Auger Split Spoon

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **B-04**
ERM PROJECT # 0346372
SHEET 3 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	R. Trask	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	Geoprobe 6610DT	FINISH	07/17/2017

HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	20.5 ft
NORTHING	1078028.61	BOREHOLE DIAMETER	2 in
EASTING	672332.97		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	605.93 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	SPT	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		subangular, wet to saturated, brown (10YR 4/3)	20	GP-SP		X	120	6/6	0	B-4(19-20.5) [(19-20.5ft)]
		GRAVELLY SAND (GP-SP) fine to medium grained SAND; subangular, fine to medium grained GRAVEL; firm, wet, dark brown (10YR 3/3), [EOB @ 20.5ft.]	20.5							
	585									
22										
24										
26	580									
28										

REMARKS:

Hand Auger Split Spoon

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-01S/D**
ERM PROJECT # 0346372
SHEET 1 OF 5

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	R. Trask	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	CME-55	FINISH	07/19/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	45 ft
NORTHING	1078013.64	BOREHOLE DIAMETER	2 in
EASTING	672361.09		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	606.43 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	SPT	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[asphalt]	0.3							
		GRAVELLY SAND (GP-SP) fine to medium grained SAND; subangular, fine to coarse grained GRAVEL; loose, dry, reddish brown (5YR 4/3), [asphalt]		GP-SP					0	
	605	GRAVELLY SAND (GP-SP) fine grained SAND; subangular, fine to coarse grained GRAVEL; loose, some silt, some brick fragments, some cobbles; dry to moist, reddish brown (5YR 4/3)	1	GP-SP					0.3	
2		SILTY SAND (SM) fine grained SAND; loose, some fine to medium subangular gravel, dry to moist, reddish brown (5YR 4/3)	2	SM				60/60	0.1	
4		SAND (SP) fine grained SAND; loose, some gravel, some cobbles, dry to moist, brown (10YR 4/3)	4	SP						
		GRAVELLY SAND (GP-SP) poorly graded, fine to medium grained SAND; subangular, fine grained GRAVEL; loose, dry to moist, brown (10YR 4/3)	5	GP-SP			1 2 2 3	23/24	0	
6	600	SAND (SW) poorly graded, fine to medium grained SAND; soft, dry to moist, brown (10YR 4/3)	7	SW			4 5 6 6	13/24		
8		SILTY SAND (SM) fine to medium grained SAND; soft, saturated, brown (10YR 4/3)	9	SM			3 2 1 1	24/24		GWL-MW-01S(9-10) [(9-10ft)]

REMARKS:

Hand Auger
No Recovery
Split Spoon
Rock Core

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
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PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-01S/D**
ERM PROJECT # 0346372
SHEET 2 OF 5

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	R. Trask	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	CME-55	FINISH	07/19/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	45 ft
NORTHING	1078013.64	BOREHOLE DIAMETER	2 in
EASTING	672361.09		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	606.43 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	SPT	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (MLS) fine grained SAND; firm, wet, brown (10YR 4/3)	10.2	MLS			3			
		SILTY SAND (SM) fine to medium grained SAND; firm, wet, brown (10YR 4/3), [well sorted]	10.5	SM			2	24/24		
			10.7	MLS			1			
		SANDY SILT (MLS) fine grained SAND; firm, wet, brown (10YR 4/3)	11	SM			1			
	595	SILTY SAND (SM) fine to medium grained SAND; firm, some fine subangular gravel, wet, brown (10YR 4/3)		MLS			1			
12		SANDY SILT (MLS) fine grained SAND; firm, trace clay, trace fine subangular gravel, wet, brown (10YR 4/3)	12	SM			7	22/24	0	
		SILTY SAND (SM) fine to medium grained SAND; soft, some fine subangular gravel, saturated, brown (10YR 4/3), [well sorted]	13	SP			7			
		SAND (SP) fine grained SAND; firm, saturated, brown to grayish brown (10YR 5/2)	13.5	SP			5			
14		SAND (SP) fine grained SAND; firm, some fine subangular gravel, saturated, brown (10YR 4/3)	14	SM			6	24/24	0.5	
		SANDY SAND (SM) fine grained SAND; firm, saturated, grayish brown to brown (10YR 5/2)	15	MLS			11			
		SANDY SILT (MLS) fine grained SAND; firm, saturated, pale brown (10YR 6/3)	15.5	CL			11		0.6	
		CLAY (CL) stiff, wet, brown (10YR 4/3)	15.6	MLS			16			
16		SANDY SILT (MLS) fine grained SAND; firm, saturated, brown (10YR 4/3)	16	SM			4	23/24		
	590	SILTY SAND (SM) fine grained SAND; medium dense, saturated, brown (10YR 4/3)	16.7	MLS			7		1.4	GWL-MW-01S(16-17) [(16-17ft)]
		SANDY SILT (MLS) fine grained SAND; firm, saturated, brown (10YR 4/3)	17	SM			9			
		SILTY SAND (SM) fine grained SAND; soft, saturated, brown (10YR 4/3)					17		0.1	
18		SANDY SILT (MLS) fine grained SAND; soft, trace clay, wet, brown (10YR 4/3)	18	MLS			18	24/24	0.5	
							16			
							21			
							20			
		SILTY CLAY (CL-ML) medium plasticity, medium dense, wet, brown (10YR 4/3)	19	CL-ML			5			
		CLAY (CL) high plasticity, firm, moist, brown (10YR 4/3)	19.5	CL			5	24/24	0.5	
							11			
							33			

REMARKS:

Hand Auger
No Recovery
Split Spoon
Rock Core

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-01S/D**
ERM PROJECT # 0346372
SHEET 3 OF 5

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	R. Trask	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	CME-55	FINISH	07/19/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	45 ft
NORTHING	1078013.64	BOREHOLE DIAMETER	2 in
EASTING	672361.09		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	606.43 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	SAMPLING DATA: SPT	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (MLS) fine grained SAND; firm, wet, brown (10YR 4/3)	20	MLS			5 5 11 33	24/24		
		SAND (SP) fine to medium grained SAND; soft, trace silt, saturated, brown (10YR 4/3)	20.7 21	SP						
	585	SILTY SAND (SM) fine grained SAND; medium dense, some fine to medium subround gravel, trace silt, saturated, brown (10YR 4/3), [minor oxidation]		SM			35 35 24 19	18/24	0.5	
22		LIMESTONE FRAGMENTS	22.5							
		GRAVELLY SILT (GM) angular, fine to medium grained GRAVEL; firm, some fine sand, saturated, brown (10YR 4/3), [limestone in shoe, EOB @ 23.1ft.]	22.8 23.1	GM			50	1/1.2		
		LIMESTONE, bedded, horizontal, gray (10YR 5/1), microcrystalline, [drilled through to set casing]						0/26.4		
24										
		LIMESTONE, bedded, horizontal, gray (10YR 5/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 0.4% [irregular dark gray chert, calcite lined veins and fractures, trace styrolites, pyrite stringers parallel to bedding @27ft.]	25.5					2.2/26.4	0	
26	580									
		LIMESTONE, bedded, horizontal, fossiliferous, gray (10YR 5/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 3.3% [biomicrite with coarse crinoid disc with fine shell fragments, irregular bedding, fine framboidal pyrite and styolites, large open bedding fracture @ 31.1ft at upper bed cotact]	27.5					4.5/60		
28										

REMARKS:

Hand Auger
No Recovery
Split Spoon
Rock Core

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

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PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-01S/D**
ERM PROJECT # 0346372
SHEET 4 OF 5

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	R. Trask	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	CME-55	FINISH	07/19/2017

HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))
NORTHING 1078013.64
EASTING 672361.09
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 606.43 ft

BOREHOLE DEPTH 45 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	SPT	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		LIMESTONE, bedded, horizontal, fossiliferous, gray (10YR 5/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 3.3% [biomicrite with coarse crinoid disc with fine shell fragments, irregular bedding, fine framboidal pyrite and styolites, large open bedding fracture @ 31.1ft at upper bed cotact]*(Continued)*						4.5/60		
	575									
32										
		SANDY LIMESTONE, interbedded, interbedded, fossiliferous, light gray (10YR 7/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 3.75% [minor dark chert]	32.5							
34								5/60	0	
36										
	570									
		LIMESTONE, bedded, lenticular, fossiliferous, dark gray (10YR 4/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 3.6% [increased styolites and oxidized pyrite framboids]	37.5							
38								4/60		

REMARKS:

Hand Auger
No Recovery
Split Spoon
Rock Core

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-01S/D**
ERM PROJECT # 0346372
SHEET 5 OF 5

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	R. Trask	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	CME-55	FINISH	07/19/2017

HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))
NORTHING 1078013.64
EASTING 672361.09
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 606.43 ft

BOREHOLE DEPTH 45 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	SPT	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		LIMESTONE, bedded, lenticular, fossiliferous, dark gray (10YR 4/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 3.6% [increased styolites and oxidized pyrite framboids]*(Continued)*						4/60		
	565									
42										
		LIMESTONE, bedded, horizontal, fossiliferous, dark gray (10YR 4/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 2% [abundant styolites, EOC @ 45ft.]	42.5						0	
44								2.2/30		
			45							
46										
	560									
48										

REMARKS:

Hand Auger
No Recovery
Split Spoon
Rock Core

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-02S/D**
ERM PROJECT # 0346372
SHEET 1 OF 4

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Larasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/23/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/22/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	30.5 ft
NORTHING	1078121.73	BOREHOLE DIAMETER	2 in
EASTING	672663.84		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	607.37 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[concrete]						11.8	
		GRAVELLY SAND (GP-SP) coarse grained SAND; subrounded, coarse grained GRAVEL; loose, moist, brown (10YR 4/3)	0.7	GP-SP				55.3	
2	605	GRAVELLY SAND (SM) fine grained SAND; loose, little silt, moist, brown (10YR 4/3)	2	SM			60/60	11.7	
		SILTY SAND (SM) fine grained SAND; loose, some medium subround gravel, moist, brown (10YR 4/4)	3	SM				25	
4		SILTY SAND (SM) fine grained SAND; loose, some clay, moist, gray (10YR 6/1)	4	SM				30.4	
		SILTY SAND (SM) fine grained SAND; hard, some cobbles, dry, reddish brown (5YR 4/4)	5	SM				61.1	GWL-MW-02D(5-6) [(5-6ft)]
6		SILTY SAND (SM) fine grained SAND; medium dense, some rock fragments, dry, brown (10YR 4/4)	6	SM			36/36	92	
	600	SAND (SP) fine to medium grained SAND; firm, some fine to medium subangular gravel, dry, brown (10YR 4/4)	6.5	SP				152.9	
8		SAND (SP) fine to medium grained SAND; firm, some silt, dry, reddish brown (5YR 4/4)	8.5	SP			42/48	70.9	
		SAND (SP) fine to coarse grained SAND; firm, trace fine to medium subangular gravel, wet, light brown (10YR 6/3), [water table @ 9.5ft.]	9	SP				82.1	

REMARKS:

Hand Auger
No Recovery
Direct push geoprobe sample
Rock Core

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-02S/D**
ERM PROJECT # 0346372
SHEET 2 OF 4

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Larasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/23/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/22/2017

HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	30.5 ft
NORTHING	1078121.73	BOREHOLE DIAMETER	2 in
EASTING	672663.84		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	607.37 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		COBBLES	10.25	SP				147.1	
		GRAVEL (GP) subangular, medium grained GRAVEL; loose, wet, brown (10YR 4/4)	10.4	GP			42/48		
		SAND (SP) fine grained SAND; firm, some coal, wet, gray/brown mottling, light grayish brown (10YR 6/2), [refusal @ 12.4ft.]	11.5	SP				170.6	GWL-MW-02D(11-12) [(11-12ft)]
12	595	BOULDERS [limestone pieces]	12.4			○	0/12	63	
		SILTY SAND (SM) fine grained SAND; firm, some fine to medium subangular gravel, wet, grayish brown (10YR 5/2), organic-like odor	13	SM				21.6	
14								26.5	
							21/48		
		SANDY GRAVEL (GP-SP) fine grained SAND; firm, wet, grayish brown (10YR 5/2), organic-like odor, [some black rock fragments from 16 to 16.5ft., till-like]	15.5	GP-SP				24	
16								44.4	
		SILTY SAND (SM) fine grained SAND; firm, wet, grayish brown (10YR 5/2), organic-like odor	17	SM					
	590	SILTY SAND (SM) medium grained SAND; firm, wet, brown (10YR 4/3), organic-like odor	17.5	SM				6.4	
18		SILTY SAND (SM) medium grained SAND; firm, some fine to medium subangular gravel, wet, brown (10YR 4/3), organic-like odor	18				19/30		
				SM				5.5	
		[bedrock @ 19.5ft] LIMESTONE, [drilled to 20.5ft. to set casing]	19.5			▮	0/12	5	

REMARKS:

Hand Auger
No Recovery
Direct push geoprobe sample
Rock Core

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-02S/D**
ERM PROJECT # 0346372
SHEET 3 OF 4

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Larasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/23/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/22/2017

HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	30.5 ft
NORTHING	1078121.73	BOREHOLE DIAMETER	2 in
EASTING	672663.84		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	607.37 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[bedrock @ 19.5ft] LIMESTONE, [drilled to 20.5ft. to set casing]*(Continued)*					0/12		
		LIMESTONE, slightly weathered, medium, fossiliferous, dark gray (10YR 4/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 3.79% [dark gray chert nodules, slightly fractured, some weathering in fractures, mechanical breaks along chert boundaries, some styolites]	20.5						
22	585						53/60		
24								0	
		LIMESTONE, slightly weathered, medium, fossiliferous, dark gray (10YR 4/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 3.91% [dark gray chert nodules, some weathering in fractures, mechanical breaks along chert boundaries, mechanical break from 29.3-29.7ft., EOC @ 30.5ft.]	25.5						
26									
	580						53/60		
28									

REMARKS:

Hand Auger
No Recovery
Direct push geoprobe sample
Rock Core

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

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Syracuse, New York 13214
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PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-02S/D**
ERM PROJECT # 0346372
SHEET 4 OF 4

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Larasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/23/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/22/2017

HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	30.5 ft
NORTHING	1078121.73	BOREHOLE DIAMETER	2 in
EASTING	672663.84		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	607.37 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
			30.5				53/60	0	
32	575								
34									
36									
	570								
38									

REMARKS:

Hand Auger
No Recovery
Direct push geoprobe sample
Rock Core

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-03S/D**
ERM PROJECT # 0346372
SHEET 1 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Larasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/29/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/21/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	29 ft
NORTHING	1078015.23	BOREHOLE DIAMETER	2 in
EASTING	672662.31		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	607.26 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[concrete]							
		GRAVEL (GP) subangular, medium to coarse grained GRAVEL; loose, dry, grayish brown (10YR 5/2)	0.8 1	GP					
		SAND (SW) fine to medium grained SAND; loose, dry, brown (10YR 4/3), [well sorted]		SW				1	
2	605	SILTY SAND (SM) fine to medium grained SAND; medium dense, some coarse subangular, dry to moist, brown (10YR 4/3)	2	SM			60/60	2.2	
4		SANDY SILT (MLS) fine grained SAND; firm, trace clay, some fine to coarse angular gravel, moist, reddish brown (5YR 4/4)	4	MLS				1.6	
								2.1	
6		SAND (SP) fine grained SAND; firm, trace silt, moist, reddish brown (5YR 4/4), [poorly sorted]	6	SP					
		CLAYEY SILT (CL-ML) firm, some fine sand, some fine to medium gravel, moist, reddish brown (5YR 4/4)	6.5 7	CL-ML			36/36	3.8	
	600	SILTY CLAY (CL-ML) low plasticity, stiff, some coarse gravel, moist, reddish brown (5YR 4/4)	7.5	CL-ML				7.7	
8		SILTY CLAY (CL-ML) medium plasticity, stiff, some coarse gravel, moist, reddish brown (5YR 4/4)	8	CL-ML					
		SAND (SW) fine grained SAND; loose, trace clay, some silt, dry, reddish brown (5YR 4/4), [well sorted]	9	SW			48/48	8.8	
		SILTY CLAY (CL-ML) low plasticity, firm, some fine sand, moist, reddish brown (5YR 4/4)	9.5	CL-ML				12.5	GWL-MW-03D(9-11) [(9-11ft)]
		SILTY SAND (SM) fine grained SAND; firm, moist, pale brown (10YR 6/2), [well sorted]		SM					

REMARKS:

Hand Auger
Rock Core
Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-03S/D**
ERM PROJECT # 0346372
SHEET 2 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Larasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/29/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/21/2017

HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	29 ft
NORTHING	1078015.23	BOREHOLE DIAMETER	2 in
EASTING	672662.31		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	607.26 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		COBBLES							
		SANDY SILT (MLS) fine grained SAND; firm, some clay, some fine to coarse subangular gravel, moist, reddish brown (5YR 4/4)	10.5	MLS			48/48	13.8	GWL-MW-03D(9-11) [(9-11ft)]
		COBBLES	11.5					9.8	
12	595	CLAYEY SILT (CL-ML) firm, some fine sand, some fine subround gravel, moist, brown (10YR 4/3)	12	CL-ML				9.2	
		SANDY SILT (MLS) fine grained SAND; medium dense, trace clay, some fine to medium subangular gravel, wet, brown (10YR 4/3)	13	MLS					
14		SANDY SILT (MLS) fine grained SAND; medium dense, some fine to coarse subangular gravel, trace cobbles, wet, brown (10YR 4/3)	14	MLS			42/48	9.7	
								6.9	
16		GRAVELLY SILT (GM) subangular, fine to coarse grained GRAVEL; loose, some fine sand, saturated, brown (10YR 4/3)	16	GM				2.2	
	590	COBBLES	17						
		SANDY SILT (MLS) fine grained SAND; firm, some fine to medium subangular gravel, wet to moist, brown (10YR 4/3)	17.5	MLS			18/48	1.6	GLW-MW-03D(17-19) [(17-19ft)]
18								3.1	
		COBBLES	19						
		SANDY SILT (MLS) fine grained SAND; firm, some fine to coarse subangular gravel, trace cobbles, moist to wet, grayish brown (10YR 5/2), [EOB on bedrock @ 21ft.]	19.5	MLS				1.7	

REMARKS:

