INTERIM REMEDIAL MEASURE
WORK PLAN No. 2

for

FORMER ACME STEEL/BRASS FOUNDRY
72 ANTHONY STREET/498 PORTER AVENUE
Brooklyn, New York 11222
NYSDEC Site No. 224132

Prepared For:

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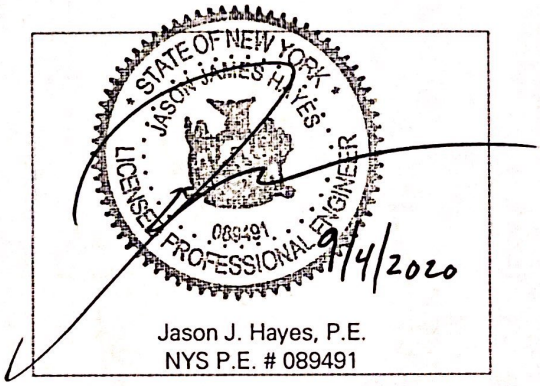
LANGAN

September 4, 2020
Langan Project No. 170157201

CERTIFICATION

I Jason J. Hayes, P.E., certify that I am currently a NYS-registered professional engineer as defined in 6 NYCRR Part 375 and that this Interim Remedial Measure (IRM) Work Plan was prepared in accordance with applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).



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1.0 INTRODUCTION

1.1 General

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) prepared this Interim Remedial Measure Work Plan (IRMWP) No. 2 for the property located at 72 Anthony Street and 498 Porter Avenue in the Greenpoint section of Brooklyn, New York (the "site"). The site is a New York State Department of Environmental Conservation (NYSDEC) Class 2 Inactive Hazardous Waste Disposal Site and is also known as NYSDEC Site No. 224132. This IRMWP pertains to the about 7,000-square-foot westernmost portion of the on-site 1-story brick building (the target mitigation area). Whitehead Company (the owner of the site) will implement the proposed interim remedial measure (IRM).

The IRM proposed in this IRMWP consists of the installation of a sub-slab depressurization (SSD) system, designed to mitigate soil vapor intrusion (SVI) in the westernmost portion of a 1-story brick building pursuant to a request in the NYSDEC's May 8, 2020 Sub-Slab Soil Vapor and Indoor Air Sampling Letter Report comment letter. The SSD system will be installed in conjunction with the IRM for the central and easternmost portions of the 1-story brick building, as described in the NYSDEC-approved IRMWP, dated March 13, 2020.

The work plan has been prepared in accordance with the requirements of the NYSDEC May 2010 Department of Environmental Remediation (DER)-10 - Technical Guidance for Site Investigation and Remediation. The final remedial measures needed for a permanent remedy will be described in a forthcoming Remedial Action Work Plan (RAWP). This approach is in accordance with the definition of an IRM (May 2010 DER-10):

"Interim remedial measure" or "IRM" *means activities to address both emergency and non-emergency site conditions, which can be undertaken without extensive investigation and evaluation, to prevent, mitigate or remedy environmental damage or the consequences of environmental damage attributable to a site, including, but not limited to, the following activities: construction of diversion ditches; collection systems; drum removal; leachate collection systems; construction of fences or other barriers; installation of water filters; provision of alternative water systems; the removal of source areas; or plume control.*

1.2 Site Description

The site occupies an area of about 52,860 square feet at 72-90 Anthony Street and 498 Porter Avenue (Tax Block 2820, Lots 1 and 5) in Brooklyn, New York. The site adjoins Anthony Street to the north, a warehouse building to the east, Lombardy Street to the south, and Porter Avenue to the west. The site contains one 1-story brick building, two storage sheds, one truck parking lot and storage area, and two bus parking lots. The 1-story brick building is partitioned into three

adjoining and interconnected buildings, with the about 7,000 square foot westernmost portion at 72 Anthony Street and the easternmost at 80 Anthony Street. The westernmost portion of the building contains a partial mezzanine, which is located only in the northern half of the building along Anthony Street. The IRM and target mitigation area described herein only pertain to the westernmost portion of the 1-story brick building. A site location map is included as Figure 1.

The 1-story brick building is occupied by a custom carpentry company and is adjoined by a metal storage shed to the east, followed by truck and bus parking lots. A second bus parking lot occupies the southern portion of the property, and utilizes a maintenance shop located in a corrugated metal enclosure facing west toward Porter Avenue. An additional storage shed is located in the southeast corner of the site, facing south toward Lombardy Street.

The site is underlain by the Meeker Avenue Plume Trackdown (Trackdown) site, which occupies the Greenpoint/East Williamsburg Industrial Area in Brooklyn. The Trackdown site is located within a region of historical petroleum refining and storage operations that occupied a significant part of the Greenpoint neighborhood, straddles the Brooklyn-Queens Expressway, and extends southwest to northeast from Kingsland Avenue to Newtown Creek. Investigations conducted by the URS Corporation (URS) on behalf of the NYSDEC and others within the Trackdown site have identified chlorinated volatile organic compounds (CVOCs), including tetrachloroethene (PCE) and trichloroethene (TCE), in soil, groundwater, and soil vapor. In response to these findings, the NYSDEC initiated several investigations to identify the sources of the chlorinated solvents. Based on the findings of these investigations and the historical generation of F001 waste (i.e., spent halogenated solvents used in degreasing) at the site, URS and NYSDEC identified the site as a source of CVOCs in the subsurface.

1.3 Site Geology and Hydrology

1.3.1 Geologic Conditions

The site contains a layer of historic fill that extends from existing grade to a maximum depth of about 12 feet below grade surface (bgs). The historic fill layer predominantly consists of brown fine- to coarse-grained sand with varying amounts of silt, clay, gravel, and anthropogenic material including coal, brick, concrete, wood, glass, metal, and gravel. The historic fill overlays glaciofluvial-alluvial and deltaic/fluvial native soil deposits. Bedrock was not encountered beneath the site during previous investigations.

1.3.2 Hydrogeologic Conditions

Synoptic groundwater level measurements were collected from monitoring wells located on site and on the adjoining sidewalks during the 2012 remedial investigation (RI), 2017 supplemental remedial investigation (SRI), the four quarters of 2019, and the first quarter of 2020. Neither light non-aqueous phase liquid (LNAPL) nor dense non-aqueous phase liquid (DNAPL) were detected

during the groundwater gauging events. Groundwater has been encountered between about 48 and 57 feet bgs, and has been modeled to flow in a northeasterly direction toward the Newtown and Maspeth Creeks (consistent with regional Brooklyn topography) based on contours prepared using Surfer software.

1.4 Site History

The site was used as a brass foundry from the 1950s until 1971. After 1971 and until around 2008, the site was operated by Acme Architectural Products, Inc. as an architectural wall manufacturing and finishing facility. The former Acme facility was reportedly a generator of F001 listed hazardous waste, which indicates that one or more of the following halogenated solvents were used in degreasing: PCE, TCE, methylene chloride, 1,1,1-trichloroethane (1,1,1-TCA), carbon tetrachloride, and chlorinated fluorocarbons. Current site uses include a custom carpentry operation, storage of construction equipment (e.g. scaffolding and tools), and bus parking.

1.5 Previous Environmental Investigations Summary

Langan conducted soil, groundwater, and/or soil vapor sampling during the 2012 RI, the 2017 SRI, and a 2019 soil vapor extraction (SVE) pilot test. A maximum PCE concentration of 210 milligrams per kilogram (mg/kg) was detected in a soil sample collected from 15 to 15.5 feet bgs in soil boring ACME-GP-19 during the 2017 SRI. ACME-GP-19 was located within the 1-story metal shed in the northern portion of the site, along Anthony Street. Other soil samples collected from on-site and off-site (sidewalk) soil borings in the vicinity of ACME-GP-19 during the 2012 RI and 2017 SRI have contained PCE, TCE, and cis-1,2-dichloroethene (cDCE) at concentrations above the Part 375 Unrestricted Use Soil Cleanup Objectives (UU SCO) in unsaturated soil at depths up to 42 feet bgs. Installation of a full-scale SVE system to address CVOC impacts in unsaturated soil is scheduled to begin in August 2020, in accordance with the NYSDEC-approved IRMWP dated March 13, 2020.

Sub-slab soil vapor and indoor air sampling was performed in March 2020 as part of a pre-remediation baseline SVI study. CVOCs, including PCE and TCE, were identified in sub-slab soil vapor and indoor air samples. PCE and TCE were detected in the westernmost portion of the 1-story brick building at maximum concentrations of 200,000 micrograms per cubic meter (µg/m^3) (PCE) and 570 µg/m^3 (TCE) in sub-slab soil vapor, and 200 µg/m^3 (PCE) and 1.5 µg/m^3 (TCE) in indoor air. Based on these results, which were documented in a Sub-Slab Soil Vapor and Indoor Air Sampling Letter Report dated April 10, 2020, the NYSDEC and New York State Department of Health (NYSDOH) requested the installation of an SSD system in the westernmost portion of the 1-story brick building. CVOC impacts to sub-slab soil vapor beneath the central and easternmost portions of the 1-story brick building will be addressed by the full-scale SVE system.

Results of previous investigations were provided to the NYSDEC and NYSDOH under separate cover in the following reports, prepared by Langan:

1. Remedial Investigation Report (RIR), dated April 2015 (revised January 22, 2016)
2. Draft Supplemental Remedial Investigation Report (SRIR), dated May 3, 2018
3. SVE Pilot Test Technical Memorandum, dated September 11, 2019
4. Sub-Slab Soil Vapor and Indoor Air Sampling Letter Report, dated April 10, 2020

2.0 SUMMARY OF INTERIM REMEDIAL MEASURE

The IRM described herein will be performed in accordance with applicable federal, state, and city regulations and a Health and Safety Plan (HASP), which is provided as Appendix A.

2.1 Interim Remedial Measure Objectives and Rationale

The objective of this IRMWP is to mitigate intrusion of CVOC-impacted soil vapor into the westernmost portion of the 1-story brick building by installing an active SSD system. The SSD system will include depressurization pits connected to above-grade piping and in-line fans and is designed to create a vacuum field, establish a sub-slab air pressure lower than that of the indoor air, and thereby collect soil vapor beneath the building slab. The site will remain in use by tenants during IRMWP implementation.

The Remedial Action Objectives (RAOs) for this site are intended to be protective of public health and the environment and are developed based on contaminant-specific standards, criteria, and guidance (SCGs). The RAOs were developed from information derived from previous environmental investigations, including known impacted media and potential public health and environmental exposure pathways. This IRMWP only addresses the RAO for soil vapor, as shown in the following table:

RAOs	RAO for Public Protection	RAO for Environmental Protection
Soil Vapor	• Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings.	• None

2.2 Summary of the Proposed Interim Remedial Measure

2.2.1 Site Preparation

Prior to implementation of this IRMWP, the remedial design team will complete a site walk with ownership and current tenants to evaluate accessibility constraints, establish work zones and confirm future depressurization pit and in-line fan locations. The floor slab will be inspected for preferential pathways, including penetrations, cracks, and voids.

Prior to intrusive activities, a geophysical contractor will pre-clear proposed depressurization pit and underground piping locations for potential subsurface utilities and structures using ground penetrating radar (GPR) and electromagnetic (EM) detectors.

2.2.2 SSD System Installation

A licensed contractor will be retained to complete the following SSD system installation and construction activities within the target mitigation area:

- Excavation of two about 4-foot-long, 4-foot-wide, and 4-foot-deep depressurization pits through the existing slab;
- Excavation of a trench to about 1 foot below slab grade between the depressurization pits and riser pipes;
- Installation of geotextile fabric along the base and sidewalls of the depressurization pits and trenches;
- Installation of solid 4-inch-diameter Schedule 80 PVC piping with a minimum slope of 1 inch per 8 linear feet (sloping downward towards the depressurization pits) between the depressurization pits and riser pipes;
- Backfill of depressurization pits with imported air-permeable 1.5-inch clean quarry stone;
- Backfill of pipe trenches with environmentally clean backfill (e.g. clean, coarse sand or pea gravel) meeting general fill requirements (see Section 2.3.7);
- Installation of two 4-inch-diameter metal riser pipes, in accordance with NYC Mechanical Code, which will originate from the slab and penetrate the roof;
- Installation of two in-line fans equipped with a remote alarm system that will alert tenants if the fans are not operating;
- Sealing of preferential pathways (e.g., cracks or voids) in the slab with polyurethane-based caulk, hydraulic cement, or other appropriate material to maintain an air-tight seal;
- Completion of a pressure/leak test of the above-grade SSD system piping and replacement or repair of observed leaks or pipe defects will be replaced or repaired, if any; and
- Restoration of the building slab and roof penetrations to pre-existing condition.

An inspection will be performed before system startup to confirm that required components are in place. Equipment will be started in accordance with the manufacturer's recommendations. System testing will include: a smoke test to check for leaks through slab penetrations, floor joints, and paved depressurization pits; system alarm testing; and measurement of airflow (at sample ports) and pressure (at sub-slab soil vapor points) to document that the system is operating in accordance with design calculations. Monitoring and maintenance of the SSD system is described in Section 3.2.

The SSD system will operate until decommissioning is approved by the NYSDEC. The approximate target mitigation area and SSD system layout are presented on Figure 2 and SSD system construction details are shown on Figure 3.

SSD System Design

The 2019 SVE pilot test was performed to confirm the feasibility and effectiveness of SVE technology to treat CVOC-impacted unsaturated soil. A computational pneumatic modeling tool, MDFIT, used data collected from the pilot test to simulate the site-specific airflow and vacuum propagation field in the subsurface. The calibrated horizontal and vertical air intrinsic permeability in the shallow subsurface was calculated to be 6.00E-7 square centimeters (cm^2), which is representative of a silty sand.

The SVE pilot test was performed within shallow (about 5 to 15 feet bgs) and deep (about 20 to 30 feet bgs) intervals to support the SVE system design. The resulting data from the shallow interval indicated favorable airflow communication across the subsurface and was used to establish design parameters for the SSD system. This method is considered to be a conservative approach, as previous boring logs indicate that the media immediately beneath the building slab consists of an about 4- to 8-foot-thick layer of historic fill, which is typically more permeable than the underlying native soil. Based on the geometry of the target mitigation area and the proposed depressurization pit locations, the minimum radius of influence (ROI) at each depressurization pit is 30 feet with an airflow rate of 5 standard cubic feet per minute (scfm) at 6 inches water column (IWC). The selected RadonAway HS3000E in-line fan (or equivalent) can provide an airflow rate of about 30 scfm at 10 IWC, resulting in an effective ROI of up to about 70 feet at each depressurization pit. Based on these parameters, two depressurization pits will effectively mitigate SVI in the target mitigation area. SSD system design support documents are included as Appendix B.

The SSD system was designed in accordance with NYSDOH guidance[1] and NYC Mechanical Code MC 512 Sub-Slab Exhaust Systems, NYC Local Law 2009/071. The SSD system design includes two separate systems, each consisting of a sub-slab depressurization pit that is connected by conveyance piping to a riser pipe, which runs through the building to a roof-mounted in-line fan and exhaust point. The depressurization pits will be backfilled with clean 1.5-inch stone and contain solid polyvinyl chloride (PVC) vapor collection pipes running below the slab into above-grade metal riser pipes. The riser pipes will extend from above the slab to roof-mounted in-line fans. The in-line fans will pull air from the pits to create a negative pressure beneath the

[1] NYS Guidance References: EPA/600/R-08-115 October 2008 Indoor Air Vapor Intrusion Mitigation Approaches; EPA/625/R-93/011 October 1993 Technical Guidance for Active Soil Depressurization Systems; EPA/625/R-92/016 - June 1994 Radon Prevention in the Design and Construction of Schools and Other Large Buildings; Guidance for Evaluating Soil Vapor Intrusion in the State of New York (2006), with updates.

concrete slab relative to the indoor air pressure. This pressure difference mitigates the potential for SVI and exhausts the captured vapor above the roof. Four sub-slab soil vapor points (ACME-SSV-5 through ACME-SSV-8) installed during the March 2020 baseline SVI study will be used to monitor the vacuum field generated below the slab, along with four new sub-slab soil vapor points (ACME-SSV-9 through ACME-SSV-12) to be installed as supplemental monitoring points near the slab edge in the four corners of the target mitigation area.

2.2.3 SSD System Communication Test

After installation of the system, a communication test will be performed to document the ability of the suction field and air flow to extend throughout the target mitigation area. Vacuum readings will be collected at sub-slab soil vapor points ACME-SSV-5 through ACME-SSV-12. The SVE system in the central and easternmost portions of the one-story brick building will not be running during the communication test.

If communication test results indicate that a minimum vacuum of -0.02 IWC cannot be achieved at sub-slab soil vapor points ACME-SSV-5 through ACME-SSV-12, the SSD system design will be re-evaluated.

2.2.4 Post-SSD System Startup Monitoring and Sampling

Post-SSD system startup monitoring will include pressure monitoring at each vapor point and one round of post-mitigation indoor air samples collected in conjunction with post-SVE system installation. One ambient air sample and twelve indoor air samples will be collected in accordance with the NYSDOH Guidance at the locations of sub-slab soil vapor points ACME-SSV-1 through ACME-SSV-12 during the 2020-2021 heating season and at least 30 days after startup and continuous operation of the SSD and SVE systems. Both the SSD and SVE systems will be operational during sample collection, and the samples will also serve as post-SVE startup samples (as described in Section 2.2.4 of the March 13, 2020 IRMWP). Prior to sample collection, a NYSDOH Indoor Air Quality Questionnaire and Building Survey will be completed to document the potential presence of equipment or chemicals in the one-story brick building that could interfere with the laboratory analytical results. The building will be screened using a PID (MultiRAE or equivalent) during the survey.

Samples will be collected about 3 to 4 feet above the ground surface for a duration of 8 hours, and will be collected in appropriately sized Summa® canisters that have been certified clean by the laboratory and will be analyzed using USEPA Method TO-15. Flow rate for both purging and sampling will not exceed 0.2 liters per minute (L/mi)n. A sample log sheet will be maintained summarizing sample identification, date and time of sample collection, sampling height, identity of samplers, sampling methods and devices, volume of the air extracted, vacuum of canisters before

and after the samples are collected, apparent moisture content of the sampling zone, and chain of custody protocols.

2.3 Remedial Activity Oversight

A Langan engineer, scientist, or geologist will be on-site full-time during implementation of this IRMWP. Visual, olfactory, and photoionization detector (PID) soil screening and assessment will be performed for soil that is disturbed. The IRM activities will be documented in daily reports and in the Construction Completion Report (CCR) described in Section 4.0.

2.3.1 Soil Screening Methods

Visual, olfactory, and PID soil screening and assessment will be performed by an engineer, geologist or scientist under the direct supervision of the Remedial Engineer (RE) or qualified environmental professional (QEP) during soil-intrusive work performed pursuant to the IRMWP. Instrumental screening will be performed with a PID equipped with a 10.6 electron volt (eV) bulb and calibrated daily, at a minimum. Grossly-impacted material, if any, will be segregated and placed in a separate United Nations/Department of Transportation (UN/DOT)-approved 55-gallon drum pending waste characterization sampling and off-site disposal.

2.3.2 Waste Characterization

Excavated soil will be stockpiled or containerized in UN/DOT-approved 55-gallon drums and/or roll-off containers (see Section 2.3.3), and waste characterization samples will be collected in accordance with general disposal facility requirements and DER-10 Section 5.4 (including Table 5.4(e)10) to characterize material subject to off-site disposal. Sampling will be coordinated and overseen by a representative of the RE. Samples will be representative of the material requiring disposal, will occur at a frequency consistent with disposal facility requirements and will be analyzed for parameters that are typically required by disposal facilities. The following list is provided for planning purposes and may not reflect the analyses performed for waste characterization:

- 6 NYCRR Part 375/TCL/New Jersey Department of Environmental Protection (NJDEP) volatile organic compounds (VOC), extractable petroleum hydrocarbon (EPH), semivolatile organic compounds (SVOC), pesticides, herbicides, polychlorinated biphenyls (PCB), and target analyte list (TAL) metals (including hexavalent chromium);
- Toxicity Characteristic Leaching Procedure (TCLP) VOCs, SVOCs, pesticides, herbicides, and metals;
- Resource Conservation and Recovery Act (RCRA) characteristics, including ignitability, corrosivity, and reactivity (sulfide and cyanide);

- Total cyanide; and
- Paint filter analysis.

Waste characterization samples collected will be submitted to a NYSDOH Environmental Laboratory Approval Program (ELAP)-approved laboratory for analysis in accordance with the QAPP previously provided to NYSDEC as Appendix C of the March 13, 2020 IRMWP. Analytical reports will be included in the CCR.

2.3.3 Stockpiles

Soil stockpiles are not anticipated, but may be constructed as necessary during excavation of depressurization pits and trenching for SSD system piping. Soil derived from trenching activities will be initially handled as hazardous waste, and will be staged and transported for disposal in UN/DOT-approved 55-gallon drums, roll-offs lined with 8-mil low-permeability liners, or an approved equivalent. Stockpiles derived from other waste streams (e.g., concrete) will meet the following requirements:

- Individual stockpiles will not exceed 500 cubic yards.
- Different waste streams will be segregated into separate stockpiles.
- Stockpiles will be covered upon reaching capacity or, if active, at the end of each workday with minimum 8-mil plastic sheeting or tarps which will be securely anchored to the ground.
- Each stockpile area will be encircled with silt fences and hay bales as needed to contain and filter particulates from rainwater runoff, and to mitigate the potential for surface water run-on.
- Stockpiles will be inspected once each week, at a minimum, and after every storm event. Deficiencies will be promptly addressed. Damaged tarps or coverings will be promptly replaced.
- Results of inspections will be recorded in a logbook and maintained at the site and made available for inspection by NYSDEC.

2.3.4 Material Load Out and Transport

Soil/fill material, grossly-impacted material, and C&D debris generated during SSD system installation will be handled, transported, and disposed of by a licensed hauler in accordance with applicable 6 NYCRR Part 360 and Part 364 regulations and other applicable federal, state, and local regulations. A Langan representative under the direct supervision of the RE will observe and document load-out of material, including UN/DOT-approved 55-gallon drum disposal.

The owner and its contractors are solely responsible for safe execution of invasive work performed under this IRMWP. Loaded vehicles leaving the site will be appropriately secured, manifested, and placarded in accordance with appropriate federal, state, local and New York State Department of Transportation requirements.

Unanticipated, ground-intrusive SSD system maintenance events will not be performed without NYSDEC approval and will not interfere with, or otherwise impair or compromise, the performance of the mitigation required by this plan.

2.3.5 Materials Disposal Off-site

The RE will review submittals for proposed disposal facilities before materials leave the site to verify that the facility has the proper permits and to review their acceptance requirements. Waste characterization will be performed per Section 2.3.2. Sampling and analytical methods, sampling frequency, analytical results, and quality assurance/quality control (QA/QC) methods will be reported in the CCR. Waste characterization data available for soil/fill material to be disposed of at a given facility will be submitted to the disposal facility with suitable explanation prior to shipment and receipt. A letter from the disposal facility stating it is in receipt of the correspondence and is approved to accept the material will be provided before material is transported.

The waste removal contractor will provide the appropriate permits, certifications, and written commitments from disposal facilities to accept the material throughout the duration of the project. Disposal facility documentation will be presented to the NYSDEC prior to disposal activities.

2.3.6 Materials Reuse On-site

Reuse of soil excavated during IRMWP implementation is not proposed.

2.3.7 Import of Backfill

Imported stone will be used to backfill the depressurization pits. Virgin stone (gravel) imported from compliant facilities containing less than 10% by weight passing a No. 80 sieve will not require analytical data, unless required by NYSDEC under the terms for operation of the facility. Environmentally clean backfill (e.g. clean, coarse sand or pea gravel) will be used to backfill the trenches between the depressurization pits and the riser pipes, and will be sampled by the Contractor in accordance with DER-10, Table 5.4(e)10 (Recommended Number of Soil Samples for Soil Imported to a Site) and analytical results will meet general fill requirements, which is the lower (more restrictive) of the 6 NYCRR Part 375 Restricted Use Restricted-Residential and Protection of Groundwater SCOs. Virgin sand or stone aggregate may be imported without analytical data if it contains less than 10% by weight passing a No. 80 sieve.

Prior to material import, the RE will review documentation from each import facility, including the facility name, address, permit/registration, and site history, if necessary, in accordance with DER-10. Proposed import material will be approved by both the RE and the NYSDEC. Upon arrival, import material will be screened for visual, olfactory, and instrumental evidence of contamination.

2.4 Contingency Plan

If underground storage tanks (USTs) or other previously unidentified contaminant sources are found during IRMWP implementation, decommissioning will be performed in conformance with the criteria defined in 6 NYCRR Part 613-3.5 and NYSDEC DER-10 Chapter 5.5, and sampling will be performed on product and surrounding subsurface material (e.g., soil, stone, etc.). Chemical analysis will include full scan parameters (Part 375 VOCs, SVOCs, PCBs, pesticides, metals and per- and polyfluoroalkyl substances [PFAS]). Analyses will not be otherwise limited without NYSDEC approval.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC Project Manager. These findings will be also be detailed in daily reports and the CCR.

2.5 Dust, Odor, Vapor and Nuisance Control Plan

This dust, odor, vapor and nuisance control plan was developed in accordance with the NYSDOH Generic Community Air Monitoring Program (CAMP) and Occupational Safety and Health Administration (OSHA) standards for construction (29 CFR 1926). Continuous monitoring on the perimeter of the work zones for odor, VOCs, and dust will be required for ground-intrusive activities such as pit and trench excavation and soil handling. The work zone is defined as the general area in which machinery is operating in support of IRM activities.

Two stationary air monitoring stations will be set up at site perimeters (one upwind and one downwind) for continuous monitoring during soil-intrusive work. Each station will include a PID and a DustTrak aerosol monitor (or equivalent). A portable PID will be used to monitor the work zone for VOCs. Action levels for protection of the community and visitors are set forth in the CAMP that is included in Section 2.8.

SSD system installation may be performed concurrently with SVE system installation. During overlap in ground-intrusive work, two air monitoring stations will be set up to include both work zones and each individual work zone will be monitored with a portable PID.

2.5.1 Odor and Vapor Control

This odor control plan is capable of controlling off-site emissions of nuisance odors. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until nuisance odors have been abated. NYSDEC and NYSDOH will be notified of odor events and of other complaints about the project. Implementation of odor control perimeter monitoring, including the temporary suspension of work, will be the responsibility of the RE, who is responsible for certifying the CCR. The Contractor is responsible for implementing odor controls as required.

All necessary means will be employed to prevent on- and off-site nuisances. If odors develop and cannot be otherwise controlled, means to eliminate odor nuisances may include: (a) shrouding open excavations with tarps and other covers; (b) use of odor-suppressing foam; (c) use of chemical odorants in spray or misting systems; and, (d) use of staff to monitor odors in the surrounding neighborhood.

2.5.2 Dust Control

A dust suppression plan that addresses dust management during invasive work will include, at a minimum, the use of a dedicated water distribution system, water trucks, or an alternate source with suitable supply and pressure.

2.5.3 Other Nuisances

A plan for rodent control will be developed and utilized by the Contractor prior to and during remedial work. A plan for noise control will be developed and utilized by the Contractor for IRM work and will conform, at a minimum, to New York City Department of Environmental Protection (NYCDEP) noise control standards.

2.6 Subcontractor's Means and Methods

The subcontractor is solely responsible for safe execution of invasive and other work performed under this IRMWP and will be responsible for obtaining local, state or federal permits or approvals that may be required to perform work under this IRMWP.

2.7 Health and Safety Plan

The RE prepared a site-specific HASP, which is provided as Appendix A. The HASP specifically addresses health and safety requirements pertaining to site contamination and will apply to all remedial and construction-related work on site. Contractors are required to adhere to their own HASP that, at a minimum, meets the requirements of the site-specific HASP. The HASP requires that all remedial work performed under this plan be in full compliance with governmental requirements, including site and worker safety requirements mandated by Federal OSHA. The

HASP provides a mechanism for establishing on-site safe working conditions, safety organization, procedures, and personal protective equipment (PPE) requirements during the IRM. The HASP meets the requirements of 29 CFR 1910 and 29 CFR 1926 (which includes 29 CFR 1910.120 and 29 CFR 1926.65, respectively).

2.8 Community Air Monitoring Plan

Community air monitoring will be conducted in compliance with the NYSDOH Generic CAMP and Special Requirements for Work within 20 feet of Potentially Exposed Individuals or Structures (NYSDOH Special Requirement), as outlined below.

The CAMP includes real-time continuous monitoring for VOCs and particulates at the downwind perimeter of each designated work area when certain activities are in progress. The monitoring station locations will also reflect the nearest potentially exposed individuals and the location of ventilation system intakes by nearby structures. Continuous monitoring is required during ground-intrusive activities. Ground-intrusive activity planned during this IRM includes excavation for depressurization pits and associated trenching for SSD system installation.

Air monitoring will be conducted with the following equipment (or equivalent):

- MiniRAE 3000 PIDs (for VOCs)
- TSI DustTrak aerosol monitors (for particulate matter less than 10 microns in diameter [PM10]).

Monitoring for particulates, vapor, and odors will be conducted during ground-intrusive activities by the RE's field inspector. The work zone is defined as the general area in which machinery is operating in support of IRM activities. A portable PID will be used within the work zone for periodic monitoring of VOCs during IRM activities. As feasible, the use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices may be used to prevent exposures related to the work activities and to control dust and odors. The site perimeter will be visually monitored for fugitive dust emissions and odor.

The following actions will be taken based on measured VOC levels:

- If total VOC levels exceed 5 parts per million (ppm) above background for the 15-minute average at the perimeter, work activities will be temporarily halted and monitoring continued. If levels readily decrease (per instantaneous readings) below 5 ppm above background, work activities will resume with continued monitoring.
- If total VOC levels at the downwind perimeter of the work zone persist at levels in excess of 5 ppm above background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions and monitoring

continued. After these steps work will resume if the total organic vapor level 200 feet downwind of the work zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less – but in no case less than 20 feet, is below 5 ppm above background for the 15-minute average.

- If the total VOC level is above 25 ppm at the perimeter of the work zone, work will be shut down.
- *NYSDOH Special Requirement*: Background readings in the occupied spaces must be taken prior to commencement of the planned work. If total VOC concentrations opposite the walls of occupied structures or next to intake vents then exceed 1 ppm, monitoring should occur within the occupied structure. Unusual background readings should be discussed with NYSDOH prior to the commencement of the work.

The following actions will be taken based on elevated PM10 concentrations and/or visual dust observations:

- If the downwind PM10 concentration is 100 µg/m³ greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work zone, then dust suppression must be employed. Work may continue with dust suppression techniques provided that downwind PM10 levels do not exceed 150 µg/m³ above the background level and provided that no visible dust is migrating from the work zone.
- If, after implementation of dust suppression techniques, downwind PM10 levels are greater than 150 µg/m³ above the background level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM10 concentration to within 150 µg/m³ of the upwind level and in preventing visible dust migration.
- *NYSDOH Special Requirement*: If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 µg/m³, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentrations to 150 µg/m³ or less at the monitoring point.

Concentrations detected above the CAMP action levels and subsequent corrective measures taken will be reported to the NYSDEC and NYSDOH project managers within 24 hours, and included in daily reports and the CCR. CAMP data summary tables will also be provided to the NYSDEC and NYSDOH project managers on a weekly basis. In addition, a map showing the location of the downwind and upwind CAMP stations will be included in each daily report.

2.9 Indoor Air Monitoring Plan

Langan will monitor air in the work zone during indoor excavation activities in the target mitigation area. Indoor air monitoring will be performed to document the absence of contaminant exposure to on-site personnel not associated with the remedial work (e.g., employees of the custom carpentry business). Community air monitoring will be conducted in compliance with the NYSDOH Generic CAMP and NYSDOH Special Requirements (as discussed in Section 2.8) and with the following Special Requirements for Indoor Work with Co-located Residences or Facilities:

- Monitoring locations will be established based on the evaluation of exhaust vents/discharge points as well as potential vapor pathways (opening, conduits, etc.) in the work area; and
- Exhaust fans or other engineering controls should be used to create negative air pressure within the work area.

When the on-site businesses are not occupied, such as at night or on weekends, air monitoring will be conducted as follows:

- Langan will monitor total VOCs with a PID (MultiRAE or equivalent) and particulate concentrations with a personal dust monitor (personal DataRAM [pDR] or equivalent) in accordance with Section 7.0 of the HASP, which is provided in Appendix A.
- In the event that VOC and/or dust action levels outlined in the HASP are exceeded, work will cease and the affected areas will be temporarily evacuated. Indoor air monitoring will continue until the VOC and particulate concentrations return to background conditions for a 15-minute interval. At that time, work can resume with continued monitoring. If VOC and particulate concentrations do not return to background conditions and persist above the action levels, the work zone will be isolated using plastic sheeting (or equivalent) or field activities will be halted until the source is identified and addressed. If required, the air monitoring plan will then be reassessed.

3.0 SCHEDULE

Construction of the SSD system will begin in September 2020 during SVE system installation, and is anticipated to take up to 10 days to install. Within 30 days after completing installation activities, an Operation, Maintenance and Monitoring (OM&M) Plan will be submitted to the NYSDEC and NYSDOH. A CCR documenting construction of the SSD system will be submitted to the NYSDEC in December 2020.

3.1 Notification

The NYSDEC will be contacted to arrange a pre-construction meeting at least seven calendar days prior to beginning of SSD system construction.

Concentrations detected above the CAMP action levels and subsequent corrective measures taken will be reported to the NYSDEC and NYSDOH project managers within 24 hours.

3.2 SSD System Performance Monitoring and Maintenance

3.2.1 Routine SSD System Performance Monitoring and Maintenance

A baseline inspection of the in-line fans and other equipment will be conducted within 24 hours after initial startup of the system. Inspections will then be conducted on an annual basis and after severe conditions (i.e., flooding).

A checklist will be completed for each inspection. The inspection checklist will include, but not be limited to, a record of the pressure readings, verifying active operation of the in-line fans, and verifying the competency of couplings and seals in the SSD system riser pipes.

The in-line fans will operate continuously after initial startup. Adjustments may be needed to calibrate the system to perform as designed. Required maintenance, adjustments, or repairs to the blower system will be conducted, as per the manufacturer's recommendations. The need for future repairs and/or adjustments will be based on comparisons between the startup testing and ongoing system performance.

A forthcoming OM&M Plan will further detail monitoring and maintenance requirements.

3.2.2 Non-Routine SSD System Performance Monitoring and Maintenance

Unscheduled inspections and/or sampling may take place when a suspected failure of the SSD system has been reported or an emergency occurs that is deemed likely to affect the operation of

the system. Non-routine maintenance may be required during the operation of the SSD system, including, but not limited to, the following situations:

- The building's owner or occupants report that the warning device indicates the system is not operating properly;
- The system is damaged; and/or
- The building undergoes renovations that may reduce the effectiveness of the system.

On-site personnel will be trained to identify system alarms, in-line fans, risers, and other system components.

4.0 REPORTING

During the IRM, daily progress reports will be prepared and submitted as described below. A CCR will be prepared and submitted after IRMWP implementation. The RE responsible for certifying the CCR will be an individual licensed to practice engineering in the State of New York. Jason Hayes, P.E. of Langan Engineering will have this responsibility. Should Mr. Hayes become unable to fulfill this responsibility, another suitably qualified New York State professional engineer (PE) will take his place.

Daily reports and monthly progress reports will be provided in electronic format (e.g., PDF) to the NYSDEC Project Manager during IRMWP implementation. Electronic copies of the daily reports will be included in the CCR.

4.1 Daily Reports

Daily reports will be submitted to the NYSDEC and NYSDOH project managers by the end of each week following the reporting period and will include:

- A progress update;
- A description of work locations;
- A site plan depicting relevant IRMWP site activities;
- A summary of complaints with relevant details (names, phone numbers); and
- Deviations from the IRMWP (if applicable).

Concentrations detected above the CAMP action levels and subsequent corrective measures will be reported to the NYSDEC and NYSDOH project managers within 24 hours, and included in the daily report. CAMP data summary tables will also be provided to the NYSDEC and NYSDOH project managers on a weekly basis.

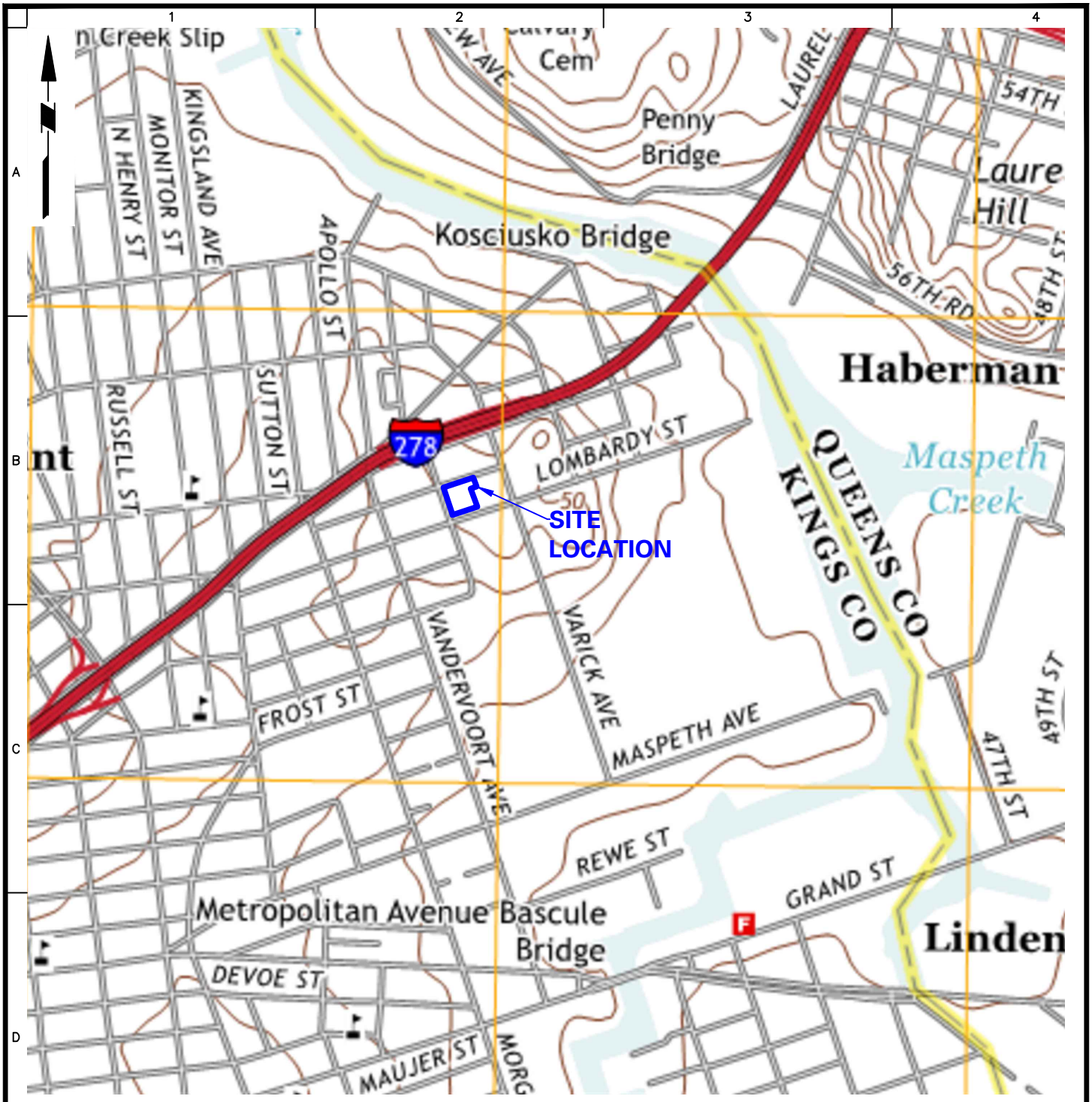
Daily reports are not intended to be the mode of communication for notification to the NYSDEC of emergencies (accident, spill), requests for changes to the IRMWP, or other sensitive or time-critical information; however, such conditions will also be included in the daily reports. Emergency conditions and deviations from the IRMWP will be addressed directly to NYSDEC Project Manager via personal communication. If site conditions warrant, the RE may request to change from daily to weekly reports that include the above information.

4.2 Construction Completion Report

A CCR, prepared in accordance with DER-10 Section 5.8, will be submitted to the NYSDEC following installation of the SSD system. The CCR will include PE-stamped as-built drawings and provide documentation that the remedial work required under the IRMWP was completed in

substantial compliance with this plan. A single CCR will be prepared to document construction of the full-scale SVE system (in accordance with the March 13, 2020 IRMWP) and the SSD system.

FIGURES



NOTE:

1. BASE MAP ADAPTED FROM UNITED STATES GEOLOGICAL SURVEY (USGS) 7.5-MINUTE BROOKLYN, N.Y. TOPOGRAPHIC QUADRANGLE, DATED 2016.

LEGEND:

APPROXIMATE SITE BOUNDARY

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

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Project
FORMER ACME STEEL/BRASS FOUNDRY
NYSDEC SITE No. 224132
72 ANTHONY STREET/
498 PORTER AVENUE
BROOKLYN NEW YORK

Figure Title
SITE LOCATION MAP

Project No.	170157201
Date	09/13/2019
Drawn By	KN
Checked By	PTF

Figure No. **1**

Sheet 1 of 3

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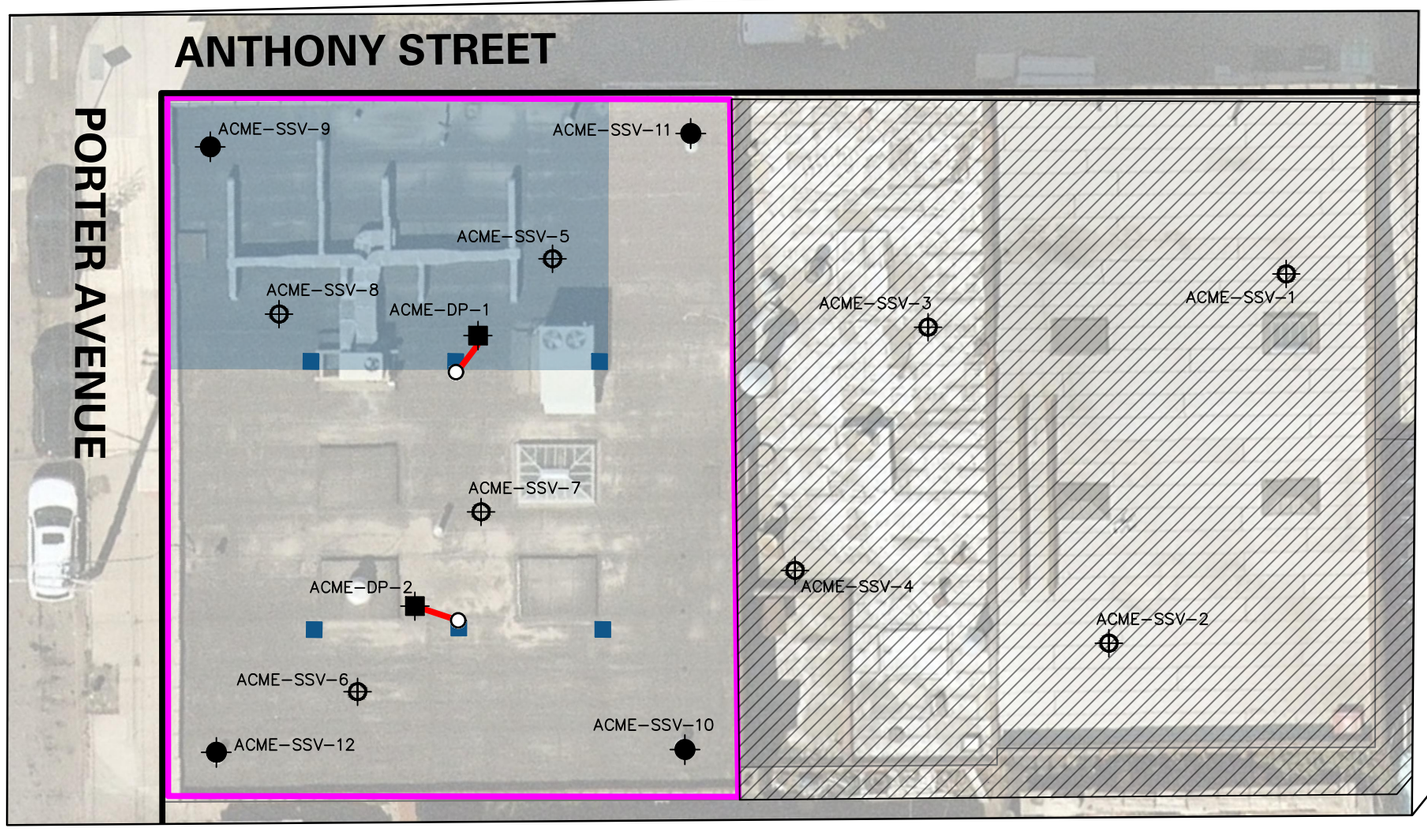
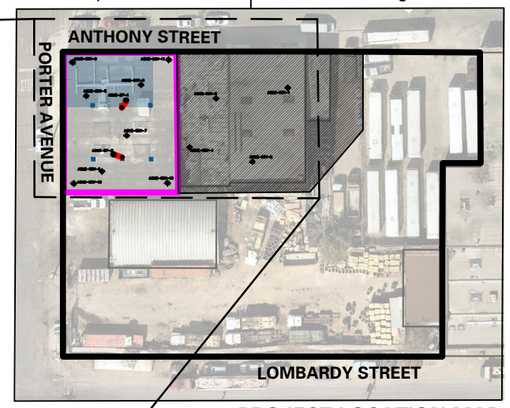
Filename: \\langan.com\data\NYC\data2\170157201\Cadd Data - 170157201\IRMWP\Figure 1 - Site Location Map.dwg Date: 3/13/2020 Time: 12:46 User: knagotko Style Table: Langan.stb Layout: ANSIA-BP





PROJECT LOCATION MAP
SCALE: 1" = 100'

GENERAL NOTES:

1. BASE MAP SOURCE: NEARMAP.COM AERIAL PHOTO DATED SEPTEMBER 2019.
2. DRAWING SHALL NOT BE USED FOR STRUCTURAL, ARCHITECTURAL, UTILITY, OR OTHER REFERENCE EXCEPT FOR THE SUB-SLAB DEPRESSURIZATION (SSD) SYSTEM.
3. CRACKS, VOIDS, AND PENETRATIONS IN THE BUILDING SLAB SHALL BE SEALED WITH POLYURETHANE-BASED CAULKING, HYDRAULIC CEMENT, OR APPROVED ALTERNATIVE.

DEPRESSURIZATION PITS AND RISER PIPES NOTES:

1. DEPRESSURIZATION PITS ACME-DP-1 AND ACME-DP-2 SHALL BE 4 FEET LONG BY 4 FEET WIDE BY 4 FEET-DEEP. DEPRESSURIZATION PITS MAY BE MOVED BASED ON SITE CONDITIONS ONLY WITH APPROVAL OF THE ENGINEER.
2. BOTTOM OF VAPOR COLLECTION PIPE SHALL BE A MINIMUM OF 6 INCHES BELOW THE TOP OF THE GRAVEL LAYER.
3. VAPOR COLLECTION PIPES, FITTINGS, AND CONNECTIONS SHALL BE CONSTRUCTED WITH SOLID 4-INCH-DIAMETER SCHEDULE 80 POLYVINYL CHLORIDE PIPING.
4. RISER PIPES, FITTINGS, AND CONNECTIONS SHALL BE CONSTRUCTED WITH 4-INCH-DIAMETER METAL OR OTHER MATERIAL THAT COMPLIES WITH THE NEW YORK CITY MECHANICAL CODE.
5. RISER PIPES SHALL EXTEND TO THE IN-LINE FANS WITH MINIMAL CHANGES IN DIRECTION. HORIZONTAL PIPE RUNS MUST MAINTAIN A MINIMUM SLOPE OF 1/8 INCHES PER LINEAR FOOT, SLOPING BACK TOWARDS THE DEPRESSURIZATION PIT.
6. EXTERIOR RISER PIPES SHALL BE STRAPPED IN ACCORDANCE WITH NEW YORK CITY MECHANICAL CODE AND AT A MINIMUM OF EVERY 5 LINEAR FEET OF RISER PIPE RUN, WITH ADDITIONAL STRAPS NEAR THE IN-LINE FAN AND AT THE TOP OF THE COLUMN WALL, AS REQUIRED.
7. RISER PIPE PENETRATIONS THROUGH THE SLAB SHALL BE SEALED WITH A POLYURETHANE-BASED CAULK OR APPROVED ALTERNATIVE.
8. RISER PIPES MUST BE CLEARLY LABELED "CAUTION: DO NOT ALTER SUB-SLAB VAPOR VENT PIPE" IN EACH ACCESSIBLE AREA (A MINIMUM OF EVERY 10 LINEAR FEET OF RISER PIPE RUN).
9. SYSTEM INSTALLATION SHALL ADHERE TO THE GUIDANCE FOR EVALUATING SOIL VAPOR INTRUSION IN THE STATE OF NEW YORK (2006), WITH UPDATES, PREPARED BY THE NEW YORK STATE DEPARTMENT OF HEALTH (NYSDOH), AND 2014 NEW YORK CITY MECHANICAL CODE, CHAPTER 5, SECTION MC 512-SUB-SLAB SOIL EXHAUST SYSTEMS.
10. POINTS OF EXHAUST SHALL BE:
    A. ABOVE THE EAVE OF THE ROOF (PREFERABLY ABOVE THE HIGHEST EAVE OF THE BUILDING) AND AT LEAST 24 INCHES ABOVE THE SURFACE OF THE ROOF;
    B. AT LEAST 10 FEET ABOVE THE GROUND LEVEL;
    C. AT LEAST 10 FEET AWAY FROM ANY OPERABLE AIR INTAKE THAT IS LESS THAN 2 FEET BELOW THE EXHAUST POINT; AND
    D. AT LEAST 10 FEET FROM ANY ADJOINING OR ADJACENT BUILDINGS, HVAC INTAKES, OR HVAC SUPPLY REGISTERS.
11. ALL EXTERNAL PIPES SHALL BE PAINTED WITH A CORROSION RESISTANT COATING, DEPENDING ON PIPE MATERIAL, AND INSULATED.
12. RAIN GUARDS OR CAPS SHALL BE INSTALLED ON THE EXHAUST POINT.
13. TRENCH BACKFILL SHALL BE CLEAN STONE, PEA GRAVEL, OR SAND MEETING GENERAL FILL REQUIREMENTS.
14. DEPRESSURIZATION PIT GRAVEL SHALL BE CLEAN, COARSE, NATURAL, ANGULAR, WASHED 1.5-INCH STONE WITH THE FOLLOWING GRADATION:

SIEVE SIZE	% PASSING BY WEIGHT
2.5-INCH	100
2-INCH	90-100
1.5-INCH	35-50
1-INCH	0-15
#10	<1

LEGEND:

- SITE BOUNDARY
- SITE FEATURE
- TARGET MITIGATION AREA (ABOUT 7,000 SQUARE FEET)
- APPROXIMATE EXTENT OF PARTIAL MEZZANINE LEVEL WITHIN BUILDING
- APPROXIMATE BUILDING COLUMN LOCATION (TYPICAL)
- APPROXIMATE AREA SUBJECT TO TREATMENT PER IRMWP, DATED MARCH 13, 2020
- ACME-SSV-7 — EXISTING SUB-SLAB SOIL VAPOR POINT LOCATION (TO BE USED FOR SUB-SLAB VACUUM MONITORING)
- ACME-SSV-9 — PROPOSED NEW SUB-SLAB SOIL VAPOR POINT LOCATION (TO BE USED FOR SUB-SLAB VACUUM MONITORING)
- ACME-DP-2 — PROPOSED DEPRESSURIZATION PIT LOCATION
- PROPOSED SOLID 4-INCH-DIAMETER SCHEDULE 80 POLYVINYL CHLORIDE PIPE AND TRENCH LOCATION
- PROPOSED RISER PIPE LOCATION LEADING TO ROOF-MOUNTED IN-LINE FAN

20 0 5 10 20
SCALE IN FEET

STATE OF NEW YORK · JASON JAMES HAYES · LICENSED PROFESSIONAL ENGINEER · 089491

SIGNATURE 9/14/2020 DATE

JASON HAYES
PROFESSIONAL ENGINEER NY Lic. No. 089491

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Project
FORMER ACME STEEL/BRASS FOUNDRY
NYSDEC SITE No. 224132
72 ANTHONY STREET/
498 PORTER AVENUE
BROOKLYN NEW YORK

Figure Title
PROPOSED SUB-SLAB DEPRESSURIZATION SYSTEM LAYOUT

Project No.	170157201
Date	8/11/2020
Drawn By	KN
Checked By	PTF

Figure No. **2**
Sheet 2 of 3

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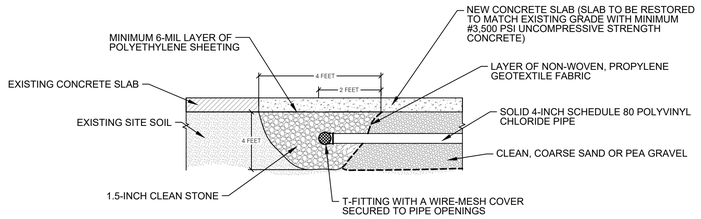
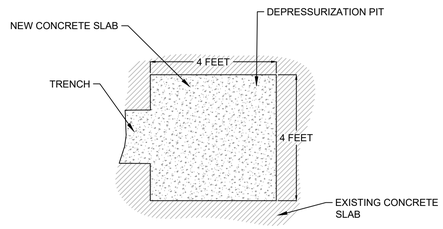
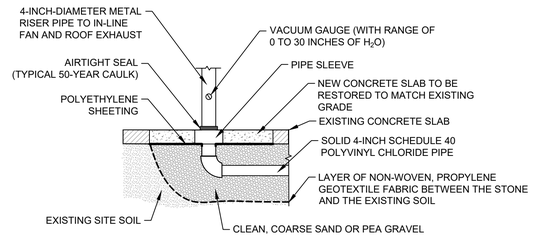
Filename: \\langan.com\data\NYC\data2\170157201\Cadd Data - 170157201\SSDS Design\Acme - SSDS Design_recover.dwg Date: 8/17/2020 Time: 14:23 User: knagotko Style Table: Langan.stb Layout: Manifold Layout



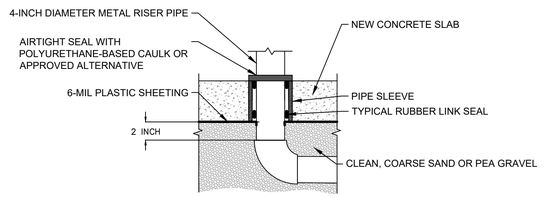
DETAIL 1: TYPICAL 4' X 4' DEPRESSURIZATION PIT SECTION VIEW
NOT TO SCALE



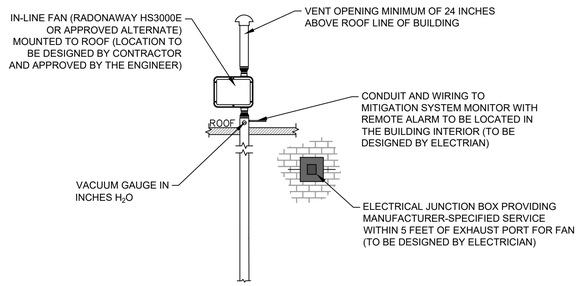
DETAIL 2: TYPICAL 4' X 4' DEPRESSURIZATION PIT (PLAN VIEW)
NOT TO SCALE



DETAIL 3: TYPICAL VAPOR COLLECTION PIPE TO RISER PIPE SECTION
NOT TO SCALE

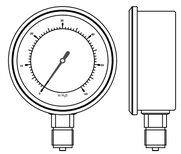


DETAIL 4: TYPICAL VAPOR COLLECTION PIPE TO RISER PIPE CONNECTION
NOT TO SCALE

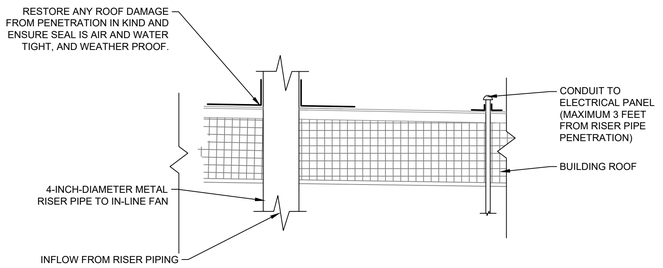


DETAIL 5: RISER TO IN-LINE FAN AND EXHAUST
NOT TO SCALE

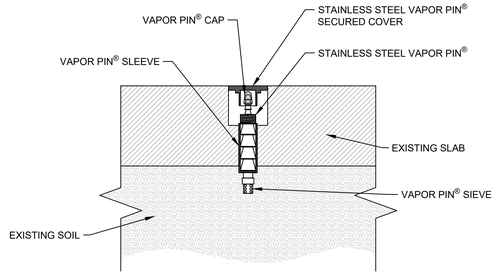
NOTE: TYPICAL WIKA® TYPE 633.50 LOW PRESSURE CAPSULE GAUGE RANGING FROM 0 TO 30 in H_2O. CONTRACTOR SHALL SUBMIT SPECIFIC GAUGE TO BE INSTALLED.



DETAIL 6: TYPICAL VACUUM GAUGE
NOT TO SCALE



DETAIL 7: ROOF PENETRATION (SECTION VIEW)
NOT TO SCALE



DETAIL 8: TYPICAL SUB-SLAB SOIL VAPOR POINT
NOT TO SCALE

IN-LINE FAN NOTES:

1. CONTRACTOR SHALL PROVIDE SUBMITTALS FOR ALL SYSTEM COMPONENTS TO THE ENGINEER FOR APPROVAL.
2. MANUFACTURER TO PROVIDE ALL ITEMS REQUIRED FOR IN-LINE FAN INSTALLATION.
3. IN-LINE FANS SHALL CONTINUOUSLY PROVIDE A MINIMUM OF 30 STANDARD CUBIC FEET PER MINUTE (SCFM) FLOW RATE AT 10 INCHES WATER COLUMN VACUUM AT THE IN-LINE FANS. IN-LINE FANS SHALL BE THE RADONAWAY HS3000E OR APPROVED ALTERNATIVE.
4. THE FAN SCHEMATICS ARE SHOWN TO ILLUSTRATE THE GENERAL LOCATIONS IN THE PIPE RUN AND SHALL NOT BE CONSIDERED TO BE ACCURATE. THE ACTUAL CONFIGURATIONS AND DIMENSIONS OF THE FAN INSTALLATION WILL VARY BASED ON MANUFACTURING METHODS AND FIELD CONDITIONS. FINAL DESIGN AND FAN SYSTEM SELECTED ARE SUBJECT TO APPROVAL BY THE ENGINEER. PROVIDE ALL FAN SPECIFICATIONS AND CUT SHEET FOR COMMISSION AND/OR CONSTRUCTION MANAGER'S APPROVAL PRIOR TO INSTALLATION.
5. A REMOTE ALARM SHALL BE LOCATED WITHIN THE BUILDING AND SHALL BE EASILY ACCESSED. THE ALARM SHALL CONSIST OF A WARNING LIGHT AND ASSOCIATED RELAYS. THE REMOTE ALARM AND CONTROL PANEL SHALL BE CONFIGURED SUCH THAT IF THE IN-LINE FANS STOP OPERATING, THE REMOTE ALARM WILL BE ACTIVATED. ALTERNATIVELY, IF A BUILDING MANAGEMENT SYSTEM IS TO BE INSTALLED, THE REMOTE ALARM CAN BE CONFIGURED THROUGH THIS SYSTEM.
6. THE REMOTE VISUAL ALARM OR BUILDING-WIDE INFORMATION SYSTEM ALERT FOR THE FANS SHALL BE LABELED AS FOLLOWS:
   - SUB-SLAB VAPOR VENTING SYSTEM ALARM
   - FAN MALFUNCTION IF LIT - SERVICE IMMEDIATELY
8. SUPPLY POWER TO THE IN-LINE FANS ASSEMBLY, INCLUDING FAN AND REMOTE ALARM, IN ACCORDANCE WITH ELECTRICAL SPECIFICATION (TO BE DESIGNED AND PREPARED BY ELECTRICIAN).