Hand Auger
Rock Core
Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-03S/D**
ERM PROJECT # 0346372
SHEET 3 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Larasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/29/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/21/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	29 ft
NORTHING	1078015.23	BOREHOLE DIAMETER	2 in
EASTING	672662.31		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	607.26 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (MLS) fine grained SAND; firm, some fine to coarse subangular gravel, trace cobbles, moist to wet, grayish brown (10YR 5/2), [EOB on bedrock @ 21ft.]*(Continued)*		MLS			12/12	1.4	
			21						
		LIMESTONE, gray (10YR 5/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 2.63% [dark gray chery nodules, calcite lined fractures, styolites throughout, massive component, slightly fractured]					33/34.8		
22	585								
24		LIMESTONE, gray (10YR 5/1), microcrystalline, close fracture spacing, 90° bedding angle, Layer RQD = 2.4% [dark gray to black chert, abundant breaks withing chert, mechanically broken chert zone 25.8-26.1ft., weathered fracture @ ~27ft., up to 50% of run is chert, some calcium recrystallization in fractures, EOC @ 29ft.]	23.9				54/61.2		
26									
	580								
28									
			29						

REMARKS:

Hand Auger
Rock Core
Direct push geoprobe sample

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-04S/D**
ERM PROJECT # 0346372
SHEET 1 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	M. Eaves	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/21/2017
DRILLING EQUIPMENT	Little Beaver Drilling Rig	FINISH	08/01/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	23.5 ft
NORTHING	1078344.18	BOREHOLE DIAMETER	2 in
EASTING	672547.78		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	598.99 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[concrete]							
		SANDY GRAVEL (GP-SP) fine to medium grained SAND; angular, fine to coarse grained GRAVEL; loose, dry, brown (10YR 4/3)	0.8 1	GP-SP					
		SILTY SAND (SM) fine grained SAND; loose, some fine subround gravel, dry, brown (10YR 4/3)							
2								0	
				SM					
4	595						96/96	1	
		SILTY SAND (SM) fine grained SAND; loose, some fine to coarse subround gravel, dry to moist, brown (10YR 4/3)	5	SM				1.8	GWL-MW-04S(5-6) [(5-6ft)]
6		SANDY SILT (MLS) fine grained SAND; firm, some clay, some fine subround gravel, trace coal; dry to moist, brown (10YR 4/3)	6	MLS				1.4	
		SANDY SILT (MLS) fine grained SAND; firm, some clay, some fine to medium subround gravel, moist, brown (10YR 4/3), [minor oxidation]	7	MLS				0.8	
8		SANDY SILT (MLS) fine grained SAND; firm, some fine to medium subround gravel, trace cobbles, moist, brown to pale brown (10YR 5/4)	8						
	590			MLS			11/24	1.2	

REMARKS:

Hand Auger
No Recovery
Split Spoon

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-04S/D**
ERM PROJECT # 0346372
SHEET 2 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	M. Eaves	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/21/2017
DRILLING EQUIPMENT	Little Beaver Drilling Rig	FINISH	08/01/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	23.5 ft
NORTHING	1078344.18	BOREHOLE DIAMETER	2 in
EASTING	672547.78		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	598.99 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (MLS) fine grained SAND; firm, trace fine subangular gravel, moist, brown (10YR 4/3)		MLS			10/24	1.1 1.2	
12		SILTY SAND (SM) fine to medium grained SAND; firm, some fine subangular gravel, wet, brown (10YR 4/3)	11.9 12	SM					
		SILTY SAND (SM) fine to medium grained SAND; soft, some fine subangular gravel, saturated, brown (10YR 4/3)		SM			13/24	0.8	
		SANDY SILT (MLS) fine grained SAND; firm, some fine to coarse subangular gravel, wet to saturated, pale brown (10YR 6/3), [some oxidation]	13 13.5	MLS					GWL-MW-04S(13-13.7) [(13-13.7ft)]
14	585	SILTY SAND (SM) fine to medium grained SAND; medium dense, saturated, brown to dark brown (10YR 3/3), organic-like odor, [some oxidation, EOB @ 13.7ft on bedrock]	13.7	SM					
		LIMESTONE, dark gray (10YR 4/1), microcrystalline, [TD @ 23.5ft.]					0/114		
16									
18									
	580								

REMARKS:

Hand Auger
No Recovery
Split Spoon

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-04S/D**
ERM PROJECT # 0346372
SHEET 3 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	M. Eaves	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/21/2017
DRILLING EQUIPMENT	Little Beaver Drilling Rig	FINISH	08/01/2017
HORIZONTAL DATUM (NAD 1983 StatePlane New York East (US Feet))		BOREHOLE DEPTH	23.5 ft
NORTHING	1078344.18	BOREHOLE DIAMETER	2 in
EASTING	672547.78		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	598.99 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		LIMESTONE, dark gray (10YR 4/1), microcrystalline, [TD @ 23.5ft.]*(Continued)*							
22						○	0/114		
			23.5						
24	575								
26									
28									
	570								

REMARKS:

Hand Auger
No Recovery
Split Spoon

BORING LOG GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/5/18

Appendix B
Well Construction Logs

5788 Widewaters Pkwy Syracuse, New York 13214 P: 1-315-445-2554	PROJECT: G.W. Lisk Site Characterization	BORING # **MW-01D** ERM PROJECT # 0346372 SHEET 1 OF 5

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	J. Percy	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	CME-55	FINISH	07/19/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078013.64
EASTING	672361.09
ELEVATION	606.43 ft

WELL CONSTRUCTION

	Riser	Screen
Material:	*Carbon Steel*	*Open Hole*
Diameter (ID):	*4-inch*	*4-inch*
Coupling:	*Threaded*	*None*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *1 hours*
Gals. Purged: *22.5*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
		[asphalt]	0.3		
		GRAVELLY SAND (GP-SP) fine to medium grained SAND; subangular, fine to coarse grained GRAVEL; loose, dry, reddish brown (5YR 4/3), [asphalt]	1	GP-SP	
	605	GRAVELLY SAND (GP-SP) fine grained SAND; subangular, fine to coarse grained GRAVEL; loose, some silt, some brick fragments, some cobbles; dry to moist, reddish brown (5YR 4/3)		GP-SP	
2			2		
		SILTY SAND (SM) fine grained SAND; loose, some fine to medium subangular gravel, dry to moist, reddish brown (5YR 4/3)		SM	
4			4		
		SAND (SP) fine grained SAND; loose, some gravel, some cobbles, dry to moist, brown (10YR 4/3)		SP	
			5		
		GRAVELLY SAND (GP-SP) poorly graded, fine to medium grained SAND; subangular, fine grained GRAVEL; loose, dry to moist, brown (10YR 4/3)		GP-SP	
6	600				
		SAND (SW) poorly graded, fine to medium grained SAND; soft, dry to moist, brown (10YR 4/3)	7	SW	
8					
			9		
		SILTY SAND (SM) fine to medium grained SAND; soft, saturated, brown (10YR 4/3)		SM	

WELL CONSTRUCTION

Casing Type:
12-inch Flushmount
Traffic-Rated
Manhole

REMARKS:
None.

WELL INSTALLATION NOTES:
Casing set 2ft into bedrock, 20ft of bedrock cored.

WELL CONSTRUCTION GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/6/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-01D**
ERM PROJECT # 0346372
SHEET 2 OF 5

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	J. Percy	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	CME-55	FINISH	07/19/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078013.64
EASTING	672361.09
ELEVATION	606.43 ft

WELL CONSTRUCTION

	Riser	Screen
Material:	*Carbon Steel*	*Open Hole*
Diameter (ID):	*4-inch*	*4-inch*
Coupling:	*Threaded*	*None*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *1 hours*
Gals. Purged: *22.5*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
		SANDY SILT (MLS) fine grained SAND; firm, wet, brown (10YR 4/3)	10.2	MLS	
			10.5	SM	
		SILTY SAND (SM) fine to medium grained SAND; firm, wet, brown (10YR 4/3), [well sorted]	10.7	MLS	
			11	SM	
	595	SANDY SILT (MLS) fine grained SAND; firm, wet, brown (10YR 4/3)		MLS	
12			12		
		SILTY SAND (SM) fine to medium grained SAND; firm, some fine subangular gravel, wet, brown (10YR 4/3)		SM	
		SANDY SILT (MLS) fine grained SAND; firm, trace clay, trace fine subangular gravel, wet, brown (10YR 4/3)	13	SP	
		SILTY SAND (SM) fine to medium grained SAND; soft, some fine subangular gravel, saturated, brown (10YR 4/3), [well sorted]	13.5	SP	
14		SAND (SP) fine grained SAND; firm, saturated, brown to grayish brown (10YR 5/2)	14	SM	
		SAND (SP) fine grained SAND; firm, some fine subangular gravel, saturated, brown (10YR 4/3)	15	MLS	
		SANDY SAND (SM) fine grained SAND; firm, saturated, grayish brown to brown (10YR 5/2)	15.5	CL	
			15.6	MLS	
16		SANDY SILT (MLS) fine grained SAND; firm, saturated, pale brown (10YR 6/3)	16	SM	
	590	CLAY (CL) stiff, wet, brown (10YR 4/3)	16.7	MLS	
		SANDY SILT (MLS) fine grained SAND; firm, saturated, brown (10YR 4/3)	17	SM	
18		SILTY SAND (SM) fine grained SAND; medium dense, saturated, brown (10YR 4/3)	18	MLS	
		SANDY SILT (MLS) fine grained SAND; firm, saturated, brown (10YR 4/3)	19	CL-ML	
		SILTY SAND (SM) fine grained SAND; soft, saturated, brown (10YR 4/3)	19.5	CL	
		SANDY SILT (MLS) fine grained SAND; soft, trace clay, wet,			

WELL CONSTRUCTION
Carbon Steel Riser
Cement/Bentonite Grout

REMARKS:
None.

WELL INSTALLATION NOTES:
Casing set 2ft into bedrock, 20ft of bedrock cored.

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-01D**
ERM PROJECT # 0346372
SHEET 3 OF 5

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	J. Percy	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	CME-55	FINISH	07/19/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078013.64
EASTING	672361.09
ELEVATION	606.43 ft

WELL CONSTRUCTION

	Riser	Screen
Material:	*Carbon Steel*	*Open Hole*
Diameter (ID):	*4-inch*	*4-inch*
Coupling:	*Threaded*	*None*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *1 hours*
Gals. Purged: *22.5*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	WELL CONSTRUCTION
		brown (10YR 4/3)	20	MLS		
		SILTY CLAY (CL-ML) medium plasticity, medium dense, wet, brown (10YR 4/3)	20.7	SP		
		CLAY (CL) high plasticity, firm, moist, brown (10YR 4/3)	21			
	585	SANDY SILT (MLS) fine grained SAND; firm, wet, brown (10YR 4/3)		SM		
22		SAND (SP) fine to medium grained SAND; soft, trace silt, saturated, brown (10YR 4/3)	22.5			
		SILTY SAND (SM) fine grained SAND; medium dense, some fine to medium subround gravel, trace silt, saturated, brown (10YR 4/3), [minor oxidation]	22.8	GM		
		LIMESTONE FRAGMENTS	23.1			
24		GRAVELLY SILT (GM) angular, fine to medium grained GRAVEL; firm, some fine sand, saturated, brown (10YR 4/3), [limestone in shoe, EOB @ 23.1ft.]				
		LIMESTONE, bedded, horizontal, gray (10YR 5/1), microcrystalline, [drilled through to set casing]	25.5			
26	580	LIMESTONE, bedded, horizontal, gray (10YR 5/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 0.4% [irregular dark gray chert, calcite lined veins and fractures, trace styrolites, pyrite stringers parallel to bedding @27ft.]				
		LIMESTONE, bedded, horizontal, fossiliferous, gray (10YR 5/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 3.3% [biomicrite with coarse crinoid disc with fine shell fragments, irregular bedding, fine framboidal pyrite and styolites, large open bedding fracture @ 31.1ft at upper bed cotact]	27.5			
28						

REMARKS:
None.

WELL INSTALLATION NOTES:
Casing set 2ft into bedrock, 20ft of bedrock cored.

5788 Widewaters Pkwy Syracuse, New York 13214 P: 1-315-445-2554	PROJECT: G.W. Lisk Site Characterization	BORING # **MW-01D** ERM PROJECT # 0346372 SHEET 4 OF 5

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	J. Percy	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	CME-55	FINISH	07/19/2017

GEOGRAPHIC COORDINATES		WELL CONSTRUCTION			WELL DEVELOPMENT
(NAD 1983 StatePlane New York East (US Feet))			Riser	Screen	
NORTHING	1078013.64	Material:	*Carbon Steel*	*Open Hole*	Method: *Surge and Pump - mechanical*
EASTING	672361.09	Diameter (ID):	*4-inch*	*4-inch*	Duration: *1 hours*
ELEVATION	606.43 ft	Coupling:	*Threaded*	*None*	Gals. Purged: *22.5*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	WELL CONSTRUCTION
		LIMESTONE, bedded, horizontal, fossiliferous, gray (10YR 5/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 3.3% [biomicrite with coarse crinoid disc with fine shell fragments, irregular bedding, fine framboidal pyrite and styolites, large open bedding fracture @ 31.1ft at upper bed cotact]*(Continued)*				
	575					
32						
		SANDY LIMESTONE, interbedded, interbedded, fossiliferous, light gray (10YR 7/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 3.75% [minor dark chert]	32.5			
34						
36						
	570					
		LIMESTONE, bedded, lenticular, fossiliferous, dark gray (10YR 4/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 3.6% [increased styolites and oxidized pyrite framboids]	37.5			
38						

REMARKS:
None.

WELL INSTALLATION NOTES:
Casing set 2ft into bedrock, 20ft of bedrock cored.

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-01D**
ERM PROJECT # 0346372
SHEET 5 OF 5

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	J. Percy	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	CME-55	FINISH	07/19/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078013.64
EASTING	672361.09
ELEVATION	606.43 ft

WELL CONSTRUCTION

	Riser	Screen
Material:	*Carbon Steel*	*Open Hole*
Diameter (ID):	*4-inch*	*4-inch*
Coupling:	*Threaded*	*None*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *1 hours*
Gals. Purged: *22.5*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	WELL CONSTRUCTION
		LIMESTONE, bedded, lenticular, fossiliferous, dark gray (10YR 4/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 3.6% [increased styolites and oxidized pyrite framboids]*(Continued)*				
	565					
42						
		LIMESTONE, bedded, horizontal, fossiliferous, dark gray (10YR 4/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 2% [abundant styolites, EOC @ 45ft.]	42.5			
44						
			45			
46						
	560					
48						

REMARKS:
None.

WELL INSTALLATION NOTES:
Casing set 2ft into bedrock, 20ft of bedrock cored.

WELL CONSTRUCTION GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/6/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-01S**
ERM PROJECT # 0346372
SHEET 1 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	CME-55	FINISH	07/19/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078013.64
EASTING	672361.09
ELEVATION	606.43 ft

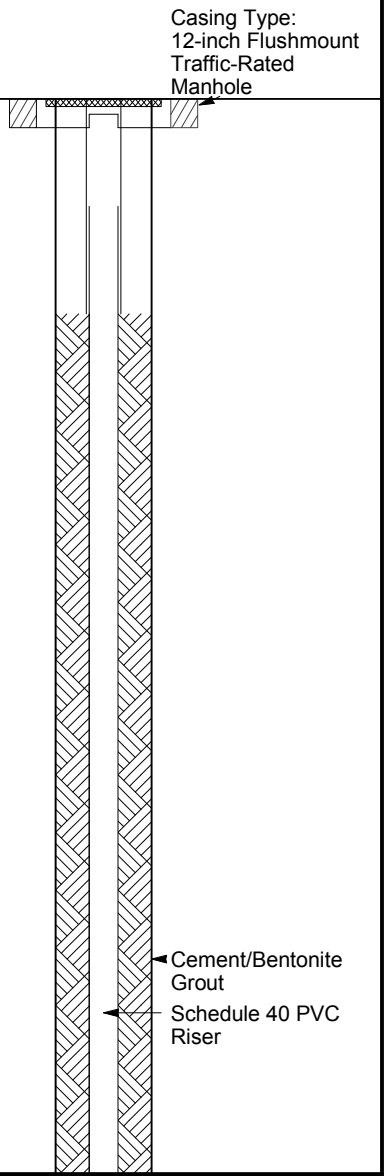
WELL CONSTRUCTION

	Riser	Screen
Material:	*Schedule 40 PVC*	*Schedule 40 PVC, 0.010-slot*
Diameter (ID):	*2-inch*	*2-inch*
Coupling:	*Threaded*	*Threaded*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *0.25 hours*
Gals. Purged: *2.07*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
		[asphalt]	0.3		
		GRAVELLY SAND (GP-SP) fine to medium grained SAND; subangular, fine to coarse grained GRAVEL; loose, dry, reddish brown (5YR 4/3), [asphalt]	1	GP-SP	
	605	GRAVELLY SAND (GP-SP) fine grained SAND; subangular, fine to coarse grained GRAVEL; loose, some silt, some brick fragments, some cobbles; dry to moist, reddish brown (5YR 4/3)		GP-SP	
2			2		
		SILTY SAND (SM) fine grained SAND; loose, some fine to medium subangular gravel, dry to moist, reddish brown (5YR 4/3)		SM	
4			4		
		SAND (SP) fine grained SAND; loose, some gravel, some cobbles, dry to moist, brown (10YR 4/3)		SP	
			5		
		GRAVELLY SAND (GP-SP) poorly graded, fine to medium grained SAND; subangular, fine grained GRAVEL; loose, dry to moist, brown (10YR 4/3)		GP-SP	
6	600				
		SAND (SW) poorly graded, fine to medium grained SAND; soft, dry to moist, brown (10YR 4/3)	7	SW	
8					
			9		
		SILTY SAND (SM) fine to medium grained SAND; soft, saturated, brown (10YR 4/3)		SM	

WELL CONSTRUCTION



REMARKS:
None.

WELL INSTALLATION NOTES:
None.

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-01S**
ERM PROJECT # 0346372
SHEET 2 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	CME-55	FINISH	07/19/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078013.64
EASTING	672361.09
ELEVATION	606.43 ft

WELL CONSTRUCTION

	Riser	Screen
Material:	*Schedule 40 PVC*	*Schedule 40 PVC, 0.010-slot*
Diameter (ID):	*2-inch*	*2-inch*
Coupling:	*Threaded*	*Threaded*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *0.25 hours*
Gals. Purged: *2.07*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
		SANDY SILT (MLS) fine grained SAND; firm, wet, brown (10YR 4/3)	10.2	MLS	
		SILTY SAND (SM) fine to medium grained SAND; firm, wet, brown (10YR 4/3), [well sorted]	10.5	SM	
	595	SANDY SILT (MLS) fine grained SAND; firm, wet, brown (10YR 4/3)	10.7	MLS	
12		SILTY SAND (SM) fine to medium grained SAND; firm, some fine subangular gravel, wet, brown (10YR 4/3)	11	SM	
		SANDY SILT (MLS) fine grained SAND; firm, trace clay, trace fine subangular gravel, wet, brown (10YR 4/3)	12	MLS	
		SILTY SAND (SM) fine to medium grained SAND; soft, some fine subangular gravel, saturated, brown (10YR 4/3), [well sorted]	13	SM	
14		SAND (SP) fine grained SAND; firm, saturated, brown to grayish brown (10YR 5/2)	13.5	SP	
		SAND (SP) fine grained SAND; firm, some fine subangular gravel, saturated, brown (10YR 4/3)	14	SP	
		SANDY SAND (SM) fine grained SAND; firm, saturated, grayish brown to brown (10YR 5/2)	15	SM	
16	590	SANDY SILT (MLS) fine grained SAND; firm, saturated, pale brown (10YR 6/3)	15.5	MLS	
		CLAY (CL) stiff, wet, brown (10YR 4/3)	15.6	CL	
		SANDY SILT (MLS) fine grained SAND; firm, saturated, brown (10YR 4/3)	16	MLS	
18		SILTY SAND (SM) fine grained SAND; medium dense, saturated, brown (10YR 4/3)	16.7	SM	
		SANDY SILT (MLS) fine grained SAND; firm, saturated, brown (10YR 4/3)	17	MLS	
		SILTY SAND (SM) fine grained SAND; soft, saturated, brown (10YR 4/3)	18	SM	
		SANDY SILT (MLS) fine grained SAND; soft, trace clay, wet,	19	MLS	
			19.5	CL-ML	
				CL	

WELL CONSTRUCTION
Bentonite Seal
#00 Morie Gravel Pack
0.010-slot Schedule 40 PVC Screen

REMARKS:
None.

WELL INSTALLATION NOTES:
None.

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-01S**
ERM PROJECT # 0346372
SHEET 3 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/17/2017
DRILLING EQUIPMENT	CME-55	FINISH	07/19/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078013.64
EASTING	672361.09
ELEVATION	606.43 ft

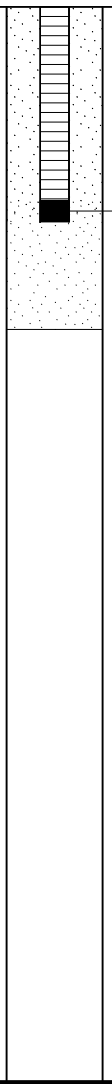
WELL CONSTRUCTION

	Riser	Screen
Material:	*Schedule 40 PVC*	*Schedule 40 PVC, 0.010-slot*
Diameter (ID):	*2-inch*	*2-inch*
Coupling:	*Threaded*	*Threaded*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *0.25 hours*
Gals. Purged: *2.07*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
		brown (10YR 4/3)	20		
		SILTY CLAY (CL-ML) medium plasticity, medium dense, wet, brown (10YR 4/3)		MLS	
			20.7	SP	
		CLAY (CL) high plasticity, firm, moist, brown (10YR 4/3)	21		
	585	SANDY SILT (MLS) fine grained SAND; firm, wet, brown (10YR 4/3)		SM	
22		SAND (SP) fine to medium grained SAND; soft, trace silt, saturated, brown (10YR 4/3)	22.5		
		SILTY SAND (SM) fine grained SAND; medium dense, some fine to medium subround gravel, trace silt, saturated, brown (10YR 4/3), [minor oxidation]	22.8	GM	
		LIMESTONE FRAGMENTS	23.1		
24		GRAVELLY SILT (GM) angular, fine to medium grained GRAVEL; firm, some fine sand, saturated, brown (10YR 4/3), [limestone in shoe, EOB @ 23.1ft.]			
26					
	580				
28					

WELL CONSTRUCTION



REMARKS:
None.

WELL INSTALLATION NOTES:
None.

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-02D**
ERM PROJECT # 0346372
SHEET 1 OF 4

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/23/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/22/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078121.73
EASTING	672663.84
ELEVATION	607.37 ft

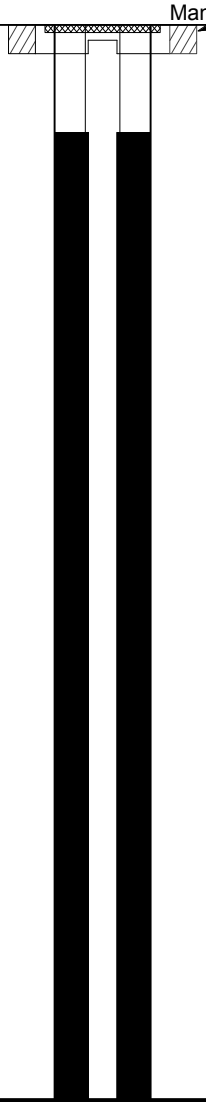
WELL CONSTRUCTION

	Riser	Screen
Material:	*Carbon Steel*	*Open Hole*
Diameter (ID):	*5-inch*	*5-inch*
Coupling:	*Threaded*	*None*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *1 hours*
Gals. Purged: *25*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
		[concrete]			
		GRAVELLY SAND (GP-SP) coarse grained SAND; subrounded, coarse grained GRAVEL; loose, moist, brown (10YR 4/3)	0.7	GP-SP	
2	605	GRAVELLY SAND (SM) fine grained SAND; loose, little silt, moist, brown (10YR 4/3)	2	SM	
		SILTY SAND (SM) fine grained SAND; loose, some medium subround gravel, moist, brown (10YR 4/4)	3	SM	
4		SILTY SAND (SM) fine grained SAND; loose, some clay, moist, gray (10YR 6/1)	4	SM	
		SILTY SAND (SM) fine grained SAND; hard, some cobbles, dry, reddish brown (5YR 4/4)	5	SM	
6		SILTY SAND (SM) fine grained SAND; medium dense, some rock fragments, dry, brown (10YR 4/4)	6	SM	
		SAND (SP) fine to medium grained SAND; firm, some fine to medium subangular gravel, dry, brown (10YR 4/4)	6.5	SP	
	600				
8					
		SAND (SP) fine to medium grained SAND; firm, some silt, dry, reddish brown (5YR 4/4)	8.5	SP	
		SAND (SP) fine to coarse grained SAND; firm, trace fine to medium subangular gravel, wet, light brown (10YR 6/3), [water table @ 9.5ft.]	9	SP	

WELL CONSTRUCTION



REMARKS:
None.

WELL INSTALLATION NOTES:
None.

5788 Widewaters Pkwy Syracuse, New York 13214 P: 1-315-445-2554	PROJECT: G.W. Lisk Site Characterization	BORING # **MW-02D** ERM PROJECT # 0346372 SHEET 2 OF 4

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/23/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/22/2017

GEOGRAPHIC COORDINATES		WELL CONSTRUCTION			WELL DEVELOPMENT
(NAD 1983 StatePlane New York East (US Feet))			Riser	Screen	
NORTHING	1078121.73	Material:	*Carbon Steel*	*Open Hole*	Method: *Surge and Pump - mechanical*
EASTING	672663.84	Diameter (ID):	*5-inch*	*5-inch*	Duration: *1 hours*
ELEVATION	607.37 ft	Coupling:	*Threaded*	*None*	Gals. Purged: *25*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	WELL CONSTRUCTION
				SP		Carbon Steel Riser
		COBBLES	10.25			
			10.4			Cement/Bentonite Grout
		GRAVEL (GP) subangular, medium grained GRAVEL; loose, wet, brown (10YR 4/4)		GP		
			11.5			
12		SAND (SP) fine grained SAND; firm, some coal, wet, gray/brown mottling, light grayish brown (10YR 6/2), [refusal @ 12.4ft.]		SP		
	595		12.4			
		BOULDERS [limestone pieces]				
			13			
		SILTY SAND (SM) fine grained SAND; firm, some fine to medium subangular gravel, wet, grayish brown (10YR 5/2), organic-like odor		SM		
14						
			15.5			
16		SANDY GRAVEL (GP-SP) fine grained SAND; firm, wet, grayish brown (10YR 5/2), organic-like odor, [some black rock fragments from 16 to 16.5ft., till-like]		GP-SP		
			17			
	590	SILTY SAND (SM) fine grained SAND; firm, wet, grayish brown (10YR 5/2), organic-like odor		SM		
			17.5			
18		SILTY SAND (SM) medium grained SAND; firm, wet, brown (10YR 4/3), organic-like odor		SM		
			18			
		SILTY SAND (SM) medium grained SAND; firm, some fine to medium subangular gravel, wet, brown (10YR 4/3), organic-like odor		SM		
			19.5			
		[bedrock @ 19.5ft] LIMESTONE, [drilled to 20.5ft. to set casing]				

REMARKS:
None.

WELL INSTALLATION NOTES:
None.

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-02D**
ERM PROJECT # 0346372
SHEET 3 OF 4

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/23/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/22/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078121.73
EASTING	672663.84
ELEVATION	607.37 ft

WELL CONSTRUCTION

	Riser	Screen
Material:	*Carbon Steel*	*Open Hole*
Diameter (ID):	*5-inch*	*5-inch*
Coupling:	*Threaded*	*None*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *1 hours*
Gals. Purged: *25*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	WELL CONSTRUCTION
		[bedrock @ 19.5ft] LIMESTONE, [drilled to 20.5ft. to set casing]*(Continued)*	20.5			
22	585	LIMESTONE, slightly weathered, medium, fossiliferous, dark gray (10YR 4/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 3.79% [dark gray chert nodules, slightly fractured, some weathering in fractures, mechanical breaks along chert boundaries, some styolites]				
24						
			25.5			
26	580	LIMESTONE, slightly weathered, medium, fossiliferous, dark gray (10YR 4/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 3.91% [dark gray chert nodules, some weathering in fractures, mechanical breaks along chert boundaries, mechanical break from 29.3-29.7ft., EOC @ 30.5ft.]				
28						

REMARKS:
None.

WELL INSTALLATION NOTES:
None.

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-02D**
ERM PROJECT # 0346372
SHEET 4 OF 4

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/23/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/22/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078121.73
EASTING	672663.84
ELEVATION	607.37 ft

WELL CONSTRUCTION

	Riser	Screen
Material:	*Carbon Steel*	*Open Hole*
Diameter (ID):	*5-inch*	*5-inch*
Coupling:	*Threaded*	*None*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *1 hours*
Gals. Purged: *25*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	WELL CONSTRUCTION
			30.5			
32	575					
34						
36	570					
38						

REMARKS:
None.

WELL INSTALLATION NOTES:
None.

WELL CONSTRUCTION GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/6/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-02S**
ERM PROJECT # 0346372
SHEET 1 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/23/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/22/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078121.73
EASTING	672663.84
ELEVATION	607.37 ft

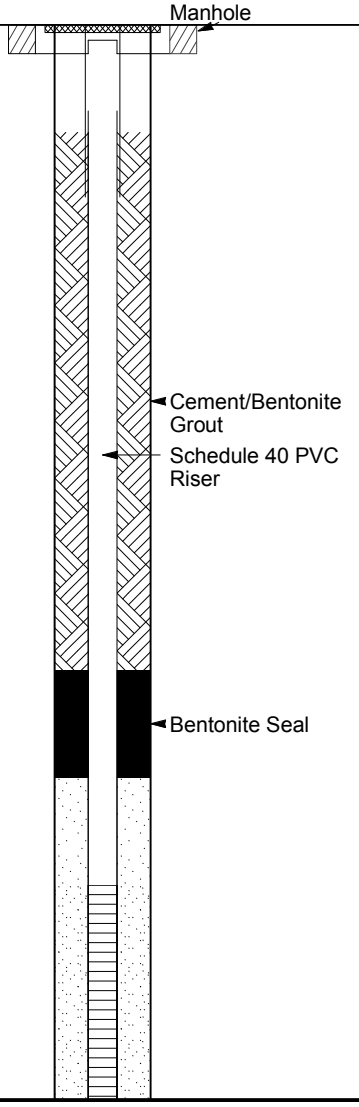
WELL CONSTRUCTION

	Riser	Screen
Material:	*Schedule 40 PVC*	*Schedule 40 PVC, 0.010-slot*
Diameter (ID):	*2-inch*	*2-inch*
Coupling:	*Threaded*	*Threaded*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *0.5 hours*
Gals. Purged: *7*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
		[concrete]			
		GRAVELLY SAND (GP-SP) coarse grained SAND; subrounded, coarse grained GRAVEL; loose, moist, brown (10YR 4/3)	0.7	GP-SP	
2	605	GRAVELLY SAND (SM) fine grained SAND; loose, little silt, moist, brown (10YR 4/3)	2	SM	
		SILTY SAND (SM) fine grained SAND; loose, some medium subround gravel, moist, brown (10YR 4/4)	3	SM	
4		SILTY SAND (SM) fine grained SAND; loose, some clay, moist, gray (10YR 6/1)	4	SM	
		SILTY SAND (SM) fine grained SAND; hard, some cobbles, dry, reddish brown (5YR 4/4)	5	SM	
6		SILTY SAND (SM) fine grained SAND; medium dense, some rock fragments, dry, brown (10YR 4/4)	6	SM	
		SAND (SP) fine to medium grained SAND; firm, some fine to medium subangular gravel, dry, brown (10YR 4/4)	6.5	SP	
	600				
8					
		SAND (SP) fine to medium grained SAND; firm, some silt, dry, reddish brown (5YR 4/4)	8.5	SP	
		SAND (SP) fine to coarse grained SAND; firm, trace fine to medium subangular gravel, wet, light brown (10YR 6/3), [water table @ 9.5ft.]	9	SP	

WELL CONSTRUCTION



REMARKS:
None.

WELL INSTALLATION NOTES:
None.

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-02S**
ERM PROJECT # 0346372
SHEET 2 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/23/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/22/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078121.73
EASTING	672663.84
ELEVATION	607.37 ft

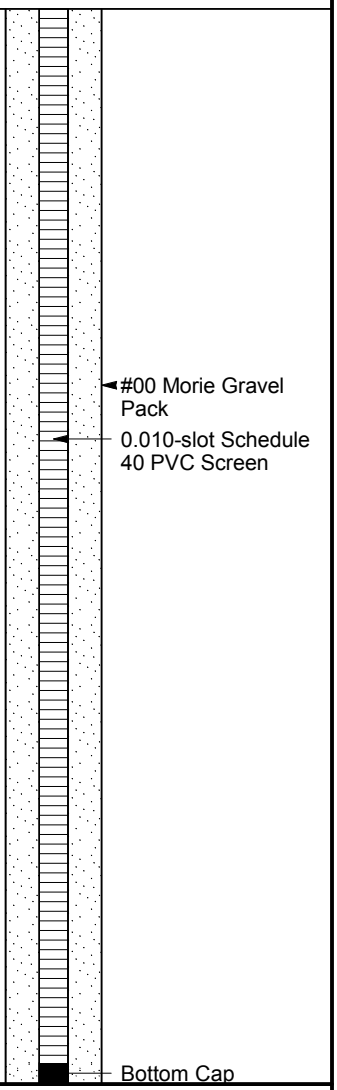
WELL CONSTRUCTION

	Riser	Screen
Material:	*Schedule 40 PVC*	*Schedule 40 PVC, 0.010-slot*
Diameter (ID):	*2-inch*	*2-inch*
Coupling:	*Threaded*	*Threaded*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *0.5 hours*
Gals. Purged: *7*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
				SP	
			10.25		
		COBBLES	10.4		
		GRAVEL (GP) subangular, medium grained GRAVEL; loose, wet, brown (10YR 4/4)		GP	
			11.5		
12		SAND (SP) fine grained SAND; firm, some coal, wet, gray/brown mottling, light grayish brown (10YR 6/2), [refusal @ 12.4ft.]		SP	
	595		12.4		
		BOULDERS [limestone pieces]			
			13		
		SILTY SAND (SM) fine grained SAND; firm, some fine to medium subangular gravel, wet, grayish brown (10YR 5/2), organic-like odor		SM	
14					
			15.5		
		SANDY GRAVEL (GP-SP) fine grained SAND; firm, wet, grayish brown (10YR 5/2), organic-like odor, [some black rock fragments from 16 to 16.5ft., till-like]		GP-SP	
16					
			17		
		SILTY SAND (SM) fine grained SAND; firm, wet, grayish brown (10YR 5/2), organic-like odor		SM	
	590		17.5		
		SILTY SAND (SM) medium grained SAND; firm, wet, brown (10YR 4/3), organic-like odor		SM	
18			18		
		SILTY SAND (SM) medium grained SAND; firm, some fine to medium subangular gravel, wet, brown (10YR 4/3), organic-like odor		SM	
			19.5		

WELL CONSTRUCTION



REMARKS:
None.

WELL INSTALLATION NOTES:
None.

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-02S**
ERM PROJECT # 0346372
SHEET 3 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/23/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/22/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078121.73
EASTING	672663.84
ELEVATION	607.37 ft

WELL CONSTRUCTION

	Riser	Screen
Material:	*Schedule 40 PVC*	*Schedule 40 PVC, 0.010-slot*
Diameter (ID):	*2-inch*	*2-inch*
Coupling:	*Threaded*	*Threaded*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *0.5 hours*
Gals. Purged: *7*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	WELL CONSTRUCTION
22	585					
24						
26	580					
28						

REMARKS:
None.

WELL INSTALLATION NOTES:
None.