STATE OF NEW YORK — JASON DAVID HAYES — 089491 — PROFESSIONAL ENGINEER

SIGNATURE 6/4/2020 DATE SIGNED

JASON HAYES
PROFESSIONAL ENGINEER NY Lic. No. 089491

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Project
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BROOKLYN NEW YORK

Figure Title
PROPOSED SUB-SLAB DEPRESSURIZATION SYSTEM DETAILS

Project No. 170157201
Date 6/3/2020
Drawn By KN
Checked By PTF
Figure No. 3
Sheet 2 of 3

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Filename: \\langan.com\data\NYC\data2\170157201\Cadd Data - 170157201\SSDS Design\Sub-Slab Depressurization System Drawings.dwg Date: 8/19/2020 Time: 18:54 User: knagotko Style Table: Langan.stb Layout: ANSID-BL

LANGAN PROJECT NO. ########

APPENDIX A
HEALTH AND SAFETY PLAN

HEALTH AND SAFETY PLAN

For

FORMER ACME STEEL/BRASS FOUNDRY
72 ANTHONY STREET/498 PORTER AVENUE
BROOKLYN, NY
NYSDEC SITE NO. 224132
Brooklyn Borough Tax Map
Block 2820, Lots 1 and 5

Prepared For

Whitehead Company
251 Lombardy Street
Brooklyn, New York 11222

Prepared By:

Langan Engineering, Environmental, Surveying
Landscape Architecture, and Geology, D.P.C.
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, New York 10001

June 2020
Langan Project No. 170157201

LANGAN

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1.0 INTRODUCTION

1.1 General

This HEALTH AND SAFETY PLAN (HASP) was developed to address disturbance of known and reasonably anticipated subsurface contaminants and comply with Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.120(b)(4), *Hazardous Waste Operations and Emergency Response* during anticipated site work at 72 Anthony Street and 498 Porter Avenue (Tax Block 2820, Lots 1 and 5) in the Greenpoint section of the borough of Brooklyn, New York ("the Site"). This HASP provides the minimum requirements for implementing site operations during future remedial measure activities. All contractors performing work on this site shall implement their own HASP that, at a minimum, adheres to this HASP. The contractor is responsible for their own health and safety and that of their subcontractors. Langan personnel will implement this HASP while onsite.

The management of the day-to-day site activities and implementation of this HASP in the field is the responsibility of the site Langan Field Team Leader (FTL). Assistance in the implementation of this HASP can also be obtained from the site Langan Health and Safety Officer (HSO) and the Langan Health and Safety Manager (HSM). Contractors operating on the site shall designate their own FTL, HSO and HSM. The content of this HASP may change or undergo revision based upon additional information made available to health and safety personnel, monitoring results, or changes in the work plan.

1.2 Site Location and Background

The Site occupies an approximate area of 52,860 square feet at 72 Anthony Street and 498 Porter Avenue (Tax Block 2820, Lots 1 and 5) in the Greenpoint section of the borough of Brooklyn, New York. Adjoining properties include Porter Avenue to the west, a warehouse building to the east, Lombardy Street to the south, and Anthony Street to the north. The Site is owned by Whitehead Company and consists of one one-story building, a truck maintenance yard, and a bus parking lot. The one-story building is occupied by a granite and marble warehouse, a carpentry operation, storage for construction and waste disposal companies, and a produce distribution warehouse. The bus parking lot adjoins the produce distribution warehouse to the east. The truck maintenance yard, located within the southern half of the Site, was formerly operated by City-Wide, and included a maintenance shop within a tent enclosure. The truck maintenance yard is now vacant. A site location map is included as Figure 1.

The Site was used as a brass foundry and civilian observation patrol from the 1960s through around 1993. After 1993, until around 2009, the Site was operated by Acme Steel as a door

finishing facility. The former Acme Steel facility that operated at the Site was reportedly a generator of F001 waste, which indicates that the following spent halogenated solvents were likely used in degreasing: tetrachloroethene (PCE), tricholoethene (TCE), methylene chloride, 1,1,1-trichloroethane (1,1,1-TCA), carbon tetrachloride, and chlorinated fluorocarbons. According to a review of the Phase I Environmental Site Assessment (ESA) prepared by Impact Environmental Consulting, the site was historically used for industrial and manufacturing purposes.

1.3 Summary of Work Tasks

1.3.1 Soil Vapor Extraction System and Vacuum Monitoring Probe

The drilling contractor retained by the client will advance soil borings to a depth below grade surface (bgs) specified in the work plan. Borings will be installed at the approximate locations indicated in Langan's work plan, but may be moved in the field based on utility clearance and accessibility. The drilling contractor will contact the appropriate utility mark-out authority and make available to their drilling staff the verification number and effective dates. Langan will record the verification number and effective dates from the drillers. Langan will also note the location of marked out utilities on the site plan and scan the data into the project folder.

Langan personnel will screen soil for visual, olfactory, and instrumental indicators suggestive of a potential petroleum or solvent release. Instrument screening for the presence of volatile organic compounds (VOC) may be performed with a calibrated photoionization detector (PID) equipped with a 10.6 electron volt (eV) bulb (or equivalent).

Soil samples may be submitted to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory and analyzed in accordance with work plan specifications.

The borings will be completed as soil vapor extraction (SVE) wells or vacuum monitoring probes (VP) will be installed in accordance with the work plan. The contractor will also install necessary support surface infrastructure necessary to operate and maintain the SVE system. Installation of this may require trenching and working at elevations.

1.3.2 Sub-Slab Soil Vapor Pin Installation and Sampling

Langan installed eight open-ended stainless steel sub-slab vapor pins with silicon sheaths at selected locations. The sub-slab vapor pins were installed per manufacture instructions. The vapor points were set below the concrete slab surface to facilitate a permanent cap designed to protect the vapor point between sampling events. No sand or bentonite was used to install these

vapor points. The sub-slab points were installed using electric hammers with chucks designed for the drill bits to be used. Conditions in the field may require adjustment of sampling locations.

Vapor samples were be collected in accordance with the Final Guidance for Evaluating Soil Vapor Intrusion published by the NYSDOH in October 2006 and Langan's Sub-Slab Vapor Sampling SOP (SOP #14).

Ambient air sample was collected for use as a comparison sample. As part of the ambient air sampling program, Langan personnel completed the NYSDOH building inventory inspection. The inspection took place prior to the commencement of actual field sampling.

1.3.3 Sub Slab or Soil Vapor Point Installation and Sampling

In addition to the sub-slab vapor sampling outlined in section 1.3.2 of this HASP, Langan may retain a drilling contractor to install one or more sub-slab or soil vapor points at other selected locations. If installed, the sub-slab points will be set approximated 2-inches below the bottom of the slab in accordance with the work plan. The sub-slab points may be installed using an electric hammer drill to advance small diameter borings through the concrete (or equivalent) slab as defined in the work plan. The borings will terminate in and sample from the gravel substrate below the slab. If installed, the soil vapor points will be installed by the drilling contractor as specified in the work plan. Conditions in the field may require adjustment of sampling locations.

Vapor samples will be collected in accordance with Langan's Sub-Slab Vapor Sampling Standard Operating Procedure No. 14 (SOP #14). The sub-slab vapor will be collected through an open tube (no implant) or similar method. The annulus around the tubing within the concrete slab is to be packed with bentonite to seal the sampling points. Once sampled, the boring will be backfilled to grade with patching material. The soil vapor samples will be collected using a stainless steel soil vapor implant and tubing or similar method. The annulus around the probe and tubing will be filled with sand to two inches above the probe. Bentonite slurry will be applied to the top of the sand up to seal the sampling points.

Ambient air sample may be collected for use as a comparison sample. As part of the ambient air sampling program, Langan personnel may complete a building inventory inspection. The inspection may take place prior to the commencement of actual field sampling.

Vapor samples will be submitted to a NYSDOH ELAP-certified laboratory and analyzed in accordance with work plan specifications.

1.3.4 Installation of Sub-Slab Depressurization (SSD) System

A properly licensed contractor will install the sub-membrane depressurization system in

accordance with specifications outlined in the work plan. Langan personnel well observe the installation of the SSD system and record the information specified in the work plan.

1.3.5 Groundwater Investigation and Sampling

Groundwater samples were collected from all of the pre-existing monitoring wells in accordance with the Langan Low Flow Groundwater Sampling SOP (SOP #12). Groundwater samples were be submitted to an NYSDOH ELAP-certified laboratory and analyzed for constituents as specified in the work plan.

1.3.6 Management of Investigative-Derived Waste

The investigative-derived waste (IDW) generated during this investigation may be contained in DOT-approved 55-gallon drums. The drums will be temporarily stored on the site or as directed by the client representative. All drums will be filled to two-thirds full to allow easy maneuvering during drum pickup and disposal. Drum labels are to be provided by Langan (Environmental Closet). All drums will be labeled as "IDW Pending Analysis" until sample data are reported from the laboratory. Drum labels will include date filled and locations where waste was generated along with the standard information required by the labels in accordance with the Langan SOP09, Drum Labeling.

Closed top drums are to be used to store liquids. Debris, including plastic sheeting, polyethylene tubing, personal protection equipment (PPE), decontamination debris, etc. will be segregated from and disposed in large heavy duty garbage bags and disposed of at the site. Excess unused glassware should be returned to the lab along with the last day of collection samples.

1.3.7 Drum Sampling

Langan personnel may collect drum samples, as required, prior to off-site drum disposal. Samples will be placed into laboratory-supplied batch-certified clean glassware and submitted to a NYSDOH ELAP-certified laboratory.

1.3.8 Surveying

Surveying activities, if defined in the work plan, may be completed by Langan. Surveying will be conducted by licensed surveyors.

2.0 IDENTIFICATION OF KEY PERSONNEL/HEALTH AND SAFETY PERSONNEL

The following briefly describes the health and safety (H&S) designations and general responsibilities that may be employed for this site. The titles have been established to

accommodate the project needs and requirements and ensure the safe conduct of site activities. The H&S personnel requirements for a given work location are based upon the proposed site activities.

2.1 Langan Project Manager

The Langan Environmental Project Managers (PM) is Patrick Farnham. His responsibilities include:

- Ensuring that this HASP is developed, current, and approved prior to on-site activities.
- Ensuring that all the tasks in the project are performed in a manner consistent with Langan's comprehensive *Health and Safety Program for Hazardous Waste Operations* and this HASP.

2.2 Langan Corporate Health and Safety Manager

The Langan Corporate Health and Safety Manager (HSM) is Tony Moffa. His responsibilities include:

- Updating the *Construction Health and Safety Program for Hazardous Waste Operations*.
- Assisting the site Health and Safety Officer (HSO) with development of the HASP, updating HASP as dictated by changing conditions, jobsite inspection results, etc. and approving changes to this HASP.
- Assisting the HSO in the implementation of this HASP and conducting Jobsite Safety Inspections and assisting with communication of results and correction of shortcomings found.
- Maintaining records on personnel (medical evaluation results, training and certifications, accident investigation results, etc.).

2.3 Langan Site Health & Safety Officer

The Langan site HSO is William Bohrer. His responsibilities include:

- Participating in the development and implementation of this HASP.
- When on-site, assisting the Langan Field Team Leader in conducting Tailgate Safety Meetings and Jobsite Safety Inspections and correcting any shortcomings in a timely manner.
- Ensuring that proper PPE is available, worn by employees, and properly stored and maintained.
- Controlling entry into and exit from the site contaminated areas or zones.

- Monitoring employees for signs of stress, such as heat stress, fatigue, and cold exposure.
- Monitoring site hazards and conditions.
- Knowing (and ensuring that all site personnel also know) emergency procedures, evacuation routes, and the telephone numbers of the ambulance, local hospital, poison control center, fire department, and police department.
- Resolving conflicts that may arise concerning safety requirements and working conditions.
- Reporting all incidents, injuries and near misses to the Langan Incident/Injury Hotline immediately and the client representative.

2.4 Langan Field Team Leader Responsibilities

The Langan Field Team Leader (FTL) is to be determined prior to the start of the start of field activities. The Field Team Leader's responsibilities include:

- The management of the day-to-day site activities and implementation of this HASP in the field.
- Participating in and/or conducting Tailgate Safety Meetings and Jobsite Safety Inspections and correcting any shortcomings in a timely manner.
- When a Community Air Monitoring Operating Program (CAMP) is part of the scope, the FTL will set up and maintaining community air monitoring activities and instructing the responsible contractor to implement organic vapor or dust mitigation when necessary.
- Overseeing the implementation of activities specified in the work plan.

2.5 Contractor Responsibilities

The contractor shall develop and implement their own HASP for their employees, lower-tier subcontractors, and consultants. The contractor is responsible for their own health and safety and that of their subcontractors. Contractors operating on the site shall designate their own FTL, HSO and HSM. The contractor's HASP will be at least as stringent as this Langan HASP. The contractor must be familiar with and abide by the requirements outlined in their own HASP. A contractor may elect to adopt Langan's HASP as its own provided that it has given written notification to Langan, but where Langan's HASP excludes provisions pertinent to the contractor's work (i.e., confined space entry); the contractor must provide written addendums to this HASP. Additionally, the contractor must:

- Ensure their employees are trained in the use of all appropriate PPE for the tasks involved;
- Notify Langan of any hazardous material brought onto the job site or site related area, the hazards associated with the material, and must provide a material safety data sheet (MSDS) or safety data sheet (SDS) for the material;

- Have knowledge of, understand, and abide by all current federal, state, and local health and safety regulations pertinent to the work;
- Ensure their employees handling hazardous materials, if identified at the Site, have received current training in the appropriate levels of 29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response* (HAZWOPER) if hazardous waste is identified at the Site;
- Ensure their employees handling hazardous materials, if identified at the Site, have been fit-tested within the year on the type respirator they will wear; and
- Ensure all air monitoring is in place pertaining to the health and safety of their employees as required by OSHA 1910.120; and
- All contractors must adherer to all federal, state, and local regulatory requirements.

3.0 TASK/OPERATION SAFETY AND HEALTH RISK ANALYSES

A Task-Hazard Analysis (Table 1) was completed for general construction hazards that may be encountered at the Site. The potential contaminants that might be encountered during the field activities and the exposure limits are listed in Table 2 complete inventory of MSDS/SDS for chemical products used on site is included as Attachment E.

3.1 Specific Task Safety Analysis

3.1.1 SVE Well and Vacuum Monitoring Probe Installation and Sampling

Advancement and completion of the SVE wells and vacuum monitoring probes as well as the installation of surface support infrastructure will be completed by the contractors under their own HASP. The contractor will complete necessary trenching in accordance with all Federal, State and Local regulations and guidelines. Aerial work for the purposes of installing pipeline from hangers secured to room ceilings will required proper fall protection training and certification. Langan employees are prohibited from completing aerial work unless properly trained and certified.

3.1.2 Electric Hammer Drill

Langan will used electric hammer drills to install the sub-slab vapor points. Langan will inspect each hammer drill prior to use and specifically note the condition of each hammer and attached electrical cord. The electrical cord must be a grounded and connect to the power source using a functional three prong grounded plug. The power source must be a Ground Fault Circuit Interrupter (GFI or GFCI) receptacle. Langan will also use a portable GFCI circuit from the outlet to the extension cord. Langan must test the GFCI before commencing drilling activities.

3.1.3 Vapor Investigation and Sampling

Sampling vapor requires the donning of work gloves in addition to the standard PPE when assembling the Summa™ canister with the regulator and cut resistant gloves when cutting sampling- or silicone-tubing to length.

When retaining a drilling contractor, Langan personnel are not to operate drilling equipment nor assemble or install soil vapor point equipment; these tasks are to be completed by the contractor.

3.1.4 Indoor Drilling and Excavation

The work scope may require indoor drilling or drilling in locations where there may not be adequate ventilation sufficient to safely operate any rig or excavation equipment powered by an internal combustion engine. Where possible, all such work should be done by equipment powered by electricity. If such equipment is used and must be directly wired to the buildings electrical system or to an independent system, this work must be completed by a licensed electrician in accordance with all electrical codes applicable to the work.

Indoor work which is to be completed with equipment powered by an internal combustion engine must incorporate air monitoring of carbon monoxide (CO) using calibrated air monitoring equipment (MultiRAE or equivalent). In addition, the work plan should incorporate mitigation for venting engine exhaust fumes directly to the outdoors and for circulating fresh air into the work area.

The OSHA Time Weighted Average (TWA) Permissible Exposure Limit (PEL) for CO from 50 to 35 parts per million (ppm). Langan will monitor CO with a suitable monitoring device. If CO levels exceed 5 ppm, Langan will instruct contractors to begin mitigation measures. These measures are at a minimum:

- Increase air circulation using industrial size fans to bring additional fresh air into the building or vent exhaust to the outside;
- Modify the passive exhaust method being used to increase venting circulation by using wider diameter tubing or sealing tubing connections; or
- Modify the work schedule where the rig is turned off to allow time for CO levels to fall back to background

All work must cease if CO levels reach 35 parts per million (ppm). The Langan engineer is to report to the PM and H&S officer when an action level is reached.

Air monitoring will be conducted in accordance with the NYSDOH Generic CAMP and NYSDOH Special Requirements for CAMP, which are provided in Appendix I.

3.1.5 Groundwater Sampling

Sampling groundwater requires the donning of chemical resistant gloves in addition to the standard PPE and cut resistant gloves when cutting sampling-tubing to length.

3.1.6 Installation of SSD System

Specifically trained contractors are to install the SSD system. Langan personnel are there only to observe and record the data required in the work plan. Installation and assemblage of the SSD system is to be done exclusively by the contractor following their own health and safety specifications outlined in their HASPs.

3.1.7 Construction Activity Inspection

The contractor will operate equipment used to install the SVE infrastructure. In addition, the contractor will provide equipment and training to their staff to perform the aerial work. Langan personnel will inspect in accordance with specification in the work plan and record the data the work plan requires. The installation of the SVE structural, electrical, and pneumatic equipment is to be done exclusively by the contractor following their own health and safety specifications outlined in their HASPs. Other activities assigned to Langan as part of construction activities are limited to inspection and observations as specified in the work pan. Langan personnel are not to operate or assist in the operation of equipment used in construction activities unless defined as part of an inspection or observation in the work plan.

3.1.8 Drum Sampling

Drilling fluid, rinse water, grossly-contaminated soil samples and cuttings will be containerized in 55-gallon drums for disposed off-site. Each drum must be labeled in accordance with the Langan Drum Labeling Standard Operating Procedure (SOP-#9). Sampling drums requires the donning of work gloves when opening the drums and chemical resistant gloves when sampling in addition to standard PPE.

Langan personnel and contractors are not to move or opened any orphaned (unlabeled) drum found on the site without approval of the project manager.

3.2 Radiation Hazards

No radiation hazards are known or expected at the site.

3.3 Physical Hazards

Physical hazards, which may be encountered during site operations for this project, are detailed in Table 1.

3.3.1 Explosion

No explosion hazards are expected for the scope of work at this site.

3.3.2 Heat Stress

The use of Level C protective equipment, or greater, may create heat stress. Monitoring of personnel wearing personal protective clothing should commence when the ambient temperature is 72°F or above. Table 6 presents the suggested frequency for such monitoring. Monitoring frequency should increase as ambient temperature increases or as slow recovery rates are observed. Refer to the Table 7 to assist in assessing when the risk for heat related illness is likely. To use this table, the ambient temperature and relative humidity must be obtained (a regional weather report should suffice). Heat stress monitoring should be performed by the HSO or the FTL, who shall be able to recognize symptoms related to heat stress.

To monitor the workers, be familiar with the following heat-related disorders and their symptoms:

- **Heat Cramps:** Painful spasm of arm, leg or abdominal muscles, during or after work
- **Heat Exhaustion:** Headache, nausea, dizziness; cool, clammy, moist skin; heavy sweating; weak, fast pulse; shallow respiration, normal temperature
- **Heat Stroke**: Headache, nausea, weakness, hot dry skin, fever, rapid strong pulse, rapid deep respirations, loss of consciousness, convulsions, coma. *This is a life threatening condition***.**

Do not permit a worker to wear a semi-permeable or impermeable garment when they are showing signs or symptoms of heat-related illness.

To monitor the worker, measure:

- **Heart rate:** Count the radial pulse during a 30-second period as early as possible in the rest period. If the heart rate exceeds 100 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period the same. If the heart rate still exceeds 100 beats per minute at the next rest period, shorten the following work cycle by one-third. A worker cannot return to work after a rest period until their heart rate is below 100 beats per minute.

- **Oral temperature:** Use a clinical thermometer (3 minutes under the tongue) or similar device to measure the oral temperature at the end of the work period (before drinking). If oral temperature exceeds 99.6°F (37.6°C), shorten the next work cycle by one-third without changing the rest period. A worker cannot return to work after a rest period until their oral temperature is below 99.6°F. If oral temperature still exceeds 99.6°F (37.6°C) at the beginning of the next rest period, shorten the following cycle by one-third. Do not permit a worker to wear a semi-permeable or impermeable garment when oral temperature exceeds 100.6°F (38.1°C).

Prevention of Heat Stress - Proper training and preventative measures will aid in averting loss of worker productivity and serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat related illness. To avoid heat stress the following steps should be taken:

- Adjust work schedules.
- Mandate work slowdowns as needed.
- Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided.
- Provide shelter (air-conditioned, if possible) or shaded areas to protect personnel during rest periods.
- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat, id., eight fluid ounces (0.23 liters) of water must be ingested for approximately every eight ounces (0.23 kg) of weight lost. The normal thirst mechanism is not sensitive enough to ensure that enough water will be drunk to replace lost sweat. When heavy sweating occurs, encourage the worker to drink more. The following strategies may be useful:
    - Maintain water temperature 50° to 60°F (10° to 16.6°C).
    - Provide small disposal cups that hold about four ounces (0.1 liter).
    - Have workers drink 16 ounces (0.5 liters) of fluid (preferably water or dilute drinks) before beginning work.
    - Urge workers to drink a cup or two every 15 to 20 minutes, or at each monitoring break. A total of 1 to 1.6 gallons (4 to 6 liters) of fluid per day are recommended, but more may be necessary to maintain body weight.
    - Train workers to recognize the symptoms of heat related illness.

3.3.3 Cold-Related Illness

If work on this project begins in the winter months, thermal injury due to cold exposure can become a problem for field personnel. Systemic cold exposure is referred to as hypothermia.

Local cold exposure is generally called frostbite.

- **Hypothermia -** Hypothermia is defined as a decrease in the patient core temperature below 96°F. The body temperature is normally maintained by a combination of central (brain and spinal cord) and peripheral (skin and muscle) activity. Interference with any of these mechanisms can result in hypothermia, even in the absence of what normally is considered a "cold" ambient temperature. Symptoms of hypothermia include: shivering, apathy, listlessness, sleepiness, and unconsciousness.
- **Frostbite -** Frostbite is both a general and medical term given to areas of local cold injury. Unlike systemic hypothermia, frostbite rarely occurs unless the ambient temperatures are less than freezing and usually less than 20°F. Symptoms of frostbite are: a sudden blanching or whitening of the skin; the skin has a waxy or white appearance and is firm to the touch; tissues are cold, pale, and solid.

Prevention of Cold-Related Illness - To prevent cold-related illness:

- Educate workers to recognize the symptoms of frostbite and hypothermia
- Identify and limit known risk factors:
- Assure the availability of enclosed, heated environment on or adjacent to the site.
- Assure the availability of dry changes of clothing.
- Assure the availability of warm drinks.
- Start (oral) temperature recording at the job site:
- At the FSO or Field Team Leader's discretion when suspicion is based on changes in a worker's performance or mental status.
- At a worker's request.
- As a screening measure, two times per shift, under unusually hazardous conditions (e.g., wind-chill less than 20°F, or wind-chill less than 30°F with precipitation).
- As a screening measure whenever anyone worker on the site develops hypothermia.

Any person developing moderate hypothermia (a core temperature of 92°F) cannot return to work for 48 hours.

3.3.4 Noise

Work activities during the proposed activities may be conducted at locations with high noise levels from the operation of equipment. Hearing protection will be used as necessary.

3.3.5 Hand and Power Tools

The use of hand and power tools can present a variety of hazards, including physical harm from being struck by flying objects, being cut or struck by the tool, fire, and electrocution. All hand

and power tools should be inspected for health and safety hazards prior to use. If deemed unserviceable/un-operable, notify supervisor and tag equipment out of service. Ground Fault Circuit Interrupters (GFCIs) are required for all power tools requiring direct electrical service.

3.3.6 Slips, Trips and Fall Hazards

Care should be exercised when walking at the site, especially when carrying equipment. The presence of surface debris, uneven surfaces, pits, facility equipment, and soil piles contribute to tripping hazards and fall hazards. To the extent possible, all hazards should be identified and marked on the site, with hazards communicated to all workers in the area.

3.3.7 Utilities (Electrocution and Fire Hazards)

3.3.7.1 Utility Clearance

The possibility of encountering underground utilities poses fire, explosion, and electrocution hazards. All excavation work will be preceded by review of available utility drawings and by notification of the subsurface work to the N.Y. One –Call--Center.

3.3.7.2 Lockout-Tagout

The potential adverse effects of electrical hazards include burns and electrocution, which could result in death. Therefore, there is a procedure that establishes the requirements for the lockout/tagout (LOTO) of energy isolating devices in accordance with the OSHA electrical lockout and tagging requirements as specified in 29 CFR 1926.417. This procedure will be used to ensure that all machines and equipment are isolated from potentially hazardous energy. If possible, equipment that could cause injury due to unexpected energizing, start-up, or release of stored energy will be locked/tagged, before field personnel perform work activities.

Depending upon the specific work task involved, Langan's SSC or FTL will serve as the authorized lockout/tagout coordinator, implement the lockout/tagout procedure and will be responsible to locate, lock and tag valves, switches, etc.

SPECIAL NOTE: Project personnel will assume that all electrical equipment at surface, subsurface and overhead locations is energized, until equipment has been designated and confirmed as de-energized by a utility company representative. Langan will notify the designated utility representative prior to working adjacent to this equipment and will verify that the equipment is energized or de-energized in the vicinity of the work location.

No project work shall be performed by Langan personnel or subcontractors on or near energized

electrical lines or equipment unless hazard assessments are completed in writing, reviewed by Langan's SSHO, and clearly communicated to the field personnel.

The FTL shall conduct a survey to locate and identify all energy isolating devices. They shall be certain which switches, valves or other isolating devices apply to the equipment. The lockout/tagout procedure involves, but is not limited to, electricity, motors, steam, natural gas, compressed air, hydraulic systems, digesters, sewers, etc.

3.3.8 Physical Hazard Considerations for Material Handling

There are moderate to severe risks associated with moving heavy objects at the Site. The following physical hazards should be considered when handling materials at the Site:

- Heavy objects will be lifted and moved by mechanical devices rather than manual effort whenever possible.
- The mechanical devices will be appropriate for the lifting of moving task and will be operated only by trained and authorized personnel.
- Objects that require special handling or rigging will only be moved under the guidance of a person who has been specifically trained to move such objects.
- Lifting devices will be inspected, certified, and labeled to confirm their weight capacities. Defective equipment will be taken out of service immediately and repaired or destroyed.
- The wheels of any trucks being loaded or unloaded will be chocked to prevent movement. Outriggers will be fully extended on a flat, firm surface during operation.
- Personnel will not pass under a raised load, nor will a suspended load be left unattended.
- Personnel will not be carried on lifting equipment, unless it is specifically designed to carry passengers.
- All reciprocating, rotating, or other moving parts will be guarded at all times.
- Accessible fire extinguishers, currently (monthly) inspected, will be available in all mechanical lifting devices.
- Verify all loads/materials are secure before transportation.

Material handling tasks that are unusual or require specific guidance will need a written addendum to this HASP. The addendum must identify the lifting protocols before the tasks are performed. Upon approval, the plan must be reviewed with all affected employees and documented. Any deviation from a written plan will require approval by the Langan HSM.

3.3.9 Hearing Conservation

Under the construction industry standard, the maximum permissible occupational noise exposure is 90 dbA (8-hour TWA), and noise levels in excess of 90 dbA must be reduced through feasible administrative and engineering controls. (20 CFR 1926.52). Hearing protection is required when working within 15 feet of vacuum extraction equipment and drill rigs.

3.3.9 Open Water

Employees working over or near water, where the danger of drowning exists, shall be provided with U.S. Coast Guard-approved life jackets or buoyant work vests. Prior to and after each use, the buoyant work vests or life preservers shall be inspected for defects which would alter their strength or buoyancy. Defective units shall not be used.

And should a worker fall into the water, OSHA requires (29 CFR 1926.106(c)) that ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. The distance between ring buoys shall not exceed 200 feet. Another remedial action required by OSHA (29 CFR 1926.106(d)) is the use of lifesaving skiffs.

OSHA requires that at least one lifesaving skiff shall be immediately available at locations where employees are working over or adjacent to water and must include the following provisions.

- The skiff must be in the water or capable of being quickly launched by one person.
- At least one person must be present and specifically designated to respond to water emergencies and operate the skiff at all times when there are employees above water.
- When the operator is on break another operator must be designated to provide requisite coverage when there are employees above water.
- The designated operator must either have the skiff staffed at all times or have someone remain in the immediate area such that the operator can quickly reach the skiff and perform rescue services.
- The skiff operator maybe assigned other tasks provided the tasks do not interfere with the operator's ability to quickly reach the skiff.
- A communication system, such as a walkie-talkie, must be used to inform the skiff operator of an emergency and to inform the skiff operator where the skiff is needed.
- The skiff must be equipped with both a motor and oars.

With regard to the number of skiffs required and the appropriate maximum response time, the following factors must be evaluated:

- The number of work locations where there is a danger of falling into water;
- The distance to each of those locations;

- Water temperature and currents;
- Other hazards such as, but not limited to, rapids, dams, and water intakes;

Other regulations that present S&H practices and PPE for work on or near water include: 29 CFR 1910, Subpart T (401 – 440)

3.4 Biological Hazards

3.4.1 Animals

There is a possibility of encountering wildlife including reptiles, rodents and other small and medium size mammals. The Langan personnel is to avoid interacting with any wildlife.

3.4.2 Insects

Ticks and other biting or stinging insects may to be encountered during site operations. Langan personnel should take necessary precautions including donning long sleeve shirts and insecticide to prevent bites and stings. After field work, Langan personnel should perform a complete visual inspection of their clothing to insure they are not inadvertently harboring ticks. If they do observe a tick bite, they are to contact the HSM or HSO and report the event.

3.4.3 Plants

Poisonous plants may to be encountered during site operations. Langan personnel should take necessary precautions including donning long sleeve shirts and applying preventative poison Ivy/Sumac lotion to prevent or limit effects of exposure. If after field work, Langan employees do observe a reaction to poisonous plant exposure, they are to contact the HSM or HSO and report the event.

3.4.4 Coronavirus

3.4.4.1 General Preventative Measures

Field personnel must follow general proper hygiene measures while in the field including:

- Avoid touching eyes, nose and mouth.
- Cover cough or sneeze with tissue, and throw in trash.
- Wash hands often with soap and water for 20 seconds after going to bathroom, before eating, after blowing nose, coughing or sneezing.
- Use hand sanitizer with at least 60% alcohol if soap and water are not available.
- Avoid physical contact with other people (e.g., no handshakes).

- Maintain a safe distance of at least 6 feet from other people (social distancing).
- Wear face coverings when around other worker to minimize spread of COVID-19. (may be required in certain states or locations.)

3.4.4.2 Construction Trailers

Employees should avoid use of shared construction trailers or where employees cannot maintain a safe distance (minimum 6 feet) from other workers. If trailer use is needed, areas such as desks, phones, chairs and other common areas, should be cleaned and disinfected before and after use. Protocols should be developed to minimize trailer use to essential personal, restrict use from any workers who are ill or showing symptoms of being ill, and ensure a safe distance of 6 feet can be established between workers.

3.4.4.3 Communication

Include Coronavirus topics and prevention topics in daily tailgate meetings to ensure Coronavirus awareness is communicated daily. Discussions can focus on general topics including: social distancing, prevention measures for field personnel, signs and symptoms and recent news on the Coronavirus. Site-specific topics should include minimizing face-to-face contact, disinfecting/sterilizing field equipment, use of PPE to reduce exposure, site security and other potential exposure issues/concerns.

3.4.4.4 Sick/Ill Workers

No Langan employee is permitted to be onsite when ill and/or showing potential symptoms of the Coronavirus. Symptoms of the Coronavirus may appear 2-14 days after exposure and can range from mild to severe. The most common symptoms include: fever, fatigue, dry cough and shortness of breath. If an employee or subcontractor is observed being ill or exhibiting symptoms of Coronavirus, employees must immediately utilize their Stop Work Authority and contact their project manager to address the situation. If an employee observes another worker onsite exhibiting symptoms of Coronavirus, immediately utilize Stop Work Authority and notify their project manager and site construction manager or safety officer. Work should resume when the safety and health of Langan and subcontractors is adequately addressed.

3.5 Additional Safety Analysis

3.5.1 Presence of Non-Aqueous Phase Liquids (NAPL)

There is potential for exposure to NAPL at this site. Special care and PPE should be considered when NAPL is observed as NAPL is a typically flammable fluid and releases VOCs known to be toxic and/or carcinogenic. If NAPL is present in a monitoring well, vapors from the well casing

may contaminate the work area breathing zone with concentrations of VOCs potentially exceeding health and safety action levels. In addition, all equipment used to monitor or sample NAPL (or ground water from wells containing NAPL) must be intrinsically safe. Equipment that directly contacts NAPL must also be resistant to organic solvents.

At a minimum, a PID should be used to monitor for VOCs when NAPL is observed. If NAPL is expected to be observed in an excavation or enclosed area, air monitoring must be started using calibrated air monitoring equipment designed to sound an audio alarm when atmospheric concentrations of VOC are within 10% of the LEL. In normal atmospheric oxygen concentrations, the LEL monitoring may be done with a Wheatstone bridge/catalytic bead type sensor (i.e. MultiRAE). However in oxygen depleted atmospheres (confined space), only an LEL designed to work in low oxygen environments may be used. Best practices require that the LEL monitoring unit be equipped with a long sniffer tube to allow the LEL unit to remain outside the UST excavation.

When NAPL is present, Langan personnel are required to use disposable nitrile gloves at all times to prevent skin contact with contaminated materials. They should also consider having available a respirator and protective clothing (Tyvek® overalls), especially if NAPL is in abundance and there are high concentrations of VOCs.

All contaminated disposables including PPE and sampling equipment must be properly disposed of in labeled 55-gallong drums

3.6 Job Safety Analysis

A Job Safety Analysis (JSA) is a process to identify existing and potential hazards associated with each job or task so these hazards can be eliminated, controlled or minimized. A JSA will be performed at the beginning of each work day, and additionally whenever an employee begins a new task or moves to a new location. All JSAs must be developed and reviewed by all parties involved. A blank JSA form and documentation of completed JSAs are in Attachment G.

4.0 PERSONNEL TRAINING

4.1 Basic Training

Completion of an initial 40-hour HAZWOPER training program as detailed in OSHA's 29 CFR 1910.120(e) is required for all employees working on a site engaged in hazardous substance removal or other activities which expose or potentially expose workers to hazardous substances, health hazards, or safety hazards as defined by 29 CFR 1910.120(a). Annual 8-hour refresher training is also required to maintain competencies to ensure a safe work environment. In addition

to these training requirements, all employees must complete the OSHA 10 hour Construction Safety and Health training and supervisory personnel must also receive eight additional hours of specialized management training. Training records are maintained by the HSM.

4.2 Initial Site-Specific Training

Training will be provided to specifically address the activities, procedures, monitoring, and equipment for site operations at the beginning of each field mobilization and the beginning of each discrete phase of work. The training will include the site and facility layout, hazards, and emergency services at the site, and will detail all the provisions contained within this HASP. For a HAZWOPER operation, training on the site must be for a minimum of 3 days. Specific issues that will be addressed include the hazards described in Section 3.0.

4.3 Tailgate Safety Briefings

Before starting work each day or as needed, the Langan HSO will conduct a brief tailgate safety meeting to assist site personnel in conducting their activities safely. Tailgate meetings will be documented in Attachment H. Briefings will include the following:

- Work plan for the day;
- Review of safety information relevant to planned tasks and environmental conditions;
- New activities/task being conducted;
- Results of Jobsite Safety Inspection Checklist;
- Changes in work practices;
- Safe work practices; and
- Discussion and remedies for noted or observed deficiencies.

5.0 MEDICAL SURVEILLANCE

All personnel who will be performing field work involving potential exposure to toxic and hazardous substances (defined by 29 CFR 1910.120(a)) will be required to have passed an initial baseline medical examination, with follow-up medical exams thereafter, consistent with 29 CFR 1910.120(f). Medical evaluations will be performed by, or under the direction of, a physician board-certified in occupational medicine.

Additionally, personnel who may be required to perform work while wearing a respirator must receive medical clearance as required under CFR 1910.134(e), *Respiratory Protection*. Medical evaluations will be performed by, or under the direction of, a physician board-certified in occupational medicine. Results of medical evaluations are maintained by the HSM.

6.0 PERSONAL PROTECTIVE EQUIPMENT

6.1 Levels of Protection

Langan will provide PPE to Langan employees to protect them from the specific hazards they are likely to encounter on-site. Direct hired contractors will provide their employees with equivalent PPE to protect them from the specific hazards likely to be encountered on-site. Selection of the appropriate PPE must take into consideration: (1) identification of the hazards or suspected hazards; (2) potential exposure routes; and, (3) the performance of the PPE construction (materials and seams) in providing a barrier to these hazards.

Based on anticipated site conditions and the proposed work activities to be performed at the site, Level D protection will be used. The upgrading/downgrading of the level of protection will be based on continuous air monitoring results as described in Section 6.0 (when applicable). The decision to modify standard PPE will be made by the site HSO or FTL after conferring with the PM. The levels of protection are described below.

Level D Protection (as needed)

- Safety glasses with side shields or chemical splash goggles
- Safety boots/shoes
- Coveralls (Tyvek® or equivalent)
- Hard hat
- Long sleeve work shirt and work pants
- Nitrile gloves
- Hearing protection
- Reflective safety vest

Level D Protection (Modified, as needed)

- Safety glasses with sideshields or chemical splash goggles
- Safety boots/shoes (toe-protected)
- Disposable chemical-resistant boot covers
- Coveralls (polycoated Tyvek or equivalent to be worn when contact with wet contaminated soil, groundwater, or non-aqueous phase liquids is anticipated)
- Hard hat
- Long sleeve work shirt and work pants
- Nitrile gloves
- Hearing protection (as needed)
- Personal floatation device (for work within 5 ft of the water)

- Reflective traffic vest

Level C Protection (as needed)

- Full or Half face, air-purifying respirator, with NIOSH approved HEPA filter
- Inner (latex) and outer (nitrile) chemical-resistant gloves
- Safety glasses with side shields or chemical splash goggles
- Chemical-resistant safety boots/shoes
- Hard hat
- Long sleeve work shirt and work pants
- Coveralls (Tyvek® or equivalent)
- Hearing protection (as needed)
- Reflective safety vest

The action levels used in determining the necessary levels of respiratory protection and upgrading to Level C are summarized in Table 4. The written Respiratory Protection Program is maintained by the HSM and is available if needed. The monitoring procedures and equipment are outlined in Section 6.0 (when applicable).

6.2 Respirator Fit-Test

All Langan employees who may be exposed to hazardous substances at the work site are in possession of a full or half face-piece, air-purifying respirator and have been successfully fit-tested within the past year. Fit-test records are maintained by the HSM.

6.3 Respirator Cartridge Change-Out Schedule

Respiratory protection is required to be worn when certain action levels (table 2) are reached. A respirator cartridge change-out schedule has been developed in order to comply with 29 CFR 1910.134. The respirator cartridge change-out schedule for this project is as follows:

- Cartridges shall be removed and disposed of at the end of each shift, when cartridges become wet or wearer experiences breakthrough, whichever occurs first.
- If the humidity exceeds 85%, then cartridges shall be removed and disposed of after 4 hours of use.

Respirators shall not be stored at the end of the shift with contaminated cartridges left on. Cartridges shall not be worn on the second day, no matter how short the time period was the previous day they were used.

7.0 AIR QUALITY MONITORING AND ACTIONS LEVELS

7.1 Monitoring During Site Operations

Atmospheric air monitoring results may be collected and used to provide data to determine when exclusion zones need to be established and when certain levels of personal protective equipment are required. For all instruments there are Site-specific action level criteria which are used in making field health and safety determinations. Other data, such as the visible presence of contamination or the steady state nature of air contaminant concentration, are also used in making field health and safety decisions. Therefore, the HSO may establish an exclusion zone or require a person to wear a respirator even though atmospheric air contaminant concentrations are below established HASP action levels.

During site work involving disturbance of petroleum-impacted or fill material, real time air monitoring may be conducted for volatile organic compounds (VOCs). A photoionization detector (PID) and/or flame ionization detector (FID) will be used to monitor concentrations of VOCs at personnel breathing-zone height. Air monitoring will be the responsibility of the HSO or designee. Air monitoring may be conducted during intrusive activities associated with the completion of excavation, debris removal, and soil grading. All manufacturers' instructions for instrumentation and calibration will be available onsite.

Subcontractors' air monitoring plans must be equal or more stringent as the Langan plan.

An air monitoring calibration log is provided in Attachment D of this HASP.

7.1.1 Volatile Organic Compounds

Monitoring with a PID, such as a MiniRAE 2000 (10.6v) or equivalent may occur during intrusive work in the AOCs. Colormetric Indicator Tubes for benzene may be used as backup for the PID, if measurements remain above background monitor every 2 hours. The HSO will monitor the employee breathing zone at least every 30 minutes, or whenever there is any indication that concentrations may have changed (odors, visible gases, etc.) since the last measurement. If VOC levels are observed above 5 ppm for longer than 5 minutes or if the site PPE is upgraded to Level C, the HSO will begin monitoring the site perimeter at a location downwind of the AOC every 30 minutes in addition to the employee breathing zone. Instrument action levels for monitored gases are provided in Table 4.

7.1.2 Metals

Based upon the site historical fill, there is a potential for the soils to contain PAHs and metals. During invasive procedures which have the potential for creating airborne dust, such as excavation of dry soils, a real time airborne dust monitor such as a Mini-Ram may be used to monitor for air particulates. The HSO will monitor the employee breathing zone at least every 30 minutes, or whenever there is any indication that concentrations may have changed (appearance of visible dust) since the last measurement. If dust levels are observed to be greater than 0.100 mg/m^3 or visible dust is observed for longer than 15 minutes or if the site PPE is upgraded to Level C, the HSO will begin monitoring the site perimeter at a location downwind of the AOC every 30 minutes in addition to the employee breathing zone. Instrument action levels for dust monitoring are provided in Table 4.

7.2 Monitoring Equipment Calibration and Maintenance

Instrument calibration shall be documented and included in a dedicated safety and health logbook or on separate calibration pages of the field book. All instruments shall be calibrated before and after each shift. Calibration checks may be used during the day to confirm instrument accuracy. Duplicate readings may be taken to confirm individual instrument response.

All instruments shall be operated in accordance with the manufacturers' specifications. Manufacturers' literature, including an operations manual for each piece of monitoring equipment will be maintained on site by the HSO for reference.

7.3 Determination of Background Levels

Background (BKD) levels for VOCs and dust will be established prior to intrusive activities within the AOC at an upwind location. A notation of BKD levels will be referenced in the daily monitoring log. BKD levels are a function of prevailing conditions. BKD levels will be taken in an appropriate upwind location as determined by the HSO.

Table 4 lists the instrument action levels.

8.0 COMMUNITY AIR MONITORING PROGRAM

Community air monitoring may be conducted in compliance with local standards or the generic CAMP outlined below:

Monitoring for dust and odors will be conducted during all ground intrusive activities by the FTL. Continuous monitoring on the perimeter of the work zones for odor, VOCs, and dust may be

required for all ground intrusive activities such as soil excavation and handling activities. The work zone is defined as the general area in which machinery is operating in support of remediation activities. A portable PID will be used to monitor the work zone and for periodic monitoring for VOCs during activities such as soil and groundwater sampling and .soil excavation. The site perimeter will be monitored for fugitive dust emissions by visual observations as well as instrumentation measurements (if required). When required, particulate or dust will be monitored continuously with real-time field instrumentation that will meet, at a minimum, the local standards or, default to the performance standards below:

If VOC monitoring is required, the following actions will be taken based on VOC levels measured:

- If total VOC levels exceed 5 ppm above background for the 15-minute average at the perimeter, work activities will be temporarily halted and monitoring continued. If levels readily decrease (per instantaneous readings) below 5 ppm above background, work activities will resume with continued monitoring.
- If total VOC levels at the downwind perimeter of the hot zone persist at levels in excess of 5 ppm above background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps work activities will resume provided that the total organic vapor level 200 feet downwind of the hot zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less – but in no case less than 20 feet, is below 5 ppm above background for the 15-minute average.
- If the total VOC level is above 25 ppm at the perimeter of the hot zone, activities will be shut down.

If dust monitoring with field instrumentation is required, the following actions will be taken based on instrumentation measurements:

- If the downwind particulate level is 100 micrograms per cubic meter (µg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression must be employed. Work may continue with dust suppression techniques provided that downwind PM10 levels do not exceed 150 µg/m^3 above the background level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM10 levels are greater than 150 µg/m^3 above the background level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM10 concentration to within 150 µg/m^3 of the upwind level and in preventing visible dust migration.

8.1 Vapor Emission Response Plan

This section applies if VOC monitoring is required. If the ambient air concentration of organic vapors exceeds 5 ppm above background at the perimeter of the hot zone, boring and well installation, and excavation activities will be halted or odor controls will be employed, and monitoring continued. When work shut-down occurs, downwind air monitoring as directed by the HSO or FTL will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

If the organic vapor level decreases below 5 ppm above background, sampling and boring and well installation can resume, provided:

- The organic vapor level 200 feet downwind of the hot zone or half the distance to the nearest residential or commercial structure, whichever is less, is below 1 ppm over background, and
- More frequent intervals of monitoring, as directed by the HSO or FTL, are conducted.

8.2 Major Vapor Emission

This section applies if VOC monitoring is required. If any organic levels greater than 5 ppm over background are identified 200 feet downwind from the work site, or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted or odor controls must be implemented.

If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the hot zone, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If either of the following criteria is exceeded in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be implemented.

- Sustained organic vapor levels approaching 5 ppm above background for a period of more than 30 minutes, or
- Organic vapor levels greater than 5 ppm above background for any time period.

8.3 Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

- The local police authorities will immediately be contacted by the HSO or FTL and advised of the situation;
- Frequent air monitoring will be conducted at 30-minute intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the HSO or FTL; and
- All Emergency contacts will go into effect as appropriate.

8.4 Dust Suppression Techniques

Preventative measures for dust generation may include wetting site fill and soil, construction of an engineered construction entrance with gravel pad, a truck wash area, covering soils with tarps, and limiting vehicle speeds to five miles per hour.

Work practices to minimize odors and vapors include limiting the time that the excavations remain open, minimizing stockpiling of contaminated-source soil, and minimizing the handling of contaminated material. Offending odor and organic vapor controls may include the application of foam suppressants or tarps over the odor or VOC source areas. Foam suppressants may include biodegradable foams applied over the source material for short-term control of the odor and VOCs.

If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: direct load-out of soils to trucks for off-site disposal; use of chemical odorants in spray or misting systems; and, use of staff to monitor odors in surrounding neighborhoods.

Where odor nuisances have developed during remedial work and cannot be corrected, or where the release of nuisance odors cannot otherwise be avoided due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering excavation and handling areas under tented containment structures equipped with appropriate air venting/filtering systems.

9.0 WORK ZONES AND DECONTAMINATION

9.1 Site Control

Work zones are intended to control the potential spread of contamination throughout the site and to assure that only authorized individuals are permitted into potentially hazardous areas.

Any person working in an area where the potential for exposure to site contaminants exists will only be allowed access after providing the HSO with proper training and medical documentation.

Exclusion Zone (EZ) - All activities which may involve exposure to site contaminants, hazardous materials and/or conditions should be considered an EZ. Decontamination of field equipment will also be conducted in the Contaminant Reduction Zone (CRZ) which will be located on the perimeter of the EZ. The EZ and the CRZ will be clearly delineated by cones, tapes or other means. The HSO may establish more than one EZ where different levels of protection may be employed or different hazards exist. The size of the EZ shall be determined by the HSO allowing adequate space for the activity to be completed, field members and emergency equipment.

9.2 Contamination Zone

9.2.1 Personnel Decontamination Station

Personal hygiene, coupled with diligent decontamination, will significantly reduce the potential for exposure.

9.2.2 Minimization of Contact with Contaminants

During completion of all site activities, personnel should attempt to minimize the chance of contact with contaminated materials. This involves a conscientious effort to keep "clean" during site activities. All personnel should minimize kneeling, splash generation, and other physical contact with contamination as PPE is intended to minimize accidental contact. This may ultimately minimize the degree of decontamination required and the generation of waste materials from site operations.

Field procedures will be developed to control over spray and runoff and to ensure that unprotected personnel working nearby are not affected.

9.2.3 Personnel Decontamination Sequence

Decontamination may be performed by removing all PPE used in EZ and placing it in drums/trash cans at the CRZ. Baby wipes should be available for wiping hands and face. Drums/trash cans will be labeled by the field crews in accordance with all local, state, and federal requirements. Management plans for contaminated PPE, and tools are provided below.

9.2.4 Emergency Decontamination

If circumstances dictate that contaminated clothing cannot be readily removed, then remove gross contamination and wrap injured personnel with clean garments/blankets to avoid contaminating other personnel or transporting equipment. If the injured person can be moved, he/she will be decontaminated by site personnel as described above before emergency

responders handle the victim. If the person cannot be moved because of the extent of the injury (a back or neck injury), provisions shall be made to ensure that emergency response personnel will be able to respond to the victim without being exposed to potentially hazardous atmospheric conditions. If the potential for inhalation hazards exist, such as with open excavation, this area will be covered with polyethylene sheeting to eliminate any potential inhalation hazards. All emergency personnel are to be immediately informed of the injured person's condition, potential contaminants, and provided with all pertinent data.

9.2.5 Hand-Held Equipment Decontamination

Hand-held equipment includes all monitoring instruments as stated earlier, samples, hand tools, and notebooks. The hand-held equipment is dropped at the first decontamination station to be decontaminated by one of the decontamination team members. These items must be decontaminated or discarded as waste prior to removal from the CRZ.

To aid in decontamination, monitoring instruments can be sealed in plastic bags or wrapped in polyethylene. This will also protect the instruments against contaminants. The instruments will be wiped clean using wipes or paper towels if contamination is visually evident. Sampling equipment, hand tools, etc. will be cleaned with non-phosphorous soap to remove any potentially contaminated soil, and rinsed with deionized water. All decontamination fluids will be containerized and stored on-site pending waste characterization sampling and appropriate off-site disposal.

9.2.6 Heavy Equipment Decontamination

All heavy equipment and vehicles arriving at the work site will be free from contamination from offsite sources. Any vehicles arriving to work that are suspected of being impacted will not be permitted on the work site. Potentially contaminated heavy equipment will not be permitted to leave the EZ unless it has been thoroughly decontaminated and visually inspected by the HSO or his designee.

9.3 Support Zone

The support zone or cold zone will include the remaining areas of the job site. Break areas and support facilities (include equipment storage and maintenance areas) will be located in this zone. No equipment or personnel will be permitted to enter the cold zone from the hot zone without passing through the decontamination station in the warm zone (if necessitated). Eating, smoking, and drinking will be allowed only in this area.

9.4 Communications

The following communications equipment will be utilized as appropriate.

- Telephones - A cellular telephone will be located with the HSO for communication with the HSM and emergency support services/facilities.
- Hand Signals - Hand signals shall be used by field teams, along with the buddy system. The entire field team shall know them before operations commence and their use covered during site-specific training. Typical hand signals are the following:

Hand Signal	Meaning
Hand gripping throat	Out of air; cannot breathe
Grip partners wrists or place both hands around waist	Leave immediately without debate
Hands on top of head	Need assistance
Thumbs up	OK; I'm alright; I understand
Thumbs down	No; negative
Simulated "stick" break with fists	Take a break; stop work

9.5 The Buddy System

When working in teams of two or more, workers will use the "buddy system" for all work activities to ensure that rapid assistance can be provided in the event of an emergency. This requires work groups to be organized such that workers can remain close together and maintain visual contact with one another. Workers using the "buddy system" have the following responsibilities:

- Provide his/her partner with assistance.
- Observe his/her partner for signs of chemical or heat exposure.
- Periodically check the integrity of his/her partner's PPE.
- Notify the HSO or other site personnel if emergency service is needed.

10.0 NEAREST MEDICAL ASSISTANCE

The address and telephone number of the nearest hospital:

Wyckoff Heights Medical Center
374 Stockholm Street
Brooklyn, New York
718-963-7272

Map with directions to the hospital are shown in Figure 2. This information will either be posted prominently at the site or will be available to all personnel all of the time. Further, all field

personnel, including the HSO & FTL, will know the directions to the hospital.

11.0 STANDING ORDERS/SAFE WORK PRACTICES

The standing orders, which consist of a description of safe work practices that must always be followed while on-site by Langan employees and contractors, are shown in Attachment A. The site HSO and FTL each have the responsibility for enforcing these practices. The standing orders will be posted prominently at the site, or are made available to all personnel at all times. Those who do not abide by these safe work practices will be removed from the site.

12.0 SITE SECURITY

No unauthorized personnel shall be permitted access to the work areas.

13.0 UNDERGROUND UTILITIES

As provided in Langan's Underground Utility Clearance Guidelines, the following safe work practices should be followed by Langan personnel and the contractor before and during subsurface work in accordance with federal, state and local regulations:

- Obtain available utility drawings from the property owner/client or operator.
- Provide utility drawings to the project team.
- In the field, mark the proposed area of subsurface disturbance (when possible).
- Ensure that the utility clearance system has been notified.
- Ensure that utilities are marked before beginning subsurface work.
- Discuss subsurface work locations with the owner/client and contractors.
- Obtain approval from the owner/client and operators for proposed subsurface work locations.
- Use safe digging procedures when applicable.
- Stay at least 10 feet from all equipment performing subsurface work.

14.0 SITE SAFETY INSPECTION

The Langan HSO or alternate will check the work area daily, at the beginning and end of each work shift or more frequently to ensure safe work conditions. The HSO or alternate must complete the Jobsite Safety Inspection Checklist, found in Attachment F. Any deficiencies shall be shared with the FTL, HSM and PM and will be discussed at the daily tailgate meeting.

15.0 HAND AND POWER TOOLS

All hand- and electric-power tools and similar equipment shall be maintained in a safe operating

condition. All electric-power tools must be inspected before initial use. Damaged tools shall be removed immediately from service or repaired. Tools shall be used only for the purpose for which they were designed. All users must be properly trained in their safe operation.

16.0 EMERGENCY RESPONSE

16.1 General

This section establishes procedures and provides information for use during a project emergency. Emergencies happen unexpectedly and quickly, and require an immediate response; therefore, contingency planning and advanced training of staff is essential. Specific elements of emergency support procedures that are addressed in the following subsections include communications, local emergency support units, and preparation for medical emergencies, first aid for injuries incurred on site, record keeping, and emergency site evacuation procedures. In case of emergency, in addition to 911, call *Incident Intervention®* at 1-888-479-7787 to report their injuries. For all other communications, contact the Langan Incident Hotline at **(800) 9-LANGAN** (800-952-6426) extension 4699 as soon as possible.

Should outside assistance be needed for accidents, fire, or release of hazardous substances, the emergency numbers will be available and posted at the site (Table 5) where a readily accessible telephone is made available for emergency use.

Also, in the event of an incident where a team member becomes exposed or suffers from an acute symptom from contact with site materials and has to be taken to a hospital, a short medical data sheet (Attachment T) for that individual will be made available to the attending physician. The medical data sheet will include the following:

- Name, address, home phone
- Age, height, weight
- Name of person to be notified in case of an accident
- Allergies
- Particular sensitivities
- Does he/she wear contact lenses
- Short checklist of previous illness
- Name of personal physician and phone
- Name of company physician and phone
- Prescription and non-prescription medications currently used.

A sample medical data sheet is included in Attachment T.

16.2 Responsibilities

16.2.1 Health and Safety Officer (HSO)

The HSO is responsible for ensuring that all personnel are evacuated safely and that machinery and processes are shut down or stabilized in the event of a stop work order or evacuation. The HSO is responsible for ensuring the HSM are notified of all incidents, all injuries, near misses, fires, spills, releases or equipment damage. The HSO is required to immediately notify the HSM of any fatalities or catastrophes (three or more workers injured and hospitalized) so that the HSM can notify OSHA within the required time frame.

16.2.2 Emergency Coordinator

The HSO or their designated alternate will serve as the Emergency Coordinator. The Emergency Coordinator is responsible for ensuring that all personnel are evacuated safely and that machinery and processes are shut down or stabilized in the event of a stop work order or evacuation. They are also responsible for ensuring the HSM are notified of all incidents, all injuries, near misses, fires, spills, releases or equipment damage. The Emergency Coordinator is required to immediately notify the HSM of any fatalities or catastrophes (three or more workers injured and hospitalized.

The Emergency Coordinator shall locate emergency phone numbers and identify hospital routes prior to beginning work on the sites. The Emergency Coordinator shall make necessary arrangements to be prepared for any emergencies that could occur.

The Emergency Coordinator is responsible for implementing the Emergency Response Plan.

16.2.3 Site Personnel

Project site personnel are responsible for knowing the Emergency Response Plan and the procedures contained herein. Personnel are expected to notify the Emergency Coordinator of situations that could constitute a site emergency. Project site personnel, including all subcontractors will be trained in the Emergency Response Plan.

16.3 Communications

Once an emergency situation has been stabilized, or as soon as practically, the injured Langan personnel should contact *Incident Intervention®* at 1-888-479-7787 to report their injuries. For all other communications, contact the Langan Incident Hotline at **(800) 9-LANGAN** (800-952-6426) extension 4699 as soon as possible.

16.4 Local Emergency Support Units

In order to be able to deal with any emergency that might occur during investigative activities at the site, the Emergency Notification Numbers (Table 5) will be posted and provided to all personnel conducting work within the EZ.

Figure 2 shows the hospital route map. Outside emergency number 911 and local ambulance should be relied on for response to medical emergencies and transport to emergency rooms. Always contact first responders when there are serious or life threatening emergencies on the site. Project personnel are instructed not to drive injured personnel to the Hospital. In the event of an injury, provide first aid and keep the injured party calm and protected from the elements and treat for shock when necessary.

16.5 Pre-Emergency Planning

Langan will communicate directly with administrative personnel from the emergency room at the hospital in order to determine whether the hospital has the facilities and personnel needed to treat cases of trauma resulting from any of the contaminants expected to be found on the site. Instructions for finding the hospital will be posted conspicuously in the site office and in each site vehicle.

16.6 Emergency Medical Treatment

The procedures and rules in this HASP are designed to prevent employee injury. However, should an injury occur, no matter how slight, it will be reported to the HSO, immediately. First-aid equipment will be available on site at the following locations:

- First Aid Kit: Contractor Vehicles
- Emergency Eye Wash: Contractor Vehicles

During the site safety briefing, project personnel will be informed of the location of the first aid station(s) that has been set up. Some injuries, such as severe cuts and lacerations or burns, may require immediate treatment. Any first aid instructions that can be obtained from doctors or paramedics, before an emergency-response squad arrives at the site or before the injured person can be transported to the hospital, will be followed closely.

16.7 Personnel with current first aid and CPR certification will be identified.

Only in non-emergency situations may an injured person be transported to an urgent care facility. Due to hazards that may be present at the site and the conditions under which operations are conducted, it is possible that an emergency situation may develop. Emergency situations can be

characterized as injury or acute chemical exposure to personnel, fire or explosion, environmental release, or hazardous weather conditions.

16.8 Emergency Site Evacuation Routes and Procedures

All project personnel will be instructed on proper emergency response procedures and locations of emergency telephone numbers during the initial site safety meeting. If an emergency occurs as a result of the site investigation activities, including but not limited to fire, explosion or significant release of toxic gas into the atmosphere, the Langan Project Manager will be verbally notified immediately. All heavy equipment will be shut down and all personnel will evacuate the work areas and assemble at the nearest intersection to be accounted for and to receive further instructions.

In the event that an emergency situation arises, the FTL will implement an immediate evacuation of all project personnel due to immediate or impending danger. The FTL will also immediately communicate with the contractor to coordinate any needed evacuation of the property.

The FTL or Site Supervisor will give necessary instructions until the Designated Incident Commander (IC) assumes control. After the emergency has been resolved, the FTL or Site Supervisor will coordinate with the IC and indicate when staff should resume their normal duties. If dangers are present for those at the designated assembly point, another designated location of assembly will be established.

It will be the responsibility of the FTL or Site Supervisor to report a fire or emergency, assess the seriousness of the situation, and initiate emergency measures until the arrival of the local fire fighters or other first responders, should they be necessary. The FTL, working with emergency responders, may also order the closure of the Site for an indefinite period as long as it is deemed necessary.