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-03D**
ERM PROJECT # 0346372
SHEET 1 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/29/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/21/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078015.23
EASTING	672662.31
ELEVATION	607.26 ft

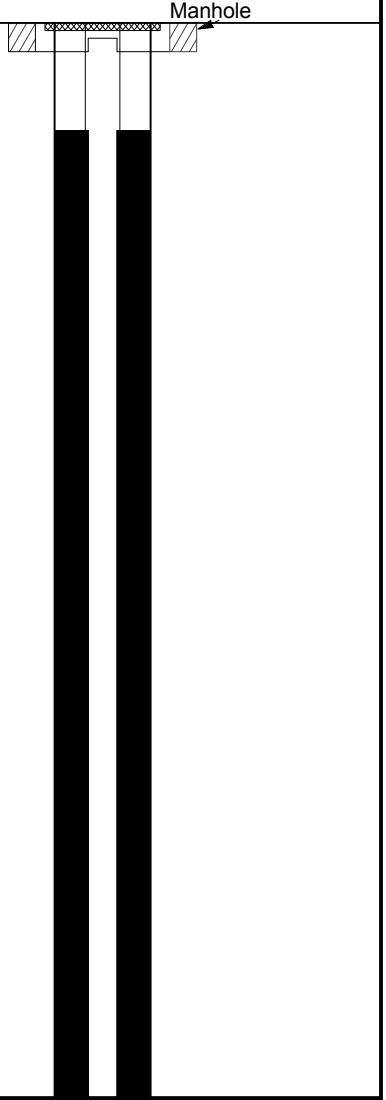
WELL CONSTRUCTION

	Riser	Screen
Material:	*Carbon Steel*	*Open Hole*
Diameter (ID):	*5-inch*	*5-inch*
Coupling:	*Threaded*	*None*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *1 hours*
Gals. Purged: *13*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
		[concrete]			
		GRAVEL (GP) subangular, medium to coarse grained GRAVEL; loose, dry, grayish brown (10YR 5/2)	0.8 1	GP	
		SAND (SW) fine to medium grained SAND; loose, dry, brown (10YR 4/3), [well sorted]		SW	
2	605	SILTY SAND (SM) fine to medium grained SAND; medium dense, some coarse subangular, dry to moist, brown (10YR 4/3)	2	SM	
4		SANDY SILT (MLS) fine grained SAND; firm, trace clay, some fine to coarse angular gravel, moist, reddish brown (5YR 4/4)	4	MLS	
6		SAND (SP) fine grained SAND; firm, trace silt, moist, reddish brown (5YR 4/4), [poorly sorted]	6	SP	
		CLAYEY SILT (CL-ML) firm, some fine sand, some fine to medium gravel, moist, reddish brown (5YR 4/4)	6.5 7	CL-ML	
	600	SILTY CLAY (CL-ML) low plasticity, stiff, some coarse gravel, moist, reddish brown (5YR 4/4)	7.5	CL-ML	
8		SILTY CLAY (CL-ML) medium plasticity, stiff, some coarse gravel, moist, reddish brown (5YR 4/4)	8	CL-ML	
		SAND (SW) fine grained SAND; loose, trace clay, some silt, dry, reddish brown (5YR 4/4), [well sorted]	9	SW	
		SILTY CLAY (CL-ML) low plasticity, firm, some fine sand, moist, reddish brown (5YR 4/4)	9.5	CL-ML	
				SM	

WELL CONSTRUCTION



REMARKS:
None.

WELL INSTALLATION NOTES:
Slow recharge (dry during development)

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-03D**
ERM PROJECT # 0346372
SHEET 2 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/29/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/21/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078015.23
EASTING	672662.31
ELEVATION	607.26 ft

WELL CONSTRUCTION

	Riser	Screen
Material:	*Carbon Steel*	*Open Hole*
Diameter (ID):	*5-inch*	*5-inch*
Coupling:	*Threaded*	*None*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *1 hours*
Gals. Purged: *13*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
		SILTY SAND (SM) fine grained SAND; firm, moist, pale brown (10YR 6/2), [well sorted]			
		COBBLES	10.5		
		SANDY SILT (MLS) fine grained SAND; firm, some clay, some fine to coarse subangular gravel, moist, reddish brown (5YR 4/4)		MLS	
		COBBLES	11.5		
12	595	CLAYEY SILT (CL-ML) firm, some fine sand, some fine subround gravel, moist, brown (10YR 4/3)	12	CL-ML	
		SANDY SILT (MLS) fine grained SAND; medium dense, trace clay, some fine to medium subangular gravel, wet, brown (10YR 4/3)	13	MLS	
14		SANDY SILT (MLS) fine grained SAND; medium dense, some fine to coarse subangular gravel, trace cobbles, wet, brown (10YR 4/3)	14	MLS	
16		GRAVELLY SILT (GM) subangular, fine to coarse grained GRAVEL; loose, some fine sand, saturated, brown (10YR 4/3)	16	GM	
	590	COBBLES	17		
		SANDY SILT (MLS) fine grained SAND; firm, some fine to medium subangular gravel, wet to moist, brown (10YR 4/3)	17.5	MLS	
18		COBBLES	19		
			19.5	MLS	

Carbon Steel Riser
Cement/Bentonite Grout

REMARKS:
None.

WELL INSTALLATION NOTES:
Slow recharge (dry during development)

WELL CONSTRUCTION GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/6/18

5788 Widewaters Pkwy Syracuse, New York 13214 P: 1-315-445-2554	PROJECT: G.W. Lisk Site Characterization	BORING # **MW-03D** ERM PROJECT # 0346372 SHEET 3 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/29/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/21/2017

GEOGRAPHIC COORDINATES		WELL CONSTRUCTION			WELL DEVELOPMENT
(NAD 1983 StatePlane New York East (US Feet))			Riser	Screen	
NORTHING	1078015.23	Material:	*Carbon Steel*	*Open Hole*	Method: *Surge and Pump - mechanical*
EASTING	672662.31	Diameter (ID):	*5-inch*	*5-inch*	Duration: *1 hours*
ELEVATION	607.26 ft	Coupling:	*Threaded*	*None*	Gals. Purged: *13*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	WELL CONSTRUCTION
		SANDY SILT (MLS) fine grained SAND; firm, some fine to coarse subangular gravel, trace cobbles, moist to wet, grayish brown (10YR 5/2), [EOB on bedrock @ 21ft.]*(Continued)*		MLS		
		LIMESTONE, gray (10YR 5/1), microcrystalline, medium fracture spacing, 90° bedding angle, Layer RQD = 2.63% [dark gray chery nodules, calcite lined fractures, styolites throughout, massive component, slightly fractured]	21			
22	585					
24		LIMESTONE, gray (10YR 5/1), microcrystalline, close fracture spacing, 90° bedding angle, Layer RQD = 2.4% [dark gray to black chert, abundant breaks withing chert, mechanically broken chert zone 25.8-26.1ft., weathered fracture @ ~27ft., up to 50% of run is chert, some calcium recrystallization in fractures, EOC @ 29ft.]	23.9			
26						
	580					
28			29			

REMARKS:
None.

WELL INSTALLATION NOTES:
Slow recharge (dry during development)

WELL CONSTRUCTION GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/6/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-03S**
ERM PROJECT # 0346372
SHEET 1 OF 2

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/29/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/21/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078015.23
EASTING	672662.31
ELEVATION	607.26 ft

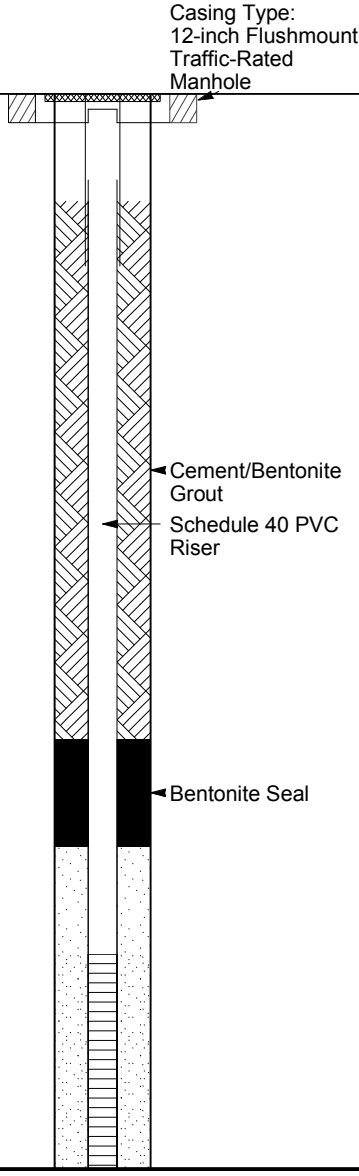
WELL CONSTRUCTION

	Riser	Screen
Material:	*Schedule 40 PVC*	*Schedule 40 PVC, 0.010-slot*
Diameter (ID):	*1-inch*	*2-inch*
Coupling:	*Threaded*	*Threaded*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *1 hours*
Gals. Purged: *7*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
		[concrete]			
		GRAVEL (GP) subangular, medium to coarse grained GRAVEL; loose, dry, grayish brown (10YR 5/2)	0.8 1	GP	
		SAND (SW) fine to medium grained SAND; loose, dry, brown (10YR 4/3), [well sorted]		SW	
2	605	SILTY SAND (SM) fine to medium grained SAND; medium dense, some coarse subangular, dry to moist, brown (10YR 4/3)	2	SM	
4		SANDY SILT (MLS) fine grained SAND; firm, trace clay, some fine to coarse angular gravel, moist, reddish brown (5YR 4/4)	4	MLS	
6		SAND (SP) fine grained SAND; firm, trace silt, moist, reddish brown (5YR 4/4), [poorly sorted]	6 6.5	SP	
		CLAYEY SILT (CL-ML) firm, some fine sand, some fine to medium gravel, moist, reddish brown (5YR 4/4)	7	CL-ML	
	600	SILTY CLAY (CL-ML) low plasticity, stiff, some coarse gravel, moist, reddish brown (5YR 4/4)	7.5	CL-ML	
8		SILTY CLAY (CL-ML) medium plasticity, stiff, some coarse gravel, moist, reddish brown (5YR 4/4)	8	SW	
		SAND (SW) fine grained SAND; loose, trace clay, some silt, dry, reddish brown (5YR 4/4), [well sorted]	9	CL-ML	
		SILTY CLAY (CL-ML) low plasticity, firm, some fine sand, moist, reddish brown (5YR 4/4)	9.5	SM	

WELL CONSTRUCTION



REMARKS:
None.

WELL INSTALLATION NOTES:
Slow recharge (dry during development).

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-03S**
ERM PROJECT # 0346372
SHEET 2 OF 2

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	I. Grasse	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	09/29/2017
DRILLING EQUIPMENT	Geoprobe 6712DT	FINISH	10/21/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078015.23
EASTING	672662.31
ELEVATION	607.26 ft

WELL CONSTRUCTION

	Riser	Screen
Material:	*Schedule 40 PVC*	*Schedule 40 PVC, 0.010-slot*
Diameter (ID):	*1-inch*	*2-inch*
Coupling:	*Threaded*	*Threaded*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *1 hours*
Gals. Purged: *7*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	WELL CONSTRUCTION
		SILTY SAND (SM) fine grained SAND; firm, moist, pale brown (10YR 6/2), [well sorted]				
		COBBLES	10.5			
		SANDY SILT (MLS) fine grained SAND; firm, some clay, some fine to coarse subangular gravel, moist, reddish brown (5YR 4/4)		MLS		
		COBBLES	11.5			
12	595	CLAYEY SILT (CL-ML) firm, some fine sand, some fine subround gravel, moist, brown (10YR 4/3)	12	CL-ML		#0 Morie Gravel Pack; 0.010-slot Schedule 40 PVC Screen
		SANDY SILT (MLS) fine grained SAND; medium dense, trace clay, some fine to medium subangular gravel, wet, brown (10YR 4/3)	13	MLS		
14		SANDY SILT (MLS) fine grained SAND; medium dense, some fine to coarse subangular gravel, trace cobbles, wet, brown (10YR 4/3)	14	MLS		
16		GRAVELLY SILT (GM) subangular, fine to coarse grained GRAVEL; loose, some fine sand, saturated, brown (10YR 4/3)	16	GM		
	590		17			Bottom Cap
18						

REMARKS:
None.

WELL INSTALLATION NOTES:
Slow recharge (dry during development).

WELL CONSTRUCTION GW LISK SC.GPJ ERM DATA TEMPLATE.GDT 4/6/18

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-04D**
ERM PROJECT # 0346372
SHEET 1 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	M. Eaves	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/21/2017
DRILLING EQUIPMENT	Little Beaver Drilling Rig	FINISH	08/01/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078344.18
EASTING	672547.78
ELEVATION	598.99 ft

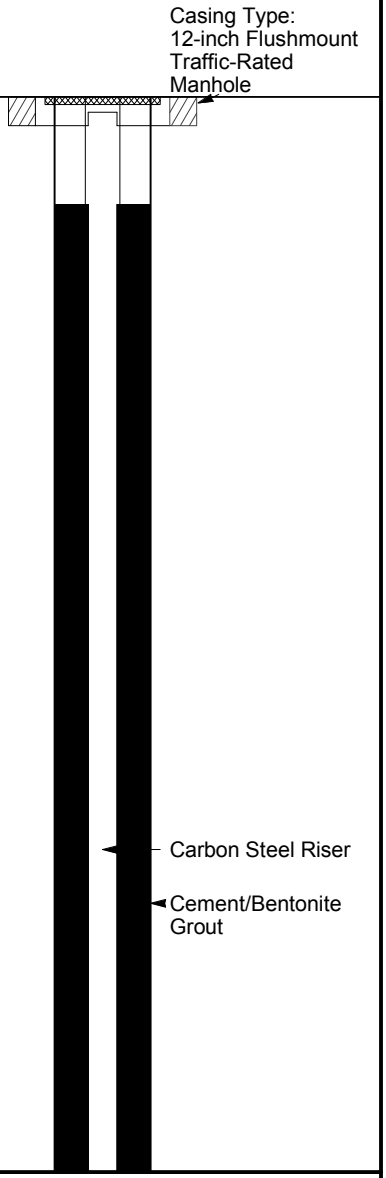
WELL CONSTRUCTION

	Riser	Screen
Material:	*Carbon Steel*	*Open Hole*
Diameter (ID):	*5-inch*	*5-inch*
Coupling:	*Threaded*	*None*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *1 hours*
Gals. Purged: *18*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
		[concrete]			
		SANDY GRAVEL (GP-SP) fine to medium grained SAND; angular, fine to coarse grained GRAVEL; loose, dry, brown (10YR 4/3)	0.8 1	GP-SP	
2		SILTY SAND (SM) fine grained SAND; loose, some fine subround gravel, dry, brown (10YR 4/3)		SM	
4	595				
		SILTY SAND (SM) fine grained SAND; loose, some fine to coarse subround gravel, dry to moist, brown (10YR 4/3)	5	SM	
6		SANDY SILT (MLS) fine grained SAND; firm, some clay, some fine subround gravel, trace coal; dry to moist, brown (10YR 4/3)	6	MLS	
		SANDY SILT (MLS) fine grained SAND; firm, some clay, some fine to medium subround gravel, moist, brown (10YR 4/3), [minor oxidation]	7	MLS	
8		SANDY SILT (MLS) fine grained SAND; firm, some fine to medium subround gravel, trace cobbles, moist, brown to pale brown (10YR 5/4)	8	MLS	
	590				

WELL CONSTRUCTION



REMARKS:
None.

WELL INSTALLATION NOTES:
None.

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-04D**
ERM PROJECT # 0346372
SHEET 2 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	M. Eaves	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/21/2017
DRILLING EQUIPMENT	Little Beaver Drilling Rig	FINISH	08/01/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078344.18
EASTING	672547.78
ELEVATION	598.99 ft

WELL CONSTRUCTION

	Riser	Screen
Material:	*Carbon Steel*	*Open Hole*
Diameter (ID):	*5-inch*	*5-inch*
Coupling:	*Threaded*	*None*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *1 hours*
Gals. Purged: *18*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	WELL CONSTRUCTION
		SANDY SILT (MLS) fine grained SAND; firm, trace fine subangular gravel, moist, brown (10YR 4/3)		MLS		
12		SILTY SAND (SM) fine to medium grained SAND; firm, some fine subangular gravel, wet, brown (10YR 4/3)	11.9 12	SM		
		SILTY SAND (SM) fine to medium grained SAND; soft, some fine subangular gravel, saturated, brown (10YR 4/3)		SM		
		SANDY SILT (MLS) fine grained SAND; firm, some fine to coarse subangular gravel, wet to saturated, pale brown (10YR 6/3), [some oxidation]	13	MLS		
14	585	SILTY SAND (SM) fine to medium grained SAND; medium dense, saturated, brown to dark brown (10YR 3/3), organic-like odor, [some oxidation, EOB @ 13.7ft on bedrock]	13.5 13.7	SM		
		LIMESTONE, dark gray (10YR 4/1), microcrystalline, [TD @ 23.5ft.]				
16						
18						
	580					

REMARKS:
None.

WELL INSTALLATION NOTES:
None.

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-04D**
ERM PROJECT # 0346372
SHEET 3 OF 3

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	M. Eaves	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/21/2017
DRILLING EQUIPMENT	Little Beaver Drilling Rig	FINISH	08/01/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078344.18
EASTING	672547.78
ELEVATION	598.99 ft

WELL CONSTRUCTION

	Riser	Screen
Material:	*Carbon Steel*	*Open Hole*
Diameter (ID):	*5-inch*	*5-inch*
Coupling:	*Threaded*	*None*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *1 hours*
Gals. Purged: *18*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	WELL CONSTRUCTION
		LIMESTONE, dark gray (10YR 4/1), microcrystalline, [TD @ 23.5ft.]*(Continued)*				
22						
			23.5			
24	575					
26						
28						
	570					

REMARKS:
None.

WELL INSTALLATION NOTES:
None.

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-04S**
ERM PROJECT # 0346372
SHEET 1 OF 2

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	M. Eaves	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/21/2017
DRILLING EQUIPMENT	Little Beaver Drilling Rig	FINISH	08/01/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078344.18
EASTING	672547.78
ELEVATION	598.99 ft

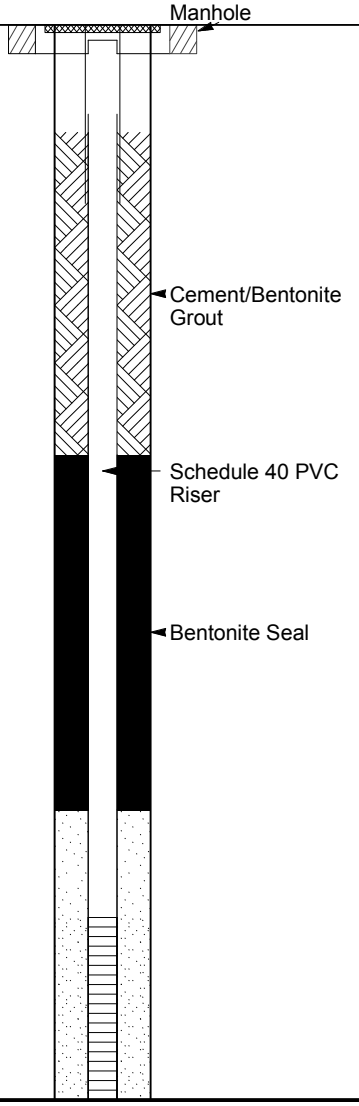
WELL CONSTRUCTION

	Riser	Screen
Material:	*Schedule 40 PVC*	*Schedule 40 PVC, 0.010-slot*
Diameter (ID):	*2-inch*	*2-inch*
Coupling:	*Threaded*	*Threaded*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *0.25 hours*
Gals. Purged: *3*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
		[concrete]			
		SANDY GRAVEL (GP-SP) fine to medium grained SAND; angular, fine to coarse grained GRAVEL; loose, dry, brown (10YR 4/3)	0.8 1	GP-SP	
2		SILTY SAND (SM) fine grained SAND; loose, some fine subround gravel, dry, brown (10YR 4/3)		SM	
4	595				
		SILTY SAND (SM) fine grained SAND; loose, some fine to coarse subround gravel, dry to moist, brown (10YR 4/3)	5	SM	
6		SANDY SILT (MLS) fine grained SAND; firm, some clay, some fine subround gravel, trace coal; dry to moist, brown (10YR 4/3)	6	MLS	
		SANDY SILT (MLS) fine grained SAND; firm, some clay, some fine to medium subround gravel, moist, brown (10YR 4/3), [minor oxidation]	7	MLS	
8		SANDY SILT (MLS) fine grained SAND; firm, some fine to medium subround gravel, trace cobbles, moist, brown to pale brown (10YR 5/4)	8	MLS	
	590				

WELL CONSTRUCTION



REMARKS:
None.

WELL INSTALLATION NOTES:
None.

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
G.W. Lisk
Site Characterization

BORING # **MW-04S**
ERM PROJECT # 0346372
SHEET 2 OF 2

DRILLING CONTRACTOR	Parratt Wolff Syracuse, NY	ERM REPRESENTATIVE	J. Reynolds/ T. Daniluk
DRILLING FOREMAN	M. Eaves	OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	07/21/2017
DRILLING EQUIPMENT	Little Beaver Drilling Rig	FINISH	08/01/2017

GEOGRAPHIC COORDINATES
(NAD 1983 StatePlane New York East (US Feet))

NORTHING	1078344.18
EASTING	672547.78
ELEVATION	598.99 ft

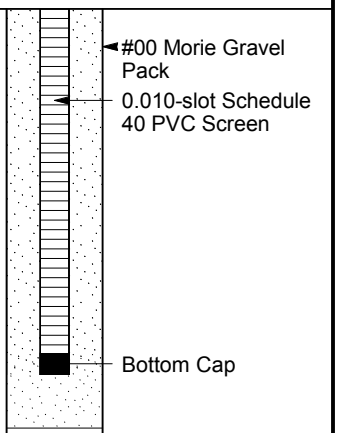
WELL CONSTRUCTION

	Riser	Screen
Material:	*Schedule 40 PVC*	*Schedule 40 PVC, 0.010-slot*
Diameter (ID):	*2-inch*	*2-inch*
Coupling:	*Threaded*	*Threaded*

WELL DEVELOPMENT
Method: *Surge and Pump - mechanical*
Duration: *0.25 hours*
Gals. Purged: *3*

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
		SANDY SILT (MLS) fine grained SAND; firm, trace fine subangular gravel, moist, brown (10YR 4/3)		MLS	
12		SILTY SAND (SM) fine to medium grained SAND; firm, some fine subangular gravel, wet, brown (10YR 4/3)	11.9 12	SM	
		SILTY SAND (SM) fine to medium grained SAND; soft, some fine subangular gravel, saturated, brown (10YR 4/3)		SM	
		SANDY SILT (MLS) fine grained SAND; firm, some fine to coarse subangular gravel, wet to saturated, pale brown (10YR 6/3), [some oxidation]	13 13.5	MLS	
14	585				
16					
18					
	580				

WELL CONSTRUCTION



REMARKS:
None.

WELL INSTALLATION NOTES:
None.

Appendix C
Sampling Forms

Low-Flow Groundwater Sampling Form

Site Name: GW Lisk
Project No.: 0346372

Monitoring Well:	GWL-N	Area:	Water Building
Date:	8-May-17	Sampling Device:	From spigot under pressure
Sampling Personnel:	M. Fox/T. Daniluk		
Weather Conditions:	48°F Partly cloudy, calm		
Time:	1635		

Total Depth (TD)[1]:	NA	Screen Length:	NA
Depth to Water (DTW):	NA	Well Diameter:	NA
Total Volume Purged:	13	Casing Type:	NA
Purge Rate:	1600 mL/min	PID Headspace (ppm):	NA
Tubing Type:	NA	Measuring Point:	NA
Pump Intake (feet below MP):	NA	Color: clear	Odor: none

Time: (min)	**DTW:** (feet)	**Comments:**	**Temp** (°C)	**SpC** (uS/cm^3)	**DO** (mg/L)	**pH** (std units)	**Turb** NTU	**ORP** mV	**Flow** (mL/min)
Stabilization Criteria[2]			+/- 3%	+/- 3%	+/- 10%	+/- 0.1 unit	+/- 10%[3]	+/- 10 mV	100-400
1640	NA		10.0	706	7.35	7.34	1.49	90.6	1600
1645	NA		9.9	628.1	7.16	7.32	0.21	94.7	1600
1650	NA		9.9	647.6	7.13	7.34	0.57	95.0	1600
1655	NA		9.9	648.7	7.97	7.35	0.32	91.6	1600
1700	NA		9.8	677.5	8.77	7.51	0.13	101.3	1600
1705	NA		9.8	681.2	9.03	7.53	0.30	102.2	1600
		Sampled due to flow cycle.							
		Unable to decrease flow rate							

Sampling Time: 1705

Sample ID:	Analysis Requested:		Filtered Y/N:		Preservative:	
GWL-N(05082017)	VOC	Metals	N	N	HCl	HNO_3
	PFC	1,4-Dioxane	N	N	None	None
	Cyanide		N		NaOH	

Additional Field Measurements

Notes:

[1] = Do not measure depth to bottom of well until after purging and sampling to reduce resuspending fines that may be resting on the well bottom.

[2] = Stabilization criteria based on three most recent consecutive measurements.

[3] = Plus or minus 10-percent when turbidity is over 10 NTUs.

Low-Flow Groundwater Sampling Form

Site Name: GW Lisk
Project No.: 0346372

Monitoring Well:	GWL-S	Area:	Water Building
Date:	9-May-17	Sampling Device:	From spigot under pressure
Sampling Personnel:	M. Fox		
Weather Conditions:	45°F Cloudy		
Time:	805		

Total Depth (TD)[1]:	NA	Screen Length:	NA
Depth to Water (DTW):	NA	Well Diameter:	NA
Total Volume Purged:	9 gal	Casing Type:	NA
Purge Rate:	600 mL/min	PID Headspace (ppm):	NA
Tubing Type:	NA	Measuring Point:	NA
Pump Intake (feet below MP):	NA	Color: clear	Odor: none

Time: (min)	**DTW:** (feet)	**Comments:**	**Temp** (°C)	**SpC** (uS/cm^3)	**DO** (mg/L)	**pH** (std units)	**Turb** NTU	**ORP** mV	**Flow** (mL/min)
Stabilization Criteria[2]			+/- 3%	+/- 3%	+/- 10%	+/- 0.1 unit	+/- 10%[3]	+/- 10 mV	100-400
810	NA		9.8	776	7.71	6.88	0.63	228.4	600
815	NA		9.8	757	7.60	7.13	2.75	217.8	600
820	NA		9.9	729	7.52	7.33	2.92	208.9	600
825	NA		9.9	730	7.17	7.39	3.53	202.6	600
		pump cycle off							
1400	NA	pump cycle on							
1405	NA		9.1	694.2	9.30	7.37	1.79	159.0	600
1410	NA		9.3	665.1	8.35	7.44	1.76	151.5	600
1415	NA		9.4	656.9	7.52	7.49	2.62	146.8	600
1420	NA		9.5	655.4	7.44	7.51	1.70	144.1	600
1425	NA		9.5	657.4	7.40	7.51	2.31	141.9	600

Sampling Time: 1430

Sample ID:	Analysis Requested:		Filtered Y/N:		Preservative:	
GWL-S(05092017)	VOC	Metals	N	N	HCl	HNO_3
	PFC	1,4-Dioxane	N	N	None	None
	Cyanide		N		NaOH	

Additional Field Measurements

Notes:

[1] = Do not measure depth to bottom of well until after purging and sampling to reduce resuspending fines that may be resting on the well bottom.

[2] = Stabilization criteria based on three most recent consecutive measurements.

[3] = Plus or minus 10-percent when turbidity is over 10 NTUs.

Low-Flow Groundwater Sampling Form

Site Name: GW Lisk
Project No.: 0346372

Monitoring Well:	MW-01S	Area:	Exterior
Date:	11/20/2017	Sampling Device:	Peristaltic Pump
Sampling Personnel:	Cal Payne		
Weather Conditions:	40, overcast		
Time:	15:40		

Total Depth (TD)[1]:	21.44	Screen Length (feet):	
Depth to Water (DTW):	20.81	Well Diameter (inches):	2
Total Volume Purged (USG):	0.1	Casing Type:	PVC
Average Purge Rate:	150	PID Headspace (ppm):	30.7
Tubing Type:	HDPE	Measuring Point:	TOC
Pump Intake (feet below MP):	~21	Color: tan, turbid	Odor: none

Time: (min)	**DTW:** (feet)	**Comments:**	**Temp** (°C)	**SpC** (uS/cm³)	**DO** (mg/L)	**pH** (std units)	**Turb** NTU	**ORP** mV	**Flow** (mL/min)
Stabilization Criteria[2]			+/- 3%	+/- 3%	+/- 10%	+/- 0.1 unit	+/- 10%[3]	+/- 10 mV	100-400
15:43		well dry @ 14:45	13.0	17620.0	1.44	6.78		64.3	150
		Recharged, VOC and 1 Trizma bottle filled @ 16:40.							

Sampling Time:
16:40

Sample ID:	Analysis Requested:		Filtered Y/N:	Preservative:	
GWL-MW-01S(11202017)	VOC	PFC	No	HCl	Trizma

Additional Field Measurements

Notes:

[1] = Do not measure depth to bottom of well until after purging and sampling to reduce resuspending fines that may be resting on the well bottom.

[2] = Stabilization criteria based on three most recent consecutive measurements.

[3] = Plus or minus 10-percent when turbidity is over 10 NTUs.

Low-Flow Groundwater Sampling Form

Site Name: GW Lisk
Project No.: 0346372

Monitoring Well:	MW-01D	Area:	Exterior
Date:	11/20/2017	Sampling Device:	Peristaltic Pump
Sampling Personnel:	Cal Payne		
Weather Conditions:	38, overcast		
Time:	13:50		

Total Depth (TD)[1]:	44.61	Screen Length (feet):	
Depth to Water (DTW):	22.43	Well Diameter (inches):	4
Total Volume Purged (USG):	1.5	Casing Type:	Steel
Average Purge Rate:	170	PID Headspace (ppm):	4.3
Tubing Type:	HDPE	Measuring Point:	TOC
Pump Intake (feet below MP):	~42	Color: Clear	Odor: None

Time: (min)	**DTW:** (feet)	**Comments:**	**Temp** (°C)	**SpC** (uS/cm^3)	**DO** (mg/L)	**pH** (std units)	**Turb** NTU	**ORP** mV	**Flow** (mL/min)
Stabilization Criteria[2]			+/- 3%	+/- 3%	+/- 10%	+/- 0.1 unit	+/- 10%[3]	+/- 10 mV	100-400
16:18	22.28		10.2	1422.0	6.03	9.31	6.81	78.8	250
16:23	22.29		10.1	1436.0	5.42	8.74	3.92	111.3	150
16:28	22.35		10.2	1437.0	5.17	8.34	1.84	121.0	150
16:33	22.34		10.2	1436.0	5.32	8.14	2.53	125.3	150
16:38	22.34		10.1	1436.0	5.31	8.09	2.41	126.5	150
16:43	22.39		10.1	1436.0	5.19	7.92	1.52	126.5	150
16:48	22.51		10.1	1429.0	5.31	7.81	1.38	130.2	150

Sampling Time:
16:51

Sample ID:	Analysis Requested:	Filtered Y/N:	Preservative:
GWL-MW-01D(11202017)	VOC PFC 1 4-dioxane	No	HCl Trizma

Additional Field Measurements

Notes:

[1] = Do not measure depth to bottom of well until after purging and sampling to reduce resuspending fines that may be resting on the well bottom.

[2] = Stabilization criteria based on three most recent consecutive measurements.

[3] = Plus or minus 10-percent when turbidity is over 10 NTUs.

Low-Flow Groundwater Sampling Form

Site Name: GW Lisk
Project No.: 0346372

Monitoring Well:	MW-02S	Area:	Interior
Date:	11/20/2017	Sampling Device:	Peristaltic Pump
Sampling Personnel:	Tim Daniluk		
Weather Conditions:			
Time:	9:50		

Total Depth (TD)[1]:	19.48	Screen Length (feet):	
Depth to Water (DTW):	12.9	Well Diameter (inches):	2
Total Volume Purged (USG):	2	Casing Type:	PVC
Average Purge Rate:	175 ml/min	PID Headspace (ppm):	2000
Tubing Type:	HDPE	Measuring Point:	TOC
Pump Intake (feet below MP):	~18.5	Color: colorless	Odor: organic

Time: (min)	**DTW:** (feet)	**Comments:**	**Temp** (°C)	**SpC** (uS/cm^3)	**DO** (mg/L)	**pH** (std units)	**Turb** NTU	**ORP** mV	**Flow** (mL/min)
Stabilization Criteria[2]			+/- 3%	+/- 3%	+/- 10%	+/- 0.1 unit	+/- 10%[3]	+/- 10 mV	100-400
9:55	13.65		18.0	3229.0	0.89	6.86	1.46	-139.7	250
10:00	13.87		18.2	3299.0	0.55	6.78	1.20	-175.4	175
10:05	14.05		18.3	2965.0	0.53	6.82	1.20	-172.6	175
10:10	14.12		18.3	2919.0	0.49	6.81	0.32	-169.3	175
10:15	14.25		18.3	2952.0	0.42	6.83	1.83	-165.5	175
10:20	14.37		18.3	2976.0	0.39	6.84	0.89	-162.7	175

Sampling Time: 10:30

Sample ID:	Analysis Requested:	Filtered Y/N:	Preservative:
GWL-MW-02S(11202017)	1 4-dioxane	No	Unpreserved
	Cyanide	No	NaOH
	VOC	No	HCl
	PFC	No	Trizma
	PCB	No	Unpreserved
	Metals + Hg	No	HNO3

Additional Field Measurements

Notes:

[1] = Do not measure depth to bottom of well until after purging and sampling to reduce resuspending fines that may be resting on the well bottom.

[2] = Stabilization criteria based on three most recent consecutive measurements.

[3] = Plus or minus 10-percent when turbidity is over 10 NTUs.

Low-Flow Groundwater Sampling Form

Site Name: GW Lisk
Project No.: 0346372

Monitoring Well:	MW-02D	Area:	Interior
Date:	11/20/2017	Sampling Device:	Peristaltic Pump
Sampling Personnel:	Tim Daniluk		
Weather Conditions:	30 snow 10 mph nw		
Time:	11:18		

Total Depth (TD)[1]:	30.13	Screen Length (feet):	
Depth to Water (DTW):	14.24	Well Diameter (inches):	4
Total Volume Purged (USG):	2	Casing Type:	Open Well
Average Purge Rate:	175 ml/min	PID Headspace (ppm):	245.7
Tubing Type:	HDPE	Measuring Point:	TOC
Pump Intake (feet below MP):	25	Color: colorless	Odor: slight organic

Time: (min)	**DTW:** (feet)	**Comments:**	**Temp** (°C)	**SpC** (uS/cm^3)	**DO** (mg/L)	**pH** (std units)	**Turb** NTU	**ORP** mV	**Flow** (mL/min)
Stabilization Criteria[2]			+/- 3%	+/- 3%	+/- 10%	+/- 0.1 unit	+/- 10%[3]	+/- 10 mV	100-400
11:23	14.55		18.8	2414.0	0.33	11.82	8.28	-106.5	200
11:28	14.86		18.8	2424.0	0.29	11.92	7.67	-102.8	175
11:33	15.18		18.8	2435.0	0.30	12.05	8.67	-98.3	175
11:38	15.31		18.8	2440.0	0.27	12.02	6.58	-93.9	175
11:43	15.61		18.8	2445.0	0.31	12.06	6.39	-88.3	175
11:48	15.78		18.8	2444.0	0.32	12.06	4.53	-87.0	175

Sampling Time: 11:53

Sample ID:	Analysis Requested:	Filtered Y/N:	Preservative:
GWL-MW-02D(11202017)	1 4-dioxane	No	Unpreserved
	Cyanide	No	NaOH
	VOC	No	HCl
	PFC	No	Trizma
	PCB	No	Unpreserved
	Metals + Hg	No	HNO3

Additional Field Measurements

Notes:

[1] = Do not measure depth to bottom of well until after purging and sampling to reduce resuspending fines that may be resting on the well bottom.

[2] = Stabilization criteria based on three most recent consecutive measurements.

[3] = Plus or minus 10-percent when turbidity is over 10 NTUs.

Low-Flow Groundwater Sampling Form

Site Name: GW Lisk
Project No.: 0346372

Monitoring Well:	MW-03S	Area:	Interior
Date:	11/20/2017	Sampling Device:	Peristaltic Pump
Sampling Personnel:	Cal Payne		
Weather Conditions:			
Time:	10:09		

Total Depth (TD)[1]:	16.1	Screen Length (feet):	
Depth to Water (DTW):	13.64	Well Diameter (inches):	2
Total Volume Purged (USG):	2.5	Casing Type:	PVC
Average Purge Rate:	200	PID Headspace (ppm):	665
Tubing Type:	HDPE	Measuring Point:	TOC
Pump Intake (feet below MP):	~15	Color: Clear	Odor: none

Time: (min)	**DTW:** (feet)	**Comments:**	**Temp** (°C)	**SpC** (uS/cm^3)	**DO** (mg/L)	**pH** (std units)	**Turb** NTU	**ORP** mV	**Flow** (mL/min)
Stabilization Criteria[2]			+/- 3%	+/- 3%	+/- 10%	+/- 0.1 unit	+/- 10%[3]	+/- 10 mV	100-400
11:13	14.11		18.9	2811.0	0.66	8.53	3.30	14.8	250
11:18	14.29		18.6	2756.0	0.44	7.71	8.10	35.1	200
11:23	14.50		18.7	2742.0	0.35	7.32	11.28	46.9	200
11:28	14.57		18.7	2711.0	0.31	7.16	5.58	51.3	200
11:33	14.63		18.7	2699.0	0.25	7.10	5.31	53.2	200
11:38	14.68		18.7	2688.0	0.22	7.07	4.90	55.5	200
11:43	14.70		18.7	2683.0	0.22	7.01	3.66	57.6	200

Sampling Time:
11:46

Sample ID:	Analysis Requested:			Filtered Y/N:	Preservative:		
GWL-MW-03S(11202017)	VOC	PFC	Metals + Hg	No	HCl	Trizma	HNO3
	Cyanide	1 4-dioxane			NaOH		

Additional Field Measurements

Notes:

[1] = Do not measure depth to bottom of well until after purging and sampling to reduce resuspending fines that may be resting on the well bottom.