Under no circumstances will incoming visitors be allowed to proceed to the area of concern, once an emergency evacuation has been implemented. Visitors or other persons present in the area of the emergency shall be instructed to evacuate the area. The FTL will ensure that access roads are not obstructed and will remain on-site to provide stand-by assistance upon arrival of emergency personnel.

If it is necessary to temporarily control traffic in the event of an emergency, those persons controlling traffic will wear proper reflection warning vests until the arrival of police or fire personnel.

16.8.1 Designated Assembly Locations

All personnel will evacuate the site and assemble at a designated assembly location. The assembly location will be designated by Langan personnel and discussed during each shift's pre-job safety briefing.

16.8.2 Accounting for Personnel

All contractor and subcontractor supervisors are responsible for the accounting of all personnel assembled at the designed assembly area. The Designated Incident Commander shall be notified if personnel are not found.

16.9 Fire Prevention and Protection

In the event of a fire or explosion, procedures will include immediately evacuating the site and notification of the Langan Project Manager of the investigation activities. Portable fire extinguishers will be provided at the work zone. The extinguishers located in the various locations should also be identified prior to the start of work. No personnel will fight a fire beyond the stage where it can be put out with a portable extinguisher (incipient stage).

16.9.1 Fire Prevention

Fires will be prevented by adhering to the following precautions:

- Good housekeeping and storage of materials.
    - Storage of flammable liquids and gases away from oxidizers.
    - Shutting off engines to refuel.
    - Grounding and bonding metal containers during transfer of flammable liquids.
    - Use of UL approved flammable storage cans.
    - Fire extinguishers rated at least 10 pounds ABC located on all heavy equipment, in all trailers and near all hot work activities.

The person responsible for the control of fuel source hazards and the maintenance of fire prevention and/or control equipment is the HSO.

16.10 Significant Vapor Release

Based on the proposed tasks, the potential for a significant vapor release is low. However, if a release occurs, the following steps will be taken:

- Move all personnel to an upwind location. All non-essential personnel shall evacuate.
- Upgrade to Level C Respiratory Protection.

- Downwind perimeter locations shall be monitored for volatile organics.
- If the release poses a potential threat to human health or the environment in the community, the Emergency Coordinator shall notify the Langan Project Manager.
- Local emergency response coordinators will be notified.

16.11 Overt Chemical Exposure

The following are standard procedures to treat chemical exposures. Other, specific procedures detailed on the Material Safety Data Sheet (MSDS) will be followed, when necessary.

SKIN AND EYE: Use copious amounts of soap and water from eye-wash kits and portable hand wash stations.

CONTACT: Wash/rinse affected areas thoroughly, then provide appropriate medical attention. Skin shall also be rinsed for 15 minutes if contact with caustics, acids or hydrogen peroxide occurs. Affected items of clothing shall also be removed from contact with skin.

Providing wash water and soap will be the responsibility of each individual contractor or subcontractor on-site.

16.12 Decontamination during Medical Emergencies

If emergency life-saving first aid and/or medical treatment is required, normal decontamination procedures may need to be abbreviated or omitted. The HSO or designee will accompany contaminated victims to the medical facility to advice on matters involving decontamination when necessary. The outer garments can be removed if they do not cause delays, interfere with treatment or aggravate the problem. Respiratory equipment must always be removed. Protective clothing can be cut away. If the outer contaminated garments cannot be safely removed on site, a plastic barrier placed between the injured individual and clean surfaces should be used to help prevent contamination of the inside of ambulances and/or medical personnel. Outer garments may then be removed at the medical facility. No attempt will be made to wash or rinse the victim if his/her injuries are life threatening, unless it is known that the individual has been contaminated with an extremely toxic or corrosive material which could also cause severe injury or loss of life to emergency response personnel. For minor medical problems or injuries, the normal decontamination procedures will be followed.

16.13 Adverse Weather Conditions

In the event of adverse weather conditions, the HSO will determine if work will continue without potentially risking the safety of all field workers. Some of the items to be considered prior to

determining if work should continue are:

- Potential for heat stress and heat-related injuries.
- Potential for cold stress and cold-related injuries.
- Treacherous weather-related working conditions (hail, rain, snow, ice, high winds).
- Limited visibility (fog).
- Potential for electrical storms.
- Earthquakes.
- Other major incidents.

Site activities will be limited to daylight hours, or when suitable artificial light is provided, and acceptable weather conditions prevail. The HSO will determine the need to cease field operations or observe daily weather reports and evacuate, if necessary, in case of severe inclement weather conditions.

16.14 Spill Control and Response

All small spills/environmental releases shall be contained as close to the source as possible. Whenever possible, the MSDS will be consulted to assist in determining proper waste characterization and the best means of containment and cleanup. For small spills, sorbent materials such as sand, sawdust or commercial sorbents should be placed directly on the substance to contain the spill and aid recovery. Any acid spills should be diluted or neutralized carefully prior to attempting recovery. Berms of earthen or sorbent materials can be used to contain the leading edge of the spills. All spill containment materials will be properly disposed. An exclusion zone of 50 to 100 feet around the spill area should be established depending on the size of the spill.

All contractor vehicles shall have spill kits on them with enough material to contain and absorb the worst-case spill from that vehicle. All vehicles and equipment shall be inspected prior to be admitted on site. Any vehicle or piece of equipment that develops a leak will be taken out of service and removed from the job site.

The following seven steps shall be taken by the Emergency Coordinator:

1. Determine the nature, identity and amounts of major spills.
2. Make sure all unnecessary persons are removed from the spill area.
3. Notify the HSO immediately.
4. Use proper PPE in consultation with the HSO.
5. If a flammable liquid, gas or vapor is involved, remove all ignition sources and use non-sparking and/or explosion-proof equipment to contain or clean up the spill (diesel-only vehicles, air-operated pumps, etc.)

6. If possible, try to stop the leak with appropriate material.
7. Remove all surrounding materials that can react or compound with the spill.

In addition to the spill control and response procedures described in this HASP, Langan personnel will coordinate with the designated project manager relative to spill response and control actions. Notification to the Project Manager must be immediate and, to the extent possible, include the following information:

- Time and location of the spill.
- Type and nature of the material spilled.
- Amount spilled.
- Whether the spill has affected or has a potential to affect a waterway or sewer.
- A brief description of affected areas/equipment.
- Whether the spill has been contained.
- Expected time of cleanup completion. If spill cleanup cannot be handled by Langan's on-site personnel alone, such fact must be conveyed to the Project Manager immediately.

Langan shall not make any notification of spills to outside agencies. The client will notify regulatory agencies as per their reporting procedures.

16.15 Emergency Equipment

The following minimum emergency equipment shall be kept and maintained on site:

- Industrial first aid kit.
- Fire extinguishers (one per site).

16.16 Restoration and Salvage

After an emergency, prompt restoration of utilities, fire protection equipment, medical supplies and other equipment will reduce the possibility of further losses. Some of the items that may need to be addressed are:

- Refilling fire extinguishers.
- Refilling medical supplies.
- Recharging eyewashes and/or showers.
- Replenishing spill control supplies.

16.17 Documentation

Immediately following an incident or near miss, unless emergency medical treatment is required, either the employee or a coworker must contact the Langan Incident/Injury Hotline at 1-(800)-9-

LANGAN (ext. #4699) and the client representative to report the incident or near miss. For emergencies involving personnel injury and/or exposure, the HSO and affected employee will complete and submit an Employee Exposure/Injury Incident Report (Attachment C) to the Langan Corporate Health and Safety Manager as soon as possible following the incident.

17.0 SPECIAL CONDITIONS

This guideline contains information and requirements for special conditions that may not be routinely encountered.

17.1 Scope

The guideline applies to the specific projects identified within this document. Additional provisions will be addressed in each Site-Specific HEALTH AND SAFETY PLAN (HASP), as needed.

17.2 Responsibilities

Site Personnel - All site personnel must be alert to safety hazards on work sites and take action to minimize such hazards. Personnel must utilize the buddy system, watch for inappropriate behavior, and be alert to changes in site conditions.

Health and Safety Officer (HSO) - The HSO is responsible for considering these procedures in the development of site specific HASPs. The HSO shall schedule frequent "tail gate" safety briefings to enhance safety awareness and discuss potential problems.

17.3 Procedures

The procedures outlined below shall be followed when such conditions are encountered.

17.3.1 Ladders

Langan safety procedures shall be used to ensure employee safety when using ladders in the office or work sites. All ladders shall be coated or repaired to prevent injury to the employee from punctures or lacerations and to prevent snagging or clothing. Any wood ladders used must have an opaque covering except for identification or warning labels, which may be placed on one face only of a side rail.

17.3.1.1 Ladder Use

Employees shall only use ladders for the purposes, which they were designed and shall not be

used as scaffolding. Ladders will be maintained and inspected prior to use for slip hazards including oil and grease. Employees shall use ladders only on stable and level surfaces unless the ladder is secured to prevent possible displacement. Ladders should not be used on slippery surfaces unless secured or provided with slip resistant feet to prevent accidental displacement. Ladders should not be used in locations where they could be displaced by workplace activities or traffic. Ladder rungs, cleats and steps shall be parallel, level and uniformly spaced when the ladder is in the use position.

Employees should not be carrying anything including equipment that could cause injury if there was a fall while utilizing the ladder. The top and bottom of the ladder area must remain clear while in use. When ascending and descending the ladder, employees must face the ladder.

Ladders shall not be loaded beyond the maximum intended load for which they were built or the manufacturer's rated capacity.

17.3.1.2 Portable Ladders

Rungs, cleats and steps for portable ladders and fixed ladders shall be spaced not less than 10 inches apart, nor more than 14 inches apart, as measured between center lines of the rungs, cleats and steps. When used to access an upper landing surface, the ladder side rails must extend at least three feet above the upper landing surface to which the ladder is used to gain access. If this is not possible, due to the ladders length, then the top of the ladder shall be secured at its top to a rigid support.

17.3.1.3 Step Stools

Rungs, cleats and steps of step stools shall not be less than 8 inches apart, nor more than 12 inches apart, as measured between center lines of the rungs, cleats and steps.

17.3.1.4 Extension Ladders

Rungs, cleats and steps of the base section of extension trestle ladders shall be spaced not less than 8 inches apart, nor more than 18 inches apart, as measured between center lines of the rungs, cleats and steps. The rung spacing on the extension section of the extension trestle ladder shall not be less than 6 inches nor more than 12 inches, as measured between center lines of the rungs, cleats and steps. Ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support).

17.3.1.5 Inspection

Ladders will be inspected for visible detects periodically, prior to utilization or after any occurrence that could have negatively affected the ladder. Portable ladders with defects including broken or missing rungs, cleats, or steps, broken or split rails, corroded components or other faulty or defective components shall not be used. The ladder will be immediately marked as defective, tagged as "Do Not Use" or blocked from being used and removed from service until repaired.

17.3.2 First Aid/Cardiopulmonary Resuscitation (CPR)

Langan field and office personnel will be encouraged to be trained in First Aid and Cardiopulmonary Resuscitation (CPR). Training will be provided free of charge by Langan to all employees. Employees will receive a training certificate that will be kept on file with the Health & Safety Coordinator (HSC). Training and certification will be provided by a credited provider such as American Red Cross or equivalent.

17.3.2.1 Emergency Procedures

Prior to work at sites the Langan employees certified in first aid and CPR will be identified in the site specific HASP. Langan will endear to have at least one employee at a job site trained and able to render first aid and CPR. The site specific HASP will contain first aid information on both potential chemical and physical hazards. Emergency procedures to be followed are in case of injury or illnesses are provided in the HASP. The HASP will include emergency contact information including local police and fire departments, hospital emergency rooms, ambulance services, on-site medical personnel and physicians. The HASP will also include directions and contact information to the nearest emergency facility in case immediate medical attention is required. The emergency contact information will be conspicuously posted at the worksite. Employees that are injured and require immediate medical attention shall call either 911 or the local posted emergency contacts. Employees should use ambulatory services to transport injured workers to the nearest facility for emergency medical care. In areas where 911 is not available, the telephone numbers of the physicians, hospitals, or ambulances shall be conspicuously posted.

17.3.2.2 First Aid Supplies

First aid supplies are readily available to all Langan employees when required. First aid kits are located in each Langan office. Portable first aid kits are available for employees to use at work sites. First aid kits should consist of items needed to treat employees for potential chemical and physical injuries. At a minimum, first aid kits should contain items to allow basic first aid to be rendered. Where the eyes or body of an employee may be exposed to corrosive materials,

suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use including eye wash.

First aid kits will be weatherproof with individual sealed packages of each item. All portable first aid kits shall be inspected by Langan employees before and after use to ensure all used items are replaced. When out in the field, employees shall check first aid kits weekly to ensure used items are replaced.

17.3.3 Hydrogen Sulfide

Langan employees with the potential to be exposed to hydrogen sulfide while at work sites shall have training in hydrogen sulfide awareness. The training will include identification of areas where employees could be exposed to hydrogen sulfide, health effects, permissible exposure limits, first aid procedures and personnel protective equipment. Langan employees could be exposed to hydrogen sulfide while at job sites including petroleum refineries, hazardous waste treatment, storage and disposal facilities, uncontrolled hazardous waste sites and remediation projects.

17.3.3.1 Characteristics

Hydrogen sulfide is a colorless gas with a strong odor of rotten eggs that is soluble in water. Hydrogen sulfide is used to test and make other chemicals. It is also found as a by-product of chemical reactions, such as in sewer treatment. It is a highly flammable gas and a dangerous fire hazard. Poisonous gases are produced in fires including sulfur oxides. Hydrogen sulfide is not listed as a carcinogen.

17.3.3.2 Health Effects

Hydrogen Sulfide can affect employees if inhaled or through contact with skin or eyes. Acute (or short term) health effects of hydrogen sulfide exposure include irritation of the nose and throat, dizziness, confusion, headache and trouble sleeping. Inhalation of hydrogen sulfide can irritate the lungs causing coughing and/or shortness of breath. Higher levels of exposure can cause build-up of fluid in the lungs (pulmonary edema), a medical emergency, with severe shortness of breath.

Chronic (or long term) health effects of low levels of exposure to hydrogen sulfide can cause pain and redness of the eyes with blurred vision. Repeated exposure may cause bronchitis with cough, phlegm and shortness of breath.

17.3.3.3 Protective Clothing and Equipment

Respirators are required for those operations in which employees will be exposed to hydrogen sulfide above OSHA permissible exposure level. The maximum OSHA permissible exposure limit (PEL) for hydrogen sulfide is 20 parts of hydrogen sulfide vapor per million parts of air (20 ppm) for an 8-hour workday and the maximum short-term exposure limit (STEL) is 10 ppm for any 10-minute period.

Where employees are exposed to levels up to 100 parts of hydrogen sulfide vapor per million parts of air (100 ppm), the following types of respiratory protection are allowed:

- Any powered, air purifying respirator with cartridge(s);
- Any air purifying, full-facepiece respirator (gas mask) with a chin style, front- or back-mounted canister;
- Any supplied air system with escape self-contained breathing apparatus, if applicable; and,
- Any self-contained breathing apparatus with a full facepiece.

Respirators used by employees must have joint Mine Safety and Health Administration and the National Institute for Occupational Safety and Health (NIOSH) seal of approval. Cartridges or canisters must be replaced before the end of their service life, or the end of the shift, whichever occurs first. Langan employees that have the potential to be exposed to hydrogen sulfide will be trained in the proper use of respirators. Respirator training is discussed under– Langan's Respiratory Protection Program.

Employees with potential exposure to hydrogen sulfide, or when required by the client, will wear a portable hydrogen sulfide gas detector. The detector should have an audible, visual and vibrating alarm. The detector may also provide detection for carbon monoxide, sulfur dioxide and oxygen deficient atmospheres. The hydrogen sulfide monitor will, at a minimum, be calibrated to detect hydrogen sulfide at a level of 20 parts of hydrogen sulfide vapor per million parts of air (20 ppm). Many portable gas detectors will have factory defaults with a low level alarm at 10 ppm and a high level alarm at 15 ppm. Langan employees shall consult clients to determine if any site specific threshold levels exist.

If the hydrogen sulfide gas detector sounds and employees are not wearing appropriate respiratory protection, employees must immediately vacate the area and meet at the assigned emergency location. Langan employees may not re- enter the site without proper respiratory protection and approval from the client or property owner, if needed.

Employees shall wear PPE to prevent eye and skin contact with hydrogen sulfide. Employees

must wear appropriate protective clothing including boots, gloves, sleeves and aprons, over any parts of their body that could be exposed to hydrogen sulfide. Non-vented, impact resistant goggles should be worn when working with or exposed to hydrogen sulfide.

17.3.3.4 Emergency and First Aid Procedures

Eye and Face Exposure

If hydrogen sulfide comes in contact with eyes, it should be washed out immediately with large amounts of water for 30 minutes, occasionally lifting the lower and upper eye lids. Seek medical attention immediately.

Skin Exposure

If hydrogen sulfide contaminates clothing or skin, remove the contaminated clothing immediately and wash the exposed skin with large amounts of water and soap. Seek medical attention immediately. Contaminated clothing should either be disposed of or washed before wearing again.

Breathing

If a Langan employee or other personnel breathe in hydrogen sulfide, immediately get the exposed person to fresh air. If breathing has stopped, artificial respiration should be started. Call for medical assistance or a doctor as soon as possible.

Safety Precautions

Hydrogen sulfide is a highly flammable gas and a dangerous fire hazard. Containers of hydrogen sulfide may explode in a fire situation. Poisonous gases are produced during fires.

Langan employees should contact property owners and operators prior to conducting work onsite to be aware of any site specific contingency plans, identify where hydrogen sulfide is used at the facility and be informed about additional safety rules or procedures.

19.3.4 Fire Protection/Extinguishers

Langan field personnel that have been provided with portable fire extinguishers for use at worksites will be trained to familiarize employees with general principles of fire extinguisher use and hazards associated with the incipient stage of firefighting. Training will be provided prior to initial assignment for field work and annually thereafter.

Portable fire extinguishers shall be visually inspected monthly and subjected to an annual maintenance check. Langan shall retain records of the annual maintenance date.

17.3.5 Overhead lines

When field work is performed near overhead lines, the lines shall be deenergized and grounded, or other protective measures shall be provided before the work shall commence. If overhead lines are to be deenergized, arrangements shall be made with the client, property owner or organization that operates or controls the electric circuits involved to deenergize and ground them. If protective measures, such as guarding, isolating, or insulating, are provided, these precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment.

When unqualified Langan personnel are working in an elevated position near overhead lines, the location shall be such that the person and the longest conductive object they may contact cannot come closer to any unguarded, energized overhead line than the following distances:

1. For voltages to ground 50kV or below - 10 feet; and
2. For voltages to ground over 50kV - 10 feet, plus 4 inches for every 10kV over 50kV.

As previously indicated, Langan does not retain qualified employees to perform work on energized equipment.

17.3.5.1 Vehicle and Equipment Clearance

Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 10 feet is maintained. If the voltage of the overhead lines is higher than 50kV, the clearance shall be increased 4 inches for every 10kV over that voltage.

If any of the following discussed conditions occur, the clearance may be reduced.

- If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 ft. If the voltage is higher than 50kV, the clearance shall be increased 4 in. for every 10 kV over that voltage.
- If insulating barriers are installed to prevent contact with the lines, and if the barriers are rated for the voltage of the line being guarded and are not a part of or an attachment to the vehicle or its raised structure, the clearance may be reduced to a distance within the designed working dimensions of the insulating barrier.

Employees standing on the ground may not contact the vehicle or mechanical equipment or any

of its attachments, unless the employee is using protective equipment rated for the voltage; or the equipment is located so that no uninsulated part of its structure (that portion of the structure that provides a conductive path to employees on the ground) can come closer to the overhead line than permitted.

If any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines is intentionally grounded, employees working on the ground near the point of grounding may not stand at the grounding location whenever there is a possibility of overhead line contact. Additional precautions, such as the use of barricades or insulation, shall be taken to protect employees from hazardous ground potentials, depending on earth resistivity and fault currents, which can develop within the first few feet or more outward from the grounding point.

17.3.6 Trade Secret

Langan employees could potentially be provided trade secret information by the client or property owner when site specific information is provided about highly hazardous chemicals. Trade secret means any confidential formula, pattern, process, device, information or compilation of information that is used in an employer's business, and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it. Langan employees understand that this information should be kept confident and if required, may enter into a confidentially agreement with the client.

17.3.7 Bloodborne Pathogens

Langan employees that can reasonably anticipate exposure to blood or other potentially infectious material while at work sites shall have training in bloodborne pathogens. Applicable employees would include those trained in first aid and serving a designated role as an emergency medical care provider. Bloodborne pathogens are pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus and human immunodeficiency virus.

17.3.7.1 Training

Langan employees with potential occupational exposure to blood or other potentially infectious material must participate in a training program. Training must be conducted prior to initial assignment where there would be potential for exposure and annually thereafter within one year of previous training. The training program will be provided to Langan employees at no cost to them and during working hours.

Langan will ensure the training program shall consist of the following:

- An accessible copy of the regulatory text of 29 CFR 1910.1030 and an explanation of its contents;
- A general explanation of the epidemiology and symptoms of bloodborne diseases;
- An explanation of the modes of transmission of bloodborne pathogens;
- An explanation of Langan's exposure control plan and the means by which the employee can obtain a copy of the written plan;
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
- An explanation of the use and limitations of personal protective
    - equipment (PPE) to prevent and reduce exposure;
    - Information on the types, proper use, location, removal, handling and disposal of PPE;
    - An explanation of the basis for selection of PPE;
    - Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge;
    - Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials;
    - An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available;
    - Information on the post-exposure evaluation and follow-up that the
    - employer is required to provide for the employee following an exposure incident;
    - An explanation of the signs and labels and/or color coding required by paragraph 29 CFR 1910.1030(g)(1); and
    - An opportunity for interactive questions and answers with the person conducting the training session.

Langan will develop and implement a written Exposure Control Plan, which will be designed to eliminate or minimize employee exposure to bloodborne pathogens. The Exposure Control Plan will contain the following elements:

- An exposure determination for employees;
- The schedule and method of implementation for Methods of Compliance (29 CFR 191.1030(d)), Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up (29 CFR 1910.1030(f)), Communication of Hazards to Employees (29 CFR 1910.1030(g)) and (h) Recordkeeping (29 CFR 1910.1030(h));
- The procedure for the evaluation of circumstances surrounding exposure incidents;
- Ensure a copy of the Exposure Control Plan will be accessible to employees; and,

- The Exposure Control Plan shall be reviewed and updated at least annually.

Langan employees with occupational exposure to bloodborne pathogens include any employees trained in first aid that would be expected to provide emergency medical care. This determination is made without regards to the use of PPE, which could eliminate or minimize exposure.

Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for bloodborne pathogens. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.

Work practice controls shall be used to eliminate or minimize employee exposure, if applicable. Since Langan employees will have occupational exposure only during rendering of first aid, personnel protective equipment will be utilized to reduce or minimize exposure. PPE that could be available to Langan personnel when administering first aid includes safety glasses, gloves, and Tyvek suits or sleeves. PPE and first aid kits will be provided to employees at no cost to them.

Langan employees that render first aid in office areas will have access to hand washing facilities or restrooms. For first aid rendered at field locations, first aid kits will contain an appropriate antiseptic hand cleanser and clean cloth/paper towels or antiseptic towelettes. After using antiseptic hand cleansers or towelettes, employees shall wash their hands with soap and running water as soon as feasible.

After administering first aid, potentially infectious materials, including towels, personnel protective equipment, clothes and bandages, shall be placed in a container, which prevents leakage during collection, handling, processing, storage, transport, or shipping. All PPE will be dispose of after use. Any equipment or working surfaces which was been exposed to blood or potentially infectious materials due to an injury, will be decontaminated prior to reuse.

Langan will make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident. These services will be available to the employee at no cost to them through a medical provider.

17.3.7.2 Recordkeeping

Langan will maintain training and medical records for each employee with occupational exposure to blood or potentially infectious materials. Medical and training records will be maintained by

Langan's H&S Department.

Training records will include the following:

- Dates of the training sessions;
- Contents or a summary of the training sessions;
- Names and qualifications of persons conducting the training; and
- Names and job titles of all persons attending the training sessions.

Training records shall be maintained for 3 years from the date on which the training occurred. Medical records will be will be preserved and maintained for the duration of employment plus 30 years.

All records will be made available upon request to employees, the Assistant Secretary of Labor for Occupational Safety and Health, and Director of National Institute for Occupational Safety and Health Director of OSHA for examination and copying. Medical records must have written consent from employee before releasing.

If Langan ceases to do business, all records shall be transferred to the successor employer. The successor employer shall receive and maintain these records.

If there will not be a successor, Langan will notify current employees of their rights to access records at least three months prior to the cessation of business.

18.0 RECORDKEEPING

The following is a summary of required health and safety logs, reports and recordkeeping.

18.1 Field Change Authorization Request

Any changes to the work to be performed that is not included in the HASP will require an addendum that is approved by the Langan project manager and Langan HSM to be prepared. Approved changes will be reviewed with all field personnel at a safety briefing.

18.2 Medical and Training Records

Copies or verification of training (40-hour, 8-hour, supervisor, site-specific training, documentation of three-day OJT, and respirator fit-test records) and medical clearance for site work and respirator use will be maintained in the office and available upon request. Records for all subcontractor employees must also be available upon request. All employee medical records will be maintained by the HSM.

18.3 Onsite Log

A log of personnel on site each day will be kept by the HSO or designee.

18.4 Daily Safety Meetings ("Tailgate Talks")

Completed safety briefing forms will be maintained by the HSO.

18.5 Exposure Records

All personal monitoring results, laboratory reports, calculations and air sampling data sheets are part of an employee exposure record. These records will be maintained by the HSO during site work. At the end of the project they will be maintained according to 29 CFR 1910.1020.

18.6 Hazard Communication Program/MSDS-SDS

Material safety data sheets (MSDS) of Safety Data Sheets (SDS) have been obtained for applicable substances and are included in this HASP (Attachment D). Langan's written hazard communication program, in compliance with 29 CFR 1910.1200, is maintained by the HSM.

18.7 Documentation

Immediately following an incident or near miss, unless emergency medical treatment is required, either the employee or a coworker must contact the Langan incident/injury hotline at 1-800-952-6426, extension 4699 and the Project Manager to report the incident or near miss. The Project Manager will contact the client or client representative. A written report must be completed and submitted HSM within 24 hours of the incident. For emergencies involving personnel injury and/or exposure, employee will complete and submit the Langan incident/injury report to the Langan corporate health and safety manager as soon as possible following the incident. Accidents will be investigated in-depth to identify all causes and to recommend hazard control measures.

18.7.1 Accident and Injury Report Forms

18.7.1.1 Accident/Incident Report

All injuries, no matter how slight, shall be reported to the FTL and the PM immediately. The accident/incident report forms, attached in Attachment U and Attachment V will be filled out on all accidents by the applicable contractor supervision personnel, the FTL, or the HSO. Copies of all accident/incident reports shall be kept on-site and available for review. Project personnel will be instructed on the location of the first aid station, hospital, and doctor and ambulance service near the job. The emergency telephone numbers will be conspicuously posted in site vehicles near the work zone. First aid supplies will be centrally located and conspicuously posted between

restricted and non-restricted areas to be readily accessible to all on the site.

18.7.1.2 First Aid Treatment Record

The forms in will be used for recording all non-lost time injuries treated by the project first-aid attendant, the local physician or hospital will be entered in detail on this record. "Minor" treatment of scratches, cuts, etc. will receive the same recording attention as treatment of more severe injuries.

18.7.1.3 OSHA Form 300

An OSHA Form 300 will be kept at the Langan Corporate Office in Parsippany, New Jersey. All recordable injuries or illnesses will be recorded on this form. Subcontractor employers must also meet the requirements of maintaining an OSHA 300 form. The Incident Report form used to capture the details of work-related injuries/illnesses meets the requirements of the OSHA Form 301 (supplemental record) and must be maintained with the OSHA Form 300 for all recordable injuries or illnesses. Forms for recording OSHA work-related injuries and illnesses are included in Attachment U and Attachment V.

19.0 CONFINED SPACE ENTRY

Confined spaces are not anticipated at the Site during planned construction activities. If confined spaces are identified, the contractor must implement their own confined space program that all applicable federal, state and local regulations. Confined spaces **will not** be entered by Langan personnel.

20.0 HASP ACKNOWLEDGEMENT FORM

All Langan personnel and contractors will sign this HASP Compliance Agreement indicating that they have become familiar with this HASP and that they understand it and agree to abide by it.

Printed Name	Signature	Company	Date

TABLES

TABLE 1
TASK HAZARD ANALYSES

Task	Hazard	Description	Control Measures	First Aid
1.3.1 – 1.3.8	Contaminated Soil or Groundwater- Dermal Contact	Contaminated water spills on skin, splashes in eyes; contact with contaminated soil/fill during construction activities or sampling.	Wear proper PPE; follow safe practices, maintain safe distance from construction activities	See Table 2, seek medical attention as required
1.3.1 – 1.3.8	Lacerations, abrasions, punctures	Cutting bailer twine, pump tubing, acetate liners, etc. with knife; cuts from sharp site objects or previously cut piles, tanks, etc.; Using tools in tight spaces	Wear proper PPE; follow safe practices	Clean wound, apply pressure and/or bandages; seek medical attention as required.
1.3.1 – 1.3.8	Contaminated Media Inhalation	Opening drums, tanks, wells; vapors for non-aqueous phase liquids or other contaminated site media; dust inhalation during excavation; vapor accumulation in excavation	Follow air monitoring plan; have quick access to respirator, do not move or open unlabeled drums found at the site, maintain safe distance from construction activities	See Table 2, seek medical attention as required
1.3.1 – 1.3.8	Lifting	Improper lifting/carrying of equipment and materials causing strains	Follow safe lifting techniques; Langan employees are not to carry contractor equipment or materials	Rest, ice, compression, elevation; seek medical attention as required
1.3.1 – 1.3.8	Slips, trips, and falls	Slips, trips and falls due to uneven surfaces, cords, steep slopes, debris and equipment in work areas	Good housekeeping at site; constant awareness and focus on the task; avoid climbing on stockpiles; maintain safe distance from construction activities and excavations; avoid elevated areas over six feet unless fully accredited in fall protection and wearing an approved fall protection safety apparatus	Rest, ice, compression, elevation; seek medical attention as required
1.3.1 – 1.3.8	Noise	Excavation equipment, hand tools, drilling equipment.	Wear hearing protection; maintain safe distance from construction activities	Seek medical attention as required
1.3.1 – 1.3.8	Falling objects	Soil material, tools, etc. dropping from drill rigs, front-end loaders, etc.	Hard hats to be worn at all times while in work zones; maintain safe distance from construction activities and excavations	Seek medical attention as required
1.3.1 – 1.3.8	Underground/ overhead utilities	Excavation equipment, drill rig auger makes contact with underground object; boom touches overhead utility	"One Call" before dig; follow safe practices; confirm utility locations with contractor; wear proper PPE; maintain safe distance from construction activities and excavations	Seek medical attention as required
1.3.1 – 1.3.8	Insects (bees, wasps, hornet, mosquitoes, and spider)	Sings, bites	Insect Repellent; wear proper protective clothing (work boots, socks and light colored pants);field personnel who may have insect allergies (e.g., bee sting) should provide this information to the HSO or FSO prior to commencing work, and will have allergy medication on site.	Seek medical attention as required
1.3.1 – 1.3.8	Vehicle traffic / Heavy Equipment Operation	Vehicles unable to see workers on site, operation of heavy equipment in tight spaces, equipment failure, malfunctioning alarms	Wear proper PPE, especially visibility vest; use a buddy system to look for traffic; rope off area of work with cones and caution tape or devices at points of hazard, maintain safe distance from construction activities and equipment	Seek medical attention as required

TABLE 2
CONTAMINANT HAZARDS OF CONCERN

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	1,1,1,2-Tetrachloroethane R-130a	630-20-6	NA	None None	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes (redness, pain), skin (redness, burning sensation, pain); Inhalation: jaundice, enlarged liver, headaches, tremors, dizziness, numbness, and drowsiness. Ingestion: burning sensation, headache, nausea	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,1,2-Trichloro-1,2,2-trifluoroethane Chlorofluorocarbon-113 CFC-113 Freon® 113 Genetron® 113 Halocarbon 113 Refrigerant 113 TTE Frigen 113 TR Freon TF Trichlorotrifluoroethane	76-13-1	PID	1000 ppm 2000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	Irritation skin, throat, drowsiness, dermatitis; central nervous system depression; dizziness, tremor, asphyxia, unconsciousness, cardiac arrhythmias, cardiac arrest; liquid: frostbite. In animals: cardiac arrhythmias, narcosis,	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,1,2-Trichloroethane 1,1,2-TCA Ethane trichloride β-Trichloroethane Vinyl trichloride	79-00-5	PID	10 ppm 100 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation eyes, nose; central nervous system depression; liver, kidney damage; dermatitis	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	1,1-Dichloroethane Asymmetrical dichloroethane Ethylidene chloride 1,1-Ethylidene dichloride 1,1-DCA	75-34-3	PID	100 ppm 3000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the skin; central nervous system depression; liver, kidney, lung damage	Eye: Irrigate immediately Skin: Soap flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,2,3-Trichlorobenzene vic-Trichlorobenzene 1,2,6-Trichlorobenzene	87-61-6	PID	None None	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, lassitude (weakness, exhaustion), dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,2,3-Trichloropropane Allyl trichloride Glycerol trichlorohydrin Glyceryl trichlorohydrin Trichlorohydrin	96-18-4	PID	50 ppm 100 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation eyes, nose, throat; central nervous system depression; In Animals: liver, kidney injury; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	1,2,4,5-Tetramethylbenzene	95-93-2	NA	None None	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, lassitude (weakness, exhaustion), dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,2,4-Trichlorobenzene Unsym-Trichlorobenzene 1,2,4-Trichlorobenzol	120-82-1	NA	None None	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation eyes, skin, mucous membrane; In Animals: liver, kidney damage; possible teratogenic effects	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,2,4-Trimethylbenzene	95-63-6	PID	None None	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, lassitude (weakness, exhaustion), dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	1,2-Dibromo-3-chloropropane	96-12-8	PID	None None	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation eyes, skin, nose, throat; drowsiness; nausea, vomiting; pulmonary edema; liver, kidney injury; sterility; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,2-Dichlorobenzene	95-50-1	PID	50 ppm 200 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eye, swelling periorbital (situated around the eye); profuse rhinitis; headache, anorexia, nausea, vomiting; weight loss, jaundice, cirrhosis; in animals: liver, kidney injury; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	2-Hexanone Butyl methyl ketone MBK Methyl butyl ketone Methyl n-butyl ketone	591-78-6	PID	100 ppm 1600 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, nose; peripheral neuropathy: lassitude (weakness, exhaustion), paresthesia; dermatitis; headache, drowsiness	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,2-Dichloroethane Ethylene dichloride 1,2-DCA DCE[1] Ethane dichloride Dutch liquid, Dutch oil Freon 150 Glycol dichloride	107-06-2	PID	1 ppm 50 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin absorption, skin and/or eye contact	irritation to the eyes, corneal opacity; central nervous system depression; nausea, vomiting; dermatitis; liver, kidney, cardiovascular system damage; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	1,2-Dichloroethene 1,2-Dichloroethylene 1,2-DCE Total 1,2-Dichloroethene cis-1,2-Dichloroethylene mixture of cis and trans Acetylene dichloride cis-Acetylene dichloride sym-Dichloroethylene cis-1,2-Dichloroethene cDCE 1,1-dimethyl-;dimethyl1,1-cyclohexane	156-59-2 540-59-0	PID	200 ppm 4000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	cis-1,2-Dichloroethene	156-59-2	PID	200 ppm 1000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, respiratory system; central nervous system depression	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,3,5-Trimethylbenzene Mesitylene sym-Trimethylbenzene	108-67-8	PID	None None	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, lassitude (weakness, exhaustion), dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	1,3-Dichlorobenzene m-Dichlorobenzol; m-Phenylene dichloride m-dichlorobenzene	541-73-1	PID	None None	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, swelling periorbital (situated around the eye); profuse rhinitis; headache, anorexia, nausea, vomiting; weight loss, jaundice, cirrhosis; in animals: liver, kidney injury; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,3-Dimethylnaphthalene	575-41-7	NA	NA NA	Groundwater Soil	Inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,4,5-Trimethylnaphthalene	2245-38-7	NA	NA NA	Soil	Inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,4,6-Trimethylnaphthalene	2131-42-2	NA	NA NA	Soil	Inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	1,4-Dichlorobenzene para-Dichlorobenzene p-Dichlorobenzene p-DCB PDB Paramoth Para crystals Paracide Dichlorocide	106-46-7	PID	75 ppm 150 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, swelling periorbital (situated around the eye); profuse rhinitis; headache, anorexia, nausea, vomiting; weight loss, jaundice, cirrhosis; in animals: liver, kidney injury; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,4-Dioxane 1,4-Dioxacyclohexane [1,4]Dioxane p-Dioxane [6]-crown-2 Diethylene dioxide Diethylene ether Dioxan Dioxane 1,4-Dioxane	123-91-1	PID	100 ppm 500 ppm	Groundwater Soil Vapor	Inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,4-Dioxane 1,4-Dioxacyclohexane [1,4]Dioxane p-Dioxane [6]-crown-2 Diethylene dioxide Diethylene ether Dioxan Dioxane 1,4-Dioxane	123-91-1	PID	100 ppm 500 ppm	Groundwater Soil Vapor	Inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	1,6,7-Trimethyl-Napthalene 2,3,5-Trimethylnaphthalene 1,6,7-TRIMETHYLNAPHTHALENE Naphthalene, 1,6,7-trimethyl- Naphthalene, 2,3,5-trimethyl- Naphthalene,1,6,7-trimethyl- 2,5-Trimethylnaphthalene Naphthalene,3,5-trimethyl- Naphthalene,6,7-trimethyl- 2,3,5-TRIMETHYLNAPHTHALENE 97% Naphthalene, 1,6,7-trimethyl-(8CI)(9CI) 2,3,5-Trimethylnaphthalene 10 microg/mL in Cyclohexane	2245-38-7	NA	NA NA	Soil	Inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1,7-Dimethyl Naphthalene 1,7-DIMETHYLNAPHTHALENE Naphthalene, 1,7-dimethyl- 1,7-Dimethyl naphthalene Naphthalene, 3,5-dimethyl 1,7-Dimethylnaphthalene, 99% Naphthalene, 1,7-dimethyl-(8CI)(9CI)	575-37-1	NA	NA NA	Soil	Inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1.2-Dibromoethane Ethylene Dibromide Ethylene bromide Glycol dibromide 1,2-Dibromoethane	106-93-4	PID	20 ppm 100 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation eyes, skin, respiratory system; dermatitis with vesiculation; liver, heart, spleen, kidney damage; reproductive effects; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	1H,1H,2H,2H.Perfluorooctanes ulfonic Acid (6:2FTS) Sodium 1H,1H, 2H, 2H-Perfluorooctane Sulfonate (6:2)(6:2FTS) 6:2 Fluorinated Telomer Sulfonates (6:2FTS) Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	27619-97-2	NA	NA NA	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	1-Methyl-2-propylcyclohexane	4291-79-6	NA	NA NA	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	2,3,6-trimethylnaphthalene	829-26-5	NA	NA NA	Groundwater Soil Vapor	Inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	2,6-dimethyl octane	2051-30-1	PID	NA NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	Irritation to the eyes, skin, respiratory system, Blue lips or finger nails. Blue skin. Headache. Dizziness. Nausea. Confusion. Convulsions. Unconsciousness	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	2,6-dimethyl undecane	17301-23-4	PID	NA NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	Irritation to the eyes, skin, respiratory system, Blue lips or finger nails. Blue skin. Headache. Dizziness. Nausea. Confusion. Convulsions. Unconsciousness	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	2-Butanone Ethyl methyl ketone MEK Methyl acetone Methyl ethyl ketone	78-93-3	PID	200 ppm 3000 ppm	Soil Groundwater Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose; headache; dizziness; vomiting; dermatitis	Eye: Irrigate immediately Skin: Water wash immediately Breathing: Fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.8	2-Methyl undecane 2-Methylundecane ISODODECANE Undecane, 2-methyl- 2-Methylhendecane isodo-decane Isododecane, mixture of isomers	7045-71-8	NA	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	Irritation to the eyes, skin, respiratory system, Blue lips or finger nails. Blue skin. Headache. Dizziness. Nausea. Confusion. Convulsions. Unconsciousness	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	3-ethyl-2-methyl-heptane 3-Ethyl-2-methylheptane 2-Methyl-3-ethylheptane Heptane, 3-ethyl-2-methyl- 2-methyl-3-ethyl-heptane 3-ethyl-2-methyl heptane Heptane,3-ethyl-2-methyl-	13475-78-0	NA	NA NA	Soil	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system, anesthetic effects (drowsiness, dizziness, and headache, may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Remove to fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	4-Isopropyltoulene 1-Methyl-4-(1-methylethyl)benzene 4-Isopropyltoluene; 4-Methylcumene; 1-Methyl-4-isopropylbenzene Dolcymene Camphogen Paracymene Cymene p-Cymene p-Isopropyltoluene	99-87-6	PID	NA NA	Soil Groundwater Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; dermatitis; headache, narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	4-methyl decane	2847-72-5	NA	NA NA	Soil	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	4-Methyl-2-pentanone Hexone Isobutyl methyl ketone Methyl isobutyl ketone MIBK	108-10-1	PID	100 ppm 500 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; headache, narcosis, coma; dermatitis; in animals: liver, kidney damage	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Acetone Dimethyl ketone Ketone propane 2-Propanone	67-64-1	PID	1000 ppm 2500 ppm	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, nose, throat; headache, dizziness, central nervous system depression; dermatitis	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Acrolein Acraldehyde Acrylaldehyde Acrylic aldehyde Allyl aldehyde Propenal 2-Propenal	107-02-8	PID	0.1 ppm 2 ppm	Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, nose, throat; headache, dizziness, central nervous system depression; dermatitis	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Acrylonitrile Acrylonitrile monomer AN Cyanoethylene Propenenitrile 2-Propenenitrile VCN, Vinyl cyanide	107-13-1	PID	1 ppm 85 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; asphyxia; headache; sneezing; nausea, vomiting; lassitude (weakness, exhaustion), dizziness; skin vesiculation; scaling dermatitis; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Water wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Aluminum	7429-90-5	None	0.5 mg/m3 50 mg/m3	Soil	inhalation, skin and/or eye contact	irritation to the eyes, skin, respiratory system	Eye: Irrigate immediately Breathing: Fresh air

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Anthracene	120-12-7	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	irritation to the skin, eyes, mucous membranes and upper respiratory tract, abdominal pain if ingested.	Eye: Irrigate immediately, seek medical attention immediately, Skin: Soap wash immediately, Breathing: Move to fresh air, refer to medical attention; Swallow: refer to medical attention
1.3.1 – 1.3.8	Antimony	7440-36-0	None	0.5 mg/m^3 50 mg/m^3	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation skin, possible dermatitis; resp distress; diarrhea; muscle tremor, convulsions; possible gastrointestinal tract	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Aroclor 1260	11096-82-5	None	0.5 mg/m^3 5 mg/m^3	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, chloracne	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Arsenic	NA	None	0.5 mg/m^3 NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation skin, possible dermatitis; resp distress; diarrhea; muscle tremor, convulsions; possible gastrointestinal tract	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Barium	10022-31-8	None	0.5 mg/m^3 50 mg/m^3	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, upper respiratory system; skin burns; gastroenteritis; muscle spasm; slow pulse	Eye: Irrigate immediately Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Benzene Benzol Phenyl hydride	71-43-2	PID	3.19 mg/m^3 1,595 mg/mg^3	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; lassitude (weakness, exhaustion) [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Benzo(a)anthracene Benzanthracene Benzanthrene 1,2-Benzanthracene Benzo[b]phenanthrene Tetraphene	56-55-3	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Groundwater Soil	inhalation, skin or eye contact, ingestion	dermatitis, bronchitis, [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Benzo(a)pyrene	50-32-8	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	dermatitis, bronchitis, [potential occupational carcinogen]	Eye: Irrigate immediately, seek medical attention Skin: Soap wash immediately; Breathing: move to fresh air; Swallow: Induce vomiting if conscious, seek medical attention immediately
1.3.1 – 1.3.8	Benzo(b)fluoranthene	205-99-2	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation(dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.8	Benzo(g,h,i)perylene Benzo(ghi)perylene	191-24-2	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	NA	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Benzo(k)fluoranthene	207-08-9	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation (dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.8	Benzyl chloride Chloromethylbenzene α-Chlorotoluene	100-44-7	PID	1 ppm 10 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation eyes, skin, nose; lassitude (weakness, exhaustion); irritability; headache; skin eruption; pulmonary edema	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.8	Beryllium	7440-41-7	None	0.002 mg/m^3 4 mg/m^3	Soil	inhalation, skin and/or eye contact	berylliosis (chronic exposure): anorexia, weight loss, lassitude (weakness, exhaustion), chest pain, cough, clubbing of fingers, cyanosis, pulmonary insufficiency; irritation to the eyes; dermatitis; [potential occupational carcinogen]	Eye: Irrigate immediately Breathing: Fresh air

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Bis(2-ethylhexyl)phthalate Bis(2-Ethylhexyl) Phthalate Di-sec octyl phthalate DEHP Di(2-ethylhexyl)phthalate Octyl phthalate	117-81-7	None	5 mg/m^3 5000 mg/m^3	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, mucous membrane; in animals: liver damage; teratogenic effects; [potential occupational carcinogen	Eye: Irrigate immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Bromochloromethane Halon 1011 Methyl Chlorobromide Chlorobromoethane Fluorocarbon	74-97-5		200 ppm 2000 ppm	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation eyes, skin, throat; confusion, dizziness, central nervous system depression; pulmonary edema	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Butyl cyclohexane	1678-93-9	NA	NA NA	Soil	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system, anesthetic effects (drowsiness, dizziness, and headache, may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Remove to fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Cadmium	7440-43-9	None	0.005 mg/m^3 9 mg/m^3	Soil	inhalation, ingestion	pulmonary edema, dyspnea (breathing difficulty), cough, chest tightness, substernal (occurring beneath the sternum) pain; headache; chills, muscle aches; nausea, vomiting, diarrhea; anosmia (loss of the sense of smell), emphysema, proteinuria, mild anemia; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Calcium	7440-70-2	None	NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, upper resp tract; ulcer, perforation nasal septum; pneumonitis; dermatitis	Eye: Irrigate immediately Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Carbon disulfide	75-15-0	PID	20 ppm 500 ppm	Soil Groundwater Vapor	inhalation, skin or eye contact, ingestion	irritation to the eyes, skin, respiratory system	Eye: Irrigate immediately (liquid) Skin: Water flush immediately (liquid) Breathing: Respiratory support

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Carbon tetrachloride Carbon chloride Carbon tet Freon® 10 Halon® 104 Tetrachloromethane	56-23-5	PID	10 ppm 200 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; central nervous system depression; nausea, vomiting; liver, kidney injury; drowsiness, dizziness, incoordination; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Chlordane Chlordan Chlordano 1,2,4,5,6,7,8,8-Octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane	57-74-9	None	0.5 mg/m^3 100 mg/m^3	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	Blurred vision; confusion; ataxia, delirium; cough; abdominal pain, nausea, vomiting, diarrhea; irritability, tremor, convulsions; anuria	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Chlorobenzene benzene chloride monochlorobenzene Phenyl chloride Chlorobenzol MCB	108-90-7	PID	75 ppm 1000 ppm	Groundwater Soil Vapor	inhalation, skin or eye contact, ingestion	irritation to the eyes, skin, nose; drowsiness, incoordination; central nervous system depression; in animals: liver, lung, kidney injury	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Chloroform Methane trichloride Trichloromethane	67-66-3	None	50 ppm 500 ppm	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; dizziness, mental dullness, nausea, confusion; headache, lassitude (weakness, exhaustion); anesthesia; enlarged liver; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Chromium Total Chromium	7440-47-3	None	1.0 mg/m^3 250 mg/m^3	Groundwater Soil	inhalation absorption ingestion	irritation to eye, skin, and respiratory	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Chrysene Benzo[a]phenanthrene 1,2-Benzphenanthrene	218-01-9	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Groundwater Soil	inhalation, absorption, ingestion, consumption	irritation to eye, skin, and respiratory, gastrointestinal irritation nausea, vomit, diarrhea [potential occupational carcinogen]	Eyes: Irrigate immediately Skin: Soap wash promptly. Breath: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Cis-1,3-Dichlorpropene Cis-1,3-Dichlropropylene Cis-1,3-Dichloropropene cis-1,3-Dichloropropylene	10061-01-5	PID	NA NA	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, respiratory system; eye, skin burns; lacrimation (discharge of tears); headache, dizziness; in animals; liver, kidney damage; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Cobalt	7440-48-4	None	0.1mg/m^3 20 mg/m^3	Soil	inhalation, ingestion, skin and/or eye contact	Cough, dyspnea (breathing difficulty), wheezing, decreased pulmonary function; weight loss; dermatitis; diffuse nodular fibrosis; resp hypersensitivity, asthma	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Copper	7440-50-8	None	1.0 mg/m^3 100 mg/m^3	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, nose, metallic taste; dermatitis; anemia	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Cumene Cumol Isopropylbenzene 2-Phenyl propane	98-82-8	PID	50 ppm 900 ppm	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; dermatitis; headache, narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Cyanide	57-12-5	None	5 mg/m^3 25 mg/m^3	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	Exposure to cyanide can cause weakness, headaches, confusion, dizziness, fatigue, anxiety, sleepiness, nausea and vomiting. Breathing can speed up then become slow and gasping. Coma and convulsions also occur. If large amounts of cyanide have been absorbed by the body, the person usually collapses and death can occur very quickly. Long-term exposure to lower levels of cyanide can cause skin and nose irritation, itching, rashes and thyroid changes.	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Cyclohexane Benzene hexahydride Hexahydrobenzene Hexamethylene Hexanaphthene	110-82-7	PID	300 ppm 1300 ppm	Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, respiratory system; drowsiness; dermatitis; narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Decane n-decane	124-18-5	PID	NA NA	Soil Vapor	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Dibenz(a,h)anthracene Dibenzo(a,h)anthracene	53-70-3	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Groundwater Soil	inhalation, absorption, ingestion, consumption	irritation to eyes, skin, respiratory, and digestion [potential occupational carcinogen]	Eyes: Irrigate immediately Skin: Soap wash promptly. Breath: Respiratory support PID Swallow: Medical attention immediately
1.3.1 – 1.3.8	Dibromomethane Methylene bromide	74-95-3	NA	20 ppm 250 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; lassitude (weakness, exhaustion), drowsiness, dizziness; numb, tingle limbs; nausea; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Dibutyl phthalate Di-n-butyl phthalate Butyl phthalate n-Butyl phthalate 1,2-Benzenedicarboxylic acid dibutyl ester o-Benzenedicarboxylic acid dibutyl ester DBP Palatinol C, Elaol Dibutyl-1,2-benzene-dicarboxylate Di-n-butylphthalate	84-74-2	None	5 mg/m^3 4000 mg/m^3	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, upper respiratory system, stomach	Eye: Irrigate immediately Skin: Wash regularly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Dichlorodifluoromethane Difluorodichloromethane, Fluorocarbon 12 Freon 12 Freon® 12 Genetron® 12 Halon® 122 Propellant 12 Refrigerant 12 Dichlorodifluromethane	75-71-8	None	1000 pp, 15,000 ppm	Groundwater Soil Vapor	inhalation, skin and/or eye contact (liquid)	dizziness, tremor, asphyxia, unconsciousness, cardiac arrhythmias, cardiac arrest; liquid: frostbite	Eye: Frostbite Skin: Frostbite Breathing: Respiratory support
1.3.1 – 1.3.8	Diesel Fuel automotive diesel fuel oil No. 2 distillate diesoline diesel oil diesel oil light diesel oil No. 1-D summer diesel	68334-30-5	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; burning sensation in chest; headache, nausea, lassitude (weakness, exhaustion), restlessness, incoordination, confusion, drowsiness; vomiting, diarrhea; dermatitis; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Dodecane, 4,6-dimethyl- 4,6-Dimethyldodecane	61141-72-8	NA	NA NA	Soil	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system, anesthetic effects (drowsiness, dizziness, and headache, may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Remove to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.8	Dodecane; n-Dodecane	112-40-3	PID	NA NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Ethyl acetate Acetic ester Acetic ether Ethyl ester of acetic acid Ethyl ethanoate	141-78-6	PID	400 ppm 2000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation eyes, skin, nose, throat; narcosis; dermatitis	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Ethyl benzene Ethylbenzene Ethylbenzol Phenylethane	100-40-4	PID	435 mg/m^3 3,472 mg/m^3	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Ethyl chloride Chloroethane Hydrochloric ether Monochloroethane Muriatic ether Hydrochloric ether	75-00-3	PID	1000 ppm 3800 ppm	Groundwater Soil Vapor	inhalation, skin absorption (liquid), ingestion (liquid), skin and/or eye contact	incoordination, inebriation; abdominal cramps; cardiac arrhythmias, cardiac arrest; liver, kidney damage	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Ethyl methyl heptane 5-ETHYL-2-METHYLHEPTANE Heptane, 5-ethyl-2-methyl- 5-ethyl-2-methyl-heptane 2-Methyl-5-ethylheptane 6-Methyl-3-ethylheptane Heptane, 3-ethyl-6-methyl Heptane,5-ethyl-2-methyl-	13475-78-0	NA	NA NA	Soil	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system, anesthetic effects (drowsiness, dizziness, and headache, may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Remove to fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Ethylmethyl cyclohexane 1-Ethyl-4-methylcyclohexane cis-1-Ethyl-4-Methylcyclohexane trans-1-Ethyl-4-Methylcyclohexane Cyclohexane, 1-ethyl-4-methyl-, cis- Cyclohexane, 1-ethyl-4-methyl-, trans- cis-1-ethyl-4-methycyclohexane trans-1-ethyl-4-methycyclohexane Cyclohexane, 1-ethyl-4-methyl- 1-Ethyl-4-methylcyclohexane cis- 1-Ethyl-4-methylcyclohexane trans- 1-ethyl-4-methyl cyclohexane c-1-Ethyl-4-methylcyclohexane 1-Methyl-cis-4-ethylcyclohexane cis-1-Methyl-4-Ethylcyclohexane 1-Methyl-trans-4-ethylcyclohexane trans-1-Methyl-4-Ethylcyclohexane 1-ethyl-4-methyl(cis)-cyclohexane Trans-1-ethyl-4-methyl cyclohexane 1alpha-Ethyl-4beta-methylcyclohexane 1-ethyl-4-methyl(trans)-cyclohexane 1-Ethyl-4-methylcyclohexane, trans- 1alpha-Ethyl-4alpha-methylcyclohexane	3728-56-1 4926-78-7 6236-88-0	NA	NA NA	Soil	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system, anesthetic effects (drowsiness, dizziness, and headache, may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Remove to fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Fluoranthene Benzo(j, k)fluorene	206-44-0	PID	0.2 mg/m³ 80 mg/m³ (Coal Pitch Tar)	Groundwater Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation(dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.8	Fuel Oil No. 2	68476-30-2	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; burning sensation in chest; headache, nausea, lassitude (weakness, exhaustion), restlessness, incoordination, confusion, drowsiness; vomiting, diarrhea; dermatitis; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Gasoline	8006-61-9	PID	NA NA	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; dermatitis; headache, lassitude (weakness, exhaustion), blurred vision, dizziness, slurred speech, confusion, convulsions; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Helium	7440-59-7	Helium Detector	NA NA	NA	inhalation	dizziness, headache, and nausea	Breathing: Respiratory support

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Heptane n-Heptane	142-82-5	PID	500 ppm 750 ppm	Goundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	dizziness, stupor, incoordination; loss of appetite, nausea; dermatitis; chemical pneumonitis (aspiration liquid); unconsciousness	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Hexachlorobenzene Perchlorobenzene Pentachlorophenylchloride Benzene hexachloride Phenyl perchloryl HCB BHC	118-74-1	NA	NA NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	Irritating to eyes, skin and mucous membranes. Prolonged periods of ingestion may cause cutaneous porphyria	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Hexachlorobutadiene HCBD Hexachloro-1,3-butadiene 1,3-Hexachlorobutadiene Perchlorobutadiene	87-68-3	PID	NA NA	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	In animals: irritation to the eyes, skin, respiratory system; kidney damage; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Hexachlorocyclopentadiene	77-47-4	PID	NA NA	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, respiratory system; eye, skin burns; lacrimation (discharge of tears); sneezing, cough, dyspnea (breathing difficulty), salivation, pulmonary edema; nausea, vomiting, diarrhea; In Animals: liver, kidney injury	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Indeno(1,2,3-cd)pyrene Indeno(1,2,3-c,d)Pyrene Indeno(1,2,3-cd)Pyrene	193-39-5	None	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Groundwater Soil	inhalation, absorption, ingestion, consumption	irritation to eyes, skin, respiratory, and digestion [potential occupational carcinogen]	Eyes: Irrigate immediately Skin: Soap wash promptly. Breath: Respiratory support Swallow: Medical attention immediately, wash mouth with water
1.3.1 – 1.3.8	Iron	7439-89-6	None	10 mg/m^3 NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; abdominal pain, diarrhea, vomiting	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Isopropyl alcohol Iso-Propyl Alcohol Carbinol IPA Isopropanol 2-Propanol sec-Propyl alcohol Rubbing alcohol Isopropylalcohol	67-63-0	PID	400 ppm 2000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, nose, throat; drowsiness, dizziness, headache; dry cracking skin; in animals: narcosis	Eye: Irrigate immediately Skin: Water flush Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Lead	7439-92-1	None	0.050 mg/m^3 100 mg/m^3	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation to the eyes; hypertension	Eye: Irrigate immediately Skin: Soap flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Magnesium	7439-95-4	None	15 mg/m^3 NA	Soil	inhalation, skin and/or eye contact	irritation to the eyes, skin, respiratory system; cough	Eye: Irrigate immediately Breathing: Fresh air
1.3.1 – 1.3.8	Manganese	7439-96-5	None	5 mg/m^3 500 mg/m^3	Groundwater Soil	inhalation, ingestion	aerosol is irritating to the respiratory tract	Eye: Irrigate immediately Skin: Soap flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Methoxychlor p,p'-Dimethoxydiphenyltrichloroethane DMDT Methoxy-DDT 2,2-bis(p-Methoxyphenyl)-1,1,1-trichloroethane 1,1,1-Trichloro-2,2-bis-(p-methoxyphenyl)ethane	72-43-5	None	15 mg/m^3 5000 mg/m^3	Groundwater Soil Vapor	inhalation, ingestion	fasciculation, trembling, convulsions; kidney, liver damage; [potential occupational carcinogen]	Skin: Soap wash Breathing: Fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.8	Methyl Acetate	79-20-9	PID	200 ppm 3100 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; headache, drowsiness; optic nerve atrophy; chest tightness; in animals: narcosis	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Methyl Bromide Bromomethane Monobromomethane	74-83-9	PID	20 ppm 250 ppm	Soil Groundwater Vapor	inhalation, skin absorption (liquid), skin and/or eye contact (liquid)	irritation to the eyes, skin, respiratory system; muscle weak, incoordination, visual disturbance, dizziness; nausea, vomiting, headache; malaise (vague feeling of discomfort); hand tremor; convulsions; dyspnea (breathing difficulty); skin vesiculation; liquid: frostbite; [potential occupational carcinogen]	Eye: Irrigate immediately (liquid) Skin: Water flush immediately (liquid) Breathing: Respiratory support