[2] = Stabilization criteria based on three most recent consecutive measurements.

[3] = Plus or minus 10-percent when turbidity is over 10 NTUs.

Low-Flow Groundwater Sampling Form

Site Name: GW Lisk
Project No.: 0346372

Monitoring Well:	MW-3D	Area:	Interior
Date:	11/20/2017	Sampling Device:	Peristaltic Pump
Sampling Personnel:	Cal Payne		
Weather Conditions:			
Time:	8:25		

Total Depth (TD)[1]:	28.96	Screen Length (feet):	
Depth to Water (DTW):	12.94	Well Diameter (inches):	4
Total Volume Purged (USG):	~3.0	Casing Type:	PVC
Average Purge Rate:	200	PID Headspace (ppm):	151.1
Tubing Type:	HDPE	Measuring Point:	TOC
Pump Intake (feet below MP):	~27	Color: Clear	Odor: trace organic

Time: (min)	**DTW:** (feet)	**Comments:**	**Temp** (°C)	**SpC** (uS/cm^3)	**DO** (mg/L)	**pH** (std units)	**Turb** NTU	**ORP** mV	**Flow** (mL/min)
Stabilization Criteria[2]			+/- 3%	+/- 3%	+/- 10%	+/- 0.1 unit	+/- 10%[3]	+/- 10 mV	100-400
9:38	13.13		17.5	2042.0	28.51	10.81	11.03	-42.3	225
9:43	13.38		18.0	2209.0	0.45	11.77	3.05	-143.8	200
9:48	13.89		18.1	2191.0	0.26	11.80	4.42	-179.1	200
9:53	14.37		18.2	2177.0	0.20	11.79	4.30	-199.5	200
9:58	15.06		18.2	2168.0	0.18	11.78	4.66	-210.4	200
10:03	15.32		18.3	2166.0	0.18	11.78	4.87	-213.1	200
10:08	15.74		18.3	2159.0	0.17	11.77	4.75	-213.4	200

Sampling Time:
10:16

Sample ID:
GWL-MW-3D((11202017)

Analysis Requested:
VOC 1 4-dioxane Cyanide
Metals PFC Pesticides

Filtered Y/N:
No

Preservative:
HCl HNO3 NaOH
Trizma

Additional Field Measurements
!

Notes:

[1] = Do not measure depth to bottom of well until after purging and sampling to reduce resuspending fines that may be resting on the well bottom.

[2] = Stabilization criteria based on three most recent consecutive measurements.

[3] = Plus or minus 10-percent when turbidity is over 10 NTUs.

Low-Flow Groundwater Sampling Form

Site Name: GW Lisk
Project No.:

Monitoring Well:	MW-04S	Area:	Interior
Date:	11/20/2017	Sampling Device:	Peristaltic Pump
Sampling Personnel:	Cal Payne		
Weather Conditions:			
Time:	12:39		

Total Depth (TD)[1]:	12.17	Screen Length (feet):	
Depth to Water (DTW):	10.52	Well Diameter (inches):	2
Total Volume Purged (USG):	2	Casing Type:	PVC
Average Purge Rate:	170	PID Headspace (ppm):	6.1
Tubing Type:	HDPE	Measuring Point:	TOC
Pump Intake (feet below MP):	~12	Color: Clear	Odor: none

Time: (min)	**DTW:** (feet)	**Comments:**	**Temp** (°C)	**SpC** (uS/cm^3)	**DO** (mg/L)	**pH** (std units)	**Turb** NTU	**ORP** mV	**Flow** (mL/min)
Stabilization Criteria[2]			+/- 3%	+/- 3%	+/- 10%	+/- 0.1 unit	+/- 10%[3]	+/- 10 mV	100-400
13:40	11.08		20.4	1399.0	5.88	7.89	10.14	70.7	200
13:45	11.10		20.6	1375.0	4.60	7.15	61.01	97.5	175
13:50	11.35		20.2	1372.0	4.04	7.08	28.92	103.3	160
13:55	11.40		20.1	1372.0	3.86	7.06	18.80	109.7	160
14:00	11.40		20.1	1372.0	3.89	7.02	12.64	114.0	160
14:05	11.40		20.1	1373.0	3.84	7.03	8.93	117.7	160
14:10	11.40		20.1	1374.0	3.87	7.04	5.41	120.7	160
14:15	11.40		20.1	1375.0	3.83	7.02	5.38	123.7	160

Sampling Time:
14:19

Sample ID:
GWL-MW-04S(11202017)

Analysis Requested:
VOC PFC SVOC
Metals + Hg Cyanide 1 4-dioxane
PCB

Filtered Y/N:
No

Preservative:
HCl HNO3 Trizma
NaOH

Additional Field Measurements

Notes:

[1] = Do not measure depth to bottom of well until after purging and sampling to reduce resuspending fines that may be resting on the well bottom.

[2] = Stabilization criteria based on three most recent consecutive measurements.

[3] = Plus or minus 10-percent when turbidity is over 10 NTUs.

Low-Flow Groundwater Sampling Form

Site Name: GW Lisk
Project No.: 0346372

Monitoring Well:	MW-04D	Area:	Interior
Date:	11/20/2017	Sampling Device:	Peristaltic Pump
Sampling Personnel:	Tim Daniluk		
Weather Conditions:	30 snow 10 mph nw		
Time:	13:38		

Total Depth (TD)[1]:	21.53	Screen Length (feet):	
Depth to Water (DTW):	10.99	Well Diameter (inches):	4
Total Volume Purged (USG):	1.75	Casing Type:	Open Well
Average Purge Rate:	175 ml/min	PID Headspace (ppm):	72.8
Tubing Type:	HDPE	Measuring Point:	TOC
Pump Intake (feet below MP):	17	Color: colorless	Odor: strong organic

Time: (min)	**DTW:** (feet)	**Comments:**	**Temp** (°C)	**SpC** (uS/cm^3)	**DO** (mg/L)	**pH** (std units)	**Turb** NTU	**ORP** mV	**Flow** (mL/min)
Stabilization Criteria[2]			+/- 3%	+/- 3%	+/- 10%	+/- 0.1 unit	+/- 10%[3]	+/- 10 mV	100-400
13:42	11.20		19.9	1624.0	0.92	11.76	7.39	-52.5	150
13:47	11.27		19.8	1630.0	0.34	11.83	5.62	-61.1	150
13:52	11.29		19.8	1633.0	0.36	11.85	8.70	-67.8	175
13:57	11.32		19.8	1635.0	0.30	11.85	5.46	-70.1	175
14:02	11.35		19.8	1635.0	0.27	11.87	3.95	-72.8	175
14:07	11.39		19.8	1613.0	0.26	11.86	7.01	-72.7	175

Sampling Time: 14:10

Sample ID:	Analysis Requested:	Filtered Y/N:	Preservative:
GWL-MW-04D(11202017)	1 4-dioxane	No	Unpreserved
	Cyanide	No	NaOH
	VOC	No	HCl
	PFC	No	Trizma
	PCB	No	Unpreserved
	Metals + Hg	No	HNO3
	SVOC	No	Unpreserved

Additional Field Measurements

Notes:

[1] = Do not measure depth to bottom of well until after purging and sampling to reduce resuspending fines that may be resting on the well bottom.

[2] = Stabilization criteria based on three most recent consecutive measurements.

[3] = Plus or minus 10-percent when turbidity is over 10 NTUs.

Low-Flow Groundwater Sampling Form

Site Name: GW Lisk
Project No.: 0346372

Monitoring Well:	MW-1	Area:	Hospital
Date:	11/20/2017	Sampling Device:	Peristaltic Pump
Sampling Personnel:	Cal Payne		
Weather Conditions:	~32 F, dark		
Time:	17:38		

Total Depth (TD)[1]:	9.38	Screen Length (feet):	
Depth to Water (DTW):	4.98	Well Diameter (inches):	2
Total Volume Purged (USG):	4	Casing Type:	PVC
Average Purge Rate:	200	PID Headspace (ppm):	0
Tubing Type:	HDPE	Measuring Point:	TOC
Pump Intake (feet below MP):	~8	Color: Light tan	Odor: none

Time: (min)	**DTW:** (feet)	**Comments:**	**Temp** (°C)	**SpC** (uS/cm^3)	**DO** (mg/L)	**pH** (std units)	**Turb** NTU	**ORP** mV	**Flow** (mL/min)
Stabilization Criteria[2]			+/- 3%	+/- 3%	+/- 10%	+/- 0.1 unit	+/- 10%[3]	+/- 10 mV	100-400
17:38			13.0	1665.0	1.73	8.19	47.07	69.5	250
17:43			13.4	1398.0	1.55	7.33	46.71	93.3	200
17:48			13.5	1450.0	1.10	7.18	41.37	99.3	200
17:53			13.9	1748.0	0.47	7.06	34.38	106.1	200
17:58			14.0	1851.0	0.37	7.01	35.35	108.2	200
18:03			10.0	1924.0	0.33	6.99	34.64	110.1	200
18:08			14.1	1927.0	0.26	6.99	28.72	111.0	200
18:13			14.2	2028.0	0.19	6.95	18.56	113.8	200
18:18			14.2	2001.0	0.20	6.95	19.31	114.2	200
18:23			14.3	2021.0	0.15	6.94	19.06	116.2	200

Sampling Time:
18:30

Sample ID:	Analysis Requested:			Filtered Y/N:	Preservative:	
GWL-H-MW-1(11202017)	VOC	PFC	1 4-dioxane	No	HCl	Trizma

Additional Field Measurements
Water meter malfunctioned, no depth to water readings

Notes:
[1] = Do not measure depth to bottom of well until after purging and sampling to reduce resuspending fines that may be resting on the well bottom.
[2] = Stabilization criteria based on three most recent consecutive measurements.
[3] = Plus or minus 10-percent when turbidity is over 10 NTUs.

Low-Flow Groundwater Sampling Form

Site Name: GW Lisk
Project No.: 0346372

Monitoring Well:	MW-1SR	Area:	Hospital
Date:	11/20/2017	Sampling Device:	Peristaltic Pump
Sampling Personnel:	Tim Daniluk		
Weather Conditions:	28 degrees calm overcast		
Time:	17:38		

Total Depth (TD)[1]:		Screen Length (feet):	
Depth to Water (DTW):	8.99	Well Diameter (inches):	4
Total Volume Purged (USG):	1.75	Casing Type:	Open Well
Average Purge Rate:	200 ml/min	PID Headspace (ppm):	0.1
Tubing Type:	HDPE	Measuring Point:	TOC
Pump Intake (feet below MP):	17	Color: colorless	Odor: none

Time: (min)	**DTW:** (feet)	**Comments:**	**Temp** (°C)	**SpC** (uS/cm^3)	**DO** (mg/L)	**pH** (std units)	**Turb** NTU	**ORP** mV	**Flow** (mL/min)
Stabilization Criteria[2]			+/- 3%	+/- 3%	+/- 10%	+/- 0.1 unit	+/- 10%[3]	+/- 10 mV	100-400
17:43	9.37		14.0	1377.0	0.84	8.07	17.10	-62.0	250
17:48	9.45		13.9	1375.0	0.76	8.04	18.70	-67.2	200
17:53	9.55		13.9	1378.0	0.72	8.01	18.60	-75.0	200
17:58	9.52		13.9	1623.0	0.66	7.69	17.90	-25.5	200
18:03	9.51		14.0	1708.0	0.74	7.47	3.95	5.9	200
18:08	9.53		14.1	1705.0	0.55	7.34	4.67	18.7	175
18:13									

Sampling Time: 14:10

Sample ID:	Analysis Requested:	Filtered Y/N:	Preservative:
GWL-H-MW-01SR(11202017)	1 4-dioxane	No	Unpreserved
	VOC	No	HCl
	PFC	No	Trizma

Additional Field Measurements

Notes:

[1] = Do not measure depth to bottom of well until after purging and sampling to reduce resuspending fines that may be resting on the well bottom.

[2] = Stabilization criteria based on three most recent consecutive measurements.

[3] = Plus or minus 10-percent when turbidity is over 10 NTUs.

Low-Flow Groundwater Sampling Form

Site Name: GW Lisk
Project No.: 0346372

Monitoring Well:	MW-4SR	Area:	Hospital
Date:	11/20/2017	Sampling Device:	Peristaltic Pump
Sampling Personnel:	Cal Payne		
Weather Conditions:	35, night		
Time:	18:56		

Total Depth (TD)[1]:	8.71	Screen Length (feet):	
Depth to Water (DTW):	7.08	Well Diameter (inches):	4
Total Volume Purged (USG):	2.2	Casing Type:	Steel
Average Purge Rate:	200	PID Headspace (ppm):	0.5
Tubing Type:	HDPE	Measuring Point:	TOC
Pump Intake (feet below MP):	~7.5	Color: Clear	Odor: None

Time: (min)	**DTW:** (feet)	**Comments:**	**Temp** (°C)	**SpC** (uS/cm^3)	**DO** (mg/L)	**pH** (std units)	**Turb** NTU	**ORP** mV	**Flow** (mL/min)
Stabilization Criteria[2]			+/- 3%	+/- 3%	+/- 10%	+/- 0.1 unit	+/- 10%[3]	+/- 10 mV	100-400
18:56	7.13		9.0	934.0	9.64	8.21	13.41	103.8;	250
19:01	7.14		10.2	890.0	8.05	7.61	7.30	111.4	225
19:06	7.14		10.2	890.0	8.10	7.51	5.00	116.9	225
19:11	7.15		10.2	890.0	7.48	7.47	5.05	121.1	225
19:16	7.16		10.2	892.0	8.07	7.47	3.94	124.0	225
19:21	7.15		10.2	892.0	8.03	7.46	3.32	127.1	225
19:26	7.15		10.1	892.0	8.02	7.46	2.88	129.9	225

Sampling Time:
19:30

Sample ID:	Analysis Requested:	Filtered Y/N:	Preservative:
GWL-H-MW-4SR(11202017)	VOC PFC 1 4-dioxane	No	HCl Trizma

Additional Field Measurements

Notes:

[1] = Do not measure depth to bottom of well until after purging and sampling to reduce resuspending fines that may be resting on the well bottom.

[2] = Stabilization criteria based on three most recent consecutive measurements.

[3] = Plus or minus 10-percent when turbidity is over 10 NTUs.

SURFACE WATER / SEDIMENT FIELD SAMPLING RECORD

Project Name: GW Lisk Project No.: 0346372 Date: 10-May-17

Samplers Name(s): Tim Daniluk
Mike Fox

SAMPLE IDENTIFICATION: GWL-SW-01(05102017)

Time of Collection: 1030
Sample Type: Surface Water
Sampling Method: SW via HDPE tubing with peristaltic pump
Description of Sample Location: Sulpher Creek, upstream of GW Lisk facility adjacent to parking area
Adjacent Sample Location(s): N/A
Drainage Direction: Stream flows south to north at sample location
Upstream From: GWL-SW-02(05102017)
Downstream From: N/A
Wildlife Observed: Birds, squirrels, insects

Sampling Description: Sampled while wading in stream, downstream of sample location
Suspended Matter: Some organics
Color/Strain: Colorless
Odor: Organic
Other:
Texture:
Preservative: See COC.
Analyze For: VOC, SVOC, PCB, Pesticides, Metals, Hg, Cyanide, PFAS, 1,4 - Dioxane
Filtered/Unfiltered: Unfiltered

Field Tests:

T (°C): 9.7 pH (su): 8.2 DO 12.06 Sp C. (µS/cm^3): 543 ORP (mV): 51.6

PID Reading (ppm): 0.0 (sed) Turbidity (NTU): 1.79

Weather: ± 52°F, partly cloudy, calm

Comments:

SURFACE WATER / SEDIMENT FIELD SAMPLING RECORD

Project Name: GW Lisk Project No.: 0346372 Date: 10-May-17

Samplers Name(s): Tim Daniluk
Mike Fox

SAMPLE IDENTIFICATION: GWL-SW-02(05102017)

Time of Collection: 1030
Sample Type: Surface Water
Sampling Method: SW via HDPE tubing with peristaltic pump
Description of Sample Location: Sulpher Creek, downstream of GW Lisk facility
Adjacent Sample Location(s): GWL-DUP-02(05102017)
Drainage Direction: Stream flows southeast to northwest at sample location
Upstream From: N/A
Downstream From: GWL-SW-01(05102017)
Wildlife Observed: Birds, insects

Sampling Description: Sampled while wading in stream, downstream of sample location
Suspended Matter: Some organics
Color/Strain: Colorless
Odor: Organic
Other:
Texture:
Preservative: See COC.
Analyze For: VOC, SVOC, PCB, Pesticides, Metals, Hg, Cyanide, PFAS, 1,4 - Dioxane
Filtered/Unfiltered: Unfiltered

Field Tests:

T (°C): 8.2 pH (su): 7.5 DO 13.22 Sp C. (µS/cm^3): 580.3 ORP (mV): 155.1

PID Reading (ppm): 0.0 (sed) Turbidity (NTU): 0.14

Weather: ± 52°F, partly cloudy, calm

Comments:

SURFACE WATER / SEDIMENT FIELD SAMPLING RECORD

Project Name: GW Lisk Project No.: 0346372 Date: 27-Jun-17

Samplers Name(s): Caldwell Payne

SAMPLE IDENTIFICATION: GWL-SW-03(06272017)

Time of Collection: 1006

Sample Type: Surface Water

Sampling Method: SW via HDPE tubing with peristaltic pump

Description of Sample Location: Sulpher Creek, upstream of GW Lisk facility

Adjacent Sample Location(s): N/A

Drainage Direction: Stream flows southwest to northeast at sample location

Upstream From: GWL-SW-02(05102017), GWL-DUP-02(05102017)

Downstream From: GWL-SW-01(05102017)

Wildlife Observed: Birds, insects

Sampling Description: Sampled while wading in stream, downstream of sample location

Suspended Matter: Some organics

Color/Strain: Colorless

Odor: Organic

Other:

Texture:

Preservative: See COC.

Analyze For: PCB

Filtered/Unfiltered: Unfiltered

Field Tests:

T (°C): 14.9 pH (su): 7.41 DO 8.92 Sp C. (µS/cm^3): 1439 ORP (mV): 116.4

PID Reading (ppm): 0.0 (sed) Turbidity (NTU): 0.12

Weather: ± 60°F, partly cloudy, calm

Comments:

Appendix D
VI Sub-Slab and Indoor Air Sampling Questionnaire

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: G.W. Lisk Company, Inc. Site Code: 835026 Operable Unit: 1

Building Code: Main Building Name: Main Building

Address: 2 South Street Apt/Suite No:

City: Clifton Springs State: NY Zip: 14432 County: Ontario

Contact Information

Preparer's Name: Tim Daniluk Phone No: (315) 317-2044

Preparer's Affiliation: ERM Company Code: ERM

Purpose of Investigation: VI Assessment Date of Inspection: 5-8-17

Contact Name: Arno Bebernitz Affiliation: MANAGER

Phone No: (315) 462-4255 Alt. Phone No: Email: abebernitz@gwlisk.com

Number of Occupants (total): 50+ Number of Children: 0

☐ Occupant Interviewed? ☒ Owner Occupied? ☐ Owner Interviewed?

Owner Name (if different): G. W Lisk Company, Inc. Owner Phone:

Owner Mailing Address:

Building Details

Bldg Type (Res/Com/Ind/Mixed): INDUSTRIAL Bldg Size (S/M/L): LARGE

If Commercial or Industrial Facility, Select Operations: MANUFACTURING

If Residential Select Structure Type:

Number of Floors: 2 Approx. Year Construction: 1940 ☒ Building Insulated? ☐ Attached Garage?

Describe Overall Building 'Tightness' and Airflows(e.g., results of smoke tests):

Average tightness

Foundation Description

Foundation Type: ABOVE GRADE Foundation Depth (bgs): Unit: FEET

Foundation Floor Material: POURED CONCRETE

Foundation Wall Material: CONCRETE BLOCK

Foundation Floor Thickness: 8

Foundation Wall Thickness:

Unit: INCHES

☒ Floor penetrations? Describe Floor Penetrations:

☐ Wall penetrations? Describe Wall Penetrations:

Basement is: Basement is: ☐ Sumps/Drains? Water In Sump?: N/A

Describe Foundation Condition (cracks, seepage, etc.) :

☐ Radon Mitigation System Installed? ☐ VOC Mitigation System Installed? ☐ Mitigation System On?

Heating / Cooling / Ventilation Systems

Heating System: FORCED AIR Heat Fuel Type: GAS ☒ Central A/C Present?

Vented Appliances

Water Heater Fuel Type: GAS Clothes Dryer Fuel Type:

Water Htr Vent Location: OUTSIDE Dryer Vent Location:

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

PRODUCT INVENTORY

Building Name: Main Building Bldg Code: Main Date: 5/8/2017

Bldg Address: 2 South Street Apt/Suite No:

Bldg City/State/Zip: Clifton Springs NY, 14432

Make and Model of PID: MiniRAE 3000 Date of Calibration: 5/8/2017

Location	Product Name/Description	Size (oz)	Condition *	Chemical Ingredients	PID Reading	COC Y/N?
VI-02	Stoner Cleaner/Degreaser	12	U	1,1,1-trichloroethane, trichloroethene, Citrus Distillates, Petroleum distillates, ether propellant, hydrocarbon propellent		☒
VI-02	Armor Dry 27		U	1,1,1-trichloroethane		☒
VI-02	Autographs Activating Solvent		U	1,1,1-trichloroethane		☒
VI-04	Trump Plus	12	U	1,1,1-trichlorethane, methylene chloride, zinc oxide, propane, N-butane, alyphatic hydrocarbon, napthenic distillate		☒
General Use	CDC-10	32	U	water, diethylene glycol monobutyl ether, sodium tripolyphosphate, disodium cocampho dipropionatedialkyl dimethyl ammonium chlorid+		☐
Flammables R+	TCE drum	drum	U	trichloroethene		☒
General Use	Clorox	19	U	ethanol, isobutane, propane, sodium nitrite, n-alkyl benzyl ammonium chloride, octyl decyl dimethyl ammonium chloride		☐
General Use	Dykem Remover and Prep	12	U	acetone, ethanol, n-propyl acetate, isopropyl alcohol		☐
General Use	Flux Remover	16	U	1,1,1,2,2,3,4,5,5,5-decafluoropentane, 1,2-transdichloroethylene, 1,1,1,2-tetrafluoroethane, ethanol, carbon dioxide		☒
General Use	Orange Tough 15	32	U	triethanolamine dodecybenzene sulfonate, dipropylene glycol monobutyl ether, triethanolaminesoybean oil, methyl esters, d- +		☐
General Use	Electro Contact Cleaner		U	ethane, 1,1,1,2-tetrafluoro-(hfc-134a),methyl nonafluorobutyl ether, perfluoro compounds, 1,2-trans dichloroethene, cyclohexylmethane, +		☐
General Use	WD-40	7	U	alyphatix hydrocarbon, petroleum base oil, LVP alyphatic hydrocarbon, surfactant		☐
Degreaser	Acetone		U	acetone	0.7	☐
Degreaser	Iso-propyl alcohol		U	Iso-propyl alcohol	4.1	☐
Degreaser	n-propylbromide	7040	U	n-propylbromide	0.7	☐
Degreaser	Xylene	7040	U	xylene	4.19	☐

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**

** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

Product Inventory Complete? Yes Were there any elevated PID readings taken on site? Yes ☒ Products with COC?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: G.W. Lisk Company, Inc. Site Code: 835026 Operable Unit: 1

Building Code: Main Building Name: Main Building

Address: 2 South Street Apt/Suite No:

City: Clifton Springs State: NY Zip: 14432 County: Ontario

Factors Affecting Indoor Air Quailty

Frequency Basement/Lowest Level is Occupied?: FULL TIME Floor Material: CEMENT

☐ Inhabited? ☐ HVAC System On? ☐ Bathroom Exhaust Fan? ☐ Kitchen Exhaust Fan?

Alternate Heat Source: OTHER ☐ Is there smoking in the building?

☐ Air Fresheners? Description/Location of Air Freshener:

☐ Cleaning Products Used Recently?: Description of Cleaning Products:

☐ Cosmetic Products Used Recently?: Description of Cosmetic Products:

☐ New Carpet or Furniture? Location of New Carpet/Furniture:

☐ Recent Dry Cleaning? Location of Recently Dry Cleaned Fabrics:

☐ Recent Painting/Staining? Location of New Painting:

☒ Solvent or Chemical Odors? Describe Odors (if any): organic

☒ Do Any Occupants Use Solvents At Work? If So, List Solvents Used: acetone, iso-propyl alcohol

☐ Recent Pesticide/Rodenticide? Description of Last Use:

Describe Any Household Activities (chemical use,/storage, unvented appliances, hobbies, etc.) That May Affect Indoor Air Quality:

Chemical Use
Degreasing
Plating
Waste Storage

☐ Any Prior Testing For Radon? If So, When?:

☒ Any Prior Testing For VOCs? If So, When?: 4/2016

Sampling Conditions

Weather Conditions: PARTLY CLOUDY Outdoor Temperature: 60 °F

Current Building Use: MANUFACTURING Barometric Pressure: 29.97 in(hg)

Product Inventory Complete? Yes ☒ Building Questionnaire Completed?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Building Code: Main Address: 2 South Street Clifton Springs, NY 14432

Sampling Information

Sampler Name(s): Tim Daniluk, Mike Fox

Sampler Company Code: ERM

Sample Collection Date: 5/9/2017

Date Samples Sent To Lab: 5/10/2017

Sample Chain of Custody Number:

Outdoor Air Sample Location ID: GWL-AA(0509

SUMMA Canister Information

Sample ID:	GWL-VI-02-SS(05	GWL-VI-02-IA	GWL-VI-03-SS	GWL-VI-03-IA	GWL-AA(0509
Location Code:	VI-02-SS	VI-02-IA	VI-03-SS	VI-02-IA	GWL-AA
Location Type:	SUBSLAB	FIRST FLOOR	SUBSLAB	FIRST FLOOR	OUTDOOR
Canister ID:	766	939	1515	787	1709
Regulator ID:	0292	0347	0589	0723	0811
Matrix:	Subslab Soil Vap	Indoor Air	Subslab Soil	Indoor Air	Ambient Outd
Sampling Method:	SUMMA AIR SAMPLI	SUMMA AIR SA	SUMMA AIR SA	SUMMA AIR SA	SUMMA AIR SA

Sampling Area Info

Slab Thickness (inches):	9		9		
Sub-Slab Material:	FILL		DIRT		
Sub-Slab Moisture:	DRY		DRY		
Seal Type:	MECHANICAL		MECHANICAL		
Seal Adequate?:	☒	☐	☒	☐	☐

Sample Times and Vacuum Readings

Sample Start Date/Time:	05/09/2017 12:	05/09/2017	05/09/2017	05/09/2017	05/09/2017
Vacuum Gauge Start:	-28.55	-29.35	-29.25	-29.21	-29.74
Sample End Date/Time:	5/10/2017 12:15	05/10/2017	05/10/2017	05/09/2017	05/10/2017
Vacuum Gauge End:	-6.52	-7.92	-11.53	-7.73	-9.07
Sample Duration (hrs):	24	24	24	24	24
Vacuum Gauge Unit:	in(hg)	in(hg)	in(hg)	in(hg)	in(hg)

Sample QA/QC Readings

Vapor Port Purge:	☒	☐	☒	☐	☐
Purge PID Reading:	0.0		0.0		
Purge PID Unit:	ppm		ppm		
Tracer Test Pass:	☒	☐	☒	☐	☐

Sample start and end times should be entered using the following format: MM/DD/YYYY HH:MM

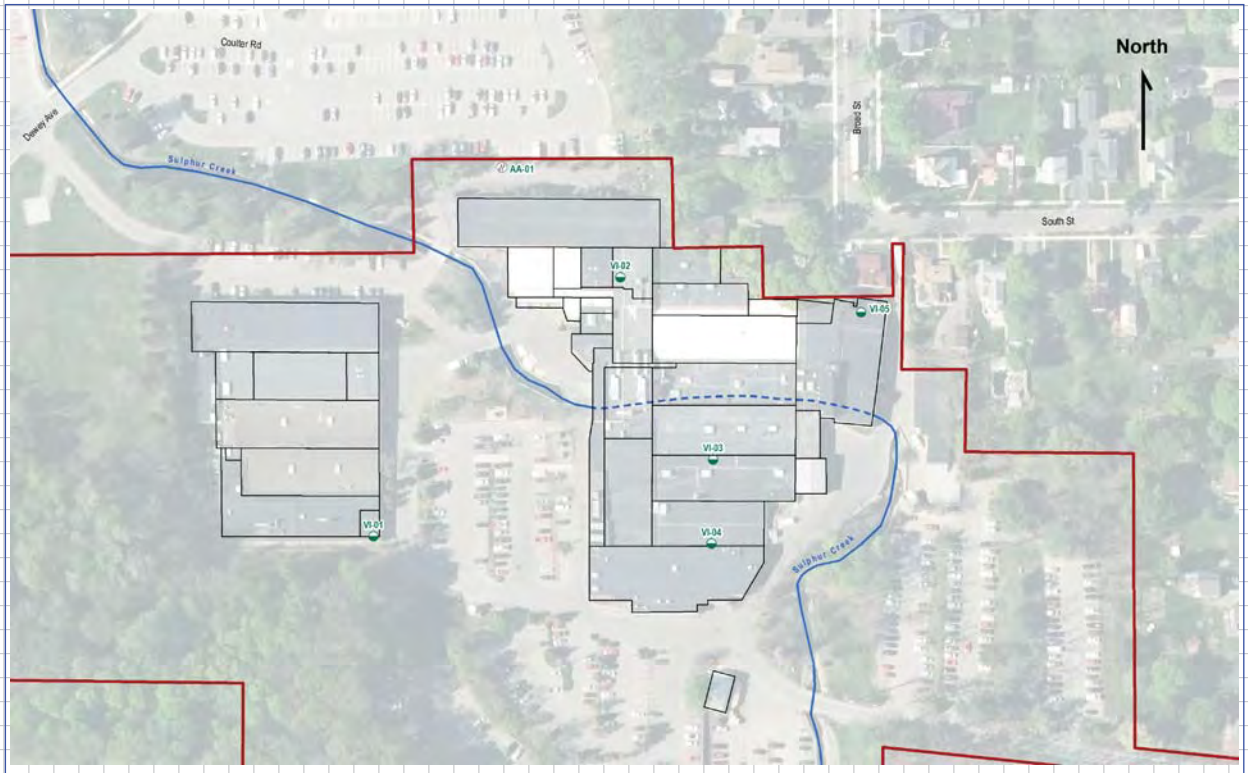
Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

LOWEST BUILDING LEVEL LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the lowest building level .
The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sket
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or **F**	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

FIRST FLOOR BUILDING LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the first floor of the building.
The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image

Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sket
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or **F**	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

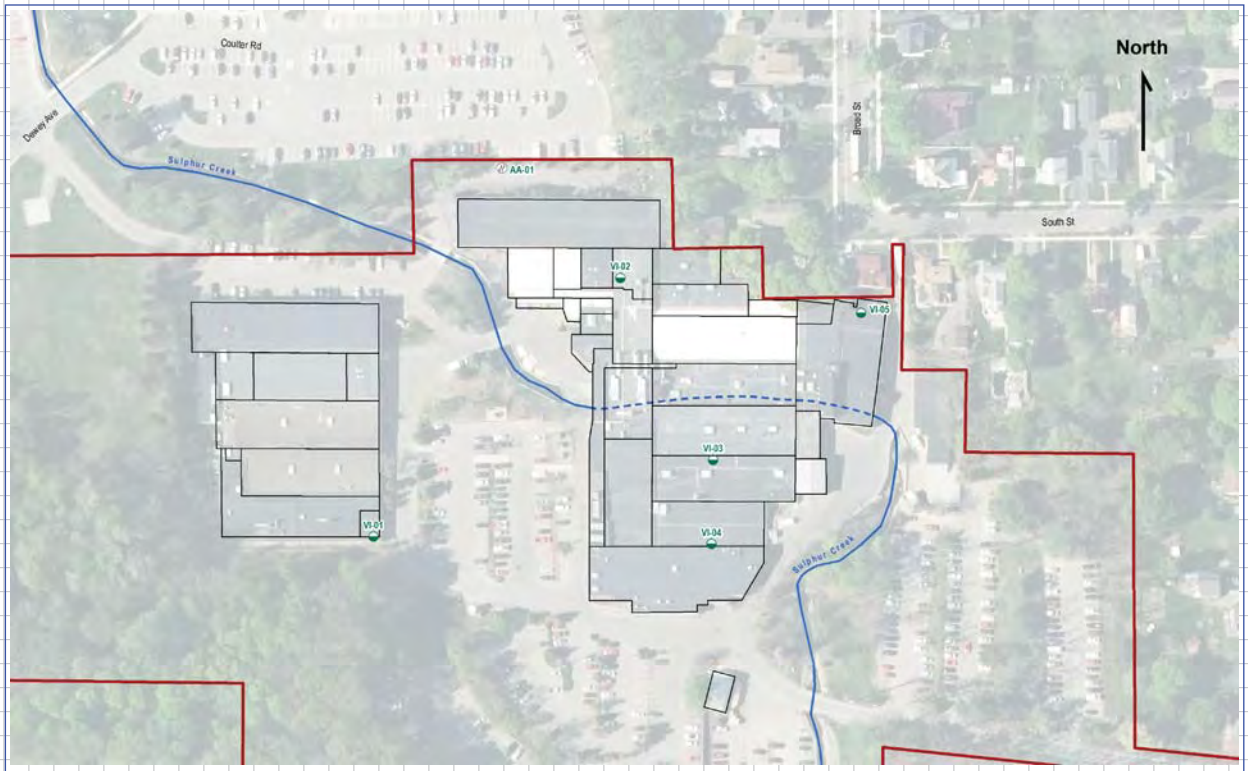
Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

OUTDOOR PLOT LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the outdoor plot of the building as well as the surrounding area. The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sket
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or **F**	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: G.W. Lisk Company, Inc. Site Code: 835026 Operable Unit: 1

Building Code: Main Building Name: Main Building

Address: 2 South Street Apt/Suite No:

City: Clifton Springs State: NY Zip: 14432 County: Ontario

Contact Information

Preparer's Name: Tim Daniluk Phone No: (315) 317-2044

Preparer's Affiliation: ERM Company Code: ERM

Purpose of Investigation: VI Assessment Date of Inspection: 5-8-17

Contact Name: Arno Bebernitz Affiliation: MANAGER

Phone No: (315) 462-4255 Alt. Phone No: Email: abebernitz@gwlisk.com

Number of Occupants (total): 50+ Number of Children: 0

☐ Occupant Interviewed? ☒ Owner Occupied? ☐ Owner Interviewed?

Owner Name (if different): G. W Lisk Company, Inc. Owner Phone:

Owner Mailing Address:

Building Details

Bldg Type (Res/Com/Ind/Mixed): INDUSTRIAL Bldg Size (S/M/L): LARGE

If Commercial or Industrial Facility, Select Operations: MANUFACTURING

If Residential Select Structure Type:

Number of Floors: 2 Approx. Year Construction: 1940 ☒ Building Insulated? ☐ Attached Garage?

Describe Overall Building 'Tightness' and Airflows(e.g., results of smoke tests):

Average tightness

Foundation Description

Foundation Type: ABOVE GRADE Foundation Depth (bgs): Unit: FEET

Foundation Floor Material: POURED CONCRETE

Foundation Wall Material: CONCRETE BLOCK

Foundation Floor Thickness: 8

Foundation Wall Thickness:

Unit: INCHES

☐ Floor penetrations? Describe Floor Penetrations:

☐ Wall penetrations? Describe Wall Penetrations:

Basement is: Basement is: ☐ Sumps/Drains? Water In Sump?: N/A

Describe Foundation Condition (cracks, seepage, etc.) :

☐ Radon Mitigation System Installed? ☐ VOC Mitigation System Installed? ☐ Mitigation System On?