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Methyl Chloride Chloromethane Monochloromethane	74-87-3	NA	100 ppm 2000 ppm	Groundwater Soil	inhalation, skin and/or eye contact	dizziness, nausea, vomiting; visual disturbance, stagger, slurred speech, convulsions, coma; liver, kidney damage; liquid: frostbite; reproductive, teratogenic effects; [potential occupational carcinogen]	Eye: Frostbite Skin: Frostbite Breathing: Respiratory support
1.3.1 – 1.3.8	Methyl *tert*-butyl ether MTBE Methyl tertiary-butyl ether Methyl t-butyl ether tert-Butyl methyl ether tBME tert-BuOMe	1634-04-4	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; burning sensation in chest; headache, nausea, lassitude (weakness, exhaustion), restlessness, incoordination, confusion, drowsiness; vomiting, diarrhea; dermatitis; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Methylcyclohexane Methyl cyclohexane Hexahydrotoluene Cyclohexylmethane Toluene hexahydride	108-87-2	PID	500 ppm 1200 ppm	Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; dizziness, drowsiness; in animals: narcosis	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Methylene Chloride Dichloromethane Methylene dichloride	75-09-2	PID	25 ppm 2300 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; lassitude (weakness, exhaustion), drowsiness, dizziness; numb, tingle limbs; nausea; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Molybdenum	7439-98-7	NA	NA NA	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, respiratory system	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	m-Xylenes 1,3-Dimethylbenzene m-Xylol Metaxylene	108-38-3	PID	100 ppm 900 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; nausea, vomiting, abdominal pain; dermatitis	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Naphthalene Naphthalin Tar camphor White tar	91-20-3	PID	50 mg/m^3 250 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes; headache, confusion, excitement, malaise (vague feeling of discomfort); nausea, vomiting, abdominal pain; irritation bladder; profuse sweating; hematuria (blood in the urine); dermatitis, optical neuritis	Eye: Irrigate immediately Skin: Molten flush immediately/solid-liquid soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	n-Hexane Hexane, Hexyl hydride, normal-Hexane	110-54-3	PID	500 ppm 1100 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, nose; nausea, headache; peripheral neuropathy: numb extremities, muscle weak; dermatitis; dizziness; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Nickel	7440-02-0	None	NA 10 mg/m^3	Groundwater Soil	ion, ingestion, skin and/or eye contact	sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]	Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Nonane n-Nonane	111-84-2	PID	NA NA	Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation eyes, skin, nose, throat; headache, drowsiness, dizziness, confusion, nausea, tremor, incoordination; chemical pneumonitis (aspiration liquid)	Eye:Irrigate immediately Skin:Soap wash immediately Breathing:Respiratory support Swallow:Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Non-Flammable Gas Mixture CALGAS (Equipment Calibration Gas : Oxygen Methane Hydrogen Sulfide Carbon Monoxide Nitrogen	 7782-44-7 74-82-8 7783-08-4 830-08-0 7727-37-9	Multi-Gas PID	 NA/NA NA/NA 10/100 ppm 50/1200 ppm NA/NA	NA	inhalation	dizziness, headache, and nausea	Breathing: Respiratory support
1.3.1 – 1.3.8	Non-Flammable Gas Mixture CALGAS (Equipment Calibration Gas : Oxygen Isobutylene Nitrogen	 7782-44-7 115-11-7 7727-37-9	PID	 NA/NA NA/NA NA/NA	NA	inhalation	dizziness, headache, and nausea	Breathing: Respiratory support
1.3.1 – 1.3.8	n-Propylbenzene Isocumene Propylbenzene 1-Phenylpropane 1-Propylbenzene Phenylpropane	103-65-1	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin; dry nose, throat; headache; low blood pressure, tachycardia, abnormal cardiovascular system stress; central nervous system, hematopoietic depression; metallic taste; liver, kidney injury	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	o-Cresol ortho-Cresol 2-Cresol o-Cresylic acid 1-Hydroxy-2-methylbenzene 2-Hydroxytoluene 2-Methyl phenol 2-Methylphenol 2-Metyhlphenol	95-48-7	PID	5 ppm 250 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; central nervous system effects: confusion, depression, resp failure; dyspnea (breathing difficulty), irreg rapid resp, weak pulse; eye, skin burns; dermatitis; lung, liver, kidney, pancreas damage	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediatelyethylphhhhhhhhhh
1.3.1 – 1.3.8	Octamethylcyclotetrasiloxane	556-67-2	PID	NA NA	Groundwater Soil Vapor	ingestion, inhalation, skin and/or eye contact	Irritant to eyes , skin mucous membranes and respiratory system, irritant to digestive track	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	OilScreenSoil (Indigo Blue)® non-SUDAN-based dye	17354-14-2	None	NA NA	NA	inhalation, skin absorption, ingestion, skin and/or eye contact	NA	Eye: Irrigate immediately Skin: Water flush promptly Breathing: move into fresh air, provide respiratory support , if required Swallow: Rinse with water

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	o-Xylenes 1,2-Dimethylbenzene ortho-Xylene o-Xylol	95-47-6	PID	100 ppm 900 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; nausea, vomiting, abdominal pain; dermatitis	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Perfluorobutanesulfonic acid FC-98 Nonaflate Nonafluorobutanesulphonic acid Perfluorobutanesulfonic Acid Perfluorobutane sulfonate PFBS	375-73-5	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Perfluorobutanoic Acid Heptafluorobutyric acid Heptafluorobutanoic acid Perfluorobutyric acid PFBA	375-22-4	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Perfluoroheptane sulfonic Acid Perfluoroheptane sulfonate Perfluoroheptanesulfonic acid PFHpS	375-92-8	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Perfluoroheptanoic acid Perfluoroheptanoic acid Tridecafluoroheptanoic acid PFHpA	375-85-9	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Perfluorohexanesulfonic Acid perfluorohexanesulfonate perfluorohexanesulfonic acid PFHxS	355-46-4	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Perfluorohexanoic Acid PFHxA	307-24-4	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Perfluorononanoic Acid Perfluorononanoic Acid PFNA perfluoro-n-nonanoic acid perfluorononanoate	375-95-1	NA	None None	Groundwater	Groundwater inhalation, skin or eye contact, ingestion; strong acid		Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Perfluorooctanesulfonamide Erfluoroctylsulfonamide Perfluorooctane sulfonamide Heptadecafluorooctanesulphonamide Perfluorooctanesulfonic acid amide Deethylsulfluramid FC-99 PFOSA	754-91-6	NA	NA NA	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Perfluorooctanesulfonic Acid PFOS	1763-23-1	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Perfluorooctanoic Acid PFOA pentadecafluorooctanoic acid perfluorooctanoate perfluorocaprylic acid	335-67-1	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Perfluoropentanoic Acid PFPeA	2706-90-3	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	p-Ethyltoluene 4-Ethyltoluene 1-ethyl-4-methyl-benzene 1-methyl-4-ethylbenzene	622-96-8	NA	NA NA	Soil	ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Phenanthrene	85-01-8	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Groundwater Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation(dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.8	p-Nitrophenol 4-Nitrophenol 4-hydroxynitrobenzene	100-02-7	NA	NA NA	Groundwater Soil	ingestion, inhalation, skin and/or eye contact	Irritant to eyes , skin mucous membranes and respiratory system, irritant to digestive track	Eye: Irrigate immediately, medical attention immediately; Skin: Water flush promptly, medical attention immediately; Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Potassium	7440-09-7	None	NA NA	Soil	inhalation, skin absorption, ingestion, skin and/or eye contact inhalation, ingestion, skin and/or eye contact	eye: Causes eye burns. Skin: Causes skin burns. Reacts with moisture in the skin to form potassium hydroxide and hydrogen with much heat. ingestion: Causes gastrointestinal tract burns. inhalation: may cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. Causes chemical burns to the respiratory tract. inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.	Eyes: Get medical aid immediately Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Ingestion: If victim is conscious and alert, give 2-4 full cups of milk or water. Get medical aid immediately. inhalation: Get medical aid immediately.
1.3.1 – 1.3.8	Propylene Propene Methyl ethylene	115-07-1	PID	NA NA	Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, nose, throat, skin burns asphyxiation	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Propylene dichloride Dichloro-1,2-propane 1,2-Dichloropropane	78-87-5	PEL	75 ppm 400 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, respiratory system; drowsiness, dizziness; liver, kidney damage; in animals: central nervous system depression; [potential occupational carcinogen]	irritation to the eyes, skin, respiratory system; drowsiness, dizziness; liver, kidney damage; in animals: central nervous system depression; [potential occupational carcinogen]
1.3.1 – 1.3.8	Pulegone	89-82-7	PID	NA NA	Soil	ingestion, inhalation, skin and/or eye contact	Irritant to eyes , skin mucous membranes and respiratory system, irritant to digestive track	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	p-Xylenes 1,4-Dimethylbenzene para-Xylene p-Xylol	106-42-3	PID	100 ppm 900 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; nausea, vomiting, abdominal pain; dermatitis	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Pyrene benzo[def]phenanthrene	129-00-0	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Groundwater Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation(dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.8	sec-Butylbenzene	135-98-8	PID	10 ppm 100 ppm	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, nose, throat; inhalation: nausea or vomiting	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Selenium	7782-49-2	None	1 mg/m^3 0.2 mg/m^3	Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; visual disturbance; headache; chills, fever; dyspnea (breathing difficulty), bronchitis; metallic taste, garlic breath, gastrointestinal disturbance; dermatitis; eye, skin burns; in animals: anemia; liver necrosis, cirrhosis; kidney, spleen damage	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Sodium	7440-23-5	None	NA NA	Groundwater Soil	ion, ingestion, skin and/or eye contact	sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]	Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Styrene Ethenyl benzene Phenylethylene Styrene monomer Styrol Vinyl benzene	100-42-5	PID	100 ppm 700 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, nose, respiratory system; headache, lassitude (weakness, exhaustion), dizziness, confusion, malaise (vague feeling of discomfort), drowsiness, unsteady gait; narcosis; defatting dermatitis; possible liver injury; reproductive effects	Eye: Irrigate immediately Skin: Water flush Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Tert-Butyl Alcohol Tertiary Butyl Alcohol Tert-Butanol Butyl alcohol 2-Methyl-2-propanol Trimethyl carbinol TBA	75-65-0	PID	100 ppm 1600 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; drowsiness, narcosis	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	tert-Butylbenzene *t*-Butylbenzene 2-Methyl-2-phenylpropane Pseudobutylbenzene	98-06-6	PID	10 ppm NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	eye, skin irritation; dry nose, throat; headaches; low blood pressure, tachycardia; abnormal cardiovascular system; central nervous system depression; hematopoietic depression	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Tetrachloroethylene Perchlorethylene Perchloroethylene PCE Perk Tetrachlorethylene Tetrachloroethene	127-18-4	PID	100 ppm 150 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Toluene Methyl benzene Methyl benzol Phenyl methane Toluol	108-88-3	PID	200 ppm 500 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, nose; lassitude (weakness, exhaustion), confusion, euphoria, dizziness, headache; dilated pupils, lacrimation (discharge of tears); anxiety, muscle fatigue, paresthesia; dermatitis	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Total PCBs Chlorodiphenyl (42% chlorine) Aroclor® 1242 PCB Polychlorinated biphenyl	53469-21-9	None	0.5 mg/m^3 5 mg/m^3	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, chloracne	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Total Xylenes Dimethylbenzene Xylol	1330-20-7	PID	100 ppm 900 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; nausea, vomiting, abdominal pain; dermatitis	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Trans-1,2-Dichloroethene trans-1,2-Dichloroethylene tDEC trans-Acetylene dichloride	156-60-5	PID	200 ppm 4000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. may be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	trans-1,3-Dichloropropene	10061-02-6	PID	NA NA	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, respiratory system; eye, skin burns; lacrimation (discharge of tears); headache, dizziness; in animals; liver, kidney damage; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Trans-1-ethyl-4-methyl-cyclohexane	6236-88-0	None	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, respiratory system;	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Trichloroethylene Ethylene trichloride TCE Trichloroethene Trilene	79-01-6	PID	100 ppm 1000 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; headache, visual disturbance, lassitude (weakness, exhaustion), dizziness, tremor, drowsiness, nausea, vomiting; dermatitis; cardiac arrhythmias, paresthesia; liver injury; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Trichlorofluoromethane Fluorotrichloromethane Freon® 11 Monofluorotrichloromethane Refrigerant 11 Trichloromonofluoromethane	75-69-4	PID	1000 ppm 2000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	incoordination, tremor; dermatitis; cardiac arrhythmias, cardiac arrest; asphyxia; liquid: frostbite	Eye: Irrigate immediately Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Tridecane n-Tridecane	629-50-5	PID	NA NA	Groundwater Soil Vapor	ingestion, inhalation, skin and/or eye contact	Causes series injury to eyes and skin may be fatal if swallowed and enters airways, may cause drowsiness or dizziness	Eye: Irrigate immediately Skin: Water flush promptly Breathing, Remove to fresh air, Swallow: Medical attention immediately
1.3.1 – 1.3.8	Undecane n-Undecane	1120-21-4	PID	NA NA	Groundwater Soil Vapor	ingestion, inhalation, skin and/or eye contact	Causes series injury to eyes and skin may be fatal if swallowed and enters airways, may cause drowsiness or dizziness	Eye: Irrigate immediately Skin: Water flush promptly Breathing, Remove to fresh air, Swallow: Medical attention immediately
1.3.1 – 1.3.8	Vanadium	7440-62-2	None	0.1 mg/m3 15 mg/m3	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	nausea, diarrhea, abdominal pain, vomiting; ptosis, strabismus; peri neuritis, tremor; retrosternal (occurring behind the sternum) tightness, chest pain, pulmonary edema; convulsions, chorea, psychosis; liver, kidney damage; alopecia; paresthesia legs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Vinyl acetate 1-Acetoxyethylene Ethenyl acetate Ethenyl ethanoate VAC Vinyl acetate monomer Vinyl ethanoate	108-05-4	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; hoarseness, cough; loss of smell; eye burns, skin blisters	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.8	Vinyl Chloride Chloroethene Chloroethylen Ethylene monochloride Monochloroethene Monochloroethylene VC Vinyl chloride monomer (VCM)	75-01-4	PID	1 ppm NA	Groundwater Soil Vapor	inhalation, skin and/or eye contact (liquid)	lassitude (weakness, exhaustion); abdominal pain, gastrointestinal bleeding; enlarged liver; pallor or cyanosis of extremities; liquid: frostbite; [potential occupational carcinogen]	Eye: Frostbite Skin: Frostbite Breathing: Respiratory support
1.3.1 – 1.3.8	Vinylidene chloride 1,1-DCE 1,1-Dichloroethene 1,1-Dichloroethylene VDC Vinylidene chloride monomer Vinylidene dichloride	75-35-4	PID	NA NA	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, throat; dizziness, headache, nausea, dyspnea (breathing difficulty); liver, kidney disturbance; pneumonitis; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.8	Zinc	7440-62-2	None	15 mg/m³ 500 mg/m³	Groundwater Soil	inhalation	chills, muscle ache, nausea, fever, dry throat, cough; lassitude (weakness, exhaustion); metallic taste; headache; blurred vision; low back pain; vomiting; malaise (vague feeling of discomfort); chest tightness; dyspnea (breathing difficulty), rales, decreased pulmonary function	Breathing: Respiratory support`

EXPLANATION OF ABBREVIATIONS

PID = Photoionization Detector
PEL = Permissible Exposure Limit (8-hour Time Weighted Average)
IDLH = Immediately Dangerous to Life and Health
ppm = part per million
mg/m^3 = milligrams per cubic meter
500 mg/m^3

TABLE 3
Summary of Monitoring Equipment

Instrument	Operation Parameters
Photoionization Detector (PID)	**Hazard Monitored:** Many organic and some inorganic gases and vapors. **Application:** Detects total concentration of many organic and some inorganic gases and vapors. Some identification of compounds is possible if more than one probe is measured. **Detection Method:** Ionizes molecules using UV radiation; produces a current that is proportional to the number of ions. **General Care/Maintenance:** Recharge or replace battery. Regularly clean lamp window. Regularly clean and maintain the instrument and accessories. **Typical Operating Time:** 10 hours. 5 hours with strip chart recorder.
Oxygen Meter	**Hazard Monitored:** Oxygen (O_2). **Application:** Measures the percentage of O_2 in the air. **Detection Method:** Uses an electrochemical sensor to measure the partial pressure of O_2 in the air, and converts the reading to O_2 concentration. **General Care/Maintenance:** Replace detector cell according to manufacturer's recommendations. Recharge or replace batteries prior to explanation of the specified interval. If the ambient air is less than 0.5% C O_2, replace the detector cell frequently. **Typical Operating Time:** 8 – 12 hours.
Additional equipment (if needed, based on site conditions)	
Combustible Gas Indicator (CGI)	**Hazard Monitored:** Combustible gases and vapors. **Application:** Measures the concentration of combustible gas or vapor. **Detection Method:** A filament, usually made of platinum, is heated by burning the combustible gas or vapor. The increase in heat is measured. Gases and vapors are ionized in a flame. A current is produced in proportion to the number of carbon atoms present. **General Care/Maintenance:** Recharge or replace battery. Calibrate immediately before use. **Typical Operating Time:** Can be used for as long as the battery lasts, or for the recommended interval between calibrations, whichever is less.
Flame Ionization Detector (FID) with Gas Chromatography Option *(i.e., Foxboro Organic Vapor Analyzer (OVA))*	**Hazard Monitored:** Many organic gases and vapors (approved areas only). **Application:** In survey mode, detects the concentration of many organic gases and vapors. In gas chromatography (GC) mode, identifies and measures specific compounds. In survey mode, all the organic compounds are ionized and detected at the same time. In GC mode, volatile species are separated. **General Care/Maintenance:** Recharge or replace battery. Monitor fuel and/or combustion air supply gauges. Perform routine maintenance as described in the manual. Check for leaks. **Typical Operating Time:** 8 hours; 3 hours with strip chart recorder.
Potable Infrared (IR) Spectrophotometer	**Hazard Monitored:** Many gases and vapors. **Application:** Measures concentration of many gases and vapors in air. Designed to quantify one or two component mixtures. **Detection Method:** Passes different frequencies of IR through the sample. The frequencies absorbed are specific for each compound. **General Care/Maintenance:** As specified by the manufacturer.

Instrument	Operation Parameters
Direct Reading Colorimetric Indicator Tube	**Hazard Monitored:** Specific gas and vapors. **Application:** Measures concentration of specific gases and vapors. **Detection Method:** The compound reacts with the indicator chemical in the tube, producing a stain whose length or color change is proportional to the compound's concentration. **General Care/Maintenance:** Do not use a previously opened tube even if the indicator chemical is not stained. Check pump for leaks before and after use. Refrigerate before use to maintain a shelf life of about 2 years. Check expiration dates of tubes. Calibrate pump volume at least quarterly. Avoid rough handling which may cause channeling.
Aerosol Monitor	**Hazard Monitored:** Airborne particulate (dust, mist, fume) concentrations **Application:** Measures total concentration of semi-volatile organic compounds, PCBs, and metals. **Detection Method:** Based on light-scattering properties of particulate matter. Using an internal pump, air sample is drawn into the sensing volume where near infrared light scattering is used to detect particles. **General Care/Maintenance:** As specified by the mfr. Also, the instrument must be calibrated with particulates of a size and refractive index similar to those to be measured in the ambient air.
Monitox	**Hazard Monitored:** Gases and vapors. **Application:** Measures specific gases and vapors. **Detection Method:** Electrochemical sensor relatively specific for the chemical species in question. **General Care/Maintenance:** Moisten sponge before use; check the function switch; change the battery when needed.
Gamma Radiation Survey Instrument	**Hazard Monitored:** Gamma Radiation. **Application:** Environmental radiation monitor. **Detection Method:** Scintillation detector. **General Care/Maintenance:** Must be calibrated annually at a specialized facility. **Typical Operating Time:** Can be used for as long as the battery lasts, or for the recommended interval between calibrations, whichever is less.

TABLE 4
INSTRUMENTATION ACTION LEVELS

Photoionization Detector Action Levels	**Action Required**
Background to 5 ppm	No respirator; no further action required
> 1 ppm but < 5 ppm for > 5 minutes	1. Temporarily discontinue all activities and evaluate potential causes of the excessive readings. If these levels persist and cannot be mitigated (i.e., by slowing drilling or excavation activities), contact HSO to review conditions and determine source and appropriate response action. 2. If PID readings remain above 1 ppm, temporarily discontinue work and upgrade to Level C protection. 3. If sustained PID readings fall below 1 ppm, downgrading to Level D protection may be permitted.
> 5 ppm but < 150 ppm for > 5 minutes	1. Discontinue all work; all workers shall move to an area upwind of the jobsite. 2. Evaluate potential causes of the excessive readings and allow work area to vent until VOC concentrations fall below 5 ppm. 3. Level C protection will continue to be used until PID readings fall below 1 ppm.
> 150 ppm	Evacuate the work area

Notes:
1. 1 ppm level based on OSHA Permissible Exposure Limit (PEL) for benzene.
2. 5 ppm level based on OSHA Short Term Exposure Limit (STEL) maximum exposure for benzene for any 15 minute period.
3. 150 ppm level based on NIOSH Immediately Dangerous to Life and Health (IDLH) for tetrachloroethylene.

TABLE 5
EMERGENCY NOTIFICATION LIST

ORGANIZATION	CONTACT	TELEPHONE
Local Police Department	NYPD	911
Local Fire Department	NYFD	911
Ambulance/Rescue Squad	NYFD	911
Hospital	Wyckoff Heights Medical Center	911 or 718-963-7272
Langan Incident Hotline		800-952-6426 ex 4699
Medical Treatment Hotline	Incident Intervention	888-449-7787
Langan Environmental Project Manager	Patrick Farnham	646-593-0849 (cell)
Langan Health and Safety Manager (HSM)	Tony Moffa	215-756-2523 (cell)
Langan Health & Safety Officer (HSO)	William Bohrer	410-984-3068 (cell)
Langan Field Team Leader (FTL)	To Be Determined	
Client's Representative	Jack Teich	718-384-7800 x3202
National Response Center (NRC)		800-424-8802
Chemical Transportation Emergency Center (Chemtrec)		800-424-9300
Center for Disease Control (CDC)		404-639-3534
EPA (RCRA Superfund Hotline)		800-424-9346
TSCA Hotline		202-554-1404
Poison Control Center		800-222-1222

Immediately following an injury, unless immediate emergency medical treatment is required, the injured employee must contact Incident Intervention® at 888-449-7787.

For all other incidents or near misses, unless emergency response is required, either the employee or a coworker must contact the Langan Incident Hotline at 1-(800)-9-LANGAN (ext. #4699).

TABLE 6
SUGGESTED FREQUENCY OF PHYSIOLOGICAL MONITORING FOR FIT AND ACCLIMATED WORKERS[A]

Adjusted Temperature[b]	Normal Work Ensemble[c]	Impermeable Ensemble
90°F or above (32.2°C) or above	After each 45 min. of work	After each 15 min. of work
87.5°F (30.8°-32.2°C)	After each 60 min. of work	After each 30 min. of work
82.5°-87.5°F (28.1°-30.8°C)	After each 90 min. of work	After each 60 min. of work
77.5°-82.5°F (25.3°-28.1°C)	After each 120 min. of work	After each 90 min. of work
72.5°-77.5°F (22.5°-25.3°C)	After each 150 min. of work	After each 120 min. of work

a For work levels of 250 kilocalories/hour.

b Calculate the adjusted air temperature (ta adj) by using this equation: ta adj ^{o}F = ta ^{o}F + (13 x % sunshine). Measure air temperature (ta) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to produce a shadow. (100 percent sunshine = no cloud cover and a sharp, distinct shadow; 0 percent sunshine = no shadows.)

c A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.

TABLE 7

HEAT INDEX

	ENVIRONMENTAL TEMPERATURE (Fahrenheit)										
	70	**75**	**80**	**85**	**90**	**95**	**100**	**105**	**110**	**115**	**120**
RELATIVE HUMIDITY	**APPARENT TEMPERATURE***										
0%	64	69	73	78	83	87	91	95	99	103	107
10%	65	70	75	80	85	90	95	100	105	111	116
20%	66	72	77	82	87	93	99	105	112	120	**130**
30%	67	73	78	84	90	96	104	113	123	**135**	**148**
40%	68	74	79	86	93	101	110	123	**137**	**151**	
50%	69	75	81	88	96	107	120	**135**	**150**		
60%	70	76	82	90	100	114	**132**	**149**			
70%	70	77	85	93	106	124	**144**				
80%	71	78	86	97	113	**136**					
90%	71	79	88	102	122						
100%	72	80	91	108							

*Combined Index of Heat and Humidity...what it "feels like" to the body
Source: National Oceanic and Atmospheric Administration

How to use Heat Index:
1. Across top locate Environmental Temperature
2. Down left side locate Relative Humidity
3. Follow across and down to find Apparent Temperature
4. Determine Heat Stress Risk on chart at right

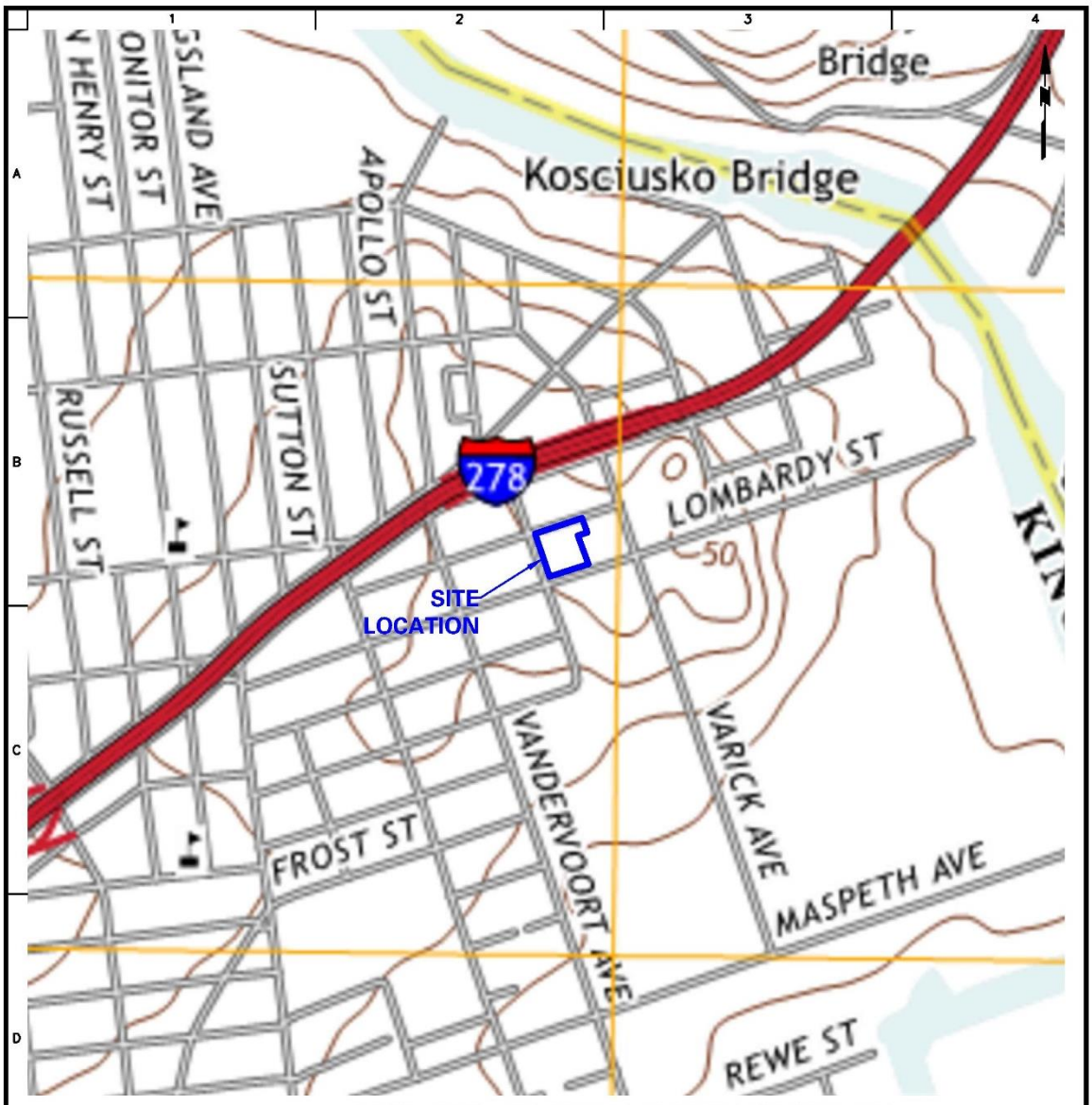
Note: Exposure to full sunshine can increase Heat Index values by up to 15 degrees F.

Apparent Temperature	**Heat Stress Risk with Physical Activity and/or Prolonged Exposure**
90-105	Heat Cramps or Heat Exhaustion Possible
105-130	Heat Cramps or Heat Exhaustion Likely, Heat Stroke Possible
>130	Heatstroke Highly Likely

FIGURES

FIGURE 1

Site Location Map



MAP REFERENCE: USGS BROOKLYN, N.Y. TOPOGRAPHIC QUADRANGLE

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

LANGAN
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Langan Engineering and Environmental Services, Inc.
Langan CT, Inc.
Langan International LLC
Collectively known as Langan

Project	FORMER ACME STEEL/BRASS FOUNDRY NYSDEC SITE No. 224132 72 ANTHONY STREET/ 498 PORTER AVENUE BROOKLYN NEW YORK
Figure Title	SITE LOCATION MAP
Project No.	170157201
Date	01/08/2018
Scale	NTS
Drawn By / Checked By	PTF / GN
Submission Date	
Figure No.	1
Sheet	1 of 2

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Filename: \\Langan.com\data\NY\data2\17015\201\Cadd Data - 1\7015\201\SRIR\224132\Figure 1 - Site Location Map.dwg Date: 3/23/2018 Time: 11:48 User: pfarnham Style Table: Langan.stb Layout: ANSI-B1

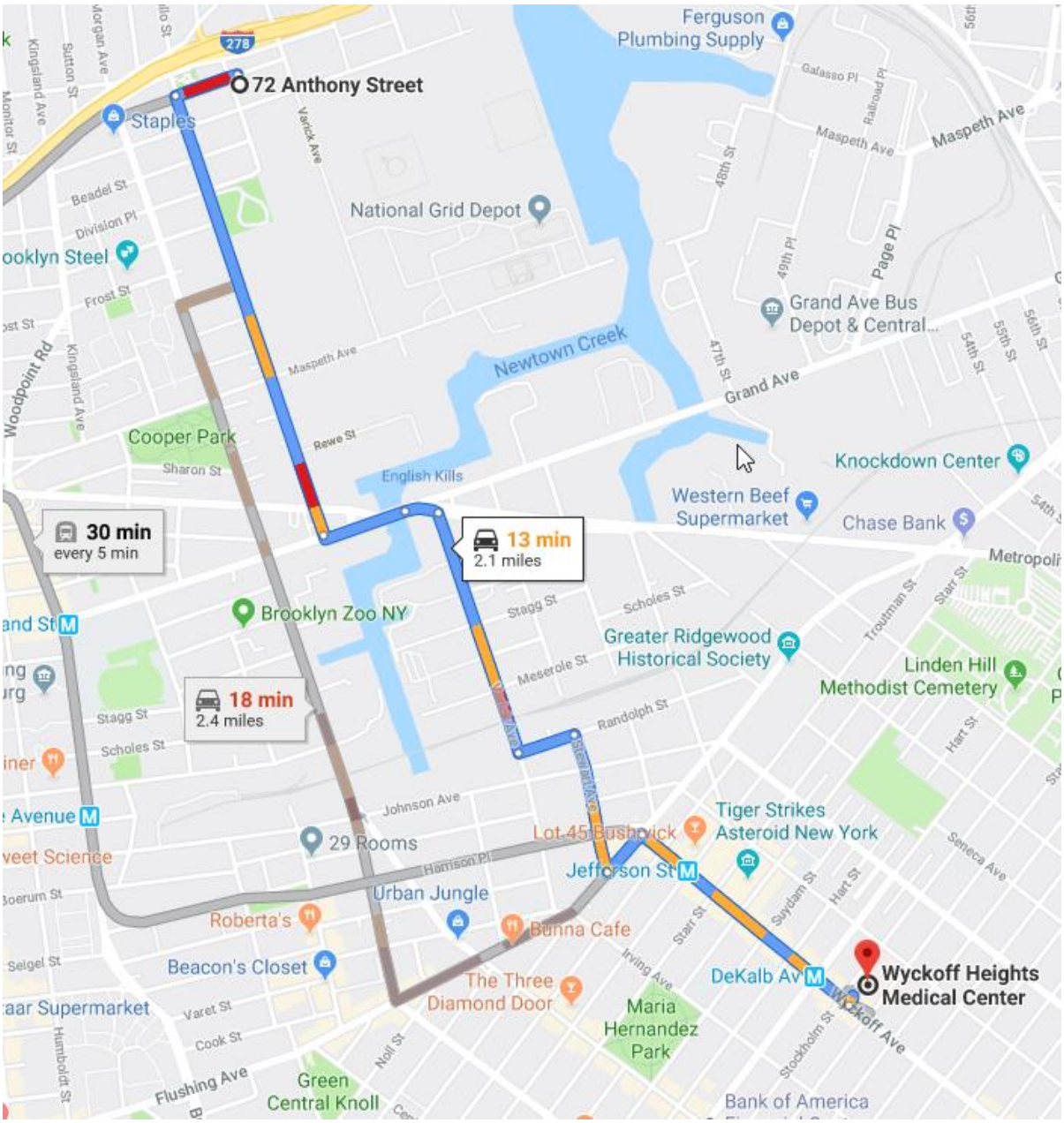
FIGURE 2
HOSPITAL ROUTE PLAN

Hospital Location: **Wyckoff Heights Medical Center**
374 Stockholm Street
Brooklyn, New York
718-963-7272

START: 72 Anthony Street, Brooklyn, New York

1. Head west on Anthony Street toward Porter Avenue
2. Turn left onto Vandervoort Avenue
3. Turn left onto Grand Street
4. Turn right onto Varick Avenue
5. Turn left onto Randolph Street
6. Turn right onto Stewart Avenue
7. Turn left onto Flushing Avenue
8. Turn right onto Wyckoff Avenue
9. Turn left, destination will be on the right.

END: Wyckoff Heights Medical Center, 374 Stockholm Street, Brooklyn, NY


72 Anthony Street
Staples
Ferguson Plumbing Supply
National Grid Depot
Maspeth Ave
Grand Ave Bus Depot & Central...
Newtown Creek
Grand Ave
Cooper Park
Sharon St
English Kills
Knockdown Center
Western Beef Supermarket
Chase Bank
30 min
every 5 min
13 min
2.1 miles
Brooklyn Zoo NY
Greater Ridgewood Historical Society
Linden Hill Methodist Cemetery
18 min
2.4 miles
Stagg St
Scholes St
Meserole St
Randolph St
Johnson Ave
29 Rooms
Tiger Strikes Asteroid New York
Lot 45 Bushwick
Jefferson St
Urban Jungle
Roberta's
Bunna Cafe
Beacon's Closet
The Three Diamond Door
DeKalb Av
Wyckoff Heights Medical Center
Maria Hernandez Park
Green Central Knoll
Flushing Ave
Bank of America

ATTACHMENT A

STANDING ORDERS

STANDING ORDERS

GENERAL

- No smoking, eating, or drinking in this work zone.
- Upon leaving the work zone, personnel will thoroughly wash their hands and face.
- Minimize contact with contaminated materials through proper planning of work areas and decontamination areas, and by following proper procedures. Do not place equipment on the ground. Do not sit on contaminated materials.
- No open flames in the work zone.
- Only properly trained and equipped personnel are permitted to work in potentially contaminated areas.
- Always use the appropriate level of personal protective equipment (PPE).
- Maintain close contact with your buddy in the work zone
- Contaminated material will be contained in the Exclusion Zone (EZ).
- Report any unusual conditions.
- Work areas will be kept clear and uncluttered. Debris and other slip, trip, and fall hazards will be removed as frequently as possible.
- The number of personnel and equipment in the work zone will be kept to an essential minimum.
- Be alert to the symptoms of fatigue and heat/cold stress, and their effects on the normal caution and judgment of personnel.
- Conflicting situations which may arise concerning safety requirements and working conditions must be addressed and resolved quickly by the site HSO.

TOOLS AND HEAVY EQUIPMENT

- Do not, under any circumstances, enter or ride in or on any backhoe bucket, materials hoist, or any other device not specifically designed to carrying passengers.
- Loose-fitting clothing or loose long hair is prohibited around moving machinery.
- Ensure that heavy equipment operators and all other personnel in the work zone are using the same hand signals to communicate.
- Drilling/excavating within 10 feet in any direction of overhead power lines is prohibited.
- The locations of all underground utilities must be identified and marked out prior to initiating any subsurface activities.
- Check to insure that the equipment operator has lowered all blades and buckets to the ground before shutting off the vehicle.
- If the equipment has an emergency stop device, have the operator show all personnel its location and how to activate it.
- Help the operator ensure adequate clearances when the equipment must negotiate in tight quarters; serve as a signalman to direct backing as necessary.
- Ensure that all heavy equipment that is used in the Exclusion Zone is kept in that zone until the job is done, and that such equipment is completely decontaminated before moving it into the clean area of the work zone.
- Samplers must not reach into or get near rotating equipment such as the drill rig. If personnel must work near any tools that could rotate, the equipment operator must completely shut down the rig prior to initiating such work. It may be necessary to use a remote sampling device.

ATTACHMENT B

DECONTAMINATION PROCEDURES

PERSONNEL DECONTAMINATION

LEVEL C DECONTAMINATION

Station 1:	Equipment Drop	1. Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, cool down stations may be set up within this area.
Station 2:	Outer Garment, Boots, and Gloves Wash and Rinse	2. Scrub outer boots, outer gloves and chemical-resistant splash suit with decon solution or detergent and water. Rinse off using copious amounts of water.
Station 3:	Outer Boot and Glove Removal	3. Remove outer boots and gloves. Deposit in container with plastic liner.
Station 4:	Canister or Mask Change	4. If worker leaves Exclusion Zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot covers donned, joints taped, and worker returns to duty.
Station 5:	Boot, Gloves and Outer Garment Removal	5. Boots, chemical-resistant splash suit, inner gloves removed and deposited in separate containers lined with plastic.
Station 6:	Face piece Removal	6. Face piece is removed (avoid touching face with fingers). Face piece deposited on plastic sheets.
Station 7:	Field Wash	7. Hands and face are thoroughly washed. Shower as soon as possible.

LEVEL D DECONTAMINATION

Station 1:	Equipment Drop	1. Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, cool down stations may be set up within this area.
Station 2:	Outer Garment, Boots, and Gloves Wash and Rinse	2. Scrub outer boots, outer gloves and chemical-resistant splash suit with decon solution or detergent and water. Rinse off using copious amounts of water.
Station 3:	Outer Boot and Glove Removal	3. Remove outer boots and gloves. Deposit in container with plastic liner.
Station 4:	Boot, Gloves and Outer Garment Removal	4. Boots, chemical-resistant splash suit, inner gloves removed and deposited in separate containers lined with plastic.
Station 5:	Field Wash	5. Hands and face are thoroughly washed. Shower as soon as possible.

EQUIPMENT DECONTAMINATION

GENERAL:

Equipment to be decontaminated during the project may include tools, monitoring equipment, respirators, sampling containers, laboratory equipment and drilling equipment.

All decontamination will be done by personnel in protective gear, appropriate for the level of decontamination, as determined by the site HSO. The decontamination work tasks will be split or rotated among support and work crews.

Depending on site conditions, backhoe and pumps may be decontaminated over a portable decontamination pad to contain wash water; or, wash water may be allowed to run off into a storm sewer system. Equipment needed may include a steam generator with high-pressure water, empty drums, screens, screen support structures, and shovels. Drums will be used to hold contaminated wash water pumped from the lined pit. These drums will be labeled as such.

Miscellaneous tools and equipment will be dropped into a plastic pail, tub, or other container. They will be brushed off and rinsed with a detergent solution, and finally rinsed with clean water.

MONITORING EQUIPMENT:

Monitoring equipment will be protected as much as possible from contamination by draping, masking, or otherwise covering as much of the instruments as possible with plastic without hindering the operation of the unit. The PID, HNu or OVA meter, for example, can be placed in a clear plastic bag, which allows reading of the scale and operation of knobs. The probes can be partially wrapped keeping the sensor tip and discharge port clear.

The contaminated equipment will be taken from the drop area and the protective coverings removed and disposed in the appropriate containers. Any dirt or obvious contamination will be brushed or wiped with a disposable paper wipe.

RESPIRATORS:

Respirators will be cleaned and disinfected after every use. Taken from the drop area, the masks (with the cartridges removed and disposed of with other used disposable gear) will be immersed in a cleaning solution and scrubbed gently with a soft brush, followed by a rinse in plain warm water, and then allowed to air dry. In the morning, new cartridges will be installed. Personnel will inspect their own masks for serviceability prior to donning them. And, once the mask is on, the wearer will check the respirator for leakage using the negative and positive pressure fit check techniques.

ATTACHMENT C

EMPLOYEE EXPOSURE/ INJURY INCIDENT REPORT

EMPLOYEE INCIDENT/INJURY REPORT
LANGAN ENGINEERING & ENVIRONMENTAL SERVICES

(Complete and return to Tony Moffa in the Doylestown Office)

Affected Employee Name: _____ Date: _____

Incident type: ☐ Injury ☐ Report Only/No Injury
☐ Near Miss ☐ Other: _____

EMPLOYEE INFORMATION (Person completing Form)

Employee Name: _____ Employee No: _____

Title: _____ Office Location: _____

Length of time employed or date of hire: _____

Mailing address: _____

_____

Sex: M ☐ F ☐ Birth date: _____

Business phone & extension: _____ Residence/cell phone: _____

ACCIDENT INFORMATION

Project: _____ Project #: _____

Date & time of incident: _____ Time work started & ended: _____

Site location: _____

Incident Type: Possible Exposure ☐ Exposure ☐ Physical Injury ☐

Names of person(s) who witnessed the incident:_____

Exact location incident occurred:

Describe work being done:_____

Describe what affected employee was doing prior to the incident occurring:

Describe in detail how the incident occurred:

Nature of the incident (List the parts of the body affected):

Person(s) to whom incident was reported (Time and Date):

List the names of other persons affected during this incident:

Possible causes of the incident (equipment, unsafe work practices, lack of PPE, etc.):

Weather conditions during incident:

MEDICAL CARE INFORMATION

Did affected employee receive medical care? Yes ☐ No ☐

If Yes, when and where was medical care received:

Provide name of facility (hospital, clinic, etc.):

Length of stay at the facility?

Did the employee miss any work time? Yes ☐ No ☐ Undetermined ☐

Date employee last worked: Date employee returned to work:

Has the employee returned to work? Yes ☐ No ☐

Does the employee have any work limitations or restrictions from the injury? : Yes ☐ No ☐

If Yes, please describe:

Did the exposure/injury result in permanent disability? Yes ☐ No ☐ Unknown ☐

If Yes, please describe:

HEALTH & SAFETY INFORMATION

Was the operation being conducted under an established site specific CONSTRUCTION HEALTH AND SAFETY PLAN?
Yes ☐ No ☐ Not Applicable: ☐

Describe protective equipment and clothing used by the employee:

_____

_____

_____

Did any limitations in safety equipment or protective clothing contribute to or affect exposure / injury? If so, explain:

_____

_____

_____

_____

Employee Signature Date

_____

Langan Representative Date

ATTACHMENT D

CALIBRATION LOG

DATE:________________　　　　**PROJECT:____________________**

CALIBRATION LOG

Date & Time	Inst Type	Inst #	Media	Initial Reading	Span #	Calibrat. Reading	Performed By:

ATTACHMENT E

MATERIAL SAFETY DATA SHEETS

SAFETY DATA SHEETS

All Langan Field Personnel Completing This Work Plan Are To Have Real Time Accessibility To Material Safety Data Sheet (MSDs) or Safety Data Sheet (SDSs) Through Their Smart Phone.

The link is http://www.msds.com/
The login name is "drapehead"
The password is "2angan987"

If You Are Unable To Use the Smart Phone App, You Are To Bring Printed Copies of the MSDs/SDSs to the Site

ATTACHMENT F

JOBSITE SAFETY INSPECTION CHECKLIST

Jobsite Safety Inspection Checklist

Date: _____ **Inspected By:** _____

Location: _____ **Project #:** _____

Check one of the following: **A:** Acceptable **NA**: Not Applicable **D**: Deficiency

	A	NA	D	Remark
1. HASP available onsite for inspection?				
2. Health & Safety Compliance agreement (in HASP) appropriately signed by Langan employees and contractors?				
3. Hospital route map with directions posted on site?				
4. Emergency Notification List posted on site?				
5. First Aid kit available and properly stocked?				
6. Personnel trained in CPR/First Aid on site?				
7. MSDSs readily available, and all workers knowledgeable about the specific chemicals and compounds to which they may be exposed?				
8 Appropriate PPE being worn by Langan employees and contractors?				
9. Project site safe practices ("Standing Orders") posted?				
10. Project staff have 40-hr./8-hr./Supervisor HAZWOPER training?				
11. Project staff medically cleared to work in hazardous waste sites and fit-tested to wear respirators, if needed?				
12. Respiratory protection readily available?				
13. Health & Safety Incident Report forms available?				
14. Air monitoring instruments calibrated daily and results recorded on the Daily Instrument Calibration check sheet?				
15. Air monitoring readings recorded on the air monitoring data sheet/field log book?				
16. Subcontract workers have received 40-hr./8-hr./Spvsr. HAZWOPER training, as appropriate?				
17. Subcontract workers medically cleared to work on site, and fit-tested for respirator wear?				
18. Subcontract workers have respirators readily available?				
19. Mark outs of underground utilities done prior to initiating any subsurface activities?				
20. Decontamination procedures being followed as outlined in HASP?				
21. Are tools in good condition and properly used?				
22. Drilling performed in areas free from underground objects including utilities?				

23. Adequate size/type fire extinguisher supplied?				
24. Equipment at least 20 feet from overhead powerlines?				
25. Evidence that drilling operator is responsible for the safety of his rig.				
26. Trench sides shored, layer back, or boxed?				
27. Underground utilities located and authorities contacted before digging?				
28. Ladders in trench (25-foot spacing)?				
29. Excavated material placed more than 2 feet away from excavation edge?				
30. Public protected from exposure to open excavation?				
31. People entering the excavation regarding it as a permit-required confined space and following appropriate procedures?				
32. Confined space entry permit is completed and posted?				
33. All persons knowledgeable about the conditions and characteristics of the confined space?				
34. All persons engaged in confined space operations have been trained in safe entry and rescue (non-entry)?				
35. Full body harnesses, lifelines, and hoisting apparatus available for rescue needs?				
36. Attendant and/or supervisor certified in basic first aid and CPR?				
37. Confined space atmosphere checked before entry and continuously while the work is going on?				
38. Results of confined space atmosphere testing recorded?				
39. Evidence of coordination with off-site rescue services to perform entry rescue, if needed?				
40. Are extension cords rated for this work being used and are they properly maintained?				
41. Are GFCIs provided and being used?				

Unsafe Acts: _____

_____

_____

_____

Notes: _____

_____

_____

_____

ATTACHMENT G

JOB SAFETY ANALYSIS FORM

LANGAN	Job Safety Analysis (JSA) Health and Safety
JSA TITLE: **JSA NUMBER:**	**DATE CREATED:** **CREATED BY**: **REVISION DATE:** **REVISED BY:**

Langan employees must review and revise the Job Safety Analysis (JSA) as needed to address the any site specific hazards not identified. Employees must provide their signatures on the last page of the JSA indicating they have review the JSA and are aware the potential hazards associated with this work and will follow the provided preventive or corrective measures.

PERSONAL PROTECTIVE EQUIPMENT REQUIRED: (PPE): ■ Required ☒ As Needed		
☐ Steel-toed boots	☐ Nitrile gloves	☐ Dermal Protection (Specify)
☐ Long-sleeved shirt	☐ Leather/ Cut-resistant gloves	☐ High visibility vest/clothing
☐ Safety glasses	☐Face Shield	☐ Hard hat
ADDITIONAL PERSONAL PROTECTIVE EQUIPMENT NEEDED (Provide specific type(s) or descriptions)		
☐ Air Monitoring:	☐ Respirators:	☐ Other:

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE OR CORRECTIVE ACTION
1.	1. 2.	1a. 1b. 2a. 2b.
2.	1.	1
Additional items identified in the field.		
Additional Items.		

If additional items are identified during daily work activities, please notify all relevant personnel about the change and document on this JSA.

LANGAN	**Job Safety Analysis (JSA)** **Health and Safety**
JSA Title: COVID-19 Awareness – Site Work **JSA Number: JSA046-00**	
A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.	

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Boots	☐ Long Sleeves	☐ Safety Vest (Class 2)	☐ Hard Hat	☐ Hearing Protection
☐ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☐ Nitrile Gloves	☐ PVC Gloves
☐ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: Alcohol-based hand sanitizer, disinfectant wipes/spray				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
1. All Activities	1. Transmittal/exposure of COVID-19	1. Ask yourself and your managers – is this work essential? Can this be done remotely? 2. Stay home if sick or showing symptoms of COVID-19 (e.g. fever, cough, etc.). 3. Carry nitrile gloves, alcohol-based hand sanitizer, face coverings and disinfectant wipes/spray during field work. 4. Check federal, state, and/or local travel restrictions **prior** to travel. Many states, counties, and cities are passing strict "shelter-in-place" or business restrictions in response to COVID-19. 5. Immediately notify Beverly Williams or Rory Johnston (Supervisor if employee chooses) if you display symptoms of COVID-19. Symptoms include fever (over 100.4 F), cough, and shortness of breath. 6. Notify Beverly Williams or Rory Johnston, Supervisor and Coronavirus Task Force if you had close contact with an individual who tested positive or displayed symptoms of COVID-19. 7. Do not touch your face, to the extent possible. 8. Wear face coverings when around other worker to minimize spread of COVID-19. (may be required in certain states or locations.)

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
		9. Practice social distancing, maintaining at least 6 feet of distance between yourself and others. Avoid gatherings of more than 10 people. Limit, to the extent possible, contact with public items/objects. 10. Clean your hands frequently with soap and water for at least 20 seconds especially after you have been in a public place, or after blowing your nose, coughing, sneezing, or using the rest room. 11. If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol. Cover all surfaces of your hands and rub them together until they feel dry. 12. Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow. 13. Clean and disinfect frequently touched surfaces daily, for example, cell phones, computer equipment, headsets, tables, doorknobs, light switches, countertops, handles, desks, toilets, faucets, and sinks.
2. Travel to Jobsite	1. Transmittal/exposure of COVID-19 between passengers 2. Transmittal/exposure of COVID-19 from previous occupants (rental and fleet vehicles) 3. Transmittal/exposure of COVID-19 while refueling	1. Limit the number of occupants to each vehicle to 2 people. Employees should sit as far away from each other as possible. 2. Disinfect high “hand-traffic” areas of the vehicle: Door handles, steering wheel, turn signal and control rods, dashboard controls, seatbelts, armrests, etc. To the extent possible, do not use recycled air for heat/AC and travel with the windows open. 3. Use hand sanitizer before and after pumping gas and only return to the inside of the vehicle after refueling is complete. 4. Wear nitrile gloves if available or disinfect the key pad, pump handle, and fuel grade button prior to use. 5. Recommend face coverings are worn to minimize spread of COVID-19.
3. Conduct Tailgate Safety Meeting & Complete H&S Paperwork	1. Transmittal/exposure of COVID-19 between meeting participants	1. Practice social distancing, maintaining at least 6 feet of distance between yourself and others. 2. Recommend face coverings are worn when around other workers to minimize spread of COVID-19, 3. Hold meetings outside and keep in mind wind direction. To the extent possible, remain cross-wind from other people. 4. Designate a single person to maintain sign-in sheets/permits throughout the day to limit the passing of pens/clipboards between people. 5. Each person should complete their own JSA, even if they are completing similar tasks as others in order to limit the passing of paper/pens/clipboards between people. 6. Include COVID-19 topics and prevention measures in safety meetings.
4. Conduct Site Work	1. Transmittal/exposure of COVID-19 between site workers and public.	1. Practice social distancing maintaining 6 feet of distance between yourself and others. 2. Recommend face coverings are worn when around other workers to minimize spread of COVID-19, 3. To the extent possible, do not interact with the public. If it is necessary, politely explain you are practicing social distance and request they stay at least 6 feet away and they do not attempt to pass objects to you. 4. Wear nitrile gloves during site work underneath the appropriate gloves for your task. Utilize appropriate decontamination procedures, securely bag all waste (including nitrile gloves) generated during site work and dispose of.

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
		5. Do not share tools. Each person should be equipped with the tools to complete their task or tasks should be divided to remove the need to share tools. If tools must be shared, surfaces should be disinfected. 6. Clean and disinfect surfaces of rental tools and equipment upon receipt. To the extent possible rent equipment from Langan's internal equipment reservation center, where cleaning/disinfecting procedures can be verified.
5. Use of Construction Trailers	1. Transmittal/exposure of COVID-19 between site workers and others.	1. Avoid use of shared trailers, if possible. Minimize trailer use to essential personnel. 2. Practice social distancing; maintaining 6 feet of distance between yourself and others in trailer. 3. Clean and disinfect areas including desks, phones, chairs and other common areas, before and after use.
6. Purchasing Food from a Restaurant	1. Transmittal/exposure of COVID-19 from other customers, staff, surfaces.	1. To the extent possible, bring your own food. 2. If you must visit a restaurant, call ahead for take-out or "contactless delivery". Do not dine in. When picking up food, follow guidelines for Job Step #8: Purchasing Supplies at Retail/Shipping Centers. 3. Wash hands before and after eating.
7. Smoking Cigarettes	1. Transmittal/exposure of COVID-19 by touching mouth with hands	1. Cigarette smokers maybe at greater risk of complications arising from COVID-19. Nicotine patches/lozenges/gum, smoking cessation programs, and prescription medications may aid in "kicking the habit" if you decide to quit. 2. Wash hands thoroughly before and after smoking. 3. Discard cigarette butts properly. Do not light cigarettes from others and do not give cigarettes to others.
8. Hotel Stay	1. Transmittal/exposure of COVID-19 from previous occupants, hotel staff, common areas.	1. Verify the hotel chain/brand has modified cleaning procedures to reflect risk of COVID-19. Most hotel companies have issued statements on their websites and in email blasts reflecting these new procedures. 2. Use the front door, and not peripheral entrances. Front doors of hotels are generally automatic. 3. Request ground floor room to avoid elevator use and a room that has not be utilized in 48-72 hours. 4. If elevator use is required, do not directly touch elevator buttons with your hands. Do not ride elevators with other people, to the extent possible. 5. Bring disinfecting wipes or sanitizing spray. Upon arrival, disinfect high "hand-traffic" areas of the hotel room: Door handles, light switches, shower/sink faucet handles, TV remote, curtain/blind handles. Clean these surfaces daily. 6. Place the "Do Not Disturb" Sign on your door to prevent people (housekeeping) from entering your room. 7. Avoid common spaces and hotel sponsored events where crowds will be present. 8. Confirm hotel cleaning procedures have been modified to address COVID-19. Confirm no COVID-19 cases have occurred in hotel
9. Purchasing Supplies at Retail/Shipping Centers	1. Transmittal/exposure of COVID-19 from other customers, staff, surfaces.	1. Plan your travel to limit the need to visit retail/shipping centers. 2. Practice social distancing, maintaining at least 6 feet of distance between yourself and others. If the store is too crowded/small, consider visiting another store or returning at a different time. 3. Avoid high "hand-traffic" items/areas like door handles (i.e. use your shoulder, hip/butt, or open with a disposable napkin/paper towel), credit cards terminals (i.e. use Apple/Android pay if available), shopping carts/baskets (i.e. bring your own shopping

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
		bags), counter tops (i.e. ask clerk if you can hold the items while they are scanned) and bulk/buffet items (i.e. just avoid them). 4. Disinfect your hands before and after visiting a retail/shipping center.

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **Subsurface Investigation**

JSA Number: **JSA030-01**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions.

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):

☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☒ Safety Goggles	☐ Face Shield	☐ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☒ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: Dielectric Overshoes, Sun Block				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
1. Transport equipment to work area	1. Back/strain 2. Slip/Trip/Falls 3. Traffic 4. Cuts/abrasions/contusions from equipment 5. Accidents due to vehicle operations	1. Use proper lifting techniques/Use wheeled transport 2. Minimize distance to work area/unobstructed path to work area/follow good housekeeping procedures 3. Wear proper PPE (high visibility vest or clothing) 4. Wear proper PPE (leather gloves, long sleeves, Langan approved safety shoes) 5. Observe posted speed limits/ Wear seat belts at all times
2. Traffic	1. Hit by moving vehicle	1. Use traffic cones and signage/ Use High visibility traffic vests and clothing/ Caution tape when working near active roadways.
3. Field Work (drilling, resistivity testing, and inspection)	1. Biological Hazards: insects, rats, snakes, poisonous plants, and other animals 2. Heat stress/injuries 3. Cold Stress/injuries 4. High Energy Transmission Lines 5. Underground Utilities 6. Electrical (soil resistivity testing)	1. Inspect work area to identify biological hazards. Wear light colored long sleeve shirt and long pants/ Use insect repellant as necessary/ Beware of tall grass, bushes, woods and other areas where ticks may live/ Avoid leaving garbage on site to prevent attracting animals/ Identify and avoid contact with poisonous plants/Beware of rats, snakes, or stray animals. 2. Wear proper clothing (light colored)/ drink plenty of water/ take regular breaks/use sun block 3. Wear proper clothing/ dress in layers/ take regular breaks. 4. Avoid direct contact with high energy transmission lines/ position equipment at least 15 feet or as required by PSE&G from the transmission lines/ wear proper PPE (dielectric overshoes 15 kV minimum rating). 5. Call one-call service before performing intrusive field work/ Review utility mark-outs and available utility drawings (with respect to proposed work locations)/ Follow Underground Utility Guidelines

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
		6. See AGI Sting R1 operating manual for specific concerns during operating instrument
4. All activities	1. Slips/ Trips/ Falls 2. Hand injuries, cuts or lacerations during manual handling of materials 3. Foot injuries 4. Back injuries 5. Traffic 6. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 7. High Noise levels 8. Overhead hazards 9. Heat Stress/ Cold Stress 10. Eye Injuries	7. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 8. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 9. Wear Langan approved safety shoes 10. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 11. Wear high visibility clothing & vest / Use cones or signs to designate work area 12. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 13. Wear proper hearing protection 14. Wear hard hat / Avoid areas were overhead hazards exist. 15. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 16. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: Field Sampling

JSA Number: JSA022-01

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions.

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):

☒ Safety Shoes	☒ Long Sleeves	☐ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☒ Traffic Cones/Signs	☐ Life Vest/Jacket	
☐ Other:				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
5. Unpack/Transport equipment to work area.	6. Back Strains 7. Slip/Trips/Falls 8. Cuts/Abrasions from equipment 9. Contusions from dropped equipment	6. Use proper lifting techniques/Use wheeled transport 7. Minimize distance to work area/Unobstructed path to work area/follow good housekeeping procedures. Mark slip/trip/fall hazards with orange safety cones. 8. Wear proper PPE (leather gloves, long sleeves). 9. Wear proper PPE (Langan approved safety shoes).
6. Initial Site Arrival-Site Assessment	1. Traffic	1. Situational awareness (be alert of your surroundings). Secure area from through traffic.
7. Surface Water Sampling	1. Contaminated media. Skin/eye contact with biological agents and/or chemicals.	1. Wear appropriate PPE (Safety glasses, appropriate gloves). Review (M)SDS for all chemicals being.
8. Sampling from bridges	1. Struck by vehicles	1. Wear appropriate PPE (Safety Vest). Use buddy system and orange safety cones.
9. Icing of Samples/ Transporting coolers/equipment from work area.	11. Back Strains 12. Slips/Trips/Falls 13. Cuts/Abrasions from equipment 14. Pinch/Crushing Hazards.	17. Drain coolers of water. Use proper lifting techniques. Use wheeled transport. 18. Have unobstructed path from work area. Aware of surroundings. 19. Wear proper PPE (Leather gloves, long sleeves) 20. Wear proper PPE (Leather gloves, long sleeves)
10. Site Departure	1. Contaminated PPE/Vehicle	1. Contaminated PPE should be disposed of on-site. Remove boots and soiled clothing for secure storage in trunk. Wash hands promptly.
11. All activities	1. Slips/ Trips/ Falls 2. Hand injuries, cuts or lacerations during manual handling of materials	1. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
	3. Foot injuries 4. Back injuries 15. Traffic 16. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 17. High Noise levels 18. Overhead hazards 19. Heat Stress/ Cold Stress 20. Eye Injuries	2. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 3. Wear Langan approved safety shoes 4. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 21. Wear high visibility clothing & vest / Use cones or signs to designate work area 22. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 23. Wear hearing protection 24. Wear hard hat / Avoid areas were overhead hazards exist. 25. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 26. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	**Sign Name**	**Date**
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **Equipment Transportation and Set-Up**

JSA Number: **JSA012-01**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions.

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):

☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☐ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☐ Other:				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
12. Transport equipment to work area	10. Back Strain 11. Slips/ Trips/ Falls 12. Traffic 13. Cuts/abrasions from equipment 14. Contusions from dropped equipment	1. Use proper lifting techniques / Use wheeled transport 2. Minimize distance to work area / Have unobstructed path to work area / Follow good housekeeping procedures 3. Wear proper PPE (high visibility vest or clothing) 4. Wear proper PPE (leather gloves, long sleeves) 5. Wear proper PPE (safety shoes)
13. Moving equipment to its planned location	2. Pinch Hazard 3. Slips/ Trips/ Falls	1. Wear proper PPE (leather gloves) 2. Be aware of potential trip hazards / Practice good housekeeping procedures / Mark significant below-grade hazards (i.e. holes, trenches) with safety cones or spray paint
14. Equipment Set-up	2. Pinch Hazard 3. Cuts/abrasions to knuckles/hands 4. Back Strain	1. Wear proper PPE (leather gloves) 2. Wear proper PPE (leather gloves) 3. Use proper lifting techniques / Use wheeled transport
15. All activities	21. Slips/ Trips/ Falls 22. Hand injuries, cuts or lacerations during manual handling of materials 23. Foot injuries 24. Back injuries 25. Traffic 26. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 27. High Noise levels 28. Overhead hazards 29. Heat Stress/ Cold Stress 30. Eye Injuries	27. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 28. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 29. Wear Langan approved safety shoes 30. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 31. Wear high visibility clothing & vest / Use cones or signs to designate work area

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
4. All activities (cont'd)		32. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 33. Wear hearing protection 34. Wear hard hat / Avoid areas were overhead hazards exist. 35. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 36. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **55-gallon Drum Sampling**

JSA Number: **JSA043-01**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions.

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):

☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☐ Hearing Protection
☒ Safety Glasses	☒ Safety Goggles	☒ Face Shield	☒ Nitrile Gloves	☒ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	

☒ Other: All Drums are required to be labeled. Langan employees do not open or move undocumented drums or unlabeled drums without proper project manager authorization.

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
16. Unpack/Transport equipment to work area.	15. Back Strains 16. Slip/Trips/Falls 17. Cuts/Abrasions from equipment 4. Contusions from dropped equipment	10. Use proper lifting techniques/Use wheeled transport 11. Minimize distance to work area/Unobstructed path to work area/follow good housekeeping procedures. Mark slip/trip/fall hazards with orange safety cones. 12. Wear proper PPE (leather gloves, long sleeves). 4. Wear proper PPE (Langan approved safety shoes).
17. Open Drums	1. Hand Injuries, cuts or lacerations when untightening drum locking bolt, removing drum lid strap, or removing lid. 2. Pressure from drums.	1. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves. Use non-metallic mallet and non-sparking tools/wrenches. 2. Open drum slowly to relieve pressure. Wear proper PPE: face shield and goggles; correct gloves; and over garments.
18. Collecting Soil/Fluid Sample	4. Irritation to eye from vapor, soil dust, or splashing 5. Irritation to exposed skin	2. Wear proper eye protection including safety glasses/ face shield/googles and when necessary, splash guard. If dust or vapor phase is present, wear appropriate safety breathing gear (1/2 mask or full face mask with correct filter) 3. Wear proper skin protection including nitrile gloves.
19. Closing Drums	1. Hand Injuries, cuts or lacerations when untightening drum locking bolt, removing drum lid strap, or removing lid.	2. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves. Use non-metallic mallet and non-sparking tools/wrenches.
20. Moving Drums	2. Hand Injuries, cuts or lacerations when untightening drum locking bolt, removing drum lid strap, or removing lid. 3. Back Strains	2. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves. Use non-metallic mallet and non-sparking tools/wrenches. 3. Use proper lifting techniques/Use wheeled transport

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
21. All activities	31. Slips/ Trips/ Falls 32. Hand injuries, cuts or lacerations during manual handling of materials 33. Foot injuries 34. Back injuries 35. Traffic 36. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 37. High Noise levels 38. Overhead hazards 39. Heat Stress/ Cold Stress 40. Eye Injuries	37. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 38. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 39. Wear Langan approved safety shoes 40. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 41. Wear high visibility clothing & vest / Use cones or signs to designate work area 42. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 43. Wear hearing protection 44. Wear hard hat / Avoid areas were overhead hazards exist. 45. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 46. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: Air Sparge/Soil Vapor Extraction (SVE)Test
JSA Number: JSA040-01

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

S – ***Stop,*** *what has changed?*
T – ***Think*** *about the task*
E – ***Evaluate*** *potential hazards*
P – ***Plan*** *safe approach*
S - ***Start*** *task /* ***Stop*** *& regroup*

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☒ Safety Goggles	☐ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☒ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☒ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: Tyvek sleeves, PID				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
22. Equipment delivery to work area	18. Back Strain 19. Slips/ Trips/ Falls 20. Traffic 21. Cuts/abrasions from equipment 22. Contusions from dropped equipment	6. Use proper lifting techniques / Use wheeled transport 7. Minimize distance to work area / Have unobstructed path to work area / Follow good housekeeping procedures 8. Wear proper PPE (high visibility vest or clothing) 9. Wear proper PPE (leather gloves, long sleeves) 10. Wear proper PPE (safety shoes)
23. Electrical Connection – Connection of the process equipment (air sparge trailer and a soil vapor extraction trailer) to generators.	6. Electrical shock from improper work practices 7. Electrical shock from improper use of equipment	3. Do not use metal ladder during work / Do not work in an area of water leaks or stagnant water / Use appropriate lockout/tagout procedures 4. Properly plug in each trailer to the generators / Do not allow the wiring to contact water / Check for breaks in the cord / Ground trailer via main electrical ground to ensure there is no static electric shock concern.
24. Diesel delivery	1. Slips/trips/falls 2. Fire/explosion 3. Spill 4. Exposure to hazardous substances	1. Wear proper PPE(hard hat, safety goggles, latex gloves, long sleeves, safety shoes) 2. Have fire extinguishers (Class B) on-site 3. Have a spill containment and oil pads/socks on-site
25. Piping and manifold	1. Scrape hands/knuckles 2. Strain wrist/bruise palm 3. Pinch fingers	5. Wear proper PPE (leather gloves) / Keep fingers away from pinch points 6. Place the locks on the camlocks fittings when connecting piping/hoses from the process equipment to the testing wells
4. Remove well head/cap and lock	1. Well cap pops off from pressure 2. Exposure to hazardous substances 3. Scrape fingers/hand 4. Strain wrist/bruise palm	1. Remove cap slowly to relieve pressure / Do not place face over well when opening / Wear proper PPE (safety glasses) 2. Use direct air monitoring/reading instrument (i.e. PID) / Be familiar with and follow actions prescribed in the HASP / Wear proper PPE (nitrile gloves)

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
3. Measure soil vapor levels	1. Exposure to hazardous substances	1. Do not place face over well or at the discharge of vapor granular activated carbon (VGAC) units when collecting measurement / Be familiar with and follow action levels defined in HASP / Wear appropriate PPE (safety glasses, nitrile gloves)
4. Measure depth to water	1. Exposure to hazardous substance	1. Wear proper PPE (nitrile gloves, safety glasses)
5. Install well head connection, mechanical connections and operation of the well head manifold	1. Hand injuries/lacerations 2. Pinch fingers	1. Wear proper PPE (leather gloves) 2. Wear proper PPE (leather gloves) / Keep fingers away from pinch points
6. Pressure, vacuum or flow measurement at the well head manifold	1. Pinch fingers	1. Wear proper PPE (leather gloves) / Keep fingers away from pinch points
7. Operate air sparge equipment	1. Electrical shock 2. Exposure to high noise levels 3. Pinch fingers	1. Use caution while operating the equipment in the trailer / Be familiar with the detailed operating instructions / Use insulated gloves and appropriate safety shoes and equipment during work / Do not work in an area of water leaks or stagnant water/ Ground trailer via main electrical ground to ensure there is no static electric shock concerns. 2. Wear appropriate PPE (hearing protection) as noise level is expected to be above 85dB in the trailer. 3. Wear proper PPE (leather gloves, safety goggles)
8. Conducting air sparge/SVE testing	1. Exposure to hazardous substances 2. Slips, trips and falls	1. Use caution while conducting the test 2. Keep good housekeeping at site, constant awareness and focus on the testing 3. Wear proper PPEs (hearing protection, safety goggles) 4. Use traffic cones to designate test area 5. Follow safe work practices
9. Vapor sample collection	1. Exposure to hazardous substances 2. Pinch skin/fingers	1. Follow good housekeeping procedures / Do not carry too many items at one time / Carry items in several trips, if necessary 2. Wear proper PPE (leather gloves, safety goggles) / Keep fingers away from pinch points
10. Groundwater water sample collection	1. Exposure to hazardous substances 2. Burn from acid used for samples preservation 3. Lacerations	1. Do not place face over the well / Wear proper PPE (safety glasses, nitrile gloves) when collecting groundwater samples / Use direct-reading instruments (i.e. PID) / Be familiar with and follow action levels defined in the HASP 2. Wear proper PPE (safety glasses, nitrile gloves) when collecting samples to minimize contact with preservation / Ensure sample bottle lids are secure before use and after sample collection 3. Wear proper PPE (leather gloves) / Do not over-tighten bottle caps / Handle bottles safely to prevent breakage / Wrap glass bottles in bubble wrap, if possible 4. Use proper lifting techniques / Seek assistance for coolers heavier than 50lbs. / Use hand cart to transport cooler / Minimize distance to vehicle 5. Practice good housekeeping procedures / Have unobstructed path to vehicle or collection point / Do not lift or walk with coolers that are heavy or difficult to lift

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
11. Surface water sample collection	1. Exposure to hazardous substances 2. Trips and falls 3. Bites and stings	1. Wear proper PPE (nitrile gloves, safety glasses) / Be familiar with and follow actions prescribed in the HASP 2. Be cautious while sampling at the Brook 3. For surface water sampling, start from down gradient making your way up gradient 4. Wear proper PPE (leather gloves, safety glasses) / Keep fingers away from pinch points 5. Wear proper PPE (leather gloves) / Do not over-tighten bottle caps / Handle bottles safely to prevent breakage / Wrap glass bottles in bubble wrap, if possible
12. Place used PPE in 55-gallon open-head drum	1. Pinch fingers	1. Wear proper PPE (leather gloves) / Keep fingers away from pinch points
13. Decontaminate equipment	1. Splashing water/soap from decontamination 2. Contact with potentially contaminated groundwater through dermal exposure 3. Electric shock from broken electric cords	1. Wear proper PPE (safety glasses) 2. Wear proper PPE (safety glasses, dermal protection) 3. Properly plug in pump to generator / Do not allow pump or generator to contact water / Check for breaks in the cord
14. All activities	41. Slips/ Trips/ Falls 42. Hand injuries, cuts or lacerations during manual handling of materials 43. Foot injuries 44. Back injuries 45. Traffic 46. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 47. High Noise levels 48. Overhead hazards 49. Heat Stress/ Cold Stress 50. Eye Injuries	47. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 48. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 49. Wear Langan approved safety shoes 50. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 51. Wear high visibility clothing & vest / Use cones or signs to designate work area 52. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 53. Wear hearing protection 54. Wear hard hat / Avoid areas were overhead hazards exist. 55. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 56. Wear safety glasses

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **Direct-Push Soil Borings**
JSA Number: **JSA004-01**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

PERSONAL PROTECTIVE EQUIPMENT REQUIRED:				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☒ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: Half-face respirator, dust cartridges, PID (if applicable)				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
26. Move equipment to work site	23. Back strain when lifting equipment 24. Slips/ Trips/ Falls while moving equipment 25. Traffic (if applicable) 26. Pinched fingers or running over toes during geoprobe set-up 27. Overturn drilling rig while transporting to loading dock on flat-bed tow truck	13. Use proper lifting technique (use legs for bending and lifting and not the back)/ Use wheeled transport for heavy equipment / Get assistance when handling loads greater than 50 lbs. / Minimize distance to vehicle 14. Use proper lifting technique (use legs for bending and lifting and not the back) / Use wheeled transport for heavy equipment / Get assistance when handling loads greater than 50 lbs. / Minimize distance to vehicle / Have unobstructed path to vehicle or collection point / Do not lift/walk with boxes that are heavy/difficult to lift 15. Wear high visibility safety vests or clothing / Exercise caution 16. Wear proper PPE (cut-resistant gloves) / Stay alert, be aware of geoprobe rig at all times 17. Drill rig should be parked in center of flat-bed tow truck / Emergency brake shall be used at all times during transport on the flat-bed truck/ All unnecessary personnel should stay away from the flat-bed truck during moving activities
27. Calibration of monitoring equipment	8. Skin or eye contact with calibration chemicals 9. Pinch fingers in monitoring equipment	4. Wear proper PPE (safety glasses/ goggles) 5. Wear proper PPE (leather gloves)
28. Set-up geoprobe rig	5. Geoprobe rig movement	3. All field personnel should stay clear of the geoprobe rig while moving / Use a spotter when backing up the geoprobe
29. Advance geoprobe rods below ground surface to desired depth	4. Underground utilities 5. High noise levels	4. Clean all subsurface soil borings to a minimum of 5 feet below grade 5. Wear proper PPE (hearing protection)
30. Remove and open acetate liner	51. Pinched fingers while removing macrocore	1. Wear proper PPE (nitrile gloves, cut-resistant or leather gloves 2. Wear proper PPE (cut-resistant or leather gloves)

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
5. Remove and open acetate liner (cont'd)	52. Cuts/lacerations when cutting acetate liner open 53. Exposure to hazardous vapors 54. Skin contact with contaminated soil	3. Do not place face over acetate liner when opening / Monitor hazardous vapors in air with PID / Upgrade PPE as necessary based on levels contained in the Health and Safety Plan 4. Wear proper PPE (nitrile gloves)
31. Sample Collections a) Monitor parameters b) Prepare sample containers and labels	1. Contact with potentially contaminated soil 2. Lacerations from broken sample bottles 3. Back strain while transporting full coolers 4. Internal exposure to contaminants and metals through inhalation of dust 5. Slips/ Trips/ Falls	1. Use monitoring devices / Wear proper PPE (safety glasses, nitrile gloves) 2. Do not over-tighten bottle caps / Handle bottles safely to prevent breakage 6. Use proper lifting techniques / Do not lift heavy loads without assistance 7. Avoid creating dust / If necessary, wear a half mask respirator with applicable dust cartridge / Inspect respirator for damage and cleanliness prior to use / Clean respirator after each use and store in a clean, secure location 8. Be alert / Follow good housekeeping procedures
32. Remove excess soil from acetate liner and place in 55-gallon drum (IF NOT PERFORMED BY LANGAN, REMOVE!)	1. Cuts/lacerations from acetate liner 2. Pinched fingers/hand while opening/closing drum 3. Skin contact with contaminated soil 4. Soil debris in eyes	1. Wear proper PPE (cut-resistant or leather gloves) 2. Wear proper PPE (cut-resistant or leather gloves) 3. Wear proper PPE (nitrile gloves) 4. Wear proper PPE (safety glasses)

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
8. Transport drums to central staging location (IF NOT PERFORMED BY LANGAN, REMOVE!)	1. Back, arm or shoulder strain from moving drums 2. Pinch fingers/hand in drum cart when moving drums 3. Pinch fingers/hand when operating lift-gate on vehicle 4. Contact with potentially contaminated groundwater when moving improperly sealed drums 5. Slips when moving drums 6. Drop drum on feet/toes	57. Use drum cart for moving drums / Use proper lifting techniques / Do not lift heavy loads without assistance 58. Wear proper PPE (cut-resistant or leather gloves) 59. Wear proper PPE (cut-resistant or leather gloves) 60. Wear proper PPE (nitrile gloves underneath work gloves) 61. Follow good housekeeping procedures / Ensure route to move drum and storage space is free from obstructions 62. Wear proper PPE (safety shoes) / Work in a safe manner to prevent dropped drum
9. All activities 9. All activities (cont'd)	1. Slips/ Trips/ Falls 2. Hand injuries, cuts or lacerations during manual handling of materials 3. Foot injuries 4. Back injuries 5. Traffic 6. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 7. High Noise levels 8. Overhead hazards 9. Heat Stress/ Cold Stress 10. Eye Injuries	1. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 2. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 3. Wear Langan approved safety shoes 4. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 5. Wear high visibility clothing & vest / Use cones or signs to designate work area 6. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 7. Wear hearing protection 8. Wear hard hat / Avoid areas were overhead hazards exist. 9. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 10. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date

Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **Monitoring Well Development**

JSA Number: **JSA026-01**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions.

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):

☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☐ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☒ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☒ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	

☒ Other: Tyvek Sleeves

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
33. Transport equipment to work area	28. Back Strains 29. Slips/Trips/Falls 30. Traffic 31. Cuts/Abrasions/Contusions from equipment	18. Use proper lifting techniques/ Use wheeled transport/ use buddy system when lifting equipment. 19. Minimize distance from work area/ unobstructed path to collection points and vehicle/ Follow good housekeeping procedures. 20. Wear high-visibility vest or clothing/Exercise caution/ Use traffic cones or signage if needed. 21. Wear proper PPE (leather gloves, long sleeves, Langan approved safety shoes).
34. Measure depth of water	10. Exposure to hazardous substances 11. Pinched fingers	6. Wear proper PPE (Nitrile gloves, Safety glasses/Face shield). 7. Wear proper PPE (cut-resistant gloves).
35. Install Tremie pipe in the monitoring well and connect to water source.	6. Hand injuries during installation (pinched fingers/hands). 7. Back strain from holding Tremie pipe. 8. High pressure water spray.	4. Wear proper PPE (Nitrile gloves/cut-resistant gloves). 5. Use proper lifting techniques/ Use two personnel when lowering pump greater than 80 feet. 6. Ensure all hose connections are tight and secure/ Use proper PPE (face shield and safety glasses).
36. Install pump in to well a. Connect pump to sample tubing. b. Lower pump to desired depth in well. c. Connect sample tubing to flow cell	6. Hand injuries during pump installation and sample tubing cutting. 7. Back strain 8. Electric shock 9. Exhaust gases from generator 10. Burns from hot equipment	9. Wear proper PPE when installing pump and cutting sample tubing (Nitrile and cut-resistant gloves)/ Use tubing cutter. 10. Proper lifting techniques/ Two personnel when installing pump at depths greater than 80 feet/ Use buddy when lifting heavy loads (pump, generator)/Use wheeled transport. 11. Ensure equipment is (LO/TO: locked out/tagged out) prior to preforming any electrical connections/ Inspect wires for frays or cuts/Ensure generator is properly grounded prior to starting.

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
d. Connect pump to power source (generator) e. Turn on power source (generator)		12. Position generator so that exhaust is flowing away from work area. 13. Do not touch exhaust or any hot part of generator/ Allow equipment time to cool down prior to carrying/ Use proper PPE (long sleeves, leather gloves)
37. Develop monitoring well a. Jet water into well using Tremie pipe b. Turn pump on and adjust to desired flow rate. c. Surge pump up and down well to remove sediment from screen d. Containerize all purge water from well.	55. Hand injuries 56. Face injuries 57. Contaminated spray from water	63. Wear proper PPE (cut-resistant gloves and nitrile gloves). 64. Wear proper PPE (face shield and safety glasses)/do not stand over well opening. 65. Wear proper PPE (Face shield and safety goggles)/Tyvek over garments/ Ensure all connections are secure and tight/ Tubing outlet is contained in an overflow container.
38. Drum staging area.	1. Back, Arm, and shoulder strain. 2. Pinch points 3. Cross contamination 4. Slip/Trips/Falls	1. Use proper lifting techniques/ Use drum carts when moving drums/ use buddy system for moving of drums if needed/Move drums shortest distance needed. 2. Keep fingers and feet away from pinch points/ Use proper PPE (cut-resistant gloves, Langan approved safety shoes) 3. Use proper PPE (Nitrile gloves, Tyvek sleeves) 4. Ensure pathway is clear prior to moving equipment/ Mark all hazards/ Use additional person as a spotter if needed.
39. Equipment pack-up	1. Back Strains 2. Slips/Trips/Falls 3. Traffic 4. Cuts/Abrasions/Contusions from equipment.	1. Use proper lifting techniques/ Use wheeled transport/ use buddy system when lifting equipment. 2. Minimize distance from work area/ Unobstructed path to collection points and vehicle/ Follow good housekeeping procedures. 3. Wear high-visibility vest or clothing/Exercise caution/ Use traffic cones or signage if needed. 66. Wear proper PPE (leather gloves, long sleeves, Langan approved safety shoes).
40. All activities	1. Slips/ Trips/ Falls 2. Hand injuries, cuts or lacerations during manual handling of materials 3. Foot injuries 58. Back injuries 59. Traffic 60. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 61. High Noise levels 62. Overhead hazards 63. Heat Stress/ Cold Stress 64. Eye Injuries	1. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 2. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 3. Wear Langan approved safety shoes 4. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 5. Wear high visibility clothing & vest / Use cones or signs to designate work area 6. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 7. Wear hearing protection 8. Wear hard hat / Avoid areas were overhead hazards exist.

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
		9. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 10. Wear safety glasses.
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **Groundwater Sampling**

JSA Number: **JSA008-01**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions.

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):

☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☒ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: Tyvek sleeves, Dermal Protection, PID				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
41. Transport equipment to work area	1. Back Strain 2. Slips/ Trips/ Falls 3. Traffic 4. Cuts/abrasions from equipment 5. Contusions from dropped equipment	1. Use proper lifting techniques / Use wheeled transport 2. Minimize distance to work area / Have unobstructed path to work area / Follow good housekeeping procedures 3. Wear proper PPE (high visibility vest or clothing) 4. Wear proper PPE (leather gloves, long sleeves) 5. Wear proper PPE (safety shoes)
42. Remove well cover	12. Scrape knuckles/hand 13. Strain wrist/bruise palm 14. Pinch fingers or hand	5. Wear proper PPE (leather gloves) 6. Using a hammer, tap the end of the wrench to loosen grip of bolts 7. Wear proper PPE (leather gloves)
43. Remove well cap and lock	9. Well can pops from pressure 10. Exposure to hazardous substances through inhalation or dermal exposure 11. Scrape knuckles/hand 12. Strain write/bruise palm	7. Remove cap slowly to relieve pressure / Do not place face over well when opening / Wear proper PPE (safety glasses) 8. Use direct air monitoring/reading instrument (i.e. PID) / Be familiar with and follow actions prescribed in the HASP / Wear proper PPE (nitrile gloves) 9. Wear proper PPE (leather gloves) 10. Using hammer, tap the end of the wrench to loosen grip
44. Measure head-space vapor levels	1. Exposure to hazardous substances through inhalation	1. Do not place face over well when collecting measurement
45. Remove dedicated tubing (if necessary)	1. Exposure to hazardous substances through inhalation or dermal exposure 2. Tubing swings around after removal	1. Wear proper PPE (nitrile gloves, Tyvek sleeves) 2. Wear proper PPE (safety glasses)
46. Set-up plastic sheeting for work site around the well	1. Lacerations when cutting plastic sheeting	1. Use scissors to cut plastic sheeting / Cut motions should always be away from body and body parts
47. Measure depth to water	1. Exposure to hazardous substances through inhalation or dermal exposure 2. Pinch fingers or hand in water level instrument	1. Wear proper PPE (nitrile gloves) 2. Wear proper PPE (leather gloves)

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
48. Calibrate monitoring equipment	1. Skin or eye contact with calibration chemicals 2. Pinch fingers or hand in monitoring equipment	1. Wear proper PPE (safety glasses, nitrile gloves) 2. Wear proper PPE (leather gloves) / Avoid pinch points
49. Install sampling pump in well	1. Hand injuries during installation of pump 2. Lacerations when cutting tubing 3. Back strain during installation of pump 4. Physical hazards associated with manual lifting of heavy equipment 5. Back strain from starting generator 6. Burns from hot exhaust from generator 7. Electrical shock from improper use of generator and pump 8. Contaminated water spray from loose connections	1. Wear proper PPE (leather gloves, nitrile gloves) 2. Use safety tubing cutter 3. Use proper lifting techniques 4. Use proper lifting techniques / Use wheeled transport for heavy equipment 5. Use arm when starting generator / Do not over-strain if generator does not start 6. Do not touch generator near exhaust / Use proper handle to carry / Allow generator to cool down before moving 7. Properly plug in pump to generator / Do not allow the pump or generator to contact water / Check for breaks in the cord 8. Check all tubing connections to ensure they are tight and secure
10. Purge water	1. Contact with potentially contaminated groundwater 2. Back strain from lifting buckets of water 3. Tripping potential on sample discharge lines and pump electric line	1. Wear proper PPE (safety glasses, nitrile gloves) 2. Use proper lifting techniques / Use wheeled transport 3. Organize discharge of electric line to keep out of way as much as possible / Mark potential tripping hazards with caution tape or safety cones
11. Sample water collection	1. Contact with potentially contaminated groundwater through dermal exposure 2. Contact with and burns from acid used for sample preservation 3. Tripping potential on sample discharge lines and pump electric line 4. Lacerations from broken sample bottles 5. Back strain when transporting coolers full of collected samples 6. Slips/ Trips/ Falls	1. Wear proper PPE (safety glasses, nitrile gloves) 2. Wear proper PPE (safety glasses, nitrile gloves) / Ensure sample bottle lids are secure before use and after sample collection 3. Organize line to keep out of the way as much as possible / Mark potential tripping hazards with caution tape or safety cones 4. Do not over-tighten bottle caps / Handle bottles safely to prevent breakage / Wrap glass bottles in bubble wrap, if possible 5. Use proper lifting techniques / Use wheeled transport / Seek assistance if coolers weight exceeds 50lbs. / Minimize distance to vehicle 6. Have unobstructed path to vehicle or collection point / Follow good housekeeping procedures / Do not lift/walk with coolers that are too heavy/difficult to lift
12. Remove pump and pack up equipment	1. Back strain when removing pump or lifting heavy equipment	1. Use proper lifting technique / Use wheeled transport for heavy equipment
13. Replace well cap and lock	1. Scrape fingers/hand 2. Strain wrist/bruise palm	1. Wear proper PPE (leather gloves) 2. Using hammer, tap the end of the well cap to tighten grip
14. Replace well cover	1. Scrape knuckles/hand 2. Strain write/bruise palm 3. Pinch fingers or hand	1. Wear proper PPE (leather gloves) 2. Using hammer, tap the end of the wrench to tighten the grip of the bolts 3. Wear proper PPE (leather gloves)
15. Transport drums to disposal staging location	1. Back, arm or shoulder strain from moving drums 2. Pinch hazard 3. Contact with potentially contaminated groundwater when moving improperly sealed drums 4. Slips/ Trips/ Falls when moving drum 5. Drop drum on feet/toes	1. Use drum cart for moving drums / Use proper lifting techniques / Obtain assistance, if needed 2. Wear proper PPE (leather gloves) 3. Wear proper PPE (nitrile gloves under leather gloves) / Properly seal drum to prevent leak 4. Ensure route to move drum to storage space is dry and free from obstructions 5. Wear proper PPE (safety shoes)

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
16. Place used PPE in designated disposal drum	1. Pressure build-up inside drum 2. Pinch hazard	1. Remove cap from bung hole in drum to relieve pressure 2. Wear proper PPE (leather gloves)
17. Decontaminate equipment	1. Splashing water/soap from decontamination 2. Contact with potentially contaminated groundwater through dermal exposure 3. Electrical shock from broken electric cords	1. Wear proper PPE (safety glasses) 2. Wear proper PPE (safety glasses, dermal protection) 3. Properly plug in pump to generator / Do not allow the pump or generator to contact water / Check for breaks in the cord
18. All activities	65. Slips/ Trips/ Falls 66. Hand injuries, cuts or lacerations during manual handling of materials 67. Foot injuries 68. Back injuries 69. Traffic 70. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 71. High Noise levels 72. Overhead hazards 73. Heat Stress/ Cold Stress 74. Eye Injuries	67. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 68. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 69. Wear Langan approved safety shoes 70. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 71. Wear high visibility clothing & vest / Use cones or signs to designate work area 72. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 73. Wear hearing protection 74. Wear hard hat / Avoid areas were overhead hazards exist. 75. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 76. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

ATTACHMENT H

TAILGATE SAFETY BRIEFING FORM

LANGAN TAILGATE SAFETY BRIEFING

Date:_____ Time: _____

Leader:_____ Location:_____

Work Task:

_____

_____

SAFETY TOPICS (*provide some detail of discussion points*)

Chemical Exposure Hazards and Control:_____

_____

Physical Hazards and Control: _____

Air Monitoring: _____

PPE: _____

_____

Communications:_____

Safe Work Practices: _____

_____

Emergency Response: _____

Hospital/Medical Center Location: _____

Phone Nos.: _____

Other: _____

FOR FOLLOW-UP (the issues, responsibilities, due dates, etc.)

_____

_____

_____

ATTENDEES

PRINT NAME	COMPANY	SIGNATURE

APPENDIX B

SUB-SLAB DEPRESSURIZATION SYSTEM DESIGN SUPPORT DOCUMENTS

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Memorandum

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor New York, NY 10001 T: 212.479.5400 F: 212.479.5444

To: Michael Haggerty, QEP, New York State Department of Environmental Conservation (NYSDEC) - Division of Environmental Remediation

From: Patrick Farnham, PE

Info: Jack Teich, Marc Teich, Michael Teich (Acme Sales Group)
Sally Dewes, Michael Murphy (NYSDEC)
Dawn Hettrick, Justin Deming (New York State Department of Health [NYSDOH])
Christine Leas (Sive, Paget & Riesel)
Michael Burke, Gerald Nicholls, Matt Ambrusch, Kimberly Nagotko (Langan)

Date: September 11, 2019

Re: **Soil Vapor Extraction Pilot Test Memorandum**
Former Acme Steel/Brass Foundry
72 Anthony Street/498 Porter Avenue, Brooklyn, NY
NYSDEC Site No. 224132
Langan Project No.: 170157201

This technical memorandum presents the design of a soil vapor extraction (SVE) system intended to address chlorinated volatile organic compound (CVOC) impacts in unsaturated soil at 72 Anthony Street and 498 Porter Avenue, Brooklyn, New York ("the site"). The site is an NYSDEC Class 2 Inactive Hazardous Waste Disposal Site (IHWDS) and is identified as NYSDEC Site No. 224132.

In accordance with the NYSDEC-approved SVE Pilot Test Work Plan dated May 20, 2019 and revised June 11, 2019, Langan performed an SVE pilot test to collect additional site-specific information and derive design criteria needed to develop the SVE system design. This memorandum (1) summarizes supplemental soil, groundwater, and soil vapor sampling results, (2) summarizes SVE pilot testing results and subsequent two-dimensional (2D) computational pneumatic modeling, and (3) outlines the components, layout, and performance of the proposed SVE system, and is organized as follows:

- Section 1.0 – Site Background and Previous Investigations
- Section 2.0 – Soil Investigation
- Section 3.0 – Groundwater Investigation
- Section 4.0 – Soil Vapor Sampling
- Section 5.0 – Pilot Testing and Pneumatic Modeling Results
- Section 6.0 – SVE System Design
- Section 7.0 – Remedy Implementation
- Section 8.0 – Monitoring
- Section 9.0 – Reporting

A subsequent Interim Remedial Measures Work Plan (IRMWP) will be submitted to the NYSDEC in October 2019 and will likely propose full-scale installation of the conceptual SVE system described in this memorandum.

1.0 SITE BACKGROUND AND PREVIOUS INVESTIGATIONS

The about 52,860-square-foot site is located at 72 Anthony Street and 498 Porter Avenue (Tax Block 2820, Lots 1 and 5) in the Greenpoint section of Brooklyn, New York. The site is improved with one 1-story brick building, three 1-story metal sheds, two truck parking lots and storage areas, and a bus parking lot, and is adjoined by Anthony Street to the north, warehouse buildings to the east, Lombardy Street to the south, and Porter Avenue to the west. The site was used as a brass foundry from the 1950s until 1971 and then operated by Acme Architectural Products, Inc. as an architectural wall manufacturing and finishing facility until about 2008. Current site uses include a carpentry operation, bus parking, and storage for construction and waste disposal companies. A site location map is included as **Figure 1**.

The site is underlain by the Meeker Avenue Plume Trackdown (Trackdown) site, which occupies the Greenpoint/East Williamsburg Industrial Area in Brooklyn. The Trackdown site is located within a region of historical petroleum refining and storage operations that occupied a significant part of the Greenpoint neighborhood, straddles the Brooklyn-Queens Expressway, and extends southwest to northeast from Kingsland Avenue to Newtown Creek. Investigations conducted by the URS Corporation (URS) on behalf of the NYSDEC and others within the Trackdown site have identified CVOCs — including tetrachloroethene (PCE) and trichloroethene (TCE) — in soil, groundwater, and soil vapor. In response to these findings, the NYSDEC initiated several investigations to identify the sources of chlorinated solvents. Based on the findings of these investigations and the historical generation of F001 waste (i.e., spent halogenated solvents used in degreasing) at the site, URS and NYSDEC identified the site as a source of CVOCs in the subsurface. Langan has since conducted a remedial investigation (RI) in 2012 and a supplemental RI (SRI) in 2017.

Based on soil borings completed by Langan during the RI and SRI, the subsurface profile consists of historic fill material overlying glaciofluvial-alluvial and deltaic/fluvial deposits. The fill extends up to about 12 feet below grade surface (bgs). The fill consists of brown fine- to coarse-grained sand with varying amounts of silt, clay, gravel, coal, brick, concrete, wood, glass, metal, fabric, plastic, ceramic, and white amorphous material. Native soil underlies the fill and consists of fine- to coarse-grained sand with varying amounts of silt, fine gravel, coarse gravel, cobbles, and boulders. Groundwater has been encountered at about 53 feet bgs and is inferred to flow in a northeasterly direction toward the Newtown and Maspeth Creeks (consistent with regional Brooklyn topography).

A maximum PCE concentration of 210 milligrams per kilogram (mg/kg) was recorded in a soil sample collected from 15 to 15.5 feet bgs in soil boring ACME-GP-19 during the 2017 SRI. ACME-GP-19 was located within a 1-story metal shed in the northern portion of the site along Anthony Street. Other soil samples collected from on-site and off-site (sidewalk) soil borings in the vicinity of ACME-GP-19 during the 2012 RI and 2017 SRI have contained PCE, TCE, and cis-1,2-dichloroethene (cDCE) at concentrations above the Part 375 Unrestricted Use Soil Cleanup Objectives (UU SCO) in unsaturated soil at depths up to 42 feet bgs.

Based on RI and SRI findings, the NYSDEC requested that a pilot test be completed to collect design data in advance of a forthcoming IRMWP. The NYSDEC also requested the collection of additional soil and groundwater samples and the installation of a new groundwater monitoring well.

2.0 SOIL INVESTIGATION

The soil investigation included: 1) the advancement and sampling of two environmental soil borings (ACME-EB-15 and ACME-EB-16), 2) collection of soil samples during installation of two extraction well couplets (SVE-01_S/SVE-01_D and SVE-02_S/SVE-02_D), and 3) collection of soil samples during installation of four nested vacuum monitoring probes (VP-01_S/VP-01_D through VP-04_S/VP-04_D). The drilling portion of the soil investigation was completed from July 8 to 11, 2019 by AARCO Environmental Services, Inc. (AARCO) using track-mounted Geoprobe® 6610DT (direct push) and 8140LC Roto-Sonic (sonic) drill rigs under the oversight of a Langan field engineer. Soil boring locations are shown on **Figure 2**. Borings were advanced to between 15 and 65 feet bgs, depending on refusal depth and well screen intervals. Soil boring logs are included in **Attachment A**.

Direct-push soil samples were collected from a 2-inch-diameter by 4-foot-long steel Macro-Core® into dedicated 2-inch-diameter acetate sample liners, and sonic soil samples were collected from a 4-inch-diameter by 5-foot-long steel core barrel samplers into dedicated polyethylene bags. Soil samples retrieved from each boring were visually classified for soil type, grain size, and texture. Each sample was screened for visual, olfactory and instrumental evidence of a chemical or petroleum release. Instrumental screening for the presence of volatile organic compounds (VOC) was performed with a photoionization detector (PID) equipped with a 10.6 electron-volt (eV) lamp.

Six soil samples, including a duplicate sample, were collected from the two environmental borings. In each environmental boring, one sample was collected from the two foot interval directly beneath the existing building slabs or pavement and a second sample was collected from the interval exhibiting the greatest degree of impacts based on field screening (i.e., visual observations, odors, or PID readings above background). A third sample was collected at the groundwater interface at ACME-EB-15 (refusal was encountered before the groundwater table at ACME-EB-16). Based on visual and olfactory observations of solvent impacts encountered less than 30 feet bgs, three soil samples were collected from among the two extraction well couplets and four nested vacuum monitoring probes.

Soil samples were collected into laboratory-supplied containers and were sealed, labeled, and placed in a cooler containing ice for delivery to York Analytical Laboratories (York), a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory. All soil samples and an associated field blank were analyzed for Target Compound List (TCL)/New Jersey Department of Environmental Protection (NJDEP)/Part 375 VOCs and tentatively identified compounds (TIC). Five of the soil samples, including the duplicate sample and a field blank, were also analyzed for emerging contaminants (per- and polyfluoroalkyl substances [PFAS] and 1,4-dioxane) per NYSDEC request. A sample summary is provided as **Table 1**.

2.1 Soil Investigation Observations and Results

Visual, olfactory, and/or instrumental evidence (PID readings above background) of chemical release (likely chlorinated-solvent related) were observed at all soil borings except for SVE-02 and VP-04. A

maximum total organic vapor (TOV) concentration of 1,085 parts per million (ppm) was observed at SVE-01_D from 9 to 10 feet bgs.

Soil sample analytical results were compared to the Restricted Use Commercial (RUC), UU, and Protection of Groundwater (PGW) SCOs. The following is a summary of soil sample results:

- PCE was detected at a concentration of 160 mg/kg in ACME-EB-16_0-2 and at 200 mg/kg in VP-03_2.5-3, above the RUC SCO of 150 mg/kg. PCE was also detected above the UU/PGW SCO of 1.3 mg/kg in soil samples ACME-EB-15_0-2 (63 mg/kg), ACME-EB-15_5-5.5 (28 mg/kg), and SODUP01_071119 (54 mg/kg [parent sample ACME-EB-16_0-2]).
- The CVOCs cDCE and TCE were detected in ACME-EB-15_5-5.5 at concentrations above the UU and PGW SCOs (UU/PGW SCOs presented in parentheses):
    - cDCE was detected at a concentration of 1.5 mg/kg (0.25 mg/kg)
    - TCE was detected at a concentration of 0.83 mg/kg (0.47 mg/kg)
- The following non-chlorinated VOCs were also detected above the UU and PGW SCOs:
    - 2-butanone was detected at a concentration of 0.81 mg/kg in ACME-EB-15_5-5.5, above the UU/PGW SCO of 0.12 mg/kg;
    - Acetone was detected at a concentration of 0.65 mg/kg in ACME-EB-15_5-5.5 and at 0.058 mg/kg in VP-03_2.5-3, above the UU/PGW SCO of 0.05 mg/kg; and
    - 1,4-dioxane (VOC concentration by United States Environmental Protection Agency [USEPA] Method 8260) was detected at a concentration of 0.24 mg/kg in SVE-01_9-10, above the UU/PGW SCO of 0.10 mg/kg.
- Seven VOC TICs were detected in ACME-EB-15_5-5.5 (total TIC concentration of 591 mg/kg; maximum individual TIC concentration of 210 mg/kg [ethyl methyl cyclohexane isomers]).
- One or more VOC TICs were detected in soil samples ACME-EB-16_0-2, SODUP01_071119 (parent sample ACME EB-16_0-2), and ACME-EB-16_17-17.5 (maximum total TIC concentration of 0.493 mg/kg).
- 1,4-dioxane (SVOC concentration by USEPA Method 8270-SIM) was detected at a concentration of 0.18 mg/kg in SVE-01_9-10.
- The emerging contaminant perfluorooctanesulfonic acid (PFOS) was detected at a concentration of 0.00299 mg/kg in ACME-EB-15_0-2.

A soil sample analytical results summary is provided as **Table 2**.

Soil sample analytical results were validated in accordance with USEPA and NYSDEC validation protocols. Completeness, defined as the percentage of analytical results judged to be valid, is 100%. The data usability summary report (DUSR) is included as **Attachment B**.

3.0 GROUNDWATER INVESTIGATION

The groundwater investigation included installation of one new groundwater monitoring well (ACME-MW-15) at soil boring ACME-EB-15. The monitoring well was completed by AARCO using a Geoprobe® 8140LC sonic drill rig to 65 feet bgs. ACME-MW-15 was installed with a 15-foot section of 2-inch-diameter and 0.01-inch slotted Schedule 40 polyvinyl chloride (SCH40 PVC) screen from 48 to 63 feet bgs to straddle the observed groundwater table, which was encountered at about 53 feet bgs. Well construction details are included in **Attachment A**. The monitoring well location is shown on **Figure 2**.

ACME-MW-15 was developed by Langan on July 17, 2019 using a Waterra pump and Solinst® peristaltic pump. About 27 gallons of groundwater were purged and placed into a United Nations Department of Transportation (UN-DOT)-approved 55-gallon drum. The monitoring well was sampled using low-flow techniques to minimize drawdown using a bladder pump with a dedicated bladder at a rate of 1 liter per minute or less. Water quality parameters (pH, temperature, specific conductance, turbidity, oxidation-reduction potential [ORP], and dissolved oxygen [DO]) were measured and recorded at approximately 5-minute intervals. Measurements were collected until the parameters stabilized for at least three consecutive readings or for one hour, whichever comes first. The monitoring well sampling log is included in **Attachment C**.

Two groundwater samples, including a duplicate sample, were collected from the newly installed well a week after development. Each groundwater sample was collected into laboratory-supplied containers and was sealed, labeled, and placed in a cooler containing ice for delivery to York. The samples, including a field blank, were analyzed for TCL VOCs, TICs, and emerging contaminants (PFAS and 1,4-dioxane) per NYSDEC request. A sample summary is provided as **Table 1**.

3.1 Groundwater Investigation Observations and Results

The maximum headspace TOV concentration observed at ACME-MW-15 prior to sampling was 1,088 ppm. The following is a summary of groundwater sample results:

- The CVOCs PCE, cDCE and TCE were detected in ACME-MW-15_072419 and its duplicate sample GWDUP01_072419 at concentrations above the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values (SGV) for Class GA Water (NYSDEC SGV, presented in parentheses):
    - PCE was detected at a concentration of 890 micrograms per liter (µg/L) in ACME-MW-15_072419 and at 950 µg/L in its duplicate sample (5 µg/L)
    - cDCE was detected at a concentration of 36 µg/L in ACME-MW-15_072419 and at 35 µg/L in its duplicate sample (5 µg/L)
    - TCE was detected at a concentration of 64 µg/L in ACME-MW-15_072419 and at 63 µg/L in its duplicate sample (5 µg/L)
- Eleven emerging contaminants and 1,4-dioxane were detected in ACME-MW-15_072419 and its duplicate sample, including the following:

- Perfluorooctanoic acid (PFOA) was detected at a concentration of 0.117 µg/L in ACME-MW-15_072419 and 0.111 µg/L in the duplicate sample.
- Perfluorooctanesulfonic acid (PFOS) was detected at a concentration of 0.0263 µg/L in ACME-MW-15_072419 and 0.0249 µg/L in the duplicate sample.
- 1,4-dioxane was detected at a concentration of 2.95 µg/L in ACME-MW-15_072419 and 2.26 µg/L in the duplicate sample.

A groundwater sample analytical results summary is provided as **Table 3**.

Groundwater sample analytical results were validated by a Langan data validator in accordance with USEPA and NYSDEC validation protocols. Completeness, defined as the percentage of analytical results judged to be valid, is 100%. The DUSR is included as **Attachment B**.

4.0 SOIL VAPOR SAMPLING

During the SVE pilot test, four soil vapor samples were collected during active testing of each extraction well couplet (SVE-01_S/SVE-01_D and SVE-02_S/SVE-02_D) for laboratory analysis of VOCs via USEPA Method TO-15. Soil vapor samples were collected into laboratory-supplied and batch-certified 6-liter, stainless steel Summa canisters. The Summa canisters arrived from the laboratory with a vacuum of about 30 inches of mercury (in Hg). See Sections 5.1 and 7.4 for results and observations.

5.0 PILOT TESTING AND PNEUMATIC MODELING RESULTS

5.1 Pilot Testing Results

An SVE pilot test was completed by Langan from July 17 through 19, 2019, during which Langan derived information related to subsurface characteristics and the design criteria of the SVE system, including the air intrinsic permeability of the target treatment zone.

The test consisted of two extraction well couplets (SVE-01_S/SVE-01_D and SVE-02_S/SVE-02_D) and four nested vacuum monitoring probes (VP-01_S/VP-01_D through VP-04_S/VP-04_D) installed in the unsaturated zone within two separate test areas in the central and north portions of the site. Each test area consisted of one extraction well couplet (Test Area 1 – SVE-01 / Test Area 2 – SVE-02) and two nested vacuum monitoring probes (Test Area 1 – VP-01 and VP-02 / Test Area 2 – VP-03 and VP-04). Following discussion with the NYSDEC, Test Area 2 was relocated from the proposed location to a location east of Test Area 1 due to site access restrictions. The as-built pilot test well layout is shown on **Figure 2**.

The 10-slot (0.01-inch) screens of the extraction well couplets and associated nested vacuum monitoring probes were installed within unique intervals of the unsaturated zone to evaluate air intrinsic permeability variations, if any, with depth within the target treatment zone. See below for extraction well couplet and nested vacuum monitoring probe screen intervals:

- SVE-01_S was screened at about 5 to 15 feet bgs

- SVE-02_S was screened at about 6 to 16 feet bgs
- SVE-01_D and SVE-02_D were screened at about 20 to 30 feet bgs
- VP-01_S and VP-02_S were screened at about 5 to 15 feet bgs
- VP-03_S and VP-04_S were screened at about 6 to 16 feet bgs
- VP-01_D, VP-02_D, VP-03_D, and VP-0_4D were screened at about 20 to 30 feet bgs

As-built well construction details are included in **Attachment A**.

A series of step tests were performed at both screen intervals of each extraction well. These tests involved the extraction of subsurface air from each extraction well at multiple air extraction flow rates and vacuums, and the concurrent monitoring of vacuum influence at the vacuum monitoring probes. The nested vacuum monitoring probes were installed at varying distances and directions from the respective extraction well couplet. The tests were performed at increasing flow rates and vacuum conditions at each extraction point well screen. During most of the test, vacuum readings were allowed to stabilize at nearby vacuum monitoring probes between steps to facilitate subsurface equilibrium with the changed test condition. This testing procedure was repeated at each extraction well. Below is a summary of test conditions.

Test Well	Screened Interval (feet bgs)	Air Extraction Flow Rate (scfm)	Vacuum (IWC)	Monitoring Points (feet from respective test well)			
				VP-1_S / VP-1_D	VP-2_S / VP-2_D	VP-3_S / VP-3_D	VP-4_S / VP-4_D
SVE-01_S	5-15	4	2.5	10	20	60	70
		6.5	4.0				
		10	6.4				
		13	10.3				
		30	24.0				
		52	52.0				
SVE-01_D	20-30	25	1.5	10	20	60	70
		65	5.0				
		95	8.1				
		115	11.0				
		130	13.0				
SVE-02_S	6-16	25	1.5	70	60	10	20
		36	4.1				
		60	7.3				
		101	12.8				
		118	15.6				
SVE-02_D	20-30	25	2.0	70	60	10	20
		55	4.3				
		75	6.7				
		110	10.6				
		126	12.7				

Measurements are approximate based on field measurements.
scfm = standard cubic feet per minute
IWC = inches of water column

Pilot testing began at SVE-01_S using a Dekker VMAX Model VMX0082 vacuum pump capable of providing moderate flows at high vacuums. Based on site lithology, it was anticipated the testing would be vacuum limited (i.e., high vacuum blower required); however, it was determined to be flow limited (i.e., high flow blower required). As such, the pilot test equipment was modified on day two

of testing to a blower capable of higher flows at moderate vacuums – Rotron DR505. The increased flow capacity of the Rotron DR505 allowed for a larger range of tested flow conditions. All extracted air was treated via two 55-gallon drums of vapor phase granular activated carbon (VGAC) prior to being discharged to the atmosphere. Pilot test equipment specifications are included in **Attachment D**.

Vacuum influence was observed at the shallow and deep screens of VP-01 and VP-02 during each testing condition at SVE-01_S and SVE-01_D and at both the shallow and deep screens of VP-03 and VP-04 during each testing condition at SVE-02_S and SVE-02_D. Vacuum influence was also observed at both the shallow and deep screens of VP-01 during testing of the highest flow condition at SVE-02_D and at both the shallow and deep screens of VP-03 during testing of the highest flow condition at SVE-01_S.

An increase in the air extraction flow rate and vacuum at the test well resulted in an increase in induced vacuum at each monitoring point. At each vacuum monitoring probe, greater vacuum influence was typically observed in the same interval which air was being extracted from the extraction well. Greater vacuum influence was also typically observed at vacuum monitoring probes that were closer to the extraction well. A summary of the pilot test data is included in **Attachment D**.

With the exception of SVE-01_S, similar air extraction flow rate – vacuum relationships at each extraction well screen, as well as resultant vacuum influence at each of the respective vacuum monitoring probe well screens, were observed during the pilot test. Higher vacuums were observed to be required at SVE-01_S to achieve the same air extraction flow rates. To achieve an extraction flow rate of about 25 standard cubic feet per minute (scfm), a vacuum of 24 inches of water column (IWC) was required at SVE-01_S, compared to about 1.5 IWC at SVE-01_D, SVE-02_S and SVE-02_D. However, the vacuum propagation observed at the nested vacuum monitoring probes during testing at SVE-01_S was similar to results at the other extraction well screens.

These field observations are best explained by reduced air intrinsic permeability of the lithology within which the well screen was installed. The material which SVE-01_S was installed within may be slightly denser and contain more silt than the other extraction well screens. This could result in a higher vacuum requirement at the extraction well. This is likely the result of localized lithology heterogeneity, as the vacuum propagation observed at distance from the extraction well was not limited.

Limited vapor sampling was also completed during the pilot test. One sample was collected from each extraction well during active testing. This allowed for both a qualitative evaluation of the potential effectiveness of the full-scale SVE system (i.e., contaminant removal or not) and a quantitative analysis of the potential mass removal and mass loading of the full-scale system upon initial system start-up (see Section 7.3). The analytical results of these samples identified elevated concentrations of CVOCs in the vadose zone. Laboratory analytical reports are included in **Attachment D** and projected emissions calculations are discussed in Section 7.4.

The results of the pilot test were tabulated and used as input into a 2D computational pneumatic model, MDFIT.

5.2 Pneumatic Modeling Results

The 2D computational pneumatic model, MDFIT™, allows for the estimation and calibration of the site-specific air intrinsic permeability, based on the air extraction flow rate – vacuum relationships observed during pilot testing. The model provides the platform required to scale the results from the pilot-scale testing to full-scale design. Utilizing the calibrated site-specific air intrinsic permeability, the model allows for the prediction of full-scale system performance.

The site-specific pneumatic modeling input parameters presume that the target treatment zone displays isotropic conditions (i.e., permeability in the horizontal direction is equivalent to that of the vertical direction). Although the site is observed to have a heterogeneous subsurface, air was not observed during the pilot test to preferentially move horizontally or vertically. Anisotropic conditions often occur deeper in the subsurface – due to soil settlement, pore volume and consequently permeability is often less in the vertical compared to the horizontal direction. Anisotropy also occurs with stratigraphic variations (i.e., silt or gravel) that prevent or promote flow in a certain direction.

Although layers of silt and gravel have been observed, a consistent layer that would promote anisotropic flow has not been documented. This is further confirmed by the results of the pilot testing – similar vacuum influence was observed at both the shallow and deep intervals. The discrepancy observed in vacuum influence between deep and shallow intervals is not great enough to cite anisotropy as the reason. It is more likely this is due to the longer distance and resultant increase in pore volumes – if extracting from the shallow interval, the distance to the shallow vacuum monitoring probe screen is less than that of the deep screen and vice versa.

Based on the observed vacuum influence, an initial estimation of air intrinsic permeability for the target treatment zone was calculated. Single well modeling simulations, using this estimated air intrinsic permeability, were then run at air extraction flow rates achieved during the pilot test – the outputs of these modeling simulations being a vacuum versus distance relationship (i.e., vacuum influence). The observed vacuum influence was compared to the modeled vacuum influence at specific air extraction flow rates. Air intrinsic permeability was then adjusted to allow for "calibration" of the model such that the modeled vacuum influence closely mimicked the observed levels.

The calibrated air intrinsic permeability for the target treatment zone within Test Area 1 and 2 was calculated to be 6.00E-7 centimeters $(cm)^2$ and 7.50E-7 cm^2, respectively, corresponding to a silty sand. The calibrated air intrinsic permeability for the existing site confining layers (building slab and asphalt driveway) within Test Area 1 and 2 was calculated to be 6.50E-9 cm^2 and 4.50E-9 cm^2, respectively, corresponding to a fairly competent pavement.

Single well design modeling simulations were completed using the calibrated air intrinsic permeability of both the target treatment zone and confining layer. Due to the similarity in observed site conditions, pilot test results, and calibrated air intrinsic permeability, an average of the air intrinsic permeability for the target treatment zone and confining layers in Test Areas 1 and 2 was used in the design model simulations. Varying air extraction flow rate conditions were modeled to determine the required wellhead vacuum and the resultant approximate vacuum influence and pneumatic pore volume exchanges associated with each respective flow condition. Outputs from these simulations are provided in **Attachment E**.

The required air extraction flow rate and resultant wellhead vacuum and radius of influence (ROI) of each extraction well couplet were then determined, using the following considerations:

- Based on the site stratigraphy (i.e., silty sand), the number of pore volume exchanges within the ROI for effective treatment should be about 1,000 per year.
- The ROI of each well can be increased with an increase in the air extraction flow rate, which may potentially reduce the total number of wells required; however, the increase in ROI (and potential decrease in the number of wells) may not offset the increase in total air extraction flow rate and system vacuum capacity.
- The 2D model simulates one extraction well at one time – the estimated vacuum influence and pore volume exchanges will likely be enhanced when multiple wells are operating at one time within the treatment zone.

Based upon these considerations, the estimated effective ROI of each SVE well is approximately 25 feet, assuming an air extraction flow rate of about 50 scfm and a wellhead extraction vacuum of about 5 IWC at each extraction well couplet.

The single well modeling outputs for the 50 scfm modeling simulation indicate about 3,300 pore volume exchanges per year can be achieved at an ROI of 15 feet, but only about 700 pore volume exchanges may be achieved at an ROI of 25 feet. This is primarily an artifact of the relatively thick vadose zone – the total pore volume of the treatment area increases substantially with each foot increment away from the extraction well. However, the actual total pore volume exchanges achieved within the 25 ROI will likely be enhanced with the operation of multiple wells. When multiple wells operate at once, they "compete" for pore volume air, and thereby enhance the pore air velocity and pore volume exchanges achieved.

About 2,000 pore volume exchanges will be required to reach asymptotic concentrations. The well network will therefore likely operate for about 2 to 3 years to attain the remedial action objectives.

6.0 SVE SYSTEM DESIGN

Subsurface investigations indicate that the area of CVOC impacts in the vadose zone is about 10,500 square feet (sf) at depths between the site cover (concrete slab or asphalt pavement) and about 30 feet bgs. PCE was detected at less than one magnitude above the UU SCO at 42 feet bgs in soil sample ACME-GP-9_41-42 during the SRI; remaining subsurface investigation results indicate impacts from below site cover to 24 feet bgs. The location of the full-scale SVE components outlined herein may change slightly based on site access and site-specific constraints such as foundation elements. A proposed SVE well layout is included as **Figure 3**.

The proposed SVE system will include at least eleven SVE wells constructed of 4-inch-diameter, SCH40 PVC riser. These eleven SVE wells will be made up of the two existing extraction well couplets and nine new SVE wells. The new extraction wells will be screened from about 10 to 25 feet bgs with 20-slot (0.02-inch) screen – the screen interval and configuration will be confirmed based on stratigraphy and soil impacts observed during installation. A 20-slot screen is proposed for the new

extraction wells, compared to 10-slot used to construct the existing extraction well couplets, to promote enhanced airflow. Typical well construction details are provided in **Figure 4**.

Each well will be equipped with a 2-inch-diameter individual extraction well line equipped with a vacuum gauge, flow meter, gate valve, and sample port for monitoring and performance adjustments at individual wells. A series of individual extraction well lines will manifold into a 4-inch-diameter sub-header line. Ultimately, the 4-inch diameter sub-header lines manifold into a 6-inch-diameter main header line that leads to the inlet of the proposed process equipment. Piping installed outside the building or below grade will be constructed of Schedule 80 (SCH80) PVC. Piping installed within the building extents and above ground will be constructed of metal. Any exterior piping will be equipped with passive insulation and drain ports at low points – sub-header and main header piping will slope away from the wells and toward the process equipment at an about 0.5% slope. **Figures 5** and **6** show the proposed manifold piping layout and cross-sectional details.

The SVE system process equipment enclosure will be installed to the east of the 1-story brick building (**Figure 7**). The process equipment will be capable of providing 750 scfm at 25 IWC (**Table 4**) and will include the following components:

- Two blowers in parallel equipped with variable frequency drives (VFD)
- Air moisture separator
- Auxiliary storage tank equipped with transfer pump (optional)
- Heat exchanger (as required, depending on discharge temperature of selected blower)
- Two 2,000 pound (lb) VGAC units
- 6-inch-diameter discharge stack with no-loss silencer
- Control panel equipped with a Programmable Logic Controller (PLC)
- Instrumentation and control interlocks

A process and instrumentation diagram (P&ID) for the proposed process equipment is shown on **Figure 8**. All process equipment, with the exception of the VGAC units, is to be staged within a noise-proofed enclosure and constructed to Class I, Division 2 standards, per the National Electric Code (NEC), as well as NYC electrical code requirements. General system control specifications and control interlocks are summarized in **Tables 5** and **6**, respectively.

7.0 REMEDY IMPLEMENTATION

7.1 System Installation

Installation of the SVE system will be completed concurrently with normal site operations. The following summarizes the general sequencing of the SVE system installation.

1. Installation of SVE wells (and associated individual SVE line trenching, as applicable)
2. Installation and leak testing of below grade manifold piping, including stub-ups for above ground manifold piping

3. Installation and leak testing of above ground manifold piping
4. Delivery/staging of process equipment
5. Installation of system discharge stack
6. Installation of final electrical connections to process equipment
7. Shakedown and startup of SVE system

The installation will be completed by New York licensed contractors with field documentation by Langan personnel in accordance with this technical memorandum and a site-specific Health and Safety Plan (HASP). Modifications to the SVE system may be required to accommodate existing site conditions; however, modifications will not affect or alter the projected remedial performance of the system.

Prior to system shakedown and startup, an operation, maintenance and monitoring (OM&M) plan will be prepared. The OM&M plan will include field data record sheets to record information regarding the proper operation and maintenance of all equipment during system inspections. The OM&M plan will also contain system component cut sheets, specifications, and warranty information. Following system installation and subsequent shakedown/startup, routine OM&M of the system will be performed, as discussed below.

7.2 System Shakedown

Before system startup, equipment shakedown testing will be performed to ensure individual automation and safety controls are functional. The equipment shakedown will individually test the inherent safety features and mechanical performance. Problems identified during the testing will be addressed prior to startup and optimization in coordination with the general contractor, electrician, and equipment fabricator.

7.3 System Startup

Upon successful completion of system shakedown, system operation will be initiated. The general startup procedures for the full-scale SVE system will be as follows:

- All well-specific valves, as well as the system air dilution valve, will be opened so that a large initial load is not placed on the process equipment.
- Electrical power will then be applied to the process equipment.
- Once the system is operating properly, the air dilution valve will be closed incrementally until the process vapors are originating from the extraction wells.

Operating parameters will be monitored and recorded during startup to document that the system operates as designed. Potential adjustments to well-specific valves will be evaluated for performance optimization.

7.4 Flow Optimization

Flow optimization at individual SVE wells will be performed after start-up. After the system meets the initial design criteria, the system will be optimized by adjusting air extraction flow rates at individual extraction wells to maximize VOC mass removal. The projected initial emissions from the SVE system have been calculated based on the soil vapor data collected during the pilot test. The estimated initial rate of VOC mass removal is about 600 lb/day. This estimated mass loading is conservative and typical of initial system operations following system startup. Anticipated mass loading will decrease after the initial spike. As the remediation progresses, influent VOC concentrations are expected to decline substantially. The estimated mass removal rate does not account for any dilution that may occur as a result of the operation of the SVE system. Two 2,000-lb VGAC units in series will treat extracted soil vapor prior to discharging to the atmosphere. Projected emissions calculations based on soil vapor sample analytical results are provided in **Table 7**.

8.0 MONITORING

Following SVE system startup, routine OM&M will be performed to facilitate attainment of the remedial objectives (performance monitoring) and compliance with the design parameters (process monitoring). Routine OM&M activities are proposed weekly for the first month, monthly for the remainder of the first year, and quarterly thereafter.

8.1 Process Monitoring

Process monitoring will consist of the operation, inspection, optimization, and maintenance (routine or unscheduled) of the system. Influent VOC concentrations will likely be highest during the first one to three months and decline as VOC mass decreases. Routine monitoring will measure the following parameters:

- Total system air extraction flow rate, vacuum, and VOC concentrations
- Individual well air extraction flow rate, vacuum and VOC concentrations
- VGAC influent (SP102) and discharge (SP104) VOC concentrations

These measurements will be taken via the process equipment instrumentation and handheld field instruments. The measurements will be used to evaluate system operations. Adjustments to air extraction flow rates will be made, if necessary, to optimize performance. The system control panel will also be equipped with a cellular based Ethernet modem that notifies the system operator of alarm conditions (e.g. system shutdown) that require a non-routine system inspection. The system will be monitored at least weekly via the remote telemetry system.

8.2 Performance Monitoring

Performance monitoring will be performed to evaluate the effectiveness of the remediation system, as outlined below.

- Baseline Monitoring: Baseline vapor monitoring will be conducted using a handheld PID at the inlet of the vapor collection blower (SP101), prior to dilution valve, and at individual well lines

immediately following the system startup. Vapor samples will be collected and analyzed via USEPA Method TO-15. The baseline vapor monitoring and sampling data will be used to determine the initial performance of the system and to estimate the VOC mass removal rate upon startup.

- System Performance Monitoring: System performance vapor monitoring will be conducted regularly during routine site checks using a PID at the individual wells and at the mid (SP103) and effluent (SP104) carbon. This will determine whether contaminant breakthrough at the VGAC units has occurred. System influent vapor sampling will be conducted on a weekly basis for the first month of system operation, monthly for the remainder of the first year, and quarterly thereafter. Analytical samples will be collected at the inlet of the vapor collection blower (SP101), prior to dilution valve, for laboratory analysis via the USEPA Method TO-15 to determine the overall performance of the system and estimate VOC mass removal.

Vapor samples will be collected in accordance with NYSDOH and the NYSDEC guidelines. Modeling results and design specifications estimate that the SVE system will achieve the remedial objectives within about 2 to 3 years of operation.

8.3 Post-Remediation Verification Sampling

After vapor concentrations in the system influent reach a low-level, asymptotic condition, a short-term temporary system shutdown will be proposed to the NYSDEC and NYSDOH to evaluate potential contaminant of concern (COC) "rebound". If zones of remaining high concentration exist within the treatment area, vapor concentrations in soil will increase or "rebound" during the shutoff period. The system performance will then be adjusted to address the areas, if rebound is identified.

9.0 REPORTING

The activities associated with the installation and startup of the full-scale SVE system will be summarized in the Construction Completion Report (CCR). As-built installation drawings, specifications, operating parameters, OM&M plans/manuals, and the data from the system startup activities will be included in the FER. In addition, annual progress reports summarizing the system OM&M activities and data will be submitted to the NYSDEC with Periodic Review Reports.

Tables:

Table 1 – Sample Summary
Table 2 – Soil Sample Analytical Results Summary
Table 3 – Groundwater Sample Analytical Results Summary
Table 4 – Proposed SVE System Design Summary
Table 5 – General Control Specifications
Table 6 – Summary of System Interlocks
Table 7 – Projected Emissions Calculations

Figures:

Figure 1 – Site Location Map
Figure 2 – Boring Location Plan
Figure 3 – Proposed SVE Well Layout
Figure 4 – Proposed Typical SVE Well Construction Details
Figure 5 – Proposed SVE Manifold Piping Layout
Figure 6 – Proposed SVE Manifold Piping Cross-Section Details
Figure 7 – Proposed Process Equipment Layout
Figure 8 – Proposed Process and Instrumentation Diagram

Attachments:

Attachment A – Soil Boring and Well Construction Logs
Attachment B – Data Usability Summary Reports
Attachment C – Monitoring Well Sampling Log
Attachment D – Pilot Test Equipment Specifications, Data and Laboratory Analytical Results
Attachment E – Pneumatic Modeling Results

TABLES

Table 1
Soil Vapor Extraction Pilot Test Memorandum
Sample Summary

Former Acme Steel/Brass Foundry
Brooklyn, New York
NYSDEC Site No.: 224132
Langan Project No.: 170157201

No.	Location	Sample ID	Type	Rationale	Date of Collection	Time	Depth of Sample Collection (feet bgs)	Analysis
SOIL								
1	ACME-EB-15	ACME-EB-15_0-2	Grab	Surficial Soil (0-2' bgs)	7/10/2019	08:00	0 to 2	TCL/Part 375/NJDEP VOCs + TICs, PFAS, 1,4-Dioxane
2		ACME-EB-15_5-5.5		Greatest degree of observed impacts		09:40	5 to 5.5	TCL/Part 375/NJDEP VOCs + TICs
3		ACME-EB-15_51-53		Groundwater Interface		11:40	51 to 53	TCL/Part 375/NJDEP VOCs + TICs
4	ACME-EB-16	ACME-EB-16_0-2		Surficial Soil (0-2' bgs)	7/11/2019	14:30	0 to 2	TCL/Part 375/NJDEP VOCs + TICs, PFAS, 1,4-Dioxane
5		ACME-EB-16_17-17.5		Greatest degree of observed impacts		15:40	17 to 17.5	TCL/Part 375/NJDEP VOCs + TICs
6	SVE-01	SVE-01_9-10		Grossly-impacted interval	7/8/2019	11:10	9 to 10	TCL/Part 375/NJDEP VOCs + TICs, PFAS, 1,4-Dioxane
7		SVE-01_28-29				11:15	28 to 29	TCL/Part 375/NJDEP VOCs + TICs
8	VP-03	VP-03_2.5-3			7/11/2019	15:50	2.5 to 3	TCL/Part 375/NJDEP VOCs + TICs
SOIL QA/QC								
1	ACME-EB-16	SODUP01_071119	Duplicate	Surficial Soil (0-2' bgs)	7/11/2019	15:50	0 to 2	TCL/Part 375/NJDEP VOCs + TICs, PFAS and 1,4-Dioxane
2	NA	SOFB01_071119	Field Blank	NA		16:40	NA	
3	NA	SOTB01_071119	Trip Blank	NA		NA	NA	TCL/Part 375/NJDEP VOCs + TICs
GROUNDWATER								
1	ACME-MW-15	ACME-MW-15_072419	Grab	NA	7/24/2019	12:10	Center of Water Column	TCL VOCs + TICs, PFAS, 1,4-Dioxane
GROUNDWATER QA/QC								
1	ACME-MW-15	GWDUP01_072419	Duplicate	NA	7/24/2019	12:20	Center of Water Column	TCL VOCs + TICs, PFAS, 1,4-Dioxane
2	NA	GWFB01_072419	Field Blank	NA		12:40	NA	VOCs, PFAS, 1,4-Dioxane
3	NA	GWTB01_072419	Trip Blank	NA		NA	NA	VOCs
SOIL VAPOR								
1	SVE-01_S	SVE-01_S_071719	Soil Vapor Extraction Well Grab Sample	NA	7/17/2019	13:00	5 to 15	TO-15 VOCs
2	SVE-01_D	SVE-01_D_071919			7/19/2019	09:45	20 to 30	
3	SVE-02_S	SVE-02_S_071819			7/18/2019	10:09	6 to 16	
4	SVE-02_D	SVE-02_D_071819				13:22	20 to 30	

Notes:
1. PFAS = Per and Poly Fluoroalkyl Substances
2. NJDEP = New Jersey Department of Environmental Protection
3. VOC = Volatile Organic Compound
4. TCL = Target Compound List
5. TIC = Tentatively Identified Compounds
6. NA = not applicable
7. bgs = below grade surface
8. QA/QC = quality assurance/quality control

Table 2
Soil Vapor Extraction Pilot Test Memorandum
Soil Sample Analytical Results Summary

Former Acme Steel/Brass Foundry
Brooklyn, New York
NYSDEC Site No.: 224132
Langan Project No.: 170157201

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	NYSDEC Part 375 Restricted Use Commercial SCOs	ACME-EB-15 ACME-EB-15_0-2 19G0399-01 7/10/2019 0-2	ACME-EB-15 ACME-EB-15_5-5.5 19G0399-02 7/10/2019 5-5.5	ACME-EB-15 ACME-EB-15_51-53 19G0399-03 7/10/2019 51-53	ACME-EB-16 ACME-EB-16_0-2 19G0564-01 7/11/2019 0-2	ACME-EB-16 SODUP01_071119 19G0564-04 7/11/2019 0-2	ACME-EB-16 ACME-EB-16_17-17.5 19G0564-02 7/11/2019 17-17.5	SVE-01 SVE-01_09-10 19G0296-01 7/8/2019 9-10	SVE-01 SVE-01_28-29 19G0296-02 7/8/2019 28-29	VP-03 VP-03_2.5-3 19G0564-03 7/11/2019 2.5-3
Volatile Organic Compounds (mg/kg)												
1,1,1-Trichloroethane	0.68	0.68	500	0.0033 U	0.3 U	0.0025 U	0.0031 J	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.0078 J
1,1-Dichloroethane	0.27	0.27	240	0.0033 U	*0.3* U	0.0025 U	0.0025 U	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.0032 J
1,2,4-Trimethylbenzene	3.6	3.6	190	0.0033 U	0.46 J	0.0025 U	0.0025 U	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.0029 U
1,4-Dioxane (P-Dioxane)	0.1	0.1	130	0.065 U	*6.1* U	0.051 U	0.05 U	0.046 U	0.05 U	**0.24**	0.047 U	0.057 U
Acetone	0.05	0.05	500	0.022	**0.65** J	0.011 U	0.0094 J	0.015 J	0.017 J	0.0076 J	0.0048 J	**0.058** J
Cis-1,2-Dichloroethene	0.25	0.25	500	0.11	**1.5** J	0.0025 U	0.17 J	0.076	0.005 J	0.0024 U	0.0024 U	0.063 J
Methyl Acetate	~	~	~	0.0033 U	0.3 UJ	0.0025 UJ	0.0025 U	0.0023 U	0.0039 J	0.0024 U	0.0024 U	0.0029 U
Methyl Ethyl Ketone (2-Butanone)	0.12	0.12	500	0.013 U	**0.81** J	0.01 U	0.0025 U	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.0029 U
Methylcyclohexane	~	~	~	0.0033 U	0.3 U	0.0025 U	0.0025 U	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.0078 J
Methylene Chloride	0.05	0.05	500	0.0065 U	*0.61* U	0.0051 U	0.0063 J	0.0046 U	0.007 J	0.0049 U	0.0047 U	0.0057 U
p-Cymene (p-Isopropyltoluene)	~	~	~	0.0033 U	0.44 J	0.0025 U	0.0025 U	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.0029 UJ
Tetrachloroethene (PCE)	1.3	1.3	150	**63** J	**28** J	0.02 J	**160** D	**54** D	0.072	0.031	0.034	**200** DE
Toluene	0.7	0.7	500	0.0033 U	0.3 U	0.0025 U	0.0025 U	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.022 J
Trans-1,2-Dichloroethene	0.19	0.19	500	0.0033 U	*0.3* U	0.0025 U	0.0034 J	0.0023 U	0.0025 U	0.0024 U	0.0024 U	0.0029 U
Trichloroethene (TCE)	0.47	0.47	200	0.047 J	**0.83** J	0.0025 UJ	0.31 J	0.12	0.0051	0.0024 U	0.0024 U	0.11 J
TICs - Volatile Organic Compounds (mg/kg)												
butyl Cyclohexane isomer	~	~	~	NA	39 JD	NA	NA	NA	NA	NA	NA	NA
Decane (TIC)	~	~	~	NA	NA	NA	NA	NA	0.044 JN	NA	NA	NA
Dimethyl cyclohexane Isomer	~	~	~	NA	38 JD	NA	NA	NA	NA	NA	NA	NA
Ethyl Dimethyl cyclohexane isomers	~	~	~	NA	33 JD	NA	NA	NA	NA	NA	NA	NA
ethyl methyl cyclohexane isomers	~	~	~	NA	210 JD	NA	NA	NA	NA	NA	NA	NA
methyl propyl cyclohexane isomers	~	~	~	NA	51 JD	NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons (C9-C12) Aliphatic	~	~	~	NA	140 JD	NA	NA	NA	NA	NA	NA	NA
propyl Cyclohexane isomer	~	~	~	NA	80 JD	NA	NA	NA	NA	NA	NA	NA
unknown dimethyl cyclohexane isomer	~	~	~	NA	NA	NA	NA	0.016 JN	NA	NA	NA	NA
unknown dimethyl cyclohexane isomers	~	~	~	NA	NA	NA	NA	NA	0.14 JN	NA	NA	NA
unknown methyl cycloheptane isomer	~	~	~	NA	NA	NA	0.037 JN	NA	NA	NA	NA	NA
unknown methyl cyclohexane isomer	~	~	~	NA	NA	NA	NA	NA	0.037 JN	NA	NA	NA
unknown methyl decane isomer	~	~	~	NA	NA	NA	NA	NA	0.067 JN	NA	NA	NA
unknown methyl nonane isomer	~	~	~	NA	NA	NA	NA	NA	0.035 JN	NA	NA	NA
unknown octahydro indene isomers	~	~	~	NA	NA	NA	NA	NA	0.091 JN	NA	NA	NA
unknown propyl cyclohexane isomer	~	~	~	NA	NA	NA	NA	NA	0.037 JN	NA	NA	NA
unknown trimethyl decane isomer	~	~	~	NA	NA	NA	NA	NA	0.042 JN	NA	NA	NA
Total TICs (calculated)	~	~	~	ND	591	ND	0.037	0.016	0.493	ND	ND	ND
Semivolatile Organic Compounds (mg/kg)												
1,4-Dioxane (P-Dioxane)	~	~	130	0.075 U	NA	NA	0.075 U	0.089 U	NA	0.18	NA	NA
General Chemistry (%)												
Solids, Percent	~	~	~	87.6	82.2	98.3	89.4	89.4	92.3	91.6	99.5	91.9
Per and Polyfluoroalkyl Substances (mg/kg)												
Perfluorooctanesulfonic acid	~	~	~	0.00299	NA	NA	0.000802 U	0.000818 U	NA	0.000817 U	NA	NA

Notes:
1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use, Protection of Groundwater and Restricted Use Commercial Soil Cleanup Objectives (SCO).
2. Only detected analytes are shown in the table.
3. Analytes detected with concentrations above Unrestricted Use and Protection of Groundwater SCOs are shaded and bolded.
4. Analytes detected with concentrations above Restricted Use Commercial SCOs are underlined.
5. Sample SODUP01_071119 is a duplicate sample of ACME-EB-16_0-2.
6. Samples ACME-EB-15_0-2, ACME-EB-16_0-2, SODUP01_071119, and SVE-01_9-10 were analyzed by Phoenix Environmental Laboratories, Inc. for 1,4-Dioxane and per and polyfluoroalkyl substances. The Phoenix laboratory IDs for the aforementioned samples are CD55880, CD56579, CD56580 and CD52105, respectively.
7. ~ = Regulatory limit for this analyte does not exist
8. bgs = below grade surface
9. mg/kg = milligrams per kilogram
10. % = percent
11. NA = Not analyzed
12. TIC = Tentatively Identified Compounds

Qualifiers:
D = The concentration reported is a result of a diluted sample.
E = The result is estimated and cannot be accurately reported due to levels encountered or interferences.
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected at a level greater than or equal to the RL; however, the reported RL is approximate and may be inaccurate or imprecise.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.
N = The TIC reported indicates the presence of a possible analyte or class of analyte that has been 'tentatively identified' and the associated numerical value represents its estimated concentration.
ND = Not detected

Table 3
Soil Vapor Extraction Pilot Test Memorandum
Groundwater Sample Analytical Results Summary

Former Acme Steel/Brass Foundry
Brooklyn, New York
NYSDEC Site No.: 224132
Langan Project No.: 170157201

Location Sample ID Laboratory ID Sample Date	NYSDEC SGVs	ACME-MW-15 ACME-MW-15_072419 19G1029-15 7/24/2019		ACME-MW-15 GWDUP01_072419 19G1029-16 7/24/2019	
Volatile Organic Compounds (µg/L)					
1,1,1-Trichloroethane	5	0.64		0.65	
1,1-Dichloroethane	5	2.3		2.3	
1,1-Dichloroethene	5	0.65		0.59	
Chloroform	7	0.91		0.92	
Cis-1,2-Dichloroethene	5	**36**		**35**	
Tert-Butyl Methyl Ether	10	0.48	J	0.44	J
Tetrachloroethene (PCE)	5	**890**	D	**950**	D
Trans-1,2-Dichloroethene	5	0.74		0.67	
Trichloroethene (TCE)	5	**64**		**63**	
TIC - Volatile Organic Compounds (µg/L)	~	ND		ND	
Semivolatile Organic Compounds (µg/L)					
1,4-Dioxane (P-Dioxane)	~	2.94		2.26	
Per and Polyfluoroalkyl Substances (µg/L)					
Perfluorobutanesulfonic Acid (PFBS)	~	0.00868	J	0.00845	J
Perfluorobutanoic acid (PFBA)	~	0.0261		0.0257	
Perfluoroheptanesulfonic acid (PFHpS)	~	0.00302		0.00281	
Perfluoroheptanoic acid (PFHpA)	~	0.0389		0.039	
Perfluorohexanesulfonic Acid (PFHxS)	~	0.0515		0.0517	
Perfluorohexanoic Acid (PFHxA)	~	0.054		0.0561	
Perfluorononanoic Acid (PFNA)	~	0.00253		0.00207	
Perfluorooctanesulfonic acid (PFOS)	~	0.0263		0.0249	
Perfluorooctanoic Acid (PFOA)	~	0.117		0.111	
Perfluoropentanoic Acid (PFPeA)	~	0.0595		0.0609	
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	~	0.0166		0.0164	

Notes:

1. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules and Regulations (NYCRR) Part 703.5 and the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA Water (NYSDEC SGVs).
2. Only detected analytes are shown in the table.
3. Analytes detected with concentrations above NYSDEC SGVs are bolded and shaded.
4. Sample GWDUP01_072419 is a duplicate sample of ACME-MW-15_072419.
5. ~ = Regulatory limit for this analyte does not exist
6. µg/L = micrograms per liter
7. TIC = Tentatively Identified Compounds

Qualifiers:

D = The concentration reported is a result of a diluted sample.
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the
ND = Not detected

Table 4
Soil Vapor Extraction Pilot Test Memorandum
Proposed SVE System Design Summary

Former Acme Steel/Brass Foundry
Brooklyn, NY
NYSDEC Site No.: 224132
Langan Project No.: 170157201

Treatment Area	Well Type	Well ID	Well Screen Interval (feet bgs)	Well Diameter (inches)	ROI (feet)	Air Flow Rate (cfm)	Wellhead Vacuum (in. H_2O)
Vadose Zone Soils	Soil Vapor Extraction	SVE-1_S	5 to 15	4	25	50	5
		SVE-1_D	20 to 30				
		SVE-2_S	6 to 16				
		SVE-2_D	20 to 30				
		SVE-3	10 to 25				
		SVE-4					
		SVE-5					
		SVE-6					
		SVE-7					
		SVE-8					
		SVE-9					
		SVE-10					
		SVE-11					
TOTAL DESIGN VAPOR COLLECTION FLOW RATE AND VACUUM						**650**	**5**
BLOWER SIZING						**750**	**25**

Notes:

1. The required vacuum and air extraction flow rate at each individual SVE well is based on the results of the pilot testing activities completed July 17-19, 2019 and the subsequent two-dimensional pneumatic modeling.
2. To account for frictional losses and allow for a more conservative design, a factor of safety was included when sizing the required process equipment.
3. Pilot test wells SVE-1_S, SVE-1_D, SVE-2_S, and SVE-2_D will be incorporated into the full-scale SVE system.
4. The screen interval for each of the proposed SVE wells is approximate and is subject to change based on field conditions observed during installation.
5. SVE = soil vapor extraction
6. bgs = below grade surface
7. ROI = radius of influence
8. cfm = cubic feet per minute
9. in. H_2O = inches of water vacuum

Table 5
Soil Vapor Extraction Pilot Test Memorandum
General Control Specifications

Former Acme Steel/Brass Foundry
Brooklyn, New York
NYSDEC Site No.: 224132
Langan Project No.: 170157201

Component	Specifications
Programmable Logic Controller (PLC) & System Control Panel	• The operation of the soil vapor extraction system will be controlled through a PLC. The PLC will be housed in a wall-mounted Control Panel. Controls/interlocks/alarm conditions for the soil vapor extraction system process equipment will be located in the Control Panel. The emergency shut-offs for the system will also be provided on the Control Panel. • All soil vapor extraction system process equipment will be powered by the Control Panel. In the event a heat exchanger (optional) is required to be installed in line with the vacuum blowers, the vacuum blowers will be interlocked with the heat exchanger so that they cannot be activated without the activation of the heat exchanger. The Control Panel will be powered by an independent Electrical Panel. The Control Panel and the Electrical Panel will be attached to the process equipment enclosure. The electrical power requirements (i.e., total amperage, voltage, and phase requirements) for the Control Panel, the soil vapor extraction system process equipment, and all field wiring shall be clearly indicated and labeled in the Control Panel. • Control Panel will be required to be UL (Underwriter Laboratories, Inc.) listed. All major equipment (i.e., transfer pump [optional], heat exchanger [optional], and blowers) will be installed with Hand/Off/Auto (HOA) switches and panel lights to indicate operational status. Alarm indicator lights with first fault lockout will be provided for all major equipment and process sensors/switches. The process equipment is to be fabricated to Class I, Division 2 standards, per the National Electric Code (NEC).
Remote Telemetry System	• The soil vapor extraction system operational status and process analog data (i.e., air flow rates, vacuum, pressure, and temperature) will be monitored remotely via a Telemetry System (graphical operator interface) installed in the system Control Panel.
Autodialer	• A system alarm Autodialer will be provided to call out in the event of system shut down/alarm conditions. The Autodialer will be housed in the system Control Panel with inputs for all alarm conditions for the system. A complete list of system interlocks and alarm conditions, which can result in the shutdown of individual components or the entire system, is provided in the Summary of System Interlocks table (**Table 6**).

Notes:
1. Refer to the Proposed Process and Instrumentation Diagram (**Figure 8**) for process equipment schematics.
2. Refer to the Summary of System Interlocks table (**Table 6**) for an overview of the system interlocks and control panel inputs/outputs/analog data requirements.

Table 6
Soil Vapor Extraction Pilot Test Memorandum
Summary of System Interlocks

Former Acme Steel/Brass Foundry
Brooklyn, New York
NYSDEC Site No.: 224132
Langan Project No.: 170157201

Input /Output Type	Instrumentation Equipment Category	Interlock Data	Description	Function
Digital Input	Blowers	BL101	Blower BL101 status	BL101 running green light
			Blower BL101 overload (motor fault, alarm condition)	Shut down entire system and alarm notification in the event of motor overload detection
		BL102	Blower BL102 status	BL102 running green light
			Blower BL102 overload (motor fault, alarm condition)	Shut down entire system and alarm notification in the event of motor overload detection
	Transfer Pump	P101	Pump P101 status	P101 running green light
			Pump P101 overload (motor fault, alarm condition)	Shut down entire system and alarm notification in the event of motor overload detection
	Heat Exchanger	HE101	Heat Exchanger HE101 status	HE101 running green light
			Heat Exchanger HE101 overload (motor fault, alarm condition)	Shut down entire system and alarm notification in the event of motor overload detection
	Level Switches	LSHH101	AMS T101 level switch high, high (alarm condition)	Shut down entire system and provide alarm notification when LSHH101 gets wet
		LSHL102	AMS T101 level switch high low	Activate P101 when LSHL102 gets wet
		LSL103	AMS T101 level switch low	Shutoff P101 when LSL103 becomes dry
	Pressure Switch	PS101	BL101 and BL102 discharge pressure (alarm condition)	Shut down entire system and alarm notification in the event of high pressure detection
		PS102	P101 discharge pressure (alarm condition)	Shut down entire system and alarm notification in the event of high pressure detection
	E-STOP	-	Emergency Stop Push Button (alarm condition)	Shut down entire system when the E-STOP button is pushed in and send alarm notification, auto restart when E-STOP button is released
	Power Failure	Power Failure	Power failure/interruption (alarm condition)	Shut down entire system and alarm notification in the event of power failure/interruption, auto restart when power is restored
Digital Output	Blowers	BL101	Blower BL101 permissive operation	BL101 permissive on/off performed manually
			Blower BL101 operation	BL101 on/off controlled by PLC during AUTO mode
		BL102	Blower BL102 permissive operation	BL102 permissive on/off performed manually
			Blower BL102 operation	BL102 on/off controlled by PLC during AUTO mode
	Transfer Pump	P101	Transfer pump P101 permissive operation	P101 permissive on/off performed manually
			Transfer pump P101 operation	P101 on/off controlled by PLC during AUTO mode
	Heat Exchanger	HE101	Heat Exchanger HE101 permissive operation	HE101 permissive on/off performed manually
			Heat Exchanger HE101 operation	HE101 on/off controlled by PLC during AUTO mode
	System Operational Status	-	System operational status to remote telemetry	Under normal operating conditions provide system operational status (on/off) to remote telemetry system
	System Alarm Conditions	-	System alarm notification to autodialer/security system/ remote telemetry system	In the event of any system alarm, provide notification to auto dialer/security system/ remote telemetry system
Analog Input/Output	Temperature Indicator Analog	TIA101	BL101 and BL102 combine discharge air temperature indicator analog (alarm condition)	Provides discharge air temperature to the control panel and remote telemetry system. Also, shut down the entire system and send alarm notification in the event that discharge temperature exceeds 130 °F.
	Flow Indicator Analog	FIA101	BL101 and BL102 combine discharge air flow indicator (alarm condition)	Provides air flow data to the control panel and remote telemetry system. Also, shut down the entire system and send alarm notification in the event that discharge flow exceeds 750 scfm or NO FLOW is detected after 5 secs of BL101 and BL102 being ON, shut down the entire system and send alarm notification.
		FIA102	AMS discharge liquid flow indicator analog and totalizer (alarm condition)	Provides water flow data to the control panel and remote telemetry system. Also, when P101 is ON and NO FLOW is detected after 5 secs, shut down the entire system and send alarm notification.
	Vacuum Indicator Analog	VIA101	BL101 and BL102 combine influent vacuum indicator analog (alarm condition)	Provides vacuum data to the control panel and remote telemetry system. Also, shut down the entire system and send alarm notification in the event of low/high influent vacuum.
	Hour Meter	HM101	Total run time /hr meter	Provides BL101 Total runtime
		HM102	Total run time /hr meter	Provides BL102 Total runtime
		HM103	Total run time /hr meter	Provides HE101 Total runtime
		HM104	Total run time /hr meter	Provides P101 Total runtime

Notes:
1. The transfer pump, blower and heat exchanger shall be controlled by HOA (Hand/Off/Auto) switch.
2. By default, all electrical equipment including the transfer pump, the blower, and the heat exchanger shall be in "AUTO" mode and will be controlled through control panel.
3. When major process equipment (i.e., blowers, heat exchanger, and transfer pumps) is in "HAND" position, the corresponding motor will run continuously bypassing all alarms except an overload condition.
4. When major process equipment (i.e., blowers, heat exchanger, and transfer pumps) is in "OFF" position, the corresponding motor will remain off.
5. The system will activate on power up with no active alarms and all HOA switches shall be in "AUTO" position.
6. If major process equipment (i.e., blowers, heat exchanger, and transfer pumps) HOA switch is in "AUTO" position, the corresponding equipment will operate continuously except under any alarm conditions.
7. The final instrumentation set points will be determined during start-up of the system operation.
8. All alarm conditions are shown above in red text.
9. BL = blower
10. P = transfer pump
11. HE = heat exchanger
12. LSHH = level switch high high
13. LSHL = level switch high low
14. LSL = level switch low
15. AMS = air moisture separator
16. PS = pressure switch
17. TIA = temperature indicator analog
18. FIA = flow indicator analog
19. VIA = vacuum indicator analog
20. HM = hour meter

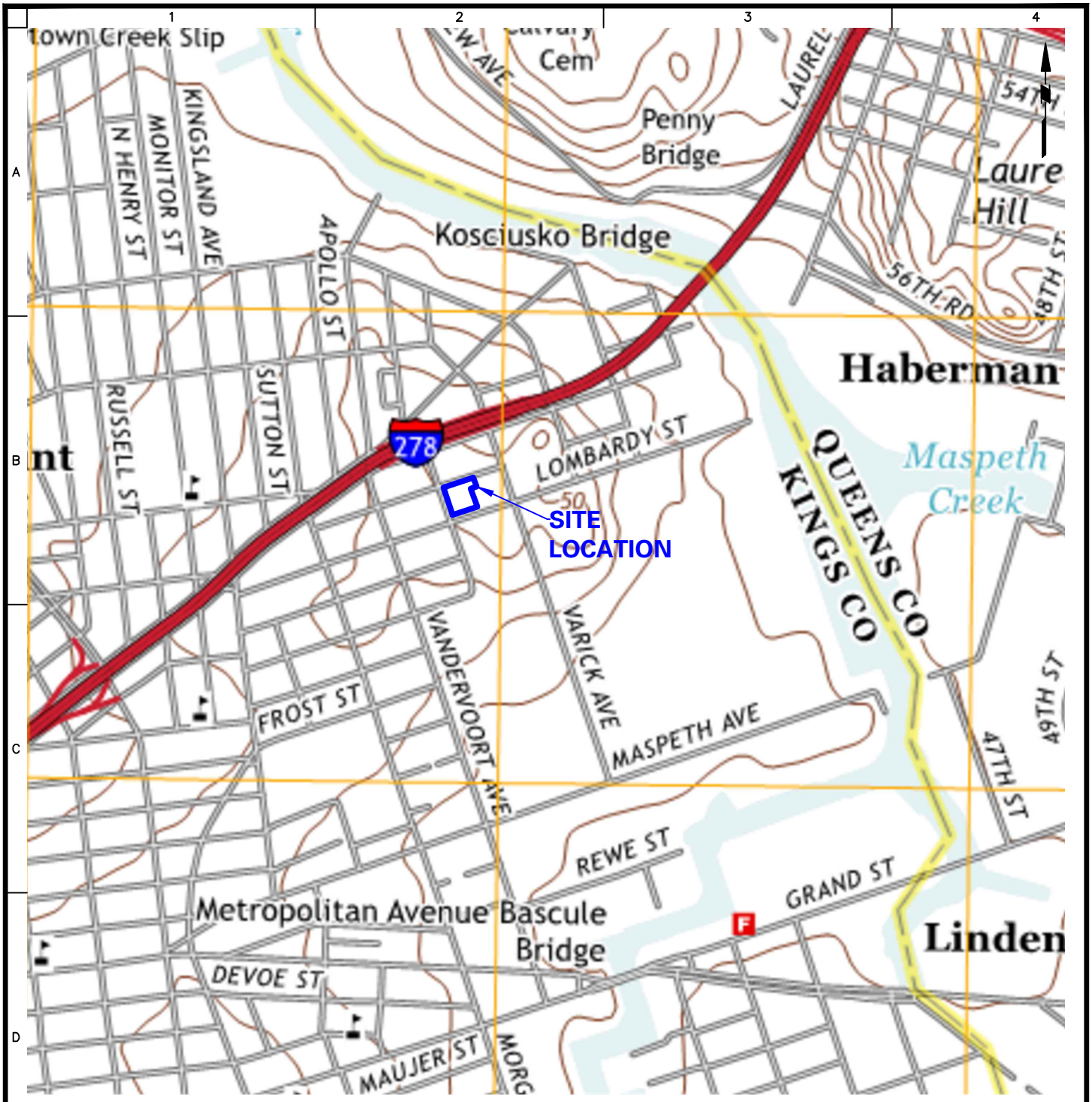
Table 7
Soil Vapor Extraction Pilot Test Memorandum
Projected Emission Calculations

Former Acme Steel/Brass Foundry
Brooklyn, New York
NYSDEC Site No.: 224132
Langan Project No.: 170157201

ANALYTE	CAS	Molecular Weight (g/mol)	SVE-01_D (µg/m^3)		SVE-01_S (µg/m^3)		SVE-02_D (µg/m^3)		SVE-02_S (µg/m^3)		Average (µg/m^3)	Extraction Flow Rate (scfm)	Mass Removal Rate (lb/day)
			Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc		
1,1,1,2-Tetrachloroethane	630-20-6	167.85	160	D	78	U	78	U	1,300	D	404	650	0.02
1,1,1-Trichloroethane	71-55-6	133.40	5,100	D	4,100	D	2,200	D	37,000	D	12,100		0.71
1,1-Dichloroethane	75-34-3	98.96	390	D	990	D	390	D	560	D	583		0.03
1,1-Dichloroethene	75-35-4	96.94	78	D	68	D	45	D	120	D	78		0.00
1,2,4-Trimethylbenzene	95-63-6	120.20	39	U	56	U	56	U	110	D	65		0.00
1,3,5-Trimethylbenzene	108-67-8	120.20	39	U	56	U	56	U	190	D	85		0.00
4-Ethyltoluene	622-96-8	120.2	39	U	56	U	56	U	130	D	70		0.00
Acetone	67-64-1	58.08	47	D	54	U	54	U	63	U	55		0.00
Benzene	71-43-2	78.11	60	D	37	U	36	U	440	D	143		0.01
Chloroform	67-66-3	119.40	320	D	150	D	100	D	2,300	D	718		0.04
Cis-1,2-Dichloroethene	156-59-2	96.94	43,000	D	16,000	D	12,000	D	40,000	D	27,750		1.62
Cyclohexane	110-82-7	84.16	41	D	39	U	39	U	7,600	D	1,930		0.11
Ethylbenzene	100-41-4	106.20	34	U	50	U	50	U	350	D	121		0.01
M,P-Xylene	179601-23-1	106.20	68	U	99	U	99	U	1,200	D	367		0.02
o-Xylene (1,2-Dimethylbenzene)	95-47-6	106.2	34	U	50	U	50	U	2,700	D	709		0.04
Tert-Butyl Methyl Ether	1634-04-4	88.2	110	D	41	U	41	U	560	D	188		0.01
Tetrachloroethene (PCE)	127-18-4	165.8	4,100,000	D	970,000	D	1,600,000	D	34,000,000	D	10,167,500		594.11
Toluene	108-88-3	92.14	30	U	43	U	43	U	570	D	172		0.01
Trans-1,2-Dichloroethene	156-60-5	96.94	300	D	410	D	180	D	480	D	343		0.02
Trichloroethene (TCE)	79-01-6	131.40	15,000	D	22,000	D	12,000	D	35,000	D	21,000		1.23
TOTAL													**597.99**

Notes:
1. The vapor data summarized above was collected during the pilot test activities completed July 17-19, 2019. Only detected compounds are listed above - a full list of analytes can be found in the complete laboratory report included in **Attachment C**.
2. Based on the above calculations, the estimated initial rate of VOC mass removal is approximately 600 lb/day. This estimated mass loading is conservative and typical of initial system operations following system startup. The anticipated mass loading of future system operations, following the initial spike, is significantly less. As the remediation progresses, the VOC concentrations at the system influent are expected to decline substantially. This estimated mass removal rate also does not account for any dilution which will likely occur as a result of the operation of the SVE system.
3. g/mol = grams per mole
4. µg/m^3 = microgram per cubic meter
5. Conc = concentration
6. Q = qualifier
7. D = concentration reported is a result of a diluted sample
8. U = analyte was analyzed for, but was not detected at a level greater than or equal to the Reporting Limit (RL); the value shown in the table is the RL
9. scfm = standard cubic feet per minute
10. lb/day = pounds per day
11. SVE = soil vapor extraction

FIGURES



WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

MAP REFERENCE: USGS BROOKLYN, N.Y. TOPOGRAPHIC QUADRANGLE

1000 0 500 1000

SCALE IN FEET

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Project

FORMER ACME STEEL/BRASS FOUNDRY
NYSDEC SITE No. 224132
72 ANTHONY STREET/
498 PORTER AVENUE

BROOKLYN NEW YORK

Figure Title

SITE LOCATION MAP

Project No.	170157201
Date	07/23/2019
Scale	1" = 1000'
Drawn By	PTF
Checked By	GN

Figure No. **1**

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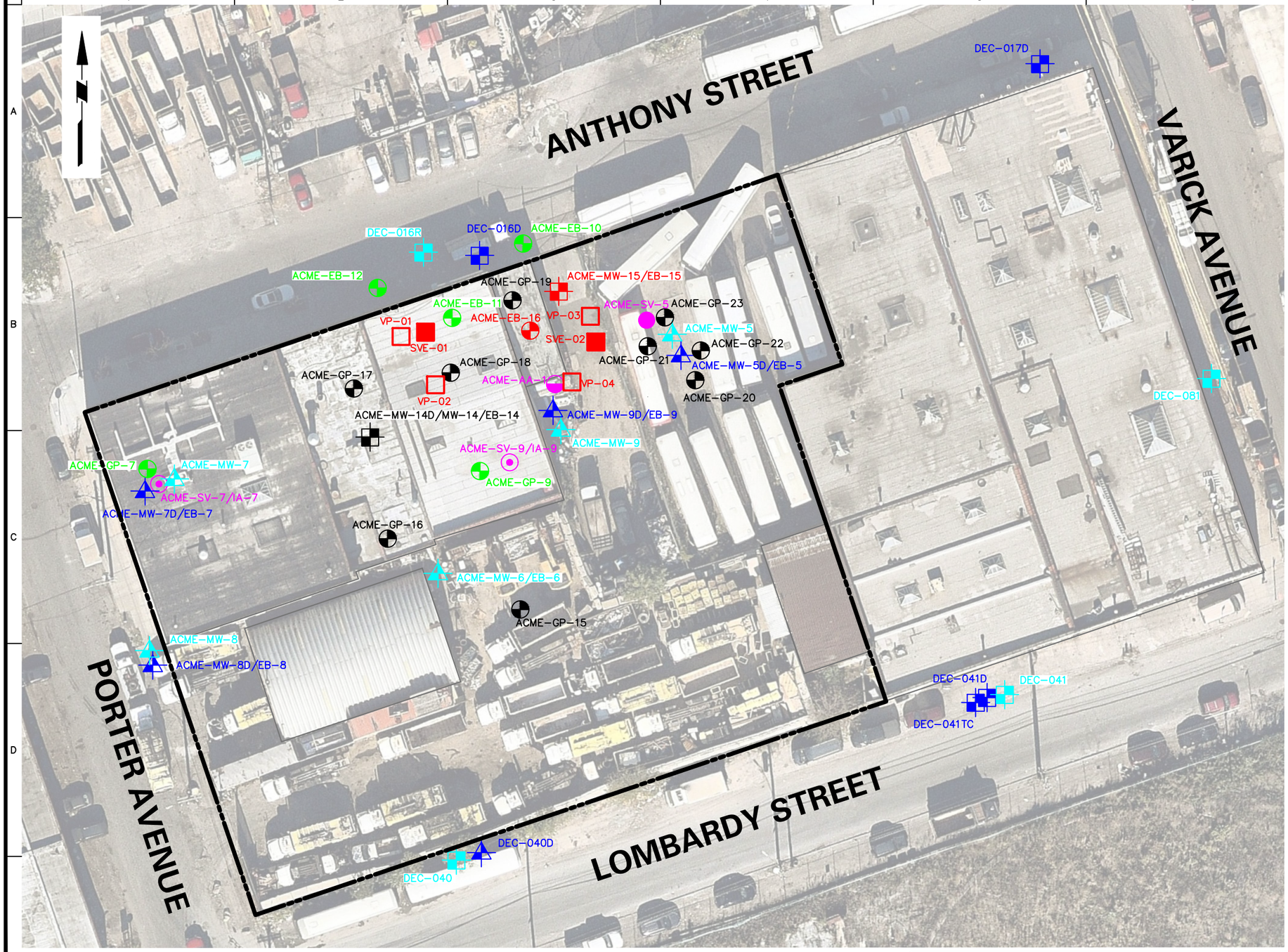
Filename: \\langan.com\data\NYC\data2\170157201\Cadd Data - 170157201\SVE Pilot Test As Built\Figure 1 - Site Location Map.dwg Date: 9/9/2019 Time: 09:20 User: knagotko Style Table: Langan.stb Layout: ANSIA-BP



LEGEND:

- SITE BOUNDARY
- SITE FEATURE
- ACME-EB-10 — RI SOIL BORING LOCATION
- ACME-MW-5D/EB-5 — RI SOIL BORING AND DEEP GROUNDWATER MONITORING WELL LOCATION
- ACME-MW-5 — RI SOIL BORING AND SHALLOW GROUNDWATER MONITORING WELL LOCATION
- DEC-017D — EXISTING NYSDEC DEEP GROUNDWATER MONITORING WELL LOCATION
- DEC-017 — EXISTING NYSDEC SHALLOW GROUNDWATER MONITORING WELL LOCATION
- ACME-SV-7/IA-7 — RI SOIL VAPOR AND INDOOR AIR SAMPLING COUPLET LOCATION
- ACME-SV-5 — RI SOIL VAPOR SAMPLING LOCATION
- ACME-AA-1 — RI AMBIENT AIR LOCATION
- ACME-GP-18 — SUPPLEMENTAL RI BORING LOCATION TO GROUNDWATER
- ACME-MW-14D/MW-14/EB-14 — SUPPLEMENTAL RI SHALLOW AND DEEP BORING/MONITORING WELL LOCATION
- SVE-01 — SOIL VAPOR EXTRACTION WELL COUPLET LOCATION (JULY 2019)
- VP-01 — VACUUM MONITORING PROBE LOCATION (JULY 2019)
- ACME-MW-15/EB-15 — SOIL BORING AND SHALLOW MONITORING WELL LOCATION (JULY 2019)
- ACME-EB-16 — SOIL BORING LOCATION (JULY 2019)

NOTES:

1. BASE MAP SOURCE: NEARMAP.COM AERIAL PHOTO DATED OCTOBER 27, 2017
2. THE REMEDIAL INVESTIGATION (RI) WAS CONDUCTED BY LANGAN BETWEEN SEPTEMBER 2012 AND JANUARY 2013.
3. THE SUPPLEMENTAL REMEDIAL INVESTIGATION (SRI) WAS CONDUCTED BY LANGAN BETWEEN MARCH AND APRIL 2017.
4. THE SVE PILOT TEST WAS CONDUCTED BY LANGAN IN JULY 2019.
5. SVE = SOIL VAPOR EXTRACTION
6. VP = VACUUM MONITORING PROBE

40 0 10 25 40
SCALE IN FEET

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Project
FORMER ACME STEEL/BRASS FOUNDRY
NYSDEC SITE No. 224132
72 ANTHONY STREET/
498 PORTER AVENUE
BROOKLYN NEW YORK

Figure Title
BORING LOCATION PLAN

Project No.	170157201
Date	07/23/2019
Drawn By	PTF
Checked By	GN

Figure No. 2

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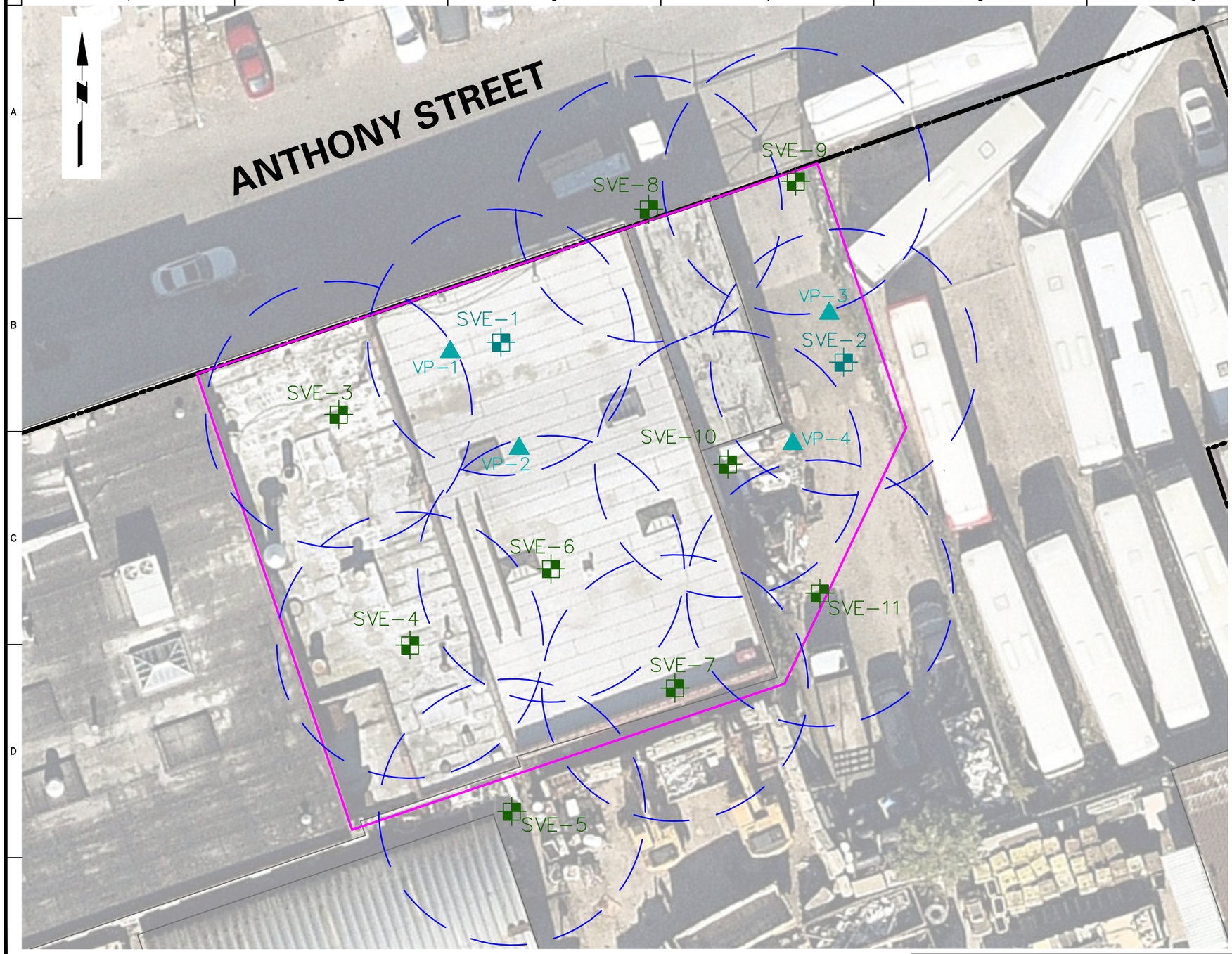
Filename: \\langan.com\data\NYC\data2\170157201\Cadd Data - 170157201\SVE Full Scale Design\Figure 2 - Boring Location Plan.dwg Date: 9/11/2019 Time: 16:34 User: knagotko Style Table: Langan.stb Layout: ANSIB-BL



LEGEND:

- SITE BOUNDARY
- TARGET TREATMENT AREA
- SVE-1 — PILOT TEST SVE WELL COUPLET
- VP-1 — PILOT TEST NESTED VACUUM MONITORING PROBE
- SVE-3 — PROPOSED SVE WELL LOCATION
- PROPOSED ROI OF 25 FEET

NOTES:

BGS - BELOW GROUND SURFACE
ROI - RADIUS OF INFLUENCE
SVE - SOIL VAPOR EXTRACTION
VOC - VOLATILE ORGANIC COMPOUND

1. BASE MAP SOURCE: NEARMAP.COM AERIAL PHOTO DATED OCTOBER 27, 2017.
2. THE SVE PILOT TEST WAS CONDUCTED BY LANGAN ON JULY 17-19, 2019.
3. THE TARGET TREATMENT AREA IS BASED ON THE RESULTS OF PREVIOUSLY COMPLETED SUBSURFACE INVESTIGATIONS INDICATE THE AREA OF CHLORINATED VOC IMPACTS IN THE VADOSE ZONE IS APPROXIMATELY 10,500 SQUARE FEET AT DEPTHS BETWEEN THE SITE COVER AND ABOUT 30 FEET BGS.
4. THE EXACT LOCATION OF PROPOSED SVE WELLS ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS OBSERVED DURING INSTALLATION.

20 0 10 20
SCALE IN FEET

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Project
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NYSDEC SITE No. 224132
72 ANTHONY STREET/
498 PORTER AVENUE
BROOKLYN NEW YORK

Figure Title
PROPOSED SVE WELL LAYOUT

Project No.	170157201
Date	8/16/2019
Drawn By	KN
Checked By	MA

Figure No. 3

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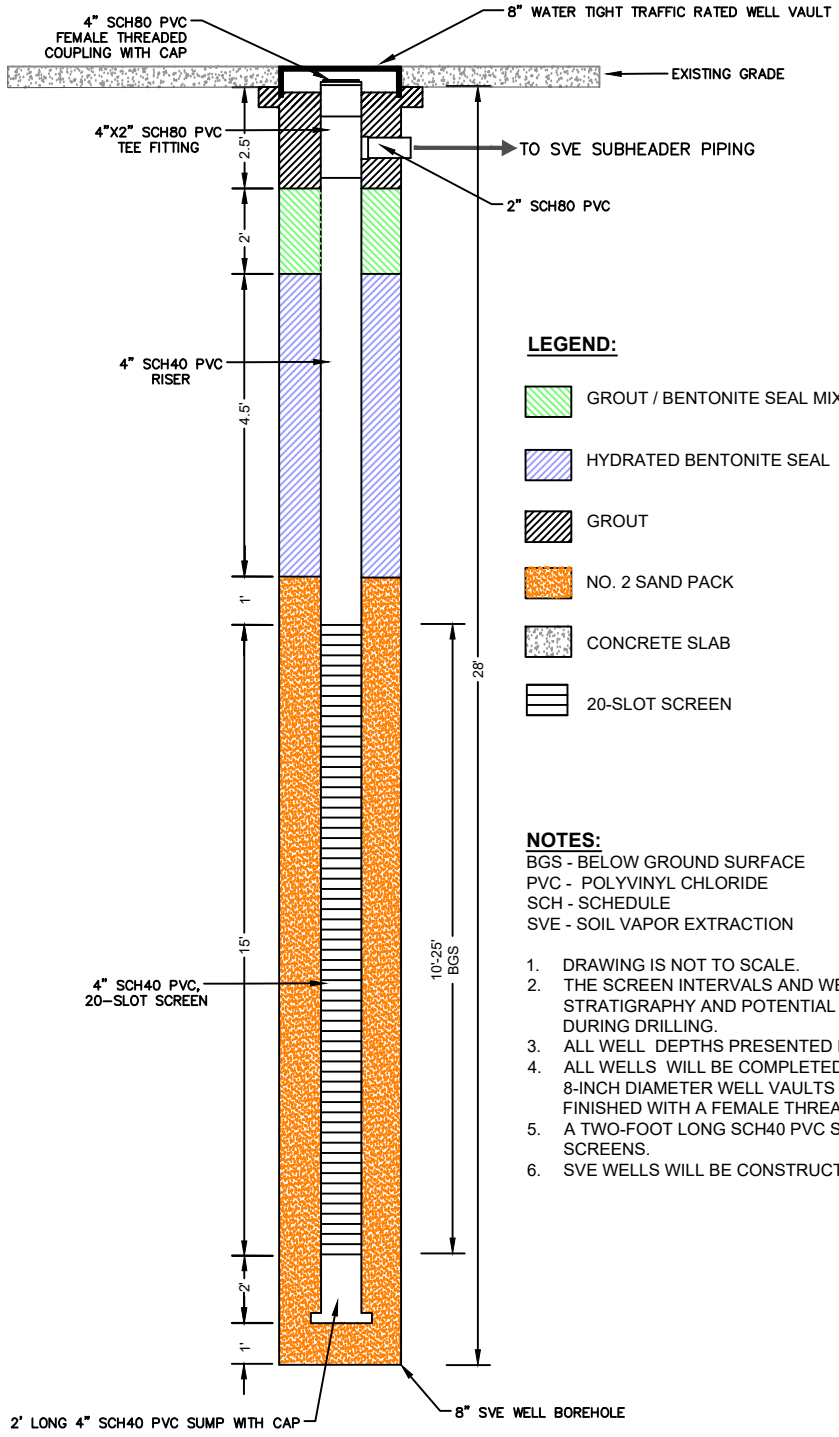
Filename: \\langan.com\data\NYC\data2\170157201\Cadd Data - 170157201\SVE Full Scale Design\SVE Full Scale Layout.dwg Date: 8/29/2019 Time: 10:12 User: kracanelli Style Table: Langan.stb Layout: Well Layout

TYPICAL SVE WELL



LEGEND:

- GROUT / BENTONITE SEAL MIXTURE
- HYDRATED BENTONITE SEAL
- GROUT
- NO. 2 SAND PACK
- CONCRETE SLAB
- 20-SLOT SCREEN

NOTES:

BGS - BELOW GROUND SURFACE
PVC - POLYVINYL CHLORIDE
SCH - SCHEDULE
SVE - SOIL VAPOR EXTRACTION

1. DRAWING IS NOT TO SCALE.
2. THE SCREEN INTERVALS AND WELL DEPTHS ARE SUBJECT TO CHANGE BASED ON THE STRATIGRAPHY AND POTENTIAL VADOSE ZONE SOIL IMPACTS OBSERVED IN THE FIELD DURING DRILLING.
3. ALL WELL DEPTHS PRESENTED HEREIN ARE RELATIVE TO EXISTING GRADE.
4. ALL WELLS WILL BE COMPLETED WITH FLUSH-MOUNT, TRAFFIC-RATED, WATER TIGHT, 8-INCH DIAMETER WELL VAULTS SET IN CONCRETE AND THE WELL RISER PIPES WILL BE FINISHED WITH A FEMALE THREADED COUPLING AND A CAP.
5. A TWO-FOOT LONG SCH40 PVC SUMP WILL BE PROVIDED AT THE BOTTOM OF ALL SCREENS.
6. SVE WELLS WILL BE CONSTRUCTED IN AT LEAST 8-INCH DIAMETER BOREHOLES.

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

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72 ANTHONY STREET/
498 PORTER AVENUE
BROOKLYN NEW YORK

Figure Title
PROPOSED TYPICAL SVE WELL CONSTRUCTION DETAILS

Project No.	170157201
Date	8/16/2019
Scale	N.T.S.
Drawn By / Checked By	KN / MA
Submission Date	
Figure No.	4

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Filename: \\langan.com\data\NYC\data2\170157201\Cadd Data - 170157201\SVE Full Scale Design\Well Construction Details.dwg Date: 8/23/2019 Time: 16:04 User: knagotko Style Table: Langan.stb Layout: Proposed Wells

LEGEND:

- SITE BOUNDARY
- TARGET TREATMENT AREA
- SVE-1 — PILOT TEST SVE WELL COUPLET
- VP-1 — PILOT TEST VACUUM MONITORING PROBE
- SVE-3 — PROPOSED SVE WELL LOCATION
- PROPOSED PROCESS EQUIPMENT ENCLOSURE LOCATION
- 2" SVE INDIVIDUAL LINES (BELOW GRADE)
- 4" SVE SUBHEADER (EXTERIOR ABOVE GROUND)
- 6" SVE MAIN HEADER (EXTERIOR ABOVE GROUND)
- 1/7 — DETAIL 1 PRESENTED ON FIGURE 6

NOTES:

BGS - BELOW GROUND SURFACE
PVC - POLYVINYL CHLORIDE
SCH - SCHEDULE
SVE - SOIL VAPOR EXTRACTION
VGAC - VAPOR GRANULAR ACTIVATED CARBON
VOC - VOLATILE ORGANIC COMPOUND

1. BASE MAP SOURCE: NEARMAP.COM AERIAL PHOTO DATED OCTOBER 27, 2017.
2. THE SVE PILOT TEST WAS CONDUCTED BY LANGAN ON JULY 17-19, 2019.
3. THE TARGET TREATMENT AREA IS BASED ON THE RESULTS OF PREVIOUSLY COMPLETED SUBSURFACE INVESTIGATIONS INDICATE THE AREA OF CHLORINATED VOC IMPACTS IN THE VADOSE ZONE IS APPROXIMATELY 10,500 SQUARE FEET AT DEPTHS BETWEEN THE SITE COVER AND ABOUT 30 FEET BGS.
4. THE EXACT LOCATION OF PROPOSED SVE WELLS AND ASSOCIATED MANIFOLD PIPING ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS OBSERVED DURING INSTALLATION.
5. ALL PROCESS EQUIPMENT, AND THE ENCLOSURE IN WHICH THE PROCESS EQUIPMENT IS TO BE PLACED, IS TO BE CONSTRUCTED TO CLASS I, DIVISION 2 STANDARDS, PER THE NATIONAL ELECTRIC CODE, AS WELL AS NYC ELECTRICAL CODE REQUIREMENTS.
6. THE SUB-HEADER AND MAIN HEADER PIPING WILL SLOPE AWAY FROM THE WELLS AND TOWARD THE PROCESS EQUIPMENT AT AN APPROXIMATELY 0.5% SLOPE.
7. ANY PIPING INSTALLED OUTSIDE THE EXTENTS OF THE BUILDING OR BELOW GRADE WILL BE CONSTRUCTED OF SCH80 PVC. ANY PIPING INSTALLED WITHIN THE BUILDING EXTENTS AND ABOVE GROUND WILL BE CONSTRUCTED OF METAL. ANY EXTERIOR PIPING WILL BE EQUIPPED WITH PASSIVE INSULATION AND DRAIN PORTS AT LOW POINTS.
8. EACH 2-INCH DIAMETER INDIVIDUAL SVE WELL LINE WILL BE EQUIPPED WITH A VACUUM GAUGE, FLOW METER, GATE VALVE, AND SAMPLE PORT FOR MONITORING AND PERFORMANCE ADJUSTMENTS AT INDIVIDUAL WELLS.
9. THE EXACT LOCATION OF THE PROCESS EQUIPMENT IS SUBJECT TO CHANGE BASED ON FIELD CONDITIONS OBSERVED DURING INSTALLATION.

20 0 10 20
SCALE IN FEET

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Figure Title
PROPOSED SVE MANIFOLD PIPING LAYOUT

Project No.	170157201
Date	8/16/2019
Drawn By	KN
Checked By	MA

Figure No. 5

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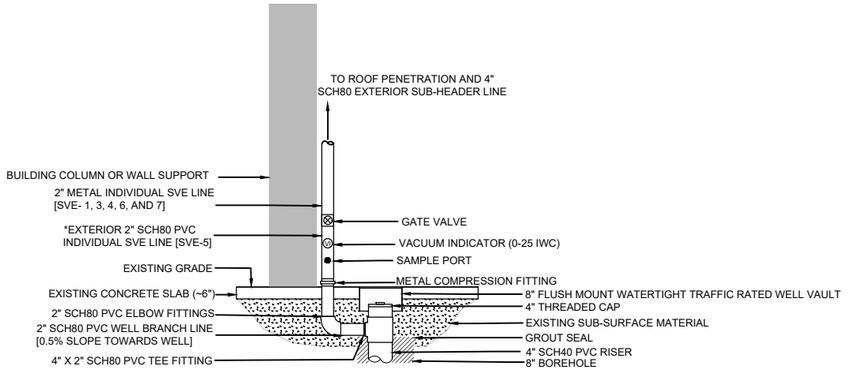
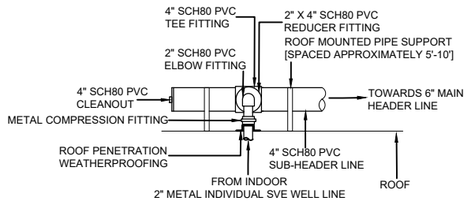
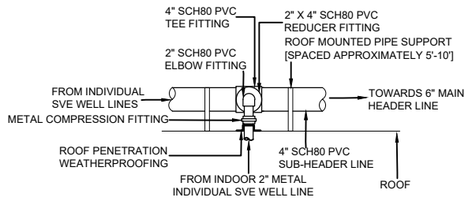
Filename: \\langan.com\data\NYC\data2\170157201\Cadd Data - 170157201\SVE Full Scale Design\SVE Full Scale Layout.dwg Date: 8/29/2019 Time: 10:15 User: kracanelli Style Table: Langan.stb Layout: Manifold Layout



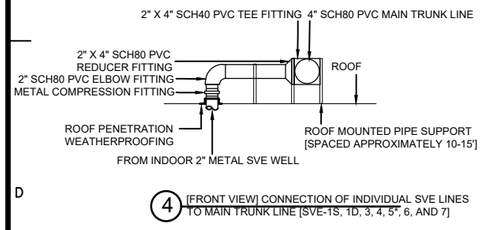
1 INDIVIDUAL INDOOR SVE WELL TRENCH, TRANSITION, AND ASSOCIATED INSTRUMENTATION [SVE- 1S, 1D, 3, 4, 5", 6 AND 7]



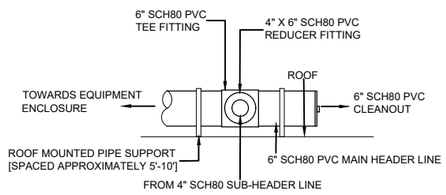
2 CONNECTION OF INDIVIDUAL SVE WELL LINES TO SUB-HEADER LINE [SVE- 1S, 1D, 5", AND 3]



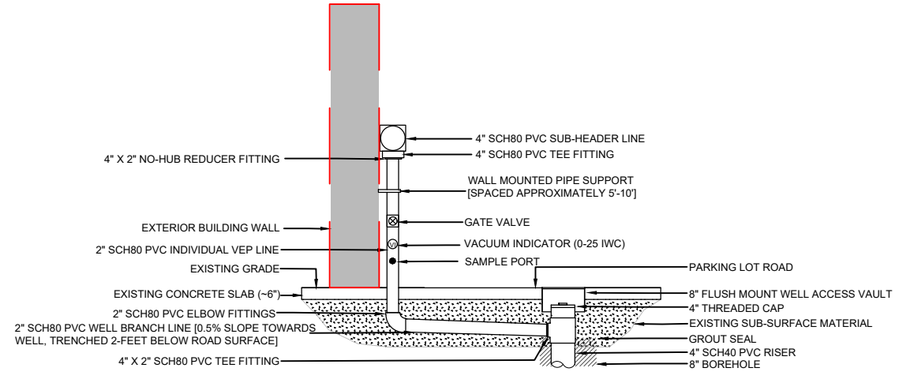
3 CONNECTION OF INDIVIDUAL SVE WELL LINES TO SUB-HEADER LINE [SVE- 4, 6 AND 7]



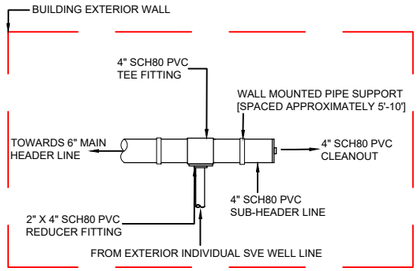
4 [FRONT VIEW] CONNECTION OF INDIVIDUAL SVE LINES TO MAIN TRUNK LINE [SVE-1S, 1D, 3, 4, 5", 6, AND 7]



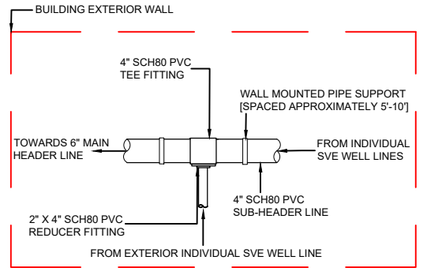
5 CONNECTION OF ROOF MOUNTED SUB-HEADER LINES TO MAIN HEADER LINE [SVE-1S, 1D, 3, 4, 5", 6, AND 7]



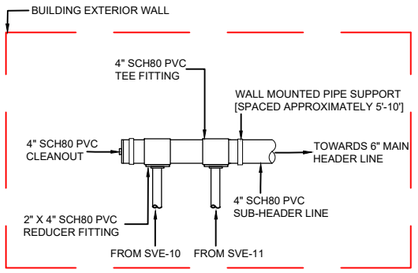
6 INDIVIDUAL EXTERIOR SVE WELL TRENCH, TRANSITION, AND ASSOCIATED INSTRUMENTATION [SVE- 2S, 2D, 8, 9, 10, AND 11]



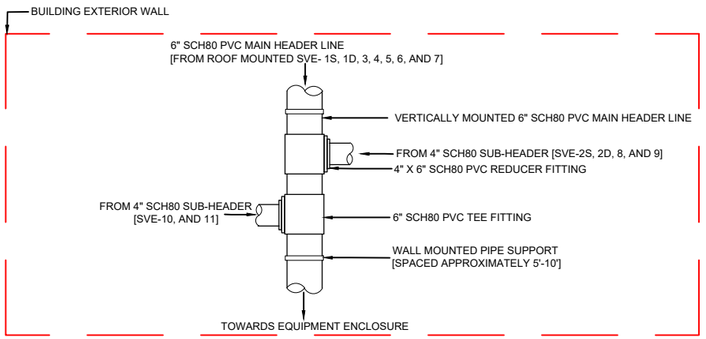
7 CONNECTION OF EXTERIOR INDIVIDUAL SVE WELL LINES TO SUB-HEADER LINE [SVE-8]



8 CONNECTION OF EXTERIOR INDIVIDUAL SVE WELL LINES TO SUB-HEADER LINE [SVE-2S, 2D, AND 9]



9 CONNECTION OF EXTERIOR INDIVIDUAL SVE WELL LINES TO SUB-HEADER LINE [SVE-10, AND 11]



10 CONNECTION OF EXTERIOR SUB-HEADER LINES TO MAIN-HEADER LINE [ALL SVE WELLS]

NOTES:
SVE - SOIL VAPOR EXTRACTION
SCH - SCHEDULE
PVC - POLYVINYL CHLORIDE

1. DRAWING IS NOT TO SCALE.
2. *SVE-5 - THIS INDIVIDUAL WELL LINE IS PROPOSED TO BE INSTALLED ON THE EXTERIOR OF THE BUILDING, AND CONSIST OF WRAPPED AND INSULATED SCH80 PVC. THE WELL LINE WILL MANIFOLD TO THE ROOF-MOUNTED WELL LINES.
3. THE PROPOSED CONSTRUCTION DETAILS ARE SUBJECT TO CHANGE BASED ON OBSERVED FIELD CONDITIONS.
4. THE PROPOSED SVE LOCATIONS AND ASSOCIATED MANIFOLD PIPING HAVE BEEN CO-LOCATED WITH BUILDING COLUMNS, TO THE EXTENT POSSIBLE, TO MINIMIZE DISTURBANCE TO NORMAL BUSINESS OPERATIONS; HOWEVER, THE LOCATION IS SUBJECT TO CHANGE BASED ON OBSERVED FIELD CONDITIONS [I.E., STRUCTURAL ELEMENTS/FOOTINGS].
5. THE PROPOSED INTERIOR SVE LOCATIONS ARE TO BE PIPED UNDERGROUND VIA SCH80 2-INCH PVC INDIVIDUAL WELL LINES TRENCHED TO THE WALL. EACH TRENCHED, SCH80 PVC INDIVIDUAL WELL LINE WILL TRANSITION TO A 2-INCH METAL RISER IN THE BUILDING INTERIOR. ONCE PENETRATING THE ROOF OF THE BUILDING, EACH WRAPPED AND INSULATED 2-INCH SCH80 PVC WELL LINE WILL MANIFOLD INTO A 4-INCH, WRAPPED, AND INSULATED SCH80 PVC SUB-HEADER LINE WHICH WILL RUN ALONG THE ROOF OF THE BUILDING. THE 4-INCH ROOF-MOUNTED SUB-HEADER LINES WILL CONNECT TO A WRAPPED AND INSULATED 6-INCH SCH80 PVC MAIN HEADER LINE AND WILL BE PIPED TO THE GROUND LEVEL PROCESS EQUIPMENT.
6. THE PROPOSED EXTERIOR SVE LOCATIONS ARE TO BE PIPED VIA SCH80 2-INCH INDIVIDUAL PVC WELL LINES IN A TRENCH, A MINIMUM OF 2 FEET BELOW THE SURFACE IN ANY ACTIVE DRIVEWAY AREA. ONCE ABOVE GROUND, THE 2-INCH SCH80 INDIVIDUAL SVE WELL LINES WILL BE WRAPPED AND INSULATED AND CONNECT TO A WRAPPED AND INSULATED 4-INCH SCH80 SUB-HEADER LINE MOUNTED TO THE EXTERIOR WALL. THE EXTERIOR SUB-HEADER LINES WILL MANIFOLD TO A WRAPPED AND INSULATED 6-INCH SCH80 PVC MAIN HEADER LINE WHICH WILL BE MOUNTED TO THE EXTERIOR WALL AND PIPED TO THE GROUND LEVEL PROCESS EQUIPMENT.
7. THE SUB-HEADER AND MAIN HEADER PIPING WILL SLOPE AWAY FROM THE WELLS AND TOWARD THE PROCESS EQUIPMENT AT AN APPROXIMATELY 0.5% SLOPE.
8. ALL PROCESS EQUIPMENT, AND THE ENCLOSURE IN WHICH THE PROCESS EQUIPMENT IS TO BE PLACED, IS TO BE CONSTRUCTED TO CLASS I, DIVISION 2 STANDARDS, PER THE NATIONAL ELECTRIC CODE, AS WELL AS NYC ELECTRICAL CODE REQUIREMENTS.
9. REFER TO FIGURES 5 AND 8 FOR THE PROPOSED FULL-SCALE SVE MANIFOLD LAYOUT AND THE PROPOSED PROCESS AND INSTRUMENTATION DETAILS, RESPECTIVELY.
10. ALL SVE MANIFOLD PIPING MUST BE CLEARLY LABELED.
11. LANGAN MUST INSPECT ALL MANIFOLD PIPING TO DOCUMENT ALL PIPING AND FITTINGS ARE COMPETENT AND FREE OF DAMAGE AND/OR DEFECT. ANY SUCH IMPERFECTIONS MUST BE REPAIRED OR REPLACED, AS REQUIRED.
12. ABOVE GROUND PIPING WITHIN 2 FEET OF FLOOR LEVEL WITHIN THE BUILDING WILL BE PROTECTED TO PREVENT DAMAGE.

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

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Figure Title
PROPOSED SVE MANIFOLD PIPING CROSS-SECTION DETAILS

Project No.	170157201
Date	8/16/2019
Drawn By	AQ
Checked By	MA

Figure No. 6

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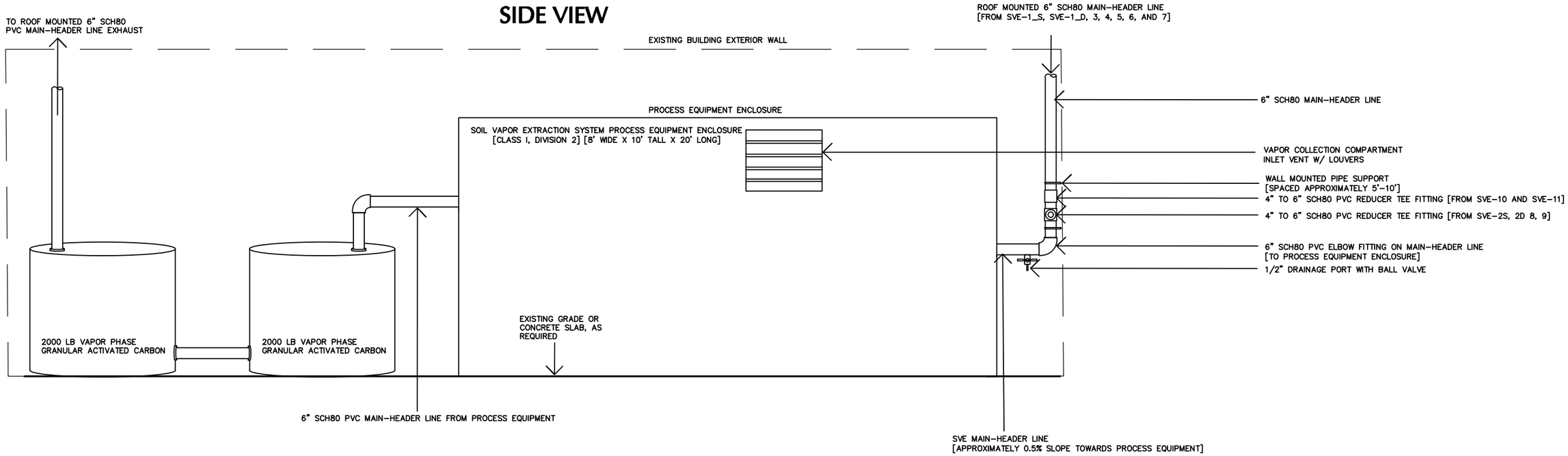
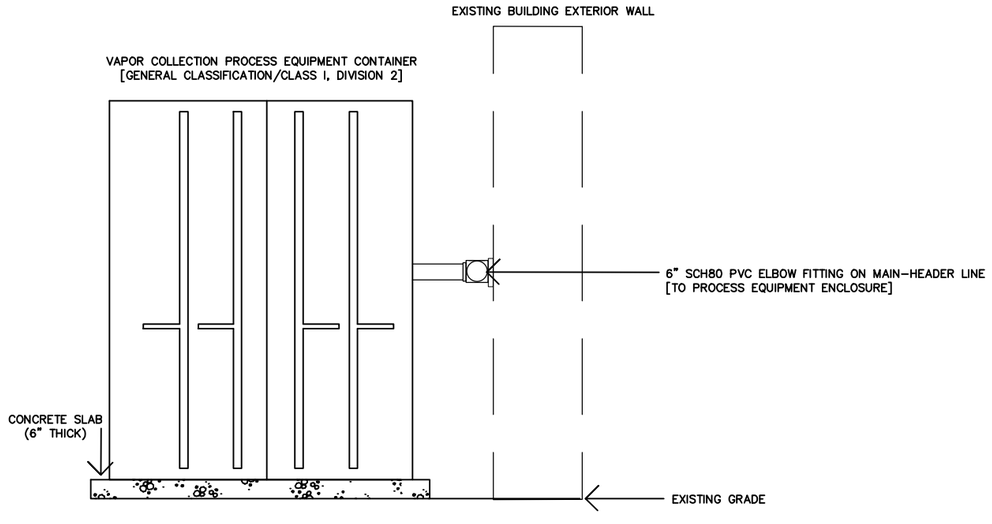
SIDE VIEW



END VIEW



NOTES:
SVE - SOIL VAPOR EXTRACTION
SCH - SCHEDULE
PVC - POLYVINYL CHLORIDE

1. FIGURE IS NOT TO SCALE.
2. THE PROPOSED CONSTRUCTION DETAILS ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS OBSERVED DURING INSTALLATION.
3. ALL OUTDOOR AND EXPOSED PIPING WILL BE CONSTRUCTED OF SCH80 PVC, SLOPED 0.5% TOWARDS THE EQUIPMENT ENCLOSURE, AND BE WRAPPED AND INSULATED TO PROTECT IT FROM THE WEATHER, TO THE EXTENT POSSIBLE.
4. REFER TO FIGURES 5 AND 8 FOR THE PROPOSED FULL-SCALE SVE MANIFOLD LAYOUT AND THE PROPOSED PROCESS AND INSTRUMENTATION DETAILS, RESPECTIVELY.
5. ALL SVE MANIFOLD PIPING MUST BE CLEARLY LABELED.
6. LANGAN MUST INSPECT ALL MANIFOLD PIPING TO DOCUMENT ALL PIPING AND FITTINGS ARE COMPETENT AND FREE OF DAMAGE AND/OR DEFECT. ANY SUCH IMPERFECTIONS MUST BE REPAIRED OR REPLACED, AS REQUIRED.
7. ABOVE GROUND PIPING WITHIN 2 FEET OF FLOOR LEVEL WITHIN THE BUILDING WILL BE PROTECTED TO PREVENT DAMAGE.
8. THE DISCHARGE TO THE ATMOSPHERE WILL BE THROUGH A STACK AT LEAST 10 FEET ABOVE THE ROOF AND AT LEAST 10 FEET FROM ANY OPERABLE OPENINGS OR AIR INTAKE. THE DISCHARGE MUST ALSO BE EQUIPPED WITH A NO-LOSS FITTING TO PREVENT THE ACCUMULATION OF DEBRIS WITHIN THE DISCHARGE PIPING AND MINIMIZE NOISE.

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Figure Title
PROPOSED PROCESS EQUIPMENT LAYOUT

Project No.	170157201
Date	8/16/2019
Drawn By	AQ
Checked By	KN

Figure No. 7

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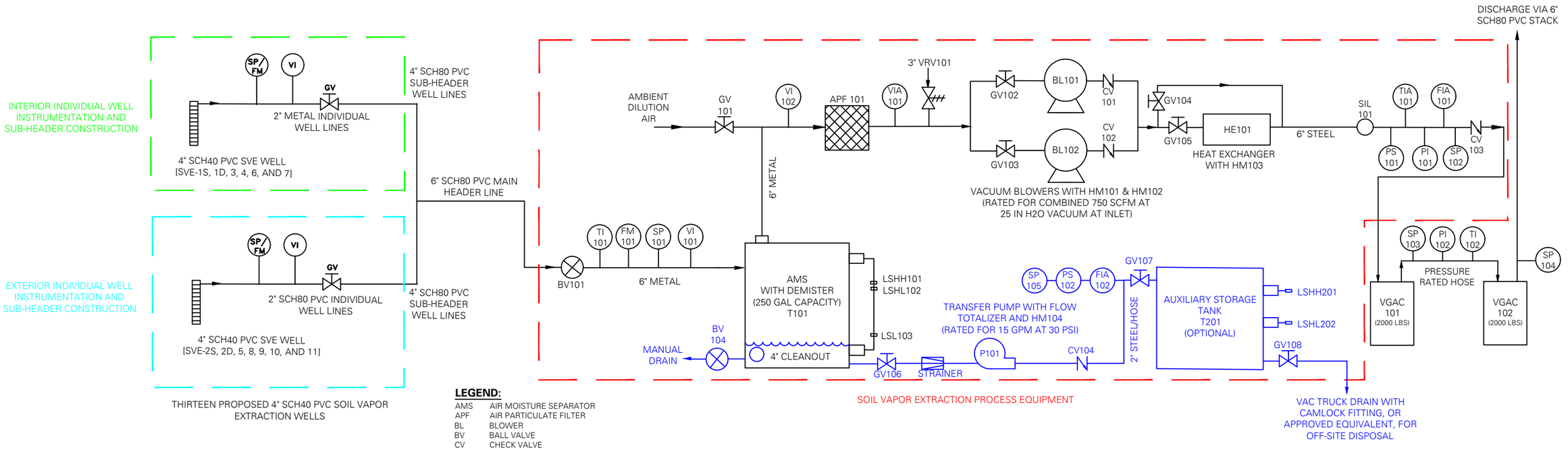

THIRTEEN PROPOSED 4" SCH40 PVC SOIL VAPOR EXTRACTION WELLS

LEGEND:

AMS	AIR MOISTURE SEPARATOR
APF	AIR PARTICULATE FILTER
BL	BLOWER
BV	BALL VALVE
CV	CHECK VALVE
FIA	FLOW INDICATOR ANALOG
FM	FLOW METER
GAL	GALLON
GPM	GALLON PER MINUTE
GV	GATE VALVE
HE	HEAT EXCHANGER
HM	HOUR METER
INH2O	INCHES OF WATER COLUMN
LSHH	LEVEL SWITCH HIGH HIGH
LSHL	LEVEL SWITCH HIGH LOW
LSL	LEVEL SWTICH LOW
PI	PRESSURE INDICATOR
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SIL	SILENCER
SP	SAMPLE PORT
SVE	SOIL VAPOR EXTRACTION
TIA	TEMPERATURE INDICATOR ANALOG
TI	TEMPERATURE INDICATOR
VGAC	VAPOR PHASE GRANULAR ACTIVATED CARBON
VI	VACUUM INDICATOR
VIA	VACUUM INDICATOR ANALOG
VRV	VACUUM RELIEF VALVE

NOTES:

1. FIGURE IS NOT TO SCALE.
2. THE EXACT LOCATION OF THE PROCESS EQUIPMENT IS SUBJECT TO CHANGE, AND WILL BE COORDINATED WITH THE OWNER.
3. EACH VACUUM BLOWER IS TO BE EQUIPPED WITH A VARIABLE FREQUENCY DRIVE.
4. A HEAT EXCHANGER WILL ONLY BE REQUIRED IF THE TEMPERATURE OF THE DISCHARGE FLOW OF THE BLOWERS EXCEEDS 130°F.
5. THE PROCESS EQUIPMENT ENCLOSURE AND ASSOCIATED PROCESS EQUIPMENT IS TO BE CONSTRUCTED TO CLASS I, DIVISION 2 STANDARDS, PER THE NATIONAL ELECTRIC CODE, AS WELL AS NYC ELECTRICAL CODE REQUIREMENTS.
6. THE WELL-SPECIFIC INSTRUMENTATION WILL BE LOCATED ABOVE GROUND AND AT GROUND LEVEL ON THE INDIVIDUAL WELL LINE RISER FOR EASE OF ACCESS.
7. ALL INDOOR MANIFOLD PIPING WILL BE CONSTRUCTED OF METAL PIPING. ALL OUTDOOR AND EXPOSED PIPING WILL BE CONSTRUCTED OF SCH80 PVC, SLOPED 0.5% TOWARDS THE EQUIPMENT ENCLOSURE, AND BE WRAPPED AND INSULATED TO PROTECT IT FROM THE WEATHER, TO THE EXTENT POSSIBLE.
8. THE DISCHARGE TO THE ATMOSPHERE WILL BE THROUGH A STACK AT LEAST 10 FEET ABOVE THE ROOF AND AT LEAST 10 FEET FROM ANY OPERABLE OPENINGS OR AIR INTAKE. THE DISCHARGE MUST ALSO BE EQUIPPED WITH A NO-LOSS FITTING TO PREVENT THE ACCUMULATION OF DEBRIS WITHIN THE DISCHARGE PIPING AND MINIMIZE ANY NOISE.
9. WATER LINE IS SHOWN IN BLUE.

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

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BROOKLYN NEW YORK

Figure Title
PROPOSED PROCESS AND INSTRUMENTATION DIAGRAM

Project No.	170157201
Date	8/16/2019
Drawn By	AQ
Checked By	KN

Figure No. 8

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ATTACHMENT A

SOIL BORING AND WELL CONSTRUCTION LOGS

LANGAN

Log of Boring **ACME-EB-15** Sheet 1 of 3

Project: Former Acme Steel/Brass Foundry Site No. 224132	Project No.: 170157201
Location: 72 Anthony Street, Brooklyn, New York	Elevation and Datum: Approx. 56.5 feet NAVD88
Drilling Company: AARCO Environmental Services Corp.	Date Started: 7/10/19 / Date Finished: 7/10/19
Drilling Equipment: Geoprobe 8140LC Sonic Drill Rig	Completion Depth: 65 ft / Rock Depth: NA
Size and Type of Bit: 4-inch diameter cutting shoe	Number of Samples: Disturbed 13 / Undisturbed NA / Core NA
Casing Diameter (in): 6-inch diameter by 5-foot long Steel Casing / Casing Depth (ft): 65	Water Level (ft.): First ▽ 53 / Completion ▼ NA / 24 HR. ▼ TBD
Casing Hammer: NA / Weight (lbs): NA / Drop (in): NA	Drilling Foreman: Tom Seickel
Sampler: 3.25-inch diameter core barrel x 5-foot long	Field Engineer: Katherine Racanelli
Sampler Hammer: NA / Weight (lbs): NA / Drop (in): NA	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+56.5		0						
	+56.0	R1a (0-6") CONCRETE slab, rebar							Pre-cleared to 4 feet bgs.
		R1b (0-48") Brown and grey fine SAND, trace silt, metal fragment, plastic, concrete fragments, fabric-like material (dry) [FILL]	1					1.1	
								4.5	
			2					26.3	Collect soil sample ACME-EB-15_0-2
		R1c (48-60") CONCRETE, some dark brown fine sand, some coarse sand, trace fine gravel, plastic (dry) [FILL]		R1	HA	NA	NA	52.2	
			3					11.6	
								1.8	
			4					2.6	
			5						
		R2a (0-14") Dense greyish brown, black banding, fine SAND, trace fine gravel, wood, plastic (dry) [FILL]						626	Solvent-like odor 5 to 5.5 feet bgs. Collect soil sample ACME-EB-15_5-5.5
	+50.3		6					28.6	
		R2b (14-21") Loose brown fine SAND (dry)						23.7	
	+49.3		7					21.6	
	+49.1	R2c (21-24") BOULDER		R2	SONIC	48/60	NA	44	
		R2d (24-28") Dense brown fine SAND, trace silt, trace fine gravel (dry)	8					97.9	
		R2e (28-48") Loose brown fine SAND, trace fine gravel (dry)						15	
			9					0.0	
			10						
		R3a (0-9") Loose brown fine SAND, trace fine gravel (dry)						16.4	
	+45.8							33.4	
	+45.5	R3b (9-12") BOULDER	11					4.8	
		R3c (12-24") Dense brown fine SAND, some silt (dry)						3.5	
		R3d (24-60") Medium dense brown fine SAND, trace silt (dry)	12	R3	SONIC	60/60	NA	1.3	
								0.1	
			13					0.0	
								0.7	
			14					0.5	
								0.4	
			15						
		R4a (0-14") Dense brown fine SAND, trace coarse sand, trace silt (dry)	16					6.2	
								1.5	
		R4b (14-36") Medium dense brown fine SAND, trace fine gravel (dry)	17					1.3	
				R4	SONIC	49/60	NA	6.4	
			18					1.6	
								6.5	
	+37.5		19					35.9	
		R4c (36-49") BOULDER, some light grey silt (dry)						65.8	
			20						

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Log of Boring **ACME-EB-15** Sheet 2 of 3

Project	Project No.
Former Acme Steel/Brass Foundry Site No. 224132	170157201
Location	**Elevation and Datum**
72 Anthony Street, Brooklyn, New York	Approx. 56.5 feet NAVD88

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+36.5		20						
		R5a (0-16") BOULDER, some brown fine sand (dry)	21						
			22	R5	SONIC	41/60	NA	7.7	
	+33.6		23					1	
		R5b (16-41") Loose dark brown to light brown medium SAND, some fine gravel, trace coarse sand (dry)	24					0.7	
			25					0.1	
			26					0.5	
			27					0.3	
		R6a (0-6") Loose brown medium SAND, trace fine gravel (dry)	28	R6	SONIC	34/60	NA	2.7	
		R6b (6-14") Loose brown fine SAND (dry)	29					1.7	
		R6c (14-34") Loose brown medium SAND (dry)	30					3.8	
			31					1.8	
			32					1.1	
			33					2.8	
		R7a (0-10") Medium dense brown fine SAND, trace fine gravel (dry)	34	R7	SONIC	32/60	NA	1.6	
		R7b (10-32") Loose brown medium SAND, cobble (dry)	35					0.6	
			36					3.1	
			37					5.3	
			38					2.4	
		R8a (0-11") Loose brown fine SAND, trace fine gravel (dry)	39	R8	SONIC	34/60	NA	11.7	
		R8b (11-34") Loose brown medium SAND (dry)	40					14.4	
			41					12.4	
			42					4.6	
			43					1.0	
		R9a (0-8") Loose brown medium SAND, cobbles (dry)	44	R9	SONIC	48/60	NA	5.8	
		R9b (8-10") Dense brown fine SAND, trace fine gravel (dry)	45					10.7	
		R9c (10-48") Loose brown medium SAND, cobble (dry)						8.9	
								5.3	
								1.2	
								1.9	
								1.1	
								1.2	

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Log of Boring **ACME-EB-15** Sheet 3 of 3

Project	Project No.
Former Acme Steel/Brass Foundry Site No. 224132	170157201
Location	**Elevation and Datum**
72 Anthony Street, Brooklyn, New York	Approx. 56.5 feet NAVD88

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+11.5		45						
		R10 (0-48") Loose brown medium SAND, trace silt, cobble (dry)	46	R10	SONIC	48/60	NA	13.3	
			47					34.7	
			48					24.6	
			49					16.8	
			50					19.4	
								7.3	
								13.5	
								9.8	
		R11 (0-50") Loose brown medium SAND, trace silt, trace fine gravel (moist)	51	R11	SONIC	50/60	NA	23.9	
			52					15.6	
			53					10.8	
			54					8.8	
								11.9	Collect soil sample ACME-EB-16_51-53
								58.6	
								11.1	
								9.9	
		R12 (0-47") Loose brown medium SAND, some fine sand, cobble (moist)	55	R12	SONIC	47/60	NA	18.3	
			56					7.4	
			57					3.9	
			58					3.2	
			59					6.1	
			60					6.2	
								5.1	
		R13 (0-46") Loose brown fine SAND, some medium sand, trace silt, cobble (moist)	61	R13	SONIC	46/60	NA	5.4	
			62					7.9	
			63					9.0	
			64					4.4	Set 15-foot, 10-slot screen at 63 feet bgs.
								3.3	
								2.8	
	-8.5							2.8	
		EOB @ 65.0 ft bgs	65						
			66						
			67						
			68						
			69						
			70						

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Log of Boring **ACME-EB-16** Sheet 1 of 2

Project: Former Acme Steel/Brass Foundry Site No. 224132	Project No.: 170157201
Location: 72 Anthony Street, Brooklyn, New York	Elevation and Datum: Approx. 57 feet NAVD88
Drilling Company: AARCO Environmental Services Corp.	Date Started: 7/11/19 — Date Finished: 7/11/19
Drilling Equipment: Geoprobe 6610DT	Completion Depth: 27 ft — Rock Depth: NA
Size and Type of Bit: 2-inch direct push	Number of Samples: Disturbed 7 — Undisturbed NA — Core NA
Casing Diameter (in): NA — Casing Depth (ft): NA	Water Level (ft.): First NA — Completion NA — 24 HR. NA
Casing Hammer: NA — Weight (lbs): NA — Drop (in): NA	Drilling Foreman: Nick Turro
Sampler: 2-inch diameter x 4-foot long steel macrocore	Field Engineer: Katherine Racanelli
Sampler Hammer: NA — Weight (lbs): NA — Drop (in): NA	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+57.0	R1a (0-6") CONCRETE slab	0						
	+56.5	R1b (6-24") Dark brown fine SAND, some medium sand, coal, white amorphous material (ash?), glass (dry) [FILL]	1	R1	MACROCORE	40/48	NA	123.6	Collect soil sample ACME-EB-16_0-2 and duplicate sample SODUP01_071119
	+55.0	R1c (24-40") Dark brown fine SAND, trace silt (dry)	2					66.2	
			3					13.6	
			4					48.8	
								29.5	
								56.0	
		R2 (0-37") Brown fine SAND, some silt, trace fine gravel (dry)	5	R2	MACROCORE	37/48	NA	21.0	
			6					45.5	
			7					52.4	
			8					10.7	
								3.9	
								1.4	
		R3 (0-39") Brown fine SAND, some silt, trace fine gravel (dry)	9	R3	MACROCORE	39/48	NA	16.8	
			10					0.5	
			11					3.3	
			12					1.5	
								1.1	
								2.4	
		R4a (0-10") Brown to greyish brown fine SAND (dry)	13	R4	MACROCORE	32/48	NA	3.9	
	+42.8		14					52.5	Solvent-like odor 14 to 14.5 feet bgs
	+42.6	R4b (10-13") Grey fine GRAVEL, trace brown fine sand (dry)						30	
		R4c (13-26") Brown fine SAND, trace fine gravel (dry)	15					12.8	
		R4d (26-32") Brown fine SAND, some fine gravel (dry)	16					1.3	
	+39.9		17	R5	MACROCORE	37/48	NA	66.7	Solvent-like odor 17 to 17.5 feet bgs. Collect soil sample ACME-EB-16_17-17.5
	+39.3	R5a (0-7") Brown silty SAND (dry)						5.2	
		R5b (7-37") Brown medium SAND, trace fine gravel (dry)	18					0.9	
			19					0.8	
								0.6	
			20					0.4	

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Log of Boring **ACME-EB-16** Sheet 2 of 2

Project	Project No.
Former Acme Steel/Brass Foundry Site No. 224132	170157201
Location	**Elevation and Datum**
72 Anthony Street, Brooklyn, New York	Approx. 57 feet NAVD88

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+37.0		20						
		R6a (0-17") Brown fine SAND, trace fine gravel (dry)	21					4.6	
		R6b (17-35") Brown medium SAND, trace fine gravel (dry)	22	R6	MACROCORE	35/48	NA	66	Solvent-like odor 21.8 to 22.3 feet bgs
			23					19	
			24					20	
								2.5	
		R7a (0-12") Brown medium SAND, trace fine gravel (dry)	25	R7	MACROCORE	22/36	NA	20.6	
		R7b (12-22") Brown fine SAND, trace fine gravel (dry)	26					14.4	
	+30.0							1.4	
		EOB @ 27.0 ft bgs	27						Refusal at 27 feet bgs. Offset ACME-EB-16_A 0.5 foot east, refusal at 3 feet bgs. Offset ACME-EB-16_B 1.5 feet south, refusal at 12 feet bgs. Offset ACME-EB-16_C 2.75 feet south, refusal at 12 feet bgs. Backfilled with grout and 5% bentonite mix, concrete patch at grade.
			28						
			29						
			30						
			31						
			32						
			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

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Log of Boring **SVE-01_D** Sheet 1 of 2

Project: Former Acme Steel/Brass Foundry Site No. 224132	Project No.: 170157201
Location: 72 Anthony Street, Brooklyn, New York	Elevation and Datum: Approx. 57 feet NAVD88
Drilling Company: AARCO Environmental Services Corp.	Date Started: 7/8/19 / Date Finished: 7/8/19
Drilling Equipment: Geoprobe 8140LC Sonic Drill Rig	Completion Depth: 30 ft / Rock Depth: NA
Size and Type of Bit: 4-inch diameter cutting shoe	Number of Samples: Disturbed 6 / Undisturbed NA / Core NA
Casing Diameter (in): 6-inch diameter by 5-foot long Steel Casing / Casing Depth (ft): 30	Water Level (ft.): First NA / Completion NA / 24 HR. NA
Casing Hammer: NA / Weight (lbs): NA / Drop (in): NA	Drilling Foreman: Tom Seickel
Sampler: 3.25-inch diameter core barrel x 5-foot long	Field Engineer: Katherine Racanelli
Sampler Hammer: NA / Weight (lbs): NA / Drop (in): NA	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+57.0		0						
	+56.5	R1a (0-6") CONCRETE slab							Pre-cleared to 5 feet bgs.
		R1b (6-54") Dark brown fine SAND, trace silt, concrete, brick (dry) [FILL]	1	R1	HA	NA	NA	466	
								478	
			2					381	
								88.6	
			3					298	
								125	
	+52.5		4					81.3	
		R1c (54-60") Brown fine SAND, some silt (dry)						97.9	
			5						Solvent-like odor 5 to 17 feet bgs
	+51.0								
		R2a (0-18") Loose brown silty fine SAND (dry)	6					4.8	
								9.5	
		R2b (18-46") Loose brown silty SAND, cobbles (dry)	7	R2	SONIC	46/60	NA	27.7	
								93.6	
			8					39.9	
								889	
			9					1,085	Collect soil sample SVE-01_9-10
			10						
			11						
		R3a (0-16") Loose to medium dense brown and dark brown banded, silty fine SAND (dry)							
		R3b (16-48") Loose brown silty SAND, trace fine gravel (dry)	12	R3	SONIC	48/60	NA	391	
								392	
			13					584	
								645	
			14					618	
								618	
			15						
			16						
		R4a (0-11") Loose brown silty fine SAND (dry)							
		R4b (11-24") Dense brown silty fine SAND, cobble (dry)	17	R4	SONIC	50/60	NA	96	
	+39.2							600.2	
		R4c (24-39") Dense brown fine SAND, some coarse sand, trace fine gravel (dry)	18					701.1	
								796	
		R4d (39-50") Loose brown medium SAND, trace fine gravel (dry)	19					861	
								944	
			20						

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Log of Boring **SVE-01_D** Sheet 2 of 2

Project	Project No.
Former Acme Steel/Brass Foundry Site No. 224132	170157201
Location	**Elevation and Datum**
72 Anthony Street, Brooklyn, New York	Approx. 57 feet NAVD88

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+37.0		20						Solvent-like odor 20 to 25 feet bgs
			21						
			22	R5	SONIC	26/60	NA		
	+34.2	R5a (0-12") Loose brown silty fine SAND, some fine gravel (dry)	23					139	
	+33.2	R5b (12-21") Dense brown to dark brown fine SAND, some medium sand (dry)	24					54 72	
	+32.4	R5c (21-26") Loose grey SILT, trace fine gravel (dry)	25					94	
			26						
	+30.3	R6a (0-7") Loose brown medium SAND, some fine gravel (dry)	27	R6	SONIC	39/60	NA	185	
		R6b (7-12") Dense brown fine SAND, some medium sand (dry)						198	
		R6c (12-26") Loose light brown medium SAND (dry)	28					191	Collect soil sample SVE-01_28-29
		R6d (26-39") Loose light brown fine SAND (dry)	29					403 403	
	+27.0							341	
		EOB @ 30.0 ft bgs	30						Set 10-foot, 10-slot screen at 30 feet bgs.
			31						
			32						
			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

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Log of Boring **SVE-01_S** Sheet 1 of 1

Project: Former Acme Steel/Brass Foundry Site No. 224132	Project No.: 170157201
Location: 72 Anthony Street, Brooklyn, New York	Elevation and Datum: Approx. 57 feet NAVD88
Drilling Company: AARCO Environmental Services Corp.	Date Started: 7/8/19 / Date Finished: 7/8/19
Drilling Equipment: Geoprobe 8140LC Sonic Drill Rig	Completion Depth: 15 ft / Rock Depth: NA
Size and Type of Bit: 4-inch diameter cutting shoe	Number of Samples: Disturbed 3 / Undisturbed NA / Core NA
Casing Diameter (in): 6-inch diameter by 5-foot long Steel Casing; Casing Depth (ft): 15	Water Level (ft.): First NA / Completion NA / 24 HR. NA
Casing Hammer: NA; Weight (lbs): NA; Drop (in): NA	Drilling Foreman: Tom Seickel
Sampler: 3.25-inch diameter core barrel x 5-foot long	Field Engineer: Katherine Racanelli
Sampler Hammer: NA; Weight (lbs): NA; Drop (in): NA	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+57.0		0						Pre-cleared to 5 feet bgs.
	+56.5	R1a (0-6") CONCRETE slab							
		R1b (6-54") Dark brown fine SAND, trace silt, brick, concrete, ceramic tile (dry) [FILL]	1	R1	HA	NA	NA	20	
			2					26	
								35	
			3					11.6	
								41	
			4					30.1	
	+52.5							21	
		R1c (54-60") Brown fine SAND, some silt (dry)						25	
			5						Solvent-like odor 5 to 15 feet bgs
	+51.0								
		R2a (0-13") Loose brown silty fine SAND (dry)	6					91	
		R2b (13-16") Dense brown silty fine SAND (dry)	7	R2	SONIC	46/60	NA	59	
		R2c (16-46") Loose brown silty fine SAND, trace fine gravel, trace coarse gravel (dry)						34	
			8					386	
								381	
			9					395	
								787	
			10						
		R3a (0-17") Dense brown and dark grey banding, silty fine SAND (dry)	11	R3	SONIC	52/60	NA	351	
								511	
		R3b (17-37") Loose brown silty fine SAND, trace fine gravel, trace coarse gravel (dry)	12					394	
								395	
			13					398	
								394	
		R3c (37-52") Dense brown silty fine SAND, trace fine gravel, trace coarse gravel (dry)	14					792	
	+42.0							720	
		EOB @ 15.0 ft bgs	15						Set 10-foot, 10-slot screen at 15 feet bgs.
			16						
			17						
			18						
			19						
			20						

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Log of Boring **SVE-02_D** Sheet 1 of 2

Project: Former Acme Steel/Brass Foundry Site No. 224132	Project No.: 170157201
Location: 72 Anthony Street, Brooklyn, New York	Elevation and Datum: Approx. 59 feet NAVD88
Drilling Company: AARCO Environmental Services Corp.	Date Started: 7/11/19 — Date Finished: 7/11/19
Drilling Equipment: Geoprobe 8140LC Sonic Drill Rig	Completion Depth: 30 ft — Rock Depth: NA
Size and Type of Bit: 4-inch diameter cutting shoe	Number of Samples: Disturbed 6 — Undisturbed NA — Core NA
Casing Diameter (in): 6-inch diameter by 5-foot long Steel Casing — Casing Depth (ft): 30	Water Level (ft.): First NA — Completion NA — 24 HR. NA
Casing Hammer: NA — Weight (lbs): NA — Drop (in): NA	Drilling Foreman: Tom Seickel
Sampler: 3.25-inch diameter core barrel x 5-foot long	Field Engineer: Katherine Racanelli
Sampler Hammer: NA — Weight (lbs): NA — Drop (in): NA	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks
	+59.0		0						Pre-cleared to 5 feet bgs.
	+58.9	R1a (0-1") ASPHALT							
	+58.3	R1b (1-8") CONCRETE							
		R1c (8-24") Black coarse SAND, trace fine gravel, trace coarse gravel, concrete (dry) [FILL]	1					2.4	
								29.6	
	+57.0		2					10	
		R1d (24-60") Brown silty fine SAND (dry)		R1	HA	NA	NA	1.4	
			3					1.9	
								2.0	
			4					1.0	
			5						
	+53.0		6						
		R2a (0-16") Loose brown fine SAND (dry)						1.3	
			7					1.9	
		R2b (16-29") Dense brown fine SAND (dry)		R2	SONIC	46/60	NA	1.9	
			8					4.5	
		R2c (29-46") Loose brown fine SAND (dry)						2.0	
			9					1.0	
								0.7	
			10						
			11						
			12						
				R3	SONIC	17/60	NA		
			13						
		R3 (0-17") Loose to medium dense brown fine SAND, some fine gravel, trace silt (dry)	14					19.2	
								19.3	
			15						
			16						
		R4 (0-43") Loose brown fine SAND, trace fine gravel (dry)						0.3	
			17					1.6	
				R4	SONIC	43/60	NA	1.2	
			18					1.1	
								1.0	
			19					1.3	
								1.9	
			20						

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Log of Boring **SVE-02_D** Sheet 2 of 2

Project	Project No.
Former Acme Steel/Brass Foundry Site No. 224132	170157201
Location	**Elevation and Datum**
72 Anthony Street, Brooklyn, New York	Approx. 59 feet NAVD88

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+39.0		20						
		R5a (0-8") Loose brown fine SAND, trace fine gravel (dry) R5b (8-12") Dense brown fine SAND, trace silt (dry) R5c (12-40") Loose brown medium SAND (dry)	21 22 23 24 25	R5	SONIC	40/60	NA	1.3 1.9 7.0 2.2 2.4 2.8	
		R6a (0-8") Loose brown fine SAND, trace fine gravel (dry) R6b (8-10") Dense brown fine SAND, trace fine gravel (dry) R6c (10-36") Loose brown medium SAND, trace fine gravel (dry)	26 27 28 29	R6	SONIC	36/60	NA	1.3 6.6 14.0 1 28.6 7.1	
	+29.0	EOB @ 30.0 ft bgs	30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45						Set 10-foot, 10-slot screen at 30 feet bgs.

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Log of Boring **SVE-02_S** Sheet 1 of 1

Project: Former Acme Steel/Brass Foundry Site No. 224132	Project No.: 170157201
Location: 72 Anthony Street, Brooklyn, New York	Elevation and Datum: Approx. 59 feet NAVD88
Drilling Company: AARCO Environmental Services Corp.	Date Started: 7/11/19 — Date Finished: 7/11/19
Drilling Equipment: Geoprobe 8140LC Sonic Drill Rig	Completion Depth: 15 ft — Rock Depth: NA
Size and Type of Bit: 4-inch diameter cutting shoe	Number of Samples: Disturbed 3 — Undisturbed NA — Core NA
Casing Diameter (in): 6-inch diameter by 5-foot long Steel Casing — Casing Depth (ft): 15	Water Level (ft.): First NA — Completion NA — 24 HR. NA
Casing Hammer: NA — Weight (lbs): NA — Drop (in): NA	Drilling Foreman: Tom Seickel
Sampler: 3.25-inch diameter core barrel x 5-foot long	Field Engineer: Katherine Racanelli
Sampler Hammer: NA — Weight (lbs): NA — Drop (in): NA	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+59.0		0						
	+58.9	R1a (0-1") ASPHALT						13.9	
	+58.7	R1b (1-4") CONCRETE						2.1	
	+58.3	R1c (4-8") Loose black coarse SAND, some fine gravel, coal fragments [FILL]	1					0.3	
		R1d (8-23") Dense brown fine SAND, trace silt (dry)	2	R1	SONIC	40/60	NA	0.2	
		R1e (23-40") Loose brown fine SAND, trace fine gravel (dry)						0.1	
			3					0.1	
			4						
			5						
			6						
		R2a (0-14") Dense brown fine SAND, trace silt (dry)	7					1.5	
		R2b (14-25") Loose brown fine SAND, trace silt (dry)	8	R2	SONIC	39/60	NA	0.4	
		R2c (25-29") Dense brown fine SAND, trace silt (dry)						0.5	
	+50.0	R2d (29-39") Loose brown silty fine SAND (dry)						0.6	
			9					0.6	
			10					4.8	
		R3a (0-6") Loose brown silty fine SAND (dry)							
		R3b (6-10") Dense brown and black banded, silty fine SAND, cobble (dry)	11					1.5	
		R3c (10-26") Loose to medium dense brown silty fine SAND, cobble (dry)	12	R3	SONIC	49/60	NA	0.6	
	+46.1							2.4	
		R3d (26-49") Loose light brown medium SAND, some coarse sand, trace fine gravel (dry)	13					0.6	
								0.8	
			14					0.3	
	+44.0							0.6	
		EOB @ 15.0 ft bgs	15					1.1	Set 10-foot, 10-slot screen at 16 feet bgs.
			16						
			17						
			18						
			19						
			20						

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Log of Boring **VP-01** Sheet 1 of 2

Project: Former Acme Steel/Brass Foundry Site No. 224132	Project No.: 170157201
Location: 72 Anthony Street, Brooklyn, New York	Elevation and Datum: Approx. 57 feet NAVD88
Drilling Company: AARCO Environmental Services Corp.	Date Started: 7/9/19 / Date Finished: 7/9/19
Drilling Equipment: Geoprobe 8140LC Sonic Drill Rig	Completion Depth: 29 ft / Rock Depth: NA
Size and Type of Bit: 4-inch diameter cutting shoe	Number of Samples: Disturbed 6 / Undisturbed NA / Core NA
Casing Diameter (in): 6-inch diameter by 5-foot long Steel Casing / Casing Depth (ft): 29	Water Level (ft.): First NA / Completion NA / 24 HR. NA
Casing Hammer: NA / Weight (lbs): NA / Drop (in): NA	Drilling Foreman: Tom Seickel
Sampler: 3.25-inch diameter core barrel x 5-foot long	Field Engineer: Katherine Racanelli
Sampler Hammer: NA / Weight (lbs): NA / Drop (in): NA	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+57.0		0						
	+56.5	R1a (0-6") CONCRETE slab, rebar							Pre-cleared to 5 feet bgs.
		R1b (6-36") Dark brown fine SAND, trace fine gravel, concrete, brick (dry)	1					4	
								77	
			2					98	
				R1	HA	NA	NA	122	
	+54.0		3					78	
		R1c (36-60") Brown fine SAND, some silt (dry)						23	
			4					32	
								100	
			5						Solvent-like odor 5 to 7 feet bgs
		R2a (0-6") Medium dense brown fine SAND, some silt (dry)						300	
		R2b (6-17") Loose brown fine SAND, some silt, trace fine gravel, cobble (dry)	6					315	
				R2	SONIC	32/36	NA	280	
	+50.0		7					53	
		R2c (17-32") BOULDER, some light grey silt, trace loose brown fine sand (dry)						9.7	
			8						Possible boulder obstruction from 7 to 9 feet bgs
				NA	SONIC	None	NA		
	+47.3		9						
		R3a (0-37") Loose brown fine SAND, trace fine gravel (dry)	10					270	
								129	
			11					135	
				R3	SONIC	51/60	NA	34	
			12					184	
	+44.3							17.2	
		R3b (37-51") Dense reddish-brown silty SAND, trace fine gravel (dry)	13					7.2	
								228	
			14						
			15					1.5	
								26	
			16					72	
				R4	SONIC	26/60	NA	0.7	
	+40.0	R4a (0-8") Loose greyish brown silty SAND (dry)	17						
		R4b (8-26") Light grey SILT (boulder?) (dry)							Possible boulder obstructions from 17 to 24 feet bgs
			18						
			19						
				R5	SONIC	25/60			
			20						

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Log of Boring **VP-01** Sheet 2 of 2

Project	Project No.
Former Acme Steel/Brass Foundry Site No. 224132	170157201
Location	**Elevation and Datum**
72 Anthony Street, Brooklyn, New York	Approx. 57 feet NAVD88

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+37.0		20						
			21						
	+35.0	R5a (0-12") Loose brown fine SAND, trace fine gravel (dry)	22	R5	SONIC	25/60	NA	44.5	
	+34.0	R5b (12-25") Light grey SILT (boulder?) (dry)	23					41.1	
			24					19	
	+31.6		25					9.3	
		R6a (0-13") Loose light brown fine SAND, some coarse gravel, trace fine gravel (dry)	26	R6	SONIC	43/60	NA	2.8	
		R6b (13-28") Loose brown medium SAND, cobble (dry)	27					5.6	
			28					2.1	
		R6c (28-43") Loose brown medium SAND (dry)	29					0.0	
	+28.0		30					8.6	
		EOB @ 29.0 ft bgs	31					4.0	
			32					0.0	Set 10-foot, 10-slot screen at 15 feet bgs. Set 10-foot, 10-slot screen at 30 feet bgs.
			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

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Log of Boring **VP-02** Sheet 1 of 2

Project: Former Acme Steel/Brass Foundry Site No. 224132	Project No.: 170157201
Location: 72 Anthony Street, Brooklyn, New York	Elevation and Datum: Approx. 57 feet NAVD88
Drilling Company: AARCO Environmental Services Corp.	Date Started: 7/9/19 — Date Finished: 7/9/19
Drilling Equipment: Geoprobe 8140LC Sonic Drill Rig	Completion Depth: 30 ft — Rock Depth: NA
Size and Type of Bit: 4-inch diameter cutting shoe	Number of Samples: Disturbed 6 — Undisturbed NA — Core NA
Casing Diameter (in): 6-inch diameter by 5-foot long Steel Casing — Casing Depth (ft): 30	Water Level (ft.): First NA — Completion NA — 24 HR. NA
Casing Hammer: NA — Weight (lbs): NA — Drop (in): NA	Drilling Foreman: Tom Seickel
Sampler: 3.25-inch diameter core barrel x 5-foot long	Field Engineer: Katherine Racanelli
Sampler Hammer: NA — Weight (lbs): NA — Drop (in): NA	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+57.0		0						Pre-cleared to 5 feet bgs.
	+56.5	R1a (0-6") CONCRETE slab							
		R1b (6-60") Dark brown fine SAND, trace fine to coarse gravel, brick, concrete, ceramic tile, glass, coal, white amorphous material (coal ash?), scrap metal (dry) [FILL]	1					399	
			2					100	
								150	
			3	R1	HA	NA	NA	348	
								123	
			4					224	
								66	
			5						
			6						
		R2a (0-18") Dense dark brown fine SAND, trace fine gravel, glass (dry) [FILL]						50	
			7					150	
	+49.2			R2	SONIC	44/60	NA	60	
		R2b (18-44") Loose brown fine SAND, some silt, trace fine gravel (dry)	8					118	
								191	
			9					330	
								77	
			10						
			11						
			12					70	
		R3 (0-39") Loose brown fine SAND, cobble (dry)		R3	SONIC	39/60	NA	73	
			13					102	
								130	
			14					230	
								120	
			15						Solvent-like odor 15 to 16.7 feet bgs
	+41.0		16						
		R4a (0-21") Loose brown silty SAND (dry)						67	
			17					94	
	+39.3			R4	SONIC	47/60	NA	180	
		R4b (21-47") Dense brown to greyish brown fine SAND, some fine gravel (dry)	18					90	
								71	
			19					24	
			20					85	

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Log of Boring **VP-02** Sheet 2 of 2

Project	Project No.
Former Acme Steel/Brass Foundry Site No. 224132	170157201
Location	**Elevation and Datum**
72 Anthony Street, Brooklyn, New York	Approx. 57 feet NAVD88

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+37.0		20						
			21						
		R5a (0-11") Dense greyish brown fine SAND, some fine gravel (dry)	22	R5	SONIC	39/60	NA	100	
		R5b (11-39") Loose brown medium SAND, some fine gravel, trace coarse sand (dry)	23					25	
			24					12.3	
			25					9.1	
			26					5.2	
			27					14	
		R6a (0-7") Loose brown fine SAND, some medium sand (dry)	28	R6	SONIC	37/60	NA	3.7	
		R6b (7-9") Dense brown fine SAND, trace coarse sand (dry)	29					9.3	
		R6c (9-37") Loose light brown medium SAND (dry)	30					24	
	+27.0		31					22	
		EOB @ 30.0 ft bgs	32					12.6	
			33					9.6	Set 10-foot, 10-slot screen at 15 feet bgs. Set 10-foot, 10-slot screen at 30 feet bgs.
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

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Log of Boring **VP-03** Sheet 1 of 2

Project: Former Acme Steel/Brass Foundry Site No. 224132	Project No.: 170157201
Location: 72 Anthony Street, Brooklyn, New York	Elevation and Datum: Approx. 59 feet NAVD88
Drilling Company: AARCO Environmental Services Corp.	Date Started: 7/11/19 — Date Finished: 7/11/19
Drilling Equipment: Geoprobe 6610DT and Geoprobe 8140LC Sonic Drill Rig	Completion Depth: 30 ft — Rock Depth: NA
Size and Type of Bit: 2" direct push and 4" cutting shoe	Number of Samples: Disturbed 6 — Undisturbed NA — Core NA
Casing Diameter (in): 6-inch diameter by 5-foot long Steel Casing — Casing Depth (ft): 30	Water Level (ft.): First NA — Completion NA — 24 HR. NA
Casing Hammer: NA — Weight (lbs): NA — Drop (in): NA	Drilling Foreman: Tom Seickel
Sampler: 2" dia. x 4' long MC and 3.25" dia. x 5' long core barrel	Field Engineer: Katherine Racanelli
Sampler Hammer: NA — Weight (lbs): NA — Drop (in): NA	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+59.0		0						
	+58.9	R1a (0-1") ASPHALT							
		R1b (1-36") Dark brown fine SAND, trace fine gravel, trace coarse gravel, brick, metal, fabric-like material (dry) [FILL]	1					60	Pre-cleared to 5 feet bgs. Begin drilling with Geoprobe 6610DT
								10	
			2					52	
								35	
			3	R1	HA	NA	NA	161	Collect soil sample VP-03_2.5-3
	+56.0	R1c (36-60") Brown fine SAND, some silt (dry)						13	
			4					10.5	
								1.7	
			5					2.4	
			6						
		R2a (0-21") Loose brown fine SAND, trace silt, trace fine gravel (dry)	7	R2	MACROCORE	33/48	NA	1.0	
								0.6	
			8					1.6	
		R2b (21-33") Dense brown fine SAND (dry)						2.3	
			9					2	
		R3a (0-5") Loose brown fine SAND, trace silt (dry)						2.5	
		R3b (5-12") Loose grey medium SAND, some fine gravel (dry)	10					2.4	
		R3c (12-38") Loose brown fine SAND (dry)		R3	MACROCORE	38/42	NA	1.2	
			11					0.6	
								2.0	
			12					2.9	
	+46.5							0.1	
	+46.0	R4a (0-6") BOULDER							Refusal at 12.5 feet bgs. Switch to Geoprobe 8140LC Sonic Rig to clear obstruction and drill to 30 feet bgs
		R4b (6-16") Dense brown fine SAND, trace fine gravel (dry)	13					0.4	
		R4c (16-21") Medium dense to loose brown fine SAND, trace silt (dry)		R4	SONIC	30/30	NA	0.5	
		R4d (21-30") Dense brown fine SAND, trace silt (dry)	14					3.5	
								1.0	
			15						
			16						
	+42.6								
		R5a (0-10") Loose brown silty SAND (dry)	17					3.8	
		R5b (10-15") Dense brown silty SAND (dry)		R5	SONIC	43/60	NA	2.7	
	+41.3							0.2	
		R5c (15-26") Loose brown medium SAND, some grey fine gravel (dry)	18					0.6	
	+40.4							1.7	
		R5d (26-43") Medium dense brown silty fine SAND (dry)	19					0.4	
								0.9	
			20						

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Log of Boring **VP-03** Sheet 2 of 2

Project	Project No.
Former Acme Steel/Brass Foundry Site No. 224132	170157201
Location	**Elevation and Datum**
72 Anthony Street, Brooklyn, New York	Approx. 59 feet NAVD88

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+39.0		20						
			21						
			22						
		R6a (0-9") Dense silty SAND (dry)		R6	SONIC	34/60	NA	0.3	
	+36.1	R6b (9-34") Loose brown medium SAND, some fine gravel (dry)	23					4.7	
			24					4.2	
								0.9	
			25					0.3	
			26						
		R7a (0-7") Loose brown medium SAND, trace fine gravel (dry)	27	R7	SONIC	37/60	NA	8.3	
		R7b (7-11") Dense brown fine SAND, trace silt (dry)						4	
		R7c (11-26") Loose brown fine SAND (dry)	28					3.3	
								2.2	
		R7d (26-37") Loose brown medium SAND, trace fine gravel (dry)	29					2.9	
	+29.0							1.2	
		EOB @ 30.0 ft bgs	30						Set 10-foot, 10-slot screen at 16 feet bgs. Set 10-foot, 10-slot screen at 30 feet bgs.
			31						
			32						
			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

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Log of Boring **VP-04** Sheet 1 of 2

Project: Former Acme Steel/Brass Foundry Site No. 224132	Project No.: 170157201
Location: 72 Anthony Street, Brooklyn, New York	Elevation and Datum: Approx. 58 feet NAVD88
Drilling Company: AARCO Environmental Services Corp.	Date Started: 7/11/19 — Date Finished: 7/11/19
Drilling Equipment: Geoprobe 6610DT	Completion Depth: 30 ft — Rock Depth: NA
Size and Type of Bit: 2-inch direct push	Number of Samples: Disturbed 8 — Undisturbed NA — Core NA
Casing Diameter (in): NA — Casing Depth (ft): NA	Water Level (ft.): First NA — Completion NA — 24 HR. NA
Casing Hammer: NA — Weight (lbs): NA — Drop (in): NA	Drilling Foreman: Nick Turro
Sampler: 2-inch diameter x 4-foot long steel macrocore	Field Engineer: Katherine Racanelli
Sampler Hammer: NA — Weight (lbs): NA — Drop (in): NA	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+58.0		0						
	+57.9	R1a (0-1") ASPHALT							
		R1b (1-24") Loose dark brown fine SAND, trace fine gravel, wood, plastic, brick (dry)	1	R1	MACROCORE	41/48	NA	0.8 2.6 1.3 0.5	
	+56.0	R1c (24-41") Medium dense to loose brown fine SAND (dry)	2					7 1.2	
			3						
			4						
		R2 (0-32") Loose brown fine SAND, some silt (dry)	5	R2	MACROCORE	32/48	NA	0.7 1.2	
			6					0.4 0.6	
			7					11.7 8.1	
			8						
		R3 (0-35") Loose brown fine SAND, trace silt, trace fine gravel (dry)	9	R3	MACROCORE	35/48	NA	1.5 0.2	
			10					1.2 0.4	
			11					2.3	
			12						
		R4a (0-11") Medium dense brown fine SAND, trace silt (dry)	13	R4	MACROCORE	33/48	NA	0.3 0.3 0.3	
		R4b (11-33") Loose brown medium SAND, trace fine gravel (dry)	14					0.5 3.0	
			15						
			16						
		R5a (0-8") Loose brown medium SAND, trace fine gravel (dry)	17	R5	MACROCORE	37/48	NA	0.4 0.3	
	+40.4	R5b (8-14") Dense brown silty SAND (dry)							
	+39.9	R5c (14-37") Loose light brown medium SAND, trace fine gravel (dry)	18					0.3 0.7	
			19					9.5 0.4	
			20						

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Log of Boring **VP-04** Sheet 2 of 2

Project	Project No.
Former Acme Steel/Brass Foundry Site No. 224132	170157201
Location	**Elevation and Datum**
72 Anthony Street, Brooklyn, New York	Approx. 58 feet NAVD88

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+38.0	R6a (0-42") Loose brown to light brown medium SAND, trace silt (dry)	20	R6	MACROCORE	42/48	NA	0.5	
			21					0.4	
			22					0.2	
			23					0.3	
			24					0.2	
			25					0.9	
			26					5.0	
		R7a (0-7") Loose light brown medium SAND, trace fine gravel, trace silt (dry) R7b (7-9") Loose brown fine SAND, trace silt (dry) R7c (9-13") Loose brown medium SAND (dry) R7d (13-15") Dense brown fine SAND (dry) R7e (15-30") Loose light brown medium SAND (dry)	27	R7	MACROCORE	30/48	NA	0.2	
			28					0.2	
			29					1.7	
			30					1.7	
			31					0.3	
			32					0.4	
			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						
	+28.0	R8 (0-18") Loose brown medium SAND, trace fine gravel (dry)		R8	MACROCORE	18/24	NA	0.4	
								2.1	
								1.6	
		EOB @ 30.0 ft bgs							Set 10-foot, 10-slot screen at 16 feet bgs. Set 10-foot, 10-slot screen at 30 feet bgs.

\\LANGAN.COM\DATA\NYC\DATA2\170157201\ENGINEERING DATA\ENVIRONMENTAL\SVE PILOT TEST\BORING LOGS - GINT\ACME SVE PILOT TEST GINT LOGS.GPJ... 8/27/2019 1:45:29 PM... Report: Log - LANGAN

WELL CONSTRUCTION AND DEVELOPMENT SUMMARY

Well No. ACME-MW-15

PROJECT		PROJECT NO.	
Former Acme Steel/Brass Foundry Site No. 224132		170157201	
LOCATION		**ELEVATION AND DATUM**	
72 Anthony Street, Brooklyn NY		Approx. el. 56.5 NAVD88	
DRILLING AGENCY		**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services Corp.		7/10/2019	7/10/2019
DRILLING EQUIPMENT		**DRILLER**	
Sonic Rig		Tom Seickel	
SIZE AND TYPE OF BIT		**INSPECTOR**	
4-inch diameter cutting shoe		Katherine Racanelli	
BOREHOLE DIAMETER		**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
6-inch		Overburden	
RISER MATERIAL	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**	
PVC	2	No. 2 Sand	
TYPE OF SCREEN	**DIAMETER**	**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 10 Slot	2	No. 2 Sand	Grout w/ 5% Bentonite

METHOD OF INSTALLATION

Geoprobe 8140LC Sonic rig was used to advance soil boring ACME-MW-15 to approximately 65 feet bgs. A two-inch (2") PVC monitoring well was installed in the borehole, and consisted of 15' of 10 slot (0.010-inch) SCH40 well screen, and a solid 2" PVC riser. Well screen was installed from approximately 48 to 63 feet bgs with riser from 48 feet bgs to surface. The annulus was backfilled with No. 2 sand to about 2 feet above the screen; a 45-foot thick seal was installed above the filter sand. Wells were finished with a flush mounted road box and concrete pad.

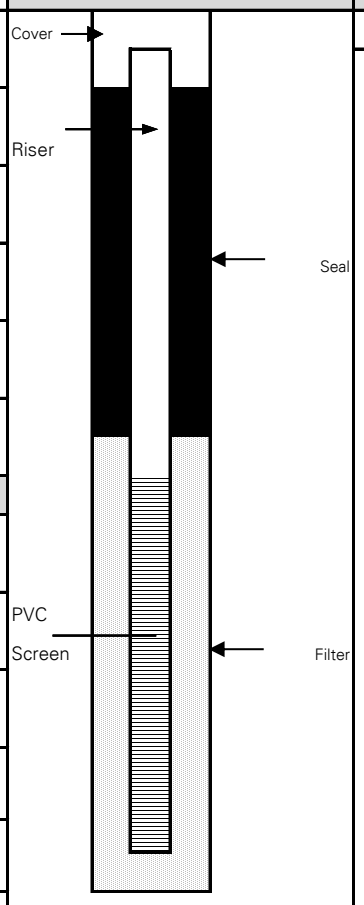
WELL DEVELOPMENT DATA

SURGE BLOCK DIAMETER	1.875-inch	**TYPE PUMP**	Waterra	**DEVELOPMENT CONFIRMATION**
DRILLER OR LANGAN	Langan	**MAX PUMP RATE**	N/A	
NUMBER OF SURGE CYCLES	N/A	**TOTAL VOLUME**	27	Well developed from 2:45-4:15 PM on 7/17/19.

TOP OF CASING	ELEVATION	DEPTH (ft)
	56.5	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**
	55.5	1
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**
	10.5	46
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**
	8.5	48
BOTTOM OF BORING	**ELEVATION**	**DEPTH (ft)**
	-8.5	65
SCREEN LENGTH		15 feet
SLOT SIZE		No. 10 Slot; 0.010 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
1.87	7/17/2019	54.63 ft



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
	1
	46
	48
	63
	65

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WELL CONSTRUCTION SUMMARY

Well No. SVE-01_S

PROJECT		PROJECT NO.	
Former Acme Steel/Brass Foundry Site No. 224132		170157201	
LOCATION		**ELEVATION AND DATUM**	
72 Anthony Street, Brooklyn NY		Approx. el. 57 feet NAVD88	
DRILLING AGENCY		**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services Corp.		7/8/2019	7/8/2019
DRILLING EQUIPMENT		**DRILLER**	
Sonic Rig		Tom Seickel	
SIZE AND TYPE OF BIT		**INSPECTOR**	
4-inch diameter cutting shoe		Katherine Racanelli	
BOREHOLE DIAMETER		**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
6-inch		Overburden	
RISER MATERIAL	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**	
PVC	4	No. 2 Sand	
TYPE OF SCREEN	**DIAMETER**	**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 10 Slot	4	No. 2 Sand	Bentonite

METHOD OF INSTALLATION

Geoprobe 8140LC Sonic rig was used to advance soil boring SVE-01_S to approximately 15 feet bgs. A four-inch (4") PVC soil vapor extraction well was installed in the borehole, and consisted of 10' of 10 slot (0.010-inch) SCH40 well screen, and a solid 4" PVC riser. Well screen was installed from approximately 5 to 15 feet bgs with riser from 5 feet bgs to surface. The annulus was backfilled with No. 2 sand to a height of about 6 inches above the screen; a 2-foot thick seal was installed above the filter sand; grout was installed above the seal to grade. Wells were finished with a flush mounted road box and concrete pad.

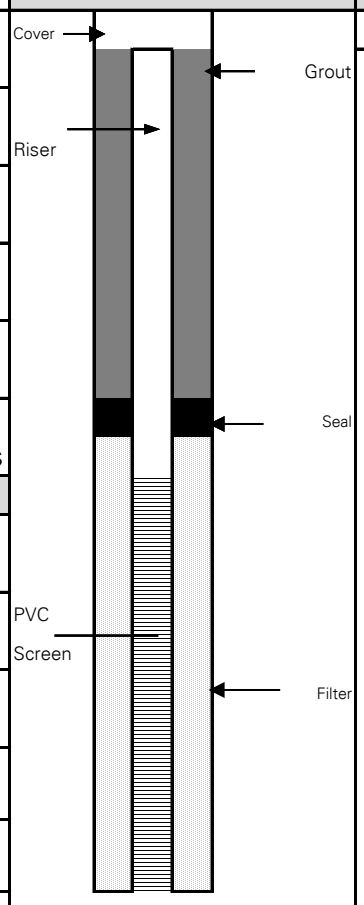
WELL DEVELOPMENT DATA

SURGE BLOCK DIAMETER	N/A	**TYPE PUMP**	N/A	**DEVELOPMENT CONFIRMATION**
Driller or LANGAN	N/A	**MAX PUMP RATE**	N/A	
NUMBER OF SURGE CYCLES	N/A	**TOTAL VOLUME**	N/A	N/A

TOP OF CASING	ELEVATION	DEPTH (ft)
	57	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**
	54.5	2.5
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**
	52.5	4.5
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**
	52	5
BOTTOM OF BORING	**ELEVATION**	**DEPTH (ft)**
	42	15
SCREEN LENGTH		10 feet
SLOT SIZE		No. 10 Slot; 0.010 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
		N/A ft
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
	2.5
	4.5
	5
	15

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WELL CONSTRUCTION SUMMARY

Well No. SVE-01_D

PROJECT		PROJECT NO.	
Former Acme Steel/Brass Foundry Site No. 224132		170157201	
LOCATION		**ELEVATION AND DATUM**	
72 Anthony Street, Brooklyn NY		Approx. el. 57 feet NAVD88	
DRILLING AGENCY		**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services Corp.		7/8/2019	7/8/2019
DRILLING EQUIPMENT		**DRILLER**	
Sonic Rig		Tom Seickel	
SIZE AND TYPE OF BIT		**INSPECTOR**	
4-inch diameter cutting shoe		Katherine Racanelli	
BOREHOLE DIAMETER		**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
6-inch		Overburden	
RISER MATERIAL	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**	
PVC	4	No. 2 Sand	
TYPE OF SCREEN	**DIAMETER**	**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 10 Slot	4	No. 2 Sand	Bentonite

METHOD OF INSTALLATION

Geoprobe 8140LC Sonic rig was used to advance soil boring SVE-01_D to approximately 30 feet bgs. A four-inch (4") PVC soil vapor extraction well was installed in the borehole, and consisted of 10' of 10 slot (0.010-inch) SCH40 well screen, and a solid 4" PVC riser. Well screen was installed from approximately 20 to 30 feet bgs with riser from 20 feet bgs to surface. The annulus was backfilled with No. 2 sand to about 6 inches above the screen; a 2.5-foot thick bentonite seal was installed above the filter sand; a 2.5-foot thick benonite grout mixture seal was installed above the bentonite seal; grout was installed above the seal to grade. Wells were finished with a flush mounted road box and concrete pad.

WELL DEVELOPMENT DATA

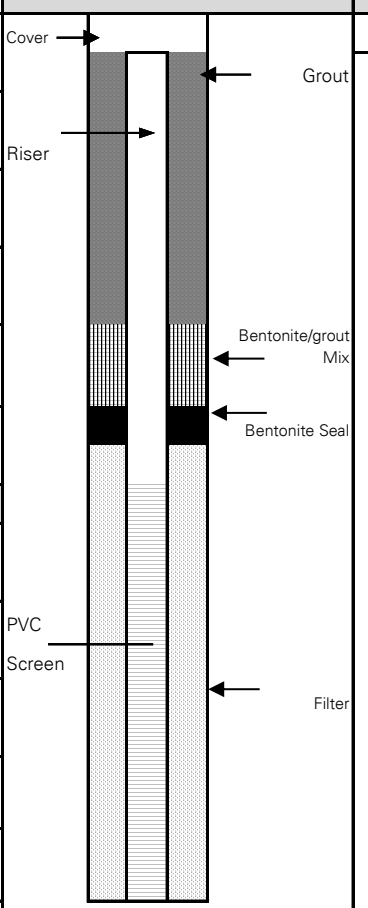
SURGE BLOCK DIAMETER	N/A	**TYPE PUMP**	N/A	**DEVELOPMENT CONFIRMATION**
Driller or LANGAN	N/A	**MAX PUMP RATE**	N/A	
NUMBER OF SURGE CYCLES	N/A	**TOTAL VOLUME**	N/A	N/A

TOP OF CASING	ELEVATION	DEPTH (ft)
	57	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**
	40	17
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**
	37.5	19.5
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**
	37	20
BOTTOM OF BORING	**ELEVATION**	**DEPTH (ft)**
	27	30
SCREEN LENGTH		10 feet
SLOT SIZE		No. 10 Slot; 0.010 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
		N/A ft
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
	14.5
	17
	19.5
	20
	30

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21 Penn Plaza, 360 West 31st Street, 8th Floor, New York

WELL CONSTRUCTION SUMMARY

Well No. SVE-02_S

PROJECT		PROJECT NO.	
Former Acme Steel/Brass Foundry Site No. 224132		170157201	
LOCATION		**ELEVATION AND DATUM**	
72 Anthony Street, Brooklyn NY		Approx. el. 59 feet NAVD88	
DRILLING AGENCY		**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services Corp.		7/11/2019	7/11/2019
DRILLING EQUIPMENT		**DRILLER**	
Sonic Rig		Tom Seickel	
SIZE AND TYPE OF BIT		**INSPECTOR**	
4-inch diameter cutting shoe		Katherine Racanelli	
BOREHOLE DIAMETER		**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
6-inch		Overburden	
RISER MATERIAL	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**	
PVC	4	No. 2 Sand	
TYPE OF SCREEN	**DIAMETER**	**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 10 Slot	4	No. 2 Sand	Bentonite

METHOD OF INSTALLATION

Geoprobe 8140LC Sonic rig was used to advance soil boring SVE-02_S to approximately 15 feet bgs. A four-inch (4") PVC soil vapor extraction well was installed in the borehole, and consisted of 10' of 10 slot (0.010-inch) SCH40 well screen, and a solid 4" PVC riser. Well screen was installed from approximately 6 to 16 feet bgs with riser from 6 feet bgs to surface. The annulus was backfilled with No. 2 sand to a height of about 6 inches above the screen; a 3-foot thick seal was installed above the filter sand; grout was installed above the seal to grade. Wells were finished with a flush mounted road box and concrete pad.

WELL DEVELOPMENT DATA

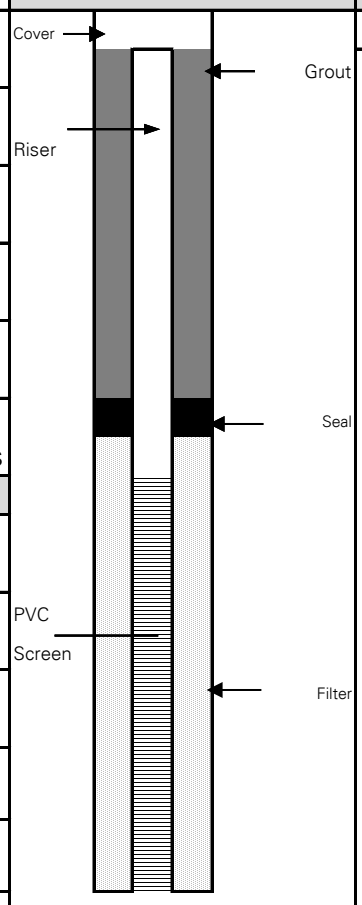
SURGE BLOCK DIAMETER	N/A	**TYPE PUMP**	N/A	**DEVELOPMENT CONFIRMATION**
Driller or LANGAN	N/A	**MAX PUMP RATE**	N/A	
NUMBER OF SURGE CYCLES	N/A	**TOTAL VOLUME**	N/A	N/A

TOP OF CASING	ELEVATION	DEPTH (ft)
	59	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**
	56.5	2.5
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**
	53.5	5.5
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**
	53	6
BOTTOM OF BORING	**ELEVATION**	**DEPTH (ft)**
	43	16
SCREEN LENGTH		10 feet
SLOT SIZE		No. 10 Slot; 0.010 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
		N/A ft
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**

WELL DETAILS	SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
		0
		2.5
		5.5
		6
		16



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21 Penn Plaza, 360 West 31st Street, 8th Floor, New York

WELL CONSTRUCTION SUMMARY

Well No. SVE-02_D

PROJECT		PROJECT NO.	
Former Acme Steel/Brass Foundry Site No. 224132		170157201	
LOCATION		**ELEVATION AND DATUM**	
72 Anthony Street, Brooklyn NY		Approx. el. 59 feet NAVD88	
DRILLING AGENCY		**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services Corp.		7/11/2019	7/11/2019
DRILLING EQUIPMENT		**DRILLER**	
Sonic Rig		Tom Seickel	
SIZE AND TYPE OF BIT		**INSPECTOR**	
4-inch diameter cutting shoe		Katherine Racanelli	
BOREHOLE DIAMETER		**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
6-inch		Overburden	
RISER MATERIAL	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**	
PVC	4	No. 2 Sand	
TYPE OF SCREEN	**DIAMETER**	**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 10 Slot	4	No. 2 Sand	Bentonite

METHOD OF INSTALLATION

Geoprobe 8140LC Sonic rig was used to advance soil boring SVE-02_D to approximately 30 feet bgs. A four-inch (4") PVC soil vapor extraction well was installed in the borehole, and consisted of 10' of 10 slot (0.010-inch) SCH40 well screen, and a solid 4" PVC riser. Well screen was installed from approximately 20 to 30 feet bgs with riser from 20 feet bgs to surface. The annulus was backfilled with No. 2 sand to about 6 inches above the screen; a 2.5-foot thick bentonite seal was installed above the filter sand; a 2.5-foot thick benonite grout mixture seal was installed above the bentonite seal; grout was installed above the seal to grade. Wells were finished with a flush mounted road box and concrete pad.

WELL DEVELOPMENT DATA

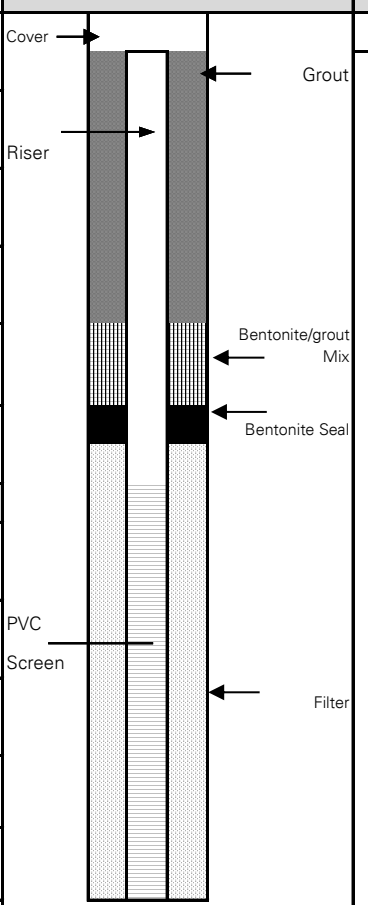
SURGE BLOCK DIAMETER	N/A	**TYPE PUMP**	N/A	**DEVELOPMENT CONFIRMATION**
Driller or LANGAN	N/A	**MAX PUMP RATE**	N/A	
NUMBER OF SURGE CYCLES	N/A	**TOTAL VOLUME**	N/A	N/A

TOP OF CASING	**ELEVATION**	**DEPTH (ft)**
	59	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**
	42	17
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**
	39.5	19.5
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**
	39	20
BOTTOM OF BORING	**ELEVATION**	**DEPTH (ft)**
	29	30
SCREEN LENGTH		10 feet
SLOT SIZE		No. 10 Slot; 0.010 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
		N/A ft

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
	14.5
	17
	19.5
	20
	30

LANGAN Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.

21 Penn Plaza, 360 West 31st Street, 8th Floor, New York

WELL CONSTRUCTION SUMMARY

Well No. VP-01_S

PROJECT		PROJECT NO.	
Former Acme Steel/Brass Foundry Site No. 224132		170157201	
LOCATION		**ELEVATION AND DATUM**	
72 Anthony Street, Brooklyn NY		Approx. el. 57 feet NAVD88	
DRILLING AGENCY		**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services Corp.		7/9/2019	7/9/2019
DRILLING EQUIPMENT		**DRILLER**	
Sonic Rig		Tom Seickel	
SIZE AND TYPE OF BIT		**INSPECTOR**	
4-inch diameter cutting shoe		Katherine Racanelli	
BOREHOLE DIAMETER		**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
6-inch		Overburden	
RISER MATERIAL	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**	
PVC	1	No. 2 Sand	
TYPE OF SCREEN	**DIAMETER**	**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 10 Slot	1	No. 2 Sand	Bentonite

METHOD OF INSTALLATION

Geoprobe 8140LC Sonic rig was used to advance soil boring to VP-01 approximately 29 feet bgs. A one-inch (1") PVC vacuum monitoring probe was installed in the borehole, and consisted of 10' of 10 slot (0.010-inch) SCH 40 well screen, and a solid 1" PVC riser. Well screen was installed from approximately 5 to 15 feet bgs with riser from 5 feet bgs to surface. The annulus was backfilled with No. 2 sand to about 6 inches above the screen; a 2-foot thick seal was installed above the filter sand; grout was installed above the seal to grade. For well construction details for 15 to 29 feet bgs see VP-01_D well construction log. VP-01_S was nested with VP-01_D and finished with a flush mounted road box and concrete pad.

WELL DEVELOPMENT DATA

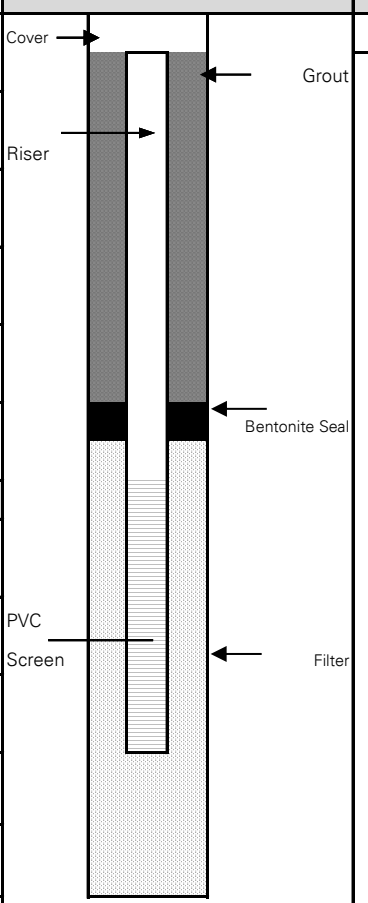
SURGE BLOCK DIAMETER	N/A	**TYPE PUMP**	N/A	**DEVELOPMENT CONFIRMATION**
Driller or LANGAN	N/A	**MAX PUMP RATE**	N/A	
NUMBER OF SURGE CYCLES	N/A	**TOTAL VOLUME**	N/A	N/A

TOP OF CASING	ELEVATION	DEPTH (ft)
	57	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**
	54.5	2.5
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**
	52.5	4.5
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**
	52	5
BOTTOM OF BORING	**ELEVATION**	**DEPTH (ft)**
	28	29
SCREEN LENGTH		10 feet
SLOT SIZE		No. 10 Slot; 0.010 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
		N/A ft
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
	2.5
	4.5
	5
	15
	29

LANGAN Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.

21 Penn Plaza, 360 West 31st Street, 8th Floor, New York

WELL CONSTRUCTION SUMMARY

Well No. VP-01_D

PROJECT			PROJECT NO.	
Former Acme Steel/Brass Foundry Site No. 224132			170157201	
LOCATION			**ELEVATION AND DATUM**	
72 Anthony Street, Brooklyn NY			Approx. el. 57 feet NAVD88	
DRILLING AGENCY			**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services Corp.			7/9/2019	7/9/2019
DRILLING EQUIPMENT			**DRILLER**	
Sonic Rig			Tom Seickel	
SIZE AND TYPE OF BIT			**INSPECTOR**	
4-inch diameter cutting shoe			Katherine Racanelli	
BOREHOLE DIAMETER			**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
6-inch			Overburden	
RISER MATERIAL	**DIAMETER**		**TYPE OF BACKFILL MATERIAL**	
PVC	1		No. 2 Sand	
TYPE OF SCREEN	**DIAMETER**		**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 10 Slot	1		No. 2 Sand	Bentonite

METHOD OF INSTALLATION

Geoprobe 8140LC Sonic rig was used to advance soil boring VP-01 to approximately 29 feet bgs. A one-inch (1") PVC vacuum monitoring probe was installed in the borehole and consisted of 10' of 10 slot (0.010-inch) SCH 40 well screen, and a solid 1" PVC riser. Well screen was installed from approximately 20 to 30 feet bgs with riser from 20 feet bgs to surface. The annulus was backfilled with No. 2 sand to about 6 inches above the screen; a 4-foot thick seal was installed above the filter sand and 6 inches of No. 2 sand was placed above the seal before installing VP-01_S screen and filter pack. For well construction details for 0 to 15 feet bgs see VP-01_S well construction log. VP-01_D was nested with VP-01_S and finished with a flush mounted road box and concrete pad.

WELL DEVELOPMENT DATA

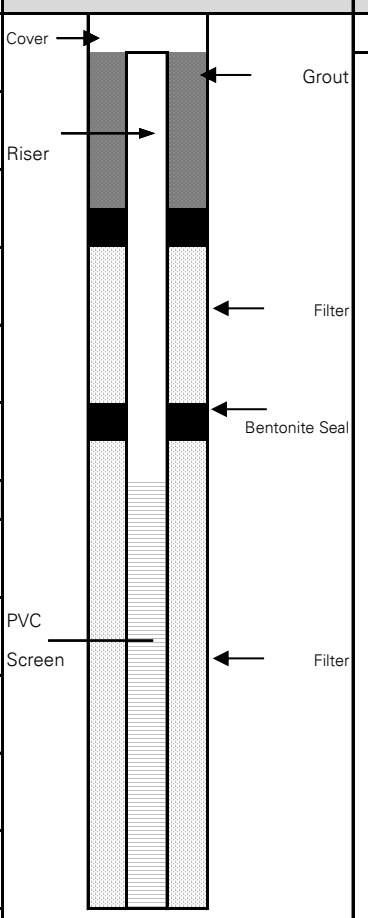
SURGE BLOCK DIAMETER	N/A	**TYPE PUMP**	N/A	**DEVELOPMENT CONFIRMATION**
Driller or LANGAN	N/A	**MAX PUMP RATE**	N/A	
NUMBER OF SURGE CYCLES	N/A	**TOTAL VOLUME**	N/A	N/A

TOP OF CASING	ELEVATION	DEPTH (ft)
	57	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**
	41.5	15.5
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**
	37.5	19.5
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**
	37	20
BOTTOM OF BORING	**ELEVATION**	**DEPTH (ft)**
	28	29
SCREEN LENGTH		10
SLOT SIZE		No. 10 Slot; 0.010 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
		N/A ft
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
	2.5
	4.5
	15.5
	19.5
	20
	29

LANGAN Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.

21 Penn Plaza, 360 West 31st Street, 8th Floor, New York

WELL CONSTRUCTION SUMMARY

Well No. VP-02_S

PROJECT			PROJECT NO.	
Former Acme Steel/Brass Foundry Site No. 224132			170157201	
LOCATION			**ELEVATION AND DATUM**	
72 Anthony Street, Brooklyn NY			Approx. el. 57 feet NAVD88	
DRILLING AGENCY			**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services Corp.			7/9/2019	7/9/2019
DRILLING EQUIPMENT			**DRILLER**	
Sonic Rig			Tom Seickel	
SIZE AND TYPE OF BIT			**INSPECTOR**	
4-inch diameter cutting shoe			Katherine Racanelli	
BOREHOLE DIAMETER			**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
6-inch			Overburden	
RISER MATERIAL	**DIAMETER**		**TYPE OF BACKFILL MATERIAL**	
PVC	1		No. 2 Sand	
TYPE OF SCREEN	**DIAMETER**		**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 10 Slot	1		No. 2 Sand	Bentonite

METHOD OF INSTALLATION

Geoprobe 8140LC Sonic rig was used to advance soil boring VP-02 to approximately 30 feet bgs. A one-inch (1") PVC vacuum monitoring probe was installed in the borehole, and consisted of 10' of 10 slot (0.010-inch) SCH40 well screen, and a solid 1" PVC riser. Well screen was installed from approximately 5 to 15 feet bgs with riser from 5 feet bgs to surface. The annulus was backfilled with No. 2 sand to about 6 inches above the screen; a 2-foot thick seal was installed above the filter sand; grout was installed above the seal to grade. For well construction details for 15 to 30 feet bgs see VP-02_D well construction log. VP-02_S was nested with VP-02_D and finished with a flush mounted road box and concrete pad.

WELL DEVELOPMENT DATA

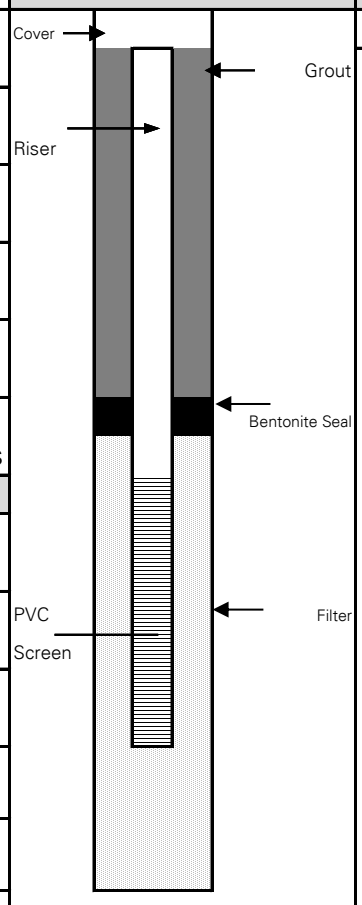
SURGE BLOCK DIAMETER	N/A	**TYPE PUMP**	N/A	**DEVELOPMENT CONFIRMATION**
Driller or LANGAN	N/A	**MAX PUMP RATE**	N/A	
NUMBER OF SURGE CYCLES	N/A	**TOTAL VOLUME**	N/A	N/A

TOP OF CASING	ELEVATION	DEPTH (ft)
	57	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**
	54.5	2.5
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**
	52.5	4.5
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**
	52	5
BOTTOM OF BORING	**ELEVATION**	**DEPTH (ft)**
	27	30
SCREEN LENGTH		10 feet
SLOT SIZE		No. 10 Slot; 0.010 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
		N/A ft
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
	2.5
	4.5
	5
	15
	30

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WELL CONSTRUCTION SUMMARY

Well No. VP-02_D

PROJECT			PROJECT NO.	
Former Acme Steel/Brass Foundry Site No. 224132			170157201	
LOCATION			**ELEVATION AND DATUM**	
72 Anthony Street, Brooklyn NY			Approx. el. 57 feet NAVD88	
DRILLING AGENCY			**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services Corp.			7/9/2019	7/9/2019
DRILLING EQUIPMENT			**DRILLER**	
Sonic Rig			Tom Seickel	
SIZE AND TYPE OF BIT			**INSPECTOR**	
4-inch diameter cutting shoe			Katherine Racanelli	
BOREHOLE DIAMETER			**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
6-inch			Overburden	
RISER MATERIAL	**DIAMETER**		**TYPE OF BACKFILL MATERIAL**	
PVC	1		No. 2 Sand	
TYPE OF SCREEN	**DIAMETER**		**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 10 Slot	1		No. 2 Sand	Bentonite

METHOD OF INSTALLATION

Geoprobe 8140LC Sonic rig was used to advance soil boring VP-02 to approximately 30 feet bgs. A one-inch (1") PVC vacuum monitoring probe was installed in the borehole and consisted of 10' of 10 slot (0.010-inch) SCH40 well screen, and a solid 1" PVC riser. Well screen was installed from approximately 20 to 30 feet bgs with riser from 20 feet bgs to surface. The annulus was backfilled with No. 2 sand to about 6 inches above the screen; a 4-foot thick seal was installed above the filter sand and 6 inches of No. 2 sand was placed above the seal before installing VP-02_S screen and filter pack. For well construction details for 0 to 15 feet bgs see VP-02_S well construction log. VP-02_D was nested with VP-02_S and finished with a flush mounted road box and concrete pad.

WELL DEVELOPMENT DATA

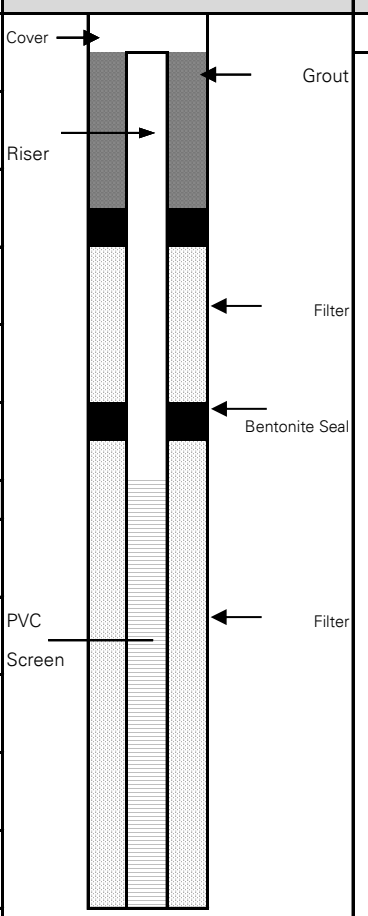
SURGE BLOCK DIAMETER	N/A	**TYPE PUMP**	N/A	**DEVELOPMENT CONFIRMATION**
Driller or LANGAN	N/A	**MAX PUMP RATE**	N/A	
NUMBER OF SURGE CYCLES	N/A	**TOTAL VOLUME**	N/A	N/A

TOP OF CASING	ELEVATION	DEPTH (ft)
	57	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**
	41.5	15.5
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**
	37.5	19.5
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**
	37	20
BOTTOM OF BORING	**ELEVATION**	**DEPTH (ft)**
	27	30
SCREEN LENGTH		10 feet
SLOT SIZE		No. 10 Slot; 0.010 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
		N/A ft
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
	2.5
	4.5
	15.5
	19.5
	20
	30

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WELL CONSTRUCTION SUMMARY

Well No. VP-03_S

PROJECT		PROJECT NO.	
Former Acme Steel/Brass Foundry Site No. 224132		170157201	
LOCATION		**ELEVATION AND DATUM**	
72 Anthony Street, Brooklyn NY		Approx. el. 59 feet NAVD88	
DRILLING AGENCY		**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services Corp.		7/11/2019	7/11/2019
DRILLING EQUIPMENT		**DRILLER**	
Sonic Rig		Tom Seickel	
SIZE AND TYPE OF BIT		**INSPECTOR**	
4-inch diameter cutting shoe		Katherine Racanelli	
BOREHOLE DIAMETER		**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
6-inch		Overburden	
RISER MATERIAL	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**	
PVC	1	No. 2 Sand	
TYPE OF SCREEN	**DIAMETER**	**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 10 Slot	1	No. 2 Sand	Bentonite

METHOD OF INSTALLATION

Geoprobe 8140LC Sonic rig was used to advance soil boring VP-03 to approximately 30 feet bgs. A one-inch (1") PVC vacuum monitoring probe was installed in the borehole and consisted of 10' of 10 slot (0.010-inch) SCH40 well screen, and a solid 1" PVC riser. Well screen was installed from approximately 6 to 16 feet bgs with riser from 6 feet bgs to surface. The annulus was backfilled with No. 2 sand to about 6 inches above the screen; a 3-foot thick seal was installed above the filter sand; grout was installed above the seal to grade. For well construction details for 16 to 30 feet bgs see VP-03_D well construction log. VP-03_S was nested with VP-03_D and finished with a flush mounted road box and concrete pad.

WELL DEVELOPMENT DATA

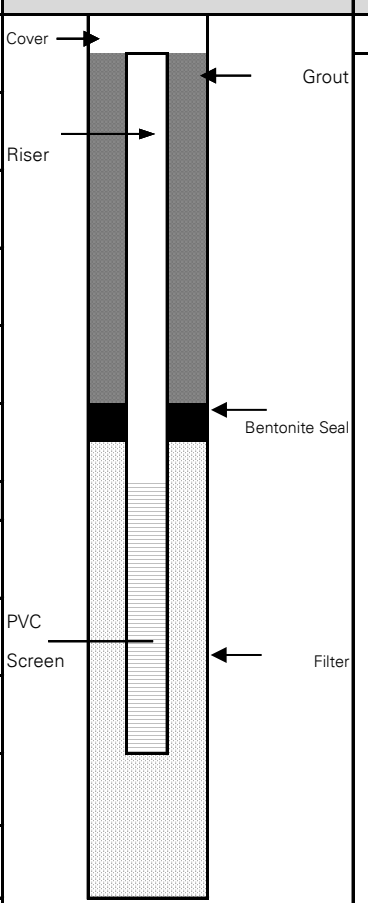
SURGE BLOCK DIAMETER	N/A	**TYPE PUMP**	N/A	**DEVELOPMENT CONFIRMATION**
Driller or LANGAN	N/A	**MAX PUMP RATE**	N/A	
NUMBER OF SURGE CYCLES	N/A	**TOTAL VOLUME**	N/A	N/A

TOP OF CASING	ELEVATION	DEPTH (ft)
	59	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**
	56.5	2.5
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**
	53.5	5.5
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**
	53	6
BOTTOM OF BORING	**ELEVATION**	**DEPTH (ft)**
	29	30
SCREEN LENGTH		10 feet
SLOT SIZE		No. 10 Slot; 0.010 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
		N/A ft
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
	2.5
	5.5
	6
	16
	30

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21 Penn Plaza, 360 West 31st Street, 8th Floor, New York

WELL CONSTRUCTION SUMMARY

Well No. VP-03_D

PROJECT		PROJECT NO.	
Former Acme Steel/Brass Foundry Site No. 224132		170157201	
LOCATION		**ELEVATION AND DATUM**	
72 Anthony Street, Brooklyn NY		Approx. el. 59 feet NAVD88	
DRILLING AGENCY		**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services Corp.		7/11/2019	7/11/2019
DRILLING EQUIPMENT		**DRILLER**	
Sonic Rig		Tom Seickel	
SIZE AND TYPE OF BIT		**INSPECTOR**	
4-inch diameter cutting shoe		Katherine Racanelli	
BOREHOLE DIAMETER		**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
6-inch		Overburden	
RISER MATERIAL	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**	
PVC	1	No. 2 Sand	
TYPE OF SCREEN	**DIAMETER**	**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 10 Slot	1	No. 2 Sand	Bentonite

METHOD OF INSTALLATION

Geoprobe 8140LC Sonic rig was used to advance soil boring VP-03 to approximately 30 feet bgs. A one-inch (1") PVC vacuum monitoring probe was installed in the borehole, and consisted of 10' of 10 slot (0.010-inch) SCH40 well screen, and a solid 1" PVC riser. Well screen was installed from approximately 20 to 30 feet bgs with riser from 20 feet bgs to surface. The annulus was backfilled with No. 2 sand to about 6 inches above the screen; a 3-foot thick seal was installed above the filter sand and 6 inches of No. 2 sand was placed above the seal before installing VP-03_S screen and filter pack. For well construction details for 0 to 16 feet bgs see VP-03_S well construction log. VP-03_D was nested with VP-03_S and finished with a flush mounted road box and concrete pad.

WELL DEVELOPMENT DATA

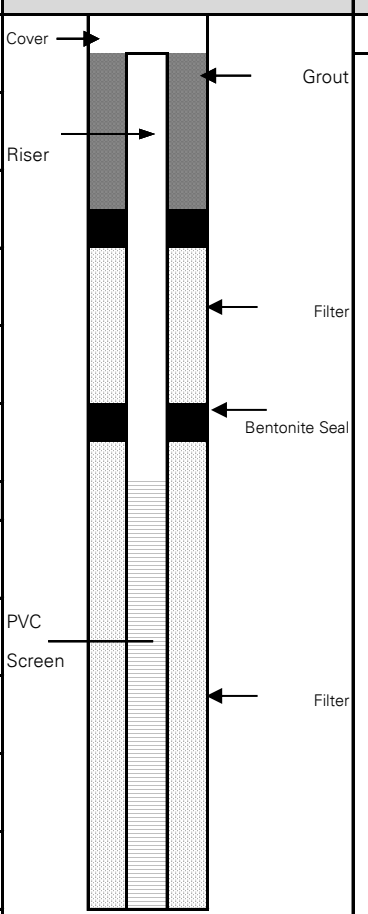
SURGE BLOCK DIAMETER	N/A	**TYPE PUMP**	N/A	**DEVELOPMENT CONFIRMATION**
Driller or LANGAN	N/A	**MAX PUMP RATE**	N/A	
NUMBER OF SURGE CYCLES	N/A	**TOTAL VOLUME**	N/A	N/A

TOP OF CASING	ELEVATION	DEPTH (ft)
	59	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**
	42.5	16.5
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**
	39.5	19.5
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**
	39	20
BOTTOM OF BORING	**ELEVATION**	**DEPTH (ft)**
	29	30
SCREEN LENGTH		10 feet
SLOT SIZE		No. 10 Slot; 0.010 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
		N/A ft
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
	2.5
	5.5
	16.5
	19.5
	20
	30

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WELL CONSTRUCTION SUMMARY

Well No. VP-04_S

PROJECT		PROJECT NO.	
Former Acme Steel/Brass Foundry Site No. 224132		170157201	
LOCATION		**ELEVATION AND DATUM**	
72 Anthony Street, Brooklyn NY		Approx. el. 58 feet NAVD88	
DRILLING AGENCY		**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services Corp.		7/11/2019	7/11/2019
DRILLING EQUIPMENT		**DRILLER**	
Geoprobe® 6610 DT		Nick Turro	
SIZE AND TYPE OF BIT		**INSPECTOR**	
2-inch Direct Push		Katherine Racanelli	
BOREHOLE DIAMETER		**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
2-inch		Overburden	
RISER MATERIAL	**DIAMETER**	**TYPE OF BACKFILL MATERIAL**	
PVC	1	No. 2 Sand	
TYPE OF SCREEN	**DIAMETER**	**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 10 Slot	1	No. 2 Sand	Bentonite

METHOD OF INSTALLATION

Geoprobe 6610DT was used to advance soil boring VP-04 to approximately 30 feet bgs. A one-inch (1") PVC vacuum monitoring probe was installed in the borehole, and consisted of 10' of 10 slot (0.010-inch) SCH40 well screen, and a solid 1" PVC riser. Well screen was installed from approximately 6 to 16 feet bgs with riser from 6 feet bgs to surface. The annulus was backfilled with No. 2 sand to about 6 inches above the screen; a 3-foot thick seal was installed above the filter sand; grout was installed above the seal to grade. For well construction details for 16 to 30 feet bgs see VP-04_D well construction log. VP-04_S was nested with VP-04_D and finished with a flush mounted road box and concrete pad.

WELL DEVELOPMENT DATA

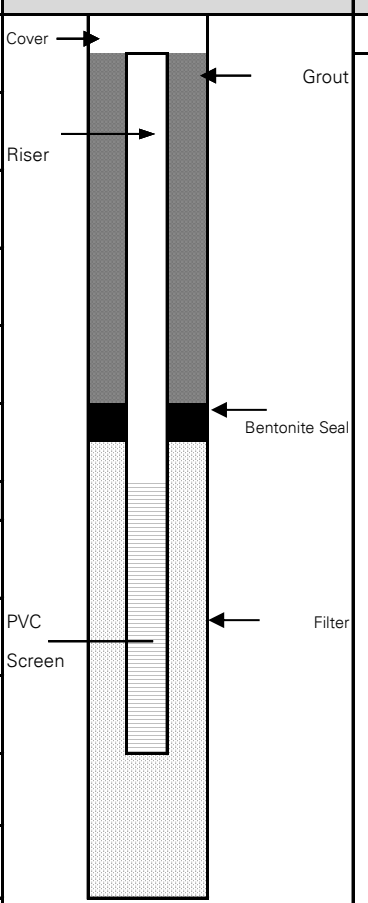
SURGE BLOCK DIAMETER	N/A	**TYPE PUMP**	N/A	**DEVELOPMENT CONFIRMATION**
Driller or LANGAN	N/A	**MAX PUMP RATE**	N/A	
NUMBER OF SURGE CYCLES	N/A	**TOTAL VOLUME**	N/A	N/A

TOP OF CASING	ELEVATION	DEPTH (ft)
	58	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**
	55.5	2.5
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**
	52.5	5.5
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**
	52	6
BOTTOM OF BORING	**ELEVATION**	**DEPTH (ft)**
	28	30
SCREEN LENGTH		10 feet
SLOT SIZE		No. 10 Slot; 0.010 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
		N/A ft
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
	2.5
	5.5
	6
	16
	30

LANGAN Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.

21 Penn Plaza, 360 West 31st Street, 8th Floor, New York

WELL CONSTRUCTION SUMMARY

Well No. VP-04_D

PROJECT			PROJECT NO.	
Former Acme Steel/Brass Foundry Site No. 224132			170157201	
LOCATION			**ELEVATION AND DATUM**	
72 Anthony Street, Brooklyn NY			Approx. el. 58 feet NAVD88	
DRILLING AGENCY			**DATE STARTED**	**DATE FINISHED**
AARCO Environmental Services Corp.			7/11/2019	7/11/2019
DRILLING EQUIPMENT			**DRILLER**	
Geoprobe® 6610 DT			Nick Turro	
SIZE AND TYPE OF BIT			**INSPECTOR**	
2-inch Direct Push			Katherine Racanelli	
BOREHOLE DIAMETER			**TYPE OF WELL (OVERBURDEN / BEDROCK)**	
2-inch			Overburden	
RISER MATERIAL	**DIAMETER**		**TYPE OF BACKFILL MATERIAL**	
PVC	1		No. 2 Sand	
TYPE OF SCREEN	**DIAMETER**		**TYPE OF WELL PACK**	**TYPE OF SEAL MATERIAL**
PVC No. 10 Slot	1		No. 2 Sand	Bentonite

METHOD OF INSTALLATION

Geoprobe 6610DT was used to advance soil boring VP-04 to approximately 30 feet bgs. A one-inch (1") PVC vacuum monitoring probe was installed in the borehole, and consisted of 10' of 10 slot (0.010-inch) SCH40 well screen, and a solid 1" PVC riser. Well screen was installed from approximately 20 to 30 feet bgs with riser from 20 feet bgs to surface. The annulus was backfilled with No. 2 sand to about 6 inches above the screen; a 3-foot thick seal was installed above the filter sand and 6 inches of No. 2 sand was placed above the seal before installing VP-04_S screen and filter pack. For well construction details for 0 to 16 feet bgs see VP-04_S well construction log. VP-04_D was nested with VP-04_S and finished with a flush mounted road box and concrete pad.

WELL DEVELOPMENT DATA

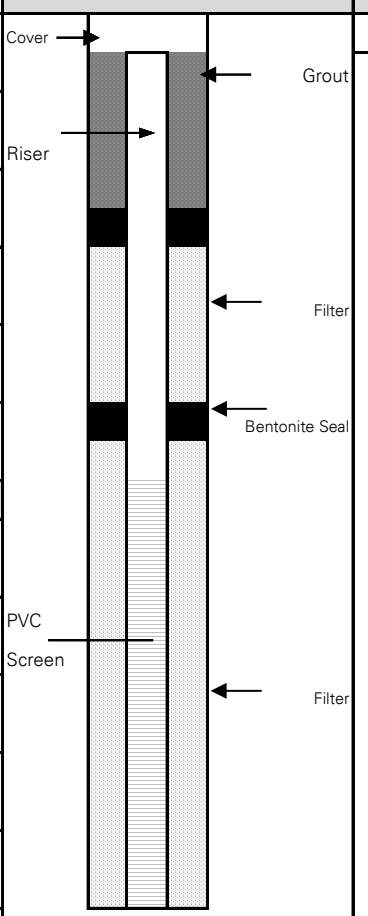
SURGE BLOCK DIAMETER	N/A	**TYPE PUMP**	N/A	**DEVELOPMENT CONFIRMATION**
Driller or LANGAN	N/A	**MAX PUMP RATE**	N/A	
NUMBER OF SURGE CYCLES	N/A	**TOTAL VOLUME**	N/A	N/A

TOP OF CASING	ELEVATION	DEPTH (ft)
	58	0
TOP OF SEAL	**ELEVATION**	**DEPTH (ft)**
	41.5	16.5
TOP OF FILTER	**ELEVATION**	**DEPTH (ft)**
	38.5	19.5
TOP OF SCREEN	**ELEVATION**	**DEPTH (ft)**
	38	20
BOTTOM OF BORING	**ELEVATION**	**DEPTH (ft)**
	28	30
SCREEN LENGTH		10 feet
SLOT SIZE		No. 10 Slot; 0.010 Inches

GROUNDWATER ELEVATIONS

ELEVATION	DATE	DEPTH TO WATER
		N/A ft
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**
ELEVATION	**DATE**	**DEPTH TO WATER**

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (FT)
	0
	2.5
	5.5
	16.5
	19.5
	20
	30

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ATTACHMENT B

DATA USABILITY SUMMARY REPORTS

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Kimberly Nagotko, Langan Senior Staff Geologist

From: Emily Strake, Langan Senior Project Chemist

Date: August 9, 2019

Re: Data Usability Summary Report
For Acme
July 2019 Soil Samples
Langan Project No.: 170157201

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of soil samples collected in July 2019 by Langan Engineering and Environmental Services ("Langan") at the Acme site ("the site"). The samples were analyzed by York Analytical Laboratories, Inc. (NYSDOH NELAP registration # 10854) and Phoenix Environmental Laboratories, Inc. (NYSDOH NELAP registration # 11301) for volatile organic compounds (VOCs), per- and polyfluoroalkyl substances (PFAS), 1,4-dioxane, and total solids (%S) by the methods specified below.

- VOCs by SW-846 Method 8260C
- PFAS by USEPA Method 537M
- 1,4-Dioxane by SW-846 Method 8270D-SIM
- Total Solids by Standard Method 2540G

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	*Lab Sample ID*	*Client Sample ID*	*Sample Date*	*Analytical Parameters*
19G0296	19G0296-01	SVE-01_09-10	7/8/2019	VOCs, PFAS, 1,4-Dioxane, %S
19G0296	19G0296-02	SVE-01_28-29	7/8/2019	VOCs, %S
19G0399	19G0399-01	ACME-EB-15_0-2	7/10/2019	VOCs, PFAS, 1,4-Dioxane, %S
19G0399	19G0399-02	ACME-EB-15_5-5.5	7/10/2019	VOCs, %S
19G0399	19G0399-03	ACME-EB-15_51-53	7/10/2019	VOCs, %S
19G0564	19G0564-01	ACME-EB-16_0-2	7/11/2019	VOCs, PFAS, 1,4-Dioxane, %S
19G0564	19G0564-02	ACME-EB-16_17-17.5	7/11/2019	VOCs, %S
19G0564	19G0564-03	VP-03_2.5-3	7/11/2019	VOCs, %S
19G0564	19G0564-04	SODUP01_071119	7/11/2019	VOCs, PFAS, 1,4-Dioxane, %S
19G0564	19G0564-05	SOFB01_071119	7/11/2019	VOCs, PFAS, 1,4-Dioxane
19G0564	19G0564-06	SOTB01_071119	7/11/2019	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-34A, "Trace Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-33A, "Low/Medium Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-35A, "Semivolatile Data Validation" (September 2016, Revision 1), the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017), the USEPA Contract Laboratory Program "National Functional Guidelines for Inorganic Superfund Methods Data Review" (EPA-540-R-2017-001, January 2017) and the specifics of the methods employed.

EPA Method 537 was developed and validated for the analysis of finished drinking water from surface water and groundwater sources. Laboratories have modified Method 537 to enable the analysis of groundwater and soil, and to incorporate PFAS analytes not currently addressed by the promulgated method. NYSDOH offers certification for perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) in the drinking water category. Non-potable water and soil certification is not available; however, the method describes acceptable modifications. EPA recommends that modified methods be assessed relative to project goals and data quality objectives.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the

originator. Items subject to review in this memorandum include holding times, sample preservation, sample extraction and digestion, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, internal standard area counts, isotope dilution recoveries, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, overall system performance, field duplicate, field blank, and trip blank sample results.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

R – The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

J – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.

U – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

NJ – The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
SVE-01_09-10	8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
SVE-01_09-10	8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SVE-01_09-10	8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
SVE-01_09-10	8260C	591-78-6	2-HEXANONE	UJ
SVE-01_09-10	8260C	67-64-1	ACETONE	J

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
SVE-01_09-10	8260C	75-25-2	BROMOFORM	UJ
SVE-01_09-10	8260C	74-83-9	BROMOMETHANE	UJ
SVE-01_09-10	8260C	87-68-3	HEXACHLOROBUTADIENE	UJ
SVE-01_09-10	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
SVE-01_09-10	8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
SVE-01_28-29	8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
SVE-01_28-29	8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SVE-01_28-29	8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
SVE-01_28-29	8260C	591-78-6	2-HEXANONE	UJ
SVE-01_28-29	8260C	67-64-1	ACETONE	J
SVE-01_28-29	8260C	75-25-2	BROMOFORM	UJ
SVE-01_28-29	8260C	74-83-9	BROMOMETHANE	UJ
SVE-01_28-29	8260C	87-68-3	HEXACHLOROBUTADIENE	UJ
SVE-01_28-29	8260C	108-10-1	4-METHYL-2-PENTANONE	UJ
SVE-01_28-29	8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
ACME-EB-15_0-2	8260C	107-02-8	ACROLEIN	UJ
ACME-EB-15_0-2	8260C	75-15-0	CARBON DISULFIDE	UJ
ACME-EB-15_0-2	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
ACME-EB-15_0-2	8260C	78-93-3	2-BUTANONE	U (0.013)
ACME-EB-15_0-2	8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
ACME-EB-15_0-2	8260C	79-01-6	TRICHLOROETHYLENE	J
ACME-EB-15_0-2	8260C	127-18-4	TETRACHLOROETHYLENE	J
ACME-EB-15_5-5.5	8260C	95-63-6	1,2,4-TRIMETHYLBENZENE	J
ACME-EB-15_5-5.5	8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
ACME-EB-15_5-5.5	8260C	67-64-1	ACETONE	J
ACME-EB-15_5-5.5	8260C	107-02-8	ACROLEIN	UJ
ACME-EB-15_5-5.5	8260C	108-90-7	CHLOROBENZENE	UJ
ACME-EB-15_5-5.5	8260C	156-59-2	CIS-1,2-DICHLOROETHYLENE	J
ACME-EB-15_5-5.5	8260C	79-20-9	METHYL ACETATE	UJ
ACME-EB-15_5-5.5	8260C	78-93-3	2-BUTANONE	J
ACME-EB-15_5-5.5	8260C	CYMP	P-ISOPROPYLTOLUENE	J
ACME-EB-15_5-5.5	8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
ACME-EB-15_5-5.5	8260C	79-01-6	TRICHLOROETHYLENE	J
ACME-EB-15_5-5.5	8260C	127-18-4	TETRACHLOROETHYLENE	J
ACME-EB-15_51-53	8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
ACME-EB-15_51-53	8260C	67-64-1	ACETONE	U (0.011)
ACME-EB-15_51-53	8260C	107-02-8	ACROLEIN	UJ
ACME-EB-15_51-53	8260C	108-90-7	CHLOROBENZENE	UJ
ACME-EB-15_51-53	8260C	79-20-9	METHYL ACETATE	UJ
ACME-EB-15_51-53	8260C	78-93-3	2-BUTANONE	U (0.010)
ACME-EB-15_51-53	8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
ACME-EB-15_51-53	8260C	127-18-4	TETRACHLOROETHYLENE	J
ACME-EB-15_51-53	8260C	79-01-6	TRICHLOROETHYLENE	UJ
ACME-EB-16_0-2	8260C	71-55-6	1,1,1-TRICHLOROETHANE	J
ACME-EB-16_0-2	8260C	67-64-1	ACETONE	J
ACME-EB-16_0-2	8260C	156-59-2	CIS-1,2-DICHLOROETHYLENE	J
ACME-EB-16_0-2	8260C	75-09-2	METHYLENE CHLORIDE	J
ACME-EB-16_0-2	8260C	156-60-5	TRANS-1,2-DICHLOROETHENE	J
ACME-EB-16_0-2	8260C	79-01-6	TRICHLOROETHYLENE	J
ACME-EB-16_17-17.5	8260C	67-64-1	ACETONE	J
ACME-EB-16_17-17.5	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
VP-03_2.5-3	8260C	71-55-6	1,1,1-TRICHLOROETHANE	J
VP-03_2.5-3	8260C	79-34-5	1,1,2,2-TETRACHLOROETHANE	UJ
VP-03_2.5-3	8260C	75-34-3	1,1-DICHLOROETHANE	J
VP-03_2.5-3	8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
VP-03_2.5-3	8260C	96-18-4	1,2,3-TRICHLOROPROPANE	UJ
VP-03_2.5-3	8260C	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
VP-03_2.5-3	8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
VP-03_2.5-3	8260C	95-50-1	1,2-DICHLOROBENZENE	UJ
VP-03_2.5-3	8260C	108-67-8	1,3,5-TRIMETHYLBENZENE	UJ
VP-03_2.5-3	8260C	541-73-1	1,3-DICHLOROBENZENE	UJ
VP-03_2.5-3	8260C	106-46-7	1,4-DICHLOROBENZENE	UJ
VP-03_2.5-3	8260C	67-64-1	ACETONE	J
VP-03_2.5-3	8260C	156-59-2	CIS-1,2-DICHLOROETHYLENE	J

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
VP-03_2.5-3	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
VP-03_2.5-3	8260C	87-68-3	HEXACHLOROBUTADIENE	UJ
VP-03_2.5-3	8260C	98-82-8	ISOPROPYLBENZENE	UJ
VP-03_2.5-3	8260C	108-87-2	METHYLCYCLOHEXANE	J
VP-03_2.5-3	8260C	104-51-8	N-BUTYLBENZENE	UJ
VP-03_2.5-3	8260C	103-65-1	N-PROPYLBENZENE	UJ
VP-03_2.5-3	8260C	CYMP	P-ISOPROPYLTOLUENE	UJ
VP-03_2.5-3	8260C	135-98-8	SEC-BUTYLBENZENE	UJ
VP-03_2.5-3	8260C	108-88-3	TOLUENE	J
VP-03_2.5-3	8260C	110-57-6	TRANS-1,4-DICHLORO-2-BUTENE	UJ
VP-03_2.5-3	8260C	79-01-6	TRICHLOROETHYLENE	J
SODUP01_071119	8260C	67-64-1	ACETONE	J
SODUP01_071119	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
SOFB01_071119	8260C	541-73-1	1,3-DICHLOROBENZENE	UJ
SOFB01_071119	8260C	123-91-1	1,4-DIOXANE	UJ
SOFB01_071119	8270D-SIM	123-91-1	1,4-DIOXANE	UJ
SOFB01_071119	8260C	74-83-9	BROMOMETHANE	UJ
SOFB01_071119	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
SOFB01_071119	8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ
SOFB01_071119	8260C	79-01-6	TRICHLOROETHYLENE	UJ
SOTB01_071119	8260C	123-91-1	1,4-DIOXANE	UJ
SOTB01_071119	8260C	74-83-9	BROMOMETHANE	UJ
SOTB01_071119	8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
SOTB01_071119	8260C	75-65-0	TERT-BUTYL ALCOHOL	UJ

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by SW-846 Method 8260C:

19G0296:

The laboratory control sample and duplicate (LCS/LCSD) for batch BG90429 exhibited a percent recovery below the lower control limit (LCL) for 1,2,4-trichlorobenzene (73.1%, 71.0%), bromoform (74.4%, 70.8%), 1,2,3-trichlorobenzene (78.7%, 75.2%), hexachlorobutadiene (75.3%, 77.0%), 4-methyl-2-pentanone (69.2%), and 2-hexanone (66.8%). The associated results in samples SVE-01_09-10 and SVE-01_28-29 are qualified as "UJ" based on potential low bias.

The continuing calibration verification (CCV) analyzed on 7/9/2019 at 20:59 exhibited percent differences (%Ds) above the control limit for 1,2-dibromo-3-chloropropane (-22.8%), acetone (-21.7%), bromomethane (20.6%), and trichlorofluoromethane (28.6%). The associated results in samples SVE-01_09-10 and SVE-01_28-29 are qualified as "J" or "UJ" based on potential indeterminate bias.

19G0399:

The method blank (MB) for batch BG90616 exhibited a detection of 2-butanone (0.0051 mg/kg). The associated results in sample ACME-EB-15_0-2 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch BG90667 exhibited detections of 2-butanone (0.0062 mg/kg) and acetone (0.0064 mg/kg). The associated results in sample ACME-EB-15_51-53 are qualified as "U" at the higher of the sample concentration and the reporting limit based on potential blank contamination.

The sample ACME-EB-15_5-5.5 exhibited a percent recovery above the upper control limit (UCL) for the surrogate p-bromofluorobenzene (167%). The associated results are qualified as "J" based on potential high bias.

The initial calibration (ICAL) for instrument QVOA4 exhibited a response factor (RF) below the control limit for tetrachloroethene (0.198). The associated results in samples ACME-EB-15_0-2, ACME-EB-15_51-53, and ACME-EB-15_5-5.5 are qualified as "J" based on potential indeterminate bias.

The ICAL for instrument QVOA4 exhibited a RF below the control limit for trichloroethene (0.195). The associated results in samples ACME-EB-15_0-2 and ACME-EB-15_51-53 are qualified as "J" or "UJ" based on potential indeterminate bias.

The initial calibration verification analyzed on 5/17/2019 at 19:13 exhibited a %D above the control limit for acrolein (-51.2%). The associated results in samples ACME-EB-15_0-2, ACME-EB-15_51-53, and ACME-EB-15_5-5.5 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 7/12/2019 at 08:21 exhibited %Ds above the control limit for carbon disulfide (25.0%), dichlorodifluoromethane (21.0%), and tert-butyl alcohol (-27.4%). The associated results in sample ACME-EB-15_0-2 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 7/16/2019 at 08:19 exhibited %Ds above the control limit for 1,2-dibromo-3-chloropropane (-22.7%), methyl acetate (-23.4%), and tert-butyl alcohol (-24.5%). The associated results in samples ACME-EB-15_51-53 and ACME-EB-15_5-5.5 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 7/16/2019 at 08:19