Heating / Cooling / Ventilation Systems

Heating System: FORCED AIR Heat Fuel Type: GAS ☒ Central A/C Present?

Vented Appliances

Water Heater Fuel Type: GAS Clothes Dryer Fuel Type:

Water Htr Vent Location: OUTSIDE Dryer Vent Location:

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

PRODUCT INVENTORY

Building Name: Main Building Bldg Code: Main Date: 5/8/2017

Bldg Address: 2 South Street Apt/Suite No:

Bldg City/State/Zip: Clifton Springs NY, 14432

Make and Model of PID: MiniRAE 3000 Date of Calibration: 5/8/2017

Location	Product Name/Description	Size (oz)	Condition *	Chemical Ingredients	PID Reading	COC Y/N?
VI-02	Stoner Cleaner/Degreaser	12	U	1,1,1-trichloroethane, trichloroethene, Citrus Distillates, Petroleum distillates, ether propellant, hydrocarbon propellent		☒
VI-02	Armor Dry 27		U	1,1,1-trichloroethane		☒
VI-02	Autographs Activating Solvent		U	1,1,1-trichloroethane		☒
VI-04	Trump Plus	12	U	1,1,1-trichlorethane, methylene chloride, zinc oxide, propane, N-butane, alyphatic hydrocarbon, napthenic distillate		☒
General Use	CDC-10	32	U	water, diethylene glycol monobutyl ether, sodium tripolyphosphate, disodium cocampho dipropionatedialkyl dimethyl ammonium chlorid+		☐
Flammables R+	TCE drum	drum	U	trichloroethene		☒
General Use	Clorox	19	U	ethanol, isobutane, propane, sodium nitrite, n-alkyl benzyl ammonium chloride, octyl decyl dimethyl ammonium chloride		☐
General Use	Dykem Remover and Prep	12	U	acetone, ethanol, n-propyl acetate, isopropyl alcohol		☐
General Use	Flux Remover	16	U	1,1,1,2,2,3,4,5,5,5-decafluoropentane, 1,2-transdichloroethylene, 1,1,1,2-tetrafluoroethane, ethanol, carbon dioxide		☒
General Use	Orange Tough 15	32	U	triethanolamine dodecybenzene sulfonate, dipropylene glycol monobutyl ether, triethanolaminesoybean oil, methyl esters, d- +		☐
General Use	Electro Contact Cleaner		U	ethane, 1,1,1,2-tetrafluoro-(hfc-134a),methyl nonafluorobutyl ether, perfluoro compounds, 1,2-trans dichloroethene, cyclohexylmethane, +		☐
General Use	WD-40	7	U	alyphatix hydrocarbon, petroleum base oil, LVP alyphatic hydrocarbon, surfactant		☐
Degreaser	Acetone		U	acetone	0.7	☐
Degreaser	Iso-propyl alcohol		U	Iso-propyl alcohol	4.1	☐
Degreaser	n-propylbromide	7040	U	n-propylbromide	0.7	☐
Degreaser	Xylene	7040	U	xylene	4.19	☐

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**

** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

Product Inventory Complete? Yes Were there any elevated PID readings taken on site? Yes ☒ Products with COC?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: G.W. Lisk Company, Inc. Site Code: 835026 Operable Unit: 1

Building Code: Main Building Name: Main Building

Address: 2 South Street Apt/Suite No:

City: Clifton Springs State: NY Zip: 14432 County: Ontario

Factors Affecting Indoor Air Quailty

Frequency Basement/Lowest Level is Occupied?: FULL TIME Floor Material: CEMENT

☐ Inhabited? ☐ HVAC System On? ☐ Bathroom Exhaust Fan? ☐ Kitchen Exhaust Fan?

Alternate Heat Source: OTHER ☐ Is there smoking in the building?

☐ Air Fresheners? Description/Location of Air Freshener:

☐ Cleaning Products Used Recently?: Description of Cleaning Products:

☐ Cosmetic Products Used Recently?: Description of Cosmetic Products:

☐ New Carpet or Furniture? Location of New Carpet/Furniture:

☐ Recent Dry Cleaning? Location of Recently Dry Cleaned Fabrics:

☐ Recent Painting/Staining? Location of New Painting:

☒ Solvent or Chemical Odors? Describe Odors (if any): organic

☒ Do Any Occupants Use Solvents At Work? If So, List Solvents Used: acetone, iso-propyl alcohol

☐ Recent Pesticide/Rodenticide? Description of Last Use:

Describe Any Household Activities (chemical use,/storage, unvented appliances, hobbies, etc.) That May Affect Indoor Air Quality:

Chemical Use
Degreasing
Plating
Waste Storage

☐ Any Prior Testing For Radon? If So, When?:

☒ Any Prior Testing For VOCs? If So, When?: 4/2016

Sampling Conditions

Weather Conditions: PARTLY CLOUDY Outdoor Temperature: 60 °F

Current Building Use: MANUFACTURING Barometric Pressure: 29.97 in(hg)

Product Inventory Complete? Yes ☒ Building Questionnaire Completed?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Building Code: Main Address: 2 South Street Clifton Springs, NY 14432

Sampling Information

Sampler Name(s): Tim Daniluk, Mike Fox

Sampler Company Code: ERM

Sample Collection Date: 5/9/2017

Date Samples Sent To Lab: 5/10/2017

Sample Chain of Custody Number:

Outdoor Air Sample Location ID: GWL-AA(0509

SUMMA Canister Information

Sample ID:	GWL-VI-04-SS(05	GWL-VI-DUP(	GWL-VI-05-SS	GWL-VI-05-IA	GWL-AA(0509
Location Code:	VI-04-SS	VI-DUP	VI-05-SS	VI-05-IA	GWL-AA
Location Type:	SUBSLAB	FIRST FLOOR	SUBSLAB	FIRST FLOOR	OUTDOOR
Canister ID:	2253	1848	1863	987	1709
Regulator ID:	0237	0341	0203	0249	0811
Matrix:	Subslab Soil Vap	Indoor Air	Subslab Soil	Indoor Air	Ambient Outd
Sampling Method:	SUMMA AIR SAMPLI	SUMMA AIR SA	SUMMA AIR SA	SUMMA AIR SA	SUMMA AIR SA

Sampling Area Info

Slab Thickness (inches):	9		9		
Sub-Slab Material:	FILL		DIRT		
Sub-Slab Moisture:	DRY		DRY		
Seal Type:	MECHANICAL		MECHANICAL		
Seal Adequate?:	☒	☐	☒	☐	☐

Sample Times and Vacuum Readings

Sample Start Date/Time:	05/09/2017 12:	05/09/2017	05/09/2017	05/09/2017	05/09/2017
Vacuum Gauge Start:	-29.97	-29.54	-29.85	-29.04	-29.74
Sample End Date/Time:	5/10/2017 12:30	05/10/2017	05/10/2017	05/09/2017	05/10/2017
Vacuum Gauge End:	-8.62	-7.73	-8.52	-0.14	-9.07
Sample Duration (hrs):	24	24	24	24	24
Vacuum Gauge Unit:	in(hg)	in(hg)	in(hg)	in(hg)	in(hg)

Sample QA/QC Readings

Vapor Port Purge:	☒	☐	☒	☐	☐
Purge PID Reading:	0.0		0.0		
Purge PID Unit:	ppm		ppm		
Tracer Test Pass:	☒	☐	☒	☐	☐

Sample start and end times should be entered using the following format: MM/DD/YYYY HH:MM

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

LOWEST BUILDING LEVEL LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the lowest building level .
The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image

Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sket
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or **F**	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

FIRST FLOOR BUILDING LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the first floor of the building.
The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image

Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
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S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

OUTDOOR PLOT LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the outdoor plot of the building as well as the surrounding area. The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image

Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
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WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Draft

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: GW Lisk | Site Code: 835026 | Operable Unit: 02

Building Code: HB | Building Name: Hundreds Building

Address: 2 South Street | Apt/Suite No:

City: Clifton Springs | State: NY | Zip: 14432 | County: Ontario

Contact Information

Preparer's Name: Michael Fox | Phone No: (315) 481-9566

Preparer's Affiliation: ERM Consulting and Engineering | Company Code: ERM

Purpose of Investigation: SV sampling / Site Characterization | Date of Inspection: May 8, 2017

Contact Name: Arno Bebernitz | Affiliation: MANAGER

Phone No: (315) 462-4255 | Alt. Phone No: | Email: Abebernitz@gwlisk.com

Number of Occupants (total): 30 | Number of Children: N/A

☐ Occupant Interviewed? ☐ Owner Occupied? ☐ Owner Interviewed?

Owner Name (if different): | Owner Phone:

Owner Mailing Address:

Building Details

Bldg Type (Res/Com/Ind/Mixed): INDUSTRIAL | Bldg Size (S/M/L): LARGE

If Commercial or Industrial Facility, Select Operations: MANUFACTURING

If Residential Select Structure Type:

Number of Floors: 1 | Approx. Year Construction: 1995 | ☒ Building Insulated? | ☐ Attached Garage?

Describe Overall Building 'Tightness' and Airflows(e.g., results of smoke tests):

Tight

Foundation Description

Foundation Type: ABOVE GRADE | Foundation Depth (bgs): | Unit: FEET

Foundation Floor Material: POURED CONCRETE

Foundation Wall Material: CONCRETE BLOCK

Foundation Floor Thickness: | Foundation Wall Thickness: | Unit: INCHES

☐ Floor penetrations? Describe Floor Penetrations:

☐ Wall penetrations? Describe Wall Penetrations:

Basement is: | Basement is: | ☐ Sumps/Drains? | Water In Sump?:

Describe Foundation Condition (cracks, seepage, etc.) : Solid, Whole

☐ Radon Mitigation System Installed? ☐ VOC Mitigation System Installed? ☐ Mitigation System On?

Heating / Cooling / Ventilation Systems

Heating System: NONE | Heat Fuel Type: ELECTRIC | ☐ Central A/C Present?

Vented Appliances

Water Heater Fuel Type: | Clothes Dryer Fuel Type:

Water Htr Vent Location: | Dryer Vent Location:

Draft

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

PRODUCT INVENTORY

Building Name: Hundreds Building Bldg Code: HB Date: May 8, 2017

Bldg Address: 2 South Street Apt/Suite No:

Bldg City/State/Zip: Clifton Springs NY, 14432

Make and Model of PID: MiniRae 3000 Date of Calibration: May 8, 2017

Location	Product Name/Description	Size (oz)	Condition *	Chemical Ingredients	PID Reading	COC Y/N?
Cafeteria	Oil Eater	32	U	2-butoxyethanol, sodium metasilicate	1.9	☐
Cafeteria	Lysol	12.5	U	ethanol, isopropyl alcohol, o-phenylphenol	1.9	☐
Cafeteria	Clorox	32	U	sodium hypochlorite, sodium chloride, sodium carbonate, sodium hydroxide	2.0	☐
Cafeteria	Fast and Easy	32	U	propylene glycol n-propyl ether	1.9	☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**

** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

Product Inventory Complete? Yes Were there any elevated PID readings taken on site? Yes ☐ Products with COC?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Draft

Site Name: GW Lisk Site Code: 835026 Operable Unit: 02

Building Code: HB Building Name: Hundreds Building

Address: 2 South Street Apt/Suite No:

City: Clifton Springs State: NY Zip: 14432 County: Ontario

Factors Affecting Indoor Air Quailty

Frequency Basement/Lowest Level is Occupied?: FULL TIME Floor Material: CEMENT

☒ Inhabited? ☒ HVAC System On? ☐ Bathroom Exhaust Fan? ☐ Kitchen Exhaust Fan?

Alternate Heat Source: OTHER ☐ Is there smoking in the building?

☐ Air Fresheners? Description/Location of Air Freshener:

☒ Cleaning Products Used Recently?: Description of Cleaning Products: lysol, clorox

☐ Cosmetic Products Used Recently?: Description of Cosmetic Products:

☐ New Carpet or Furniture? Location of New Carpet/Furniture:

☐ Recent Dry Cleaning? Location of Recently Dry Cleaned Fabrics:

☐ Recent Painting/Staining? Location of New Painting:

☒ Solvent or Chemical Odors? Describe Odors (if any): nail polish

☐ Do Any Occupants Use Solvents At Work? If So, List Solvents Used:

☐ Recent Pesticide/Rodenticide? Description of Last Use:

Describe Any Household Activities (chemical use,/storage, unvented appliances, hobbies, etc.) That May Affect Indoor Air Quality:

kitchen/cafeteria cleaning products use and storage

☐ Any Prior Testing For Radon? If So, When?:

☒ Any Prior Testing For VOCs? If So, When?: 4/2016

Sampling Conditions

Weather Conditions: PARTLY CLOUDY Outdoor Temperature: 60 °F

Current Building Use: MANUFACTURING Barometric Pressure: 29.97 in(hg)

Product Inventory Complete? Yes ☒ Building Questionnaire Completed?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Draft

Building Code: HB Address: 2 South Street Clifton Springs , NY 14432

Sampling Information

Sampler Name(s): Tim Daniluk / Mike Fox Sampler Company Code: ERM

Sample Collection Date: May 9, 2017 Date Samples Sent To Lab: May 10, 2017

Sample Chain of Custody Number: Outdoor Air Sample Location ID: GWL-AA(0509

SUMMA Canister Information

Sample ID:	GWL-VI-01-IA(050	GWL-VI-01-SG	GWL-AA(0509		
Location Code:					
Location Type:	FIRST FLOOR	SUBSLAB	OUTDOOR		
Canister ID:	625	656	1709		
Regulator ID:	0699	0285	0811		
Matrix:	Indoor Air	Subslab Soil	Ambient Outd		
Sampling Method:	SUMMA AIR SAMPLI	SUMMA AIR SA	SUMMA AIR SA		

Sampling Area Info

Slab Thickness (inches):		9"			
Sub-Slab Material:		FILL			
Sub-Slab Moisture:		DRY			
Seal Type:		MECHANICAL			
Seal Adequate?:	☐	☒	☐	☐	☐

Sample Times and Vacuum Readings

Sample Start Date/Time:	05/09/2017 13:0	05/09/2017 1	05/09/2017 1		
Vacuum Gauge Start:	-29.14	-29.48	-29.74		
Sample End Date/Time:	05/10/2017 13:0	05/10/2017 1	05/10/2017 1		
Vacuum Gauge End:	-9.05	-0.0	-4.07		
Sample Duration (hrs):	24	24	24		
Vacuum Gauge Unit:	in(hg)	in(hg)	in(hg)		

Sample QA/QC Readings

Vapor Port Purge:	☐	☒	☐	☐	☐
Purge PID Reading:		0.0			
Purge PID Unit:		ppm			
Tracer Test Pass:	☐	☒	☐	☐	☐

Sample start and end times should be entered using the following format: MM/DD/YYYY HH:MM

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Draft

LOWEST BUILDING LEVEL LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the lowest building level . The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image

Design Sketch

Design Sketch Guidelines and Recommended Symbology

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FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

FIRST FLOOR BUILDING LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the first floor of the building.
The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image

Design Sketch

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@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

OUTDOOR PLOT LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the outdoor plot of the building as well as the surrounding area. The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image

Design Sketch

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S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Appendix E
IDW Disposal Documentation

137662

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	NYD002217834	1	Rapid Response Inc. 877-460-1038	017925455 JJK

GENERATOR

5. Generator's Name and Mailing Address
G.W. Lisk Company, Inc.
2 South Street
Clifton Springs, NY 14432
Generator's Phone: 315-462-4211

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Environmental Waste Minimization, Inc. — U.S. EPA ID Number: PAR000501577

7. Transporter 2 Company Name: Horvath Trucks Inc — U.S. EPA ID Number: PAD146714878

8. Designated Facility Name and Site Address
Envirite of Pennsylvania
730 Vogelsong Road
York, PA 17404-1725
Facility's Phone: 717-846-1900

U.S. EPA ID Number: PAD010154045

9a HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. Non-Hazardous Liquids (Purgewater) DOT/RCRA Non-Regulated	008	DM	03200	P	
	2. Non-Hazardous Solids (PPE/Debris) DOT/RCRA Non-Regulated	002	DM	00245	P	
	3.					
	4.					

14. Special Handling Instructions and Additional Information
Document # D238624
112559
1.) Approval #: A183539EPA; ERG # NON-HAZARDOUS PURGEWATER
2.) Approval #: A183541EPA; ERG # DECON/PPE/SAMPLING DEBRIS
NYSDEC Site # 833026
T-155

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ARNO BERGKNITZ — Signature: [signature] — Month 2 Day 12 Year 18

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Ron Dirk — Signature: [signature] — Month 2 Day 12 Year 18

Transporter 2 Printed/Typed Name: Peter Crosco — Signature: [signature] — Month 02 Day 12 Year 18

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
L1B	H141		

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Amanda Pridgen — Signature: Amanda Pridgen — Month 02 Day 20 Year 18

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number NYD002217834	2. Page 1 of 1	3. Emergency Response Phone Rapid Response Inc. 877-460-1038	4. Manifest Tracking Number 017925456 JJK

GENERATOR

5. Generator's Name and Mailing Address
G.W. Lisk Company, Inc.
2 South Street
Clifton Springs, NY 14432
Generator's Phone: 315-462-4211

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
Environmental Waste Minimization, Inc.
U.S. EPA ID Number PAR000501577

7. Transporter 2 Company Name
Horwith Trucks Inc
U.S. EPA ID Number PAD146714878

8. Designated Facility Name and Site Address
EQ Detroit, Inc.
1923 Frederick St.
Detroit, MI 48211
U.S. EPA ID Number MID980991566
Facility's Phone: 313-923-0080

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. Non-Hazardous Solids (Soil Cuttings) DOT/RCRA Non-Regulated	020	DM	010400	P	029L
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
Statement # D238625
112559
1.) Approval #: A189196DET ; ERG# NON-HAZARDOUS SOIL CUTTINGS
T-155
NYSDEC Sink # 835026

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ARNO BERGWITZ
Signature
Month 12 Day 12 Year 18

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name
Signature
Month 12 Day 12 Year 18

Transporter 2 Printed/Typed Name: Peter Czarnecki
Signature
Month 12 Day 12 Year 18

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
U.S. EPA ID Number

18b. Alternate Facility (or Generator)
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. HB 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Angelo Hamm
Signature
Month 12 Day 15 Year 18

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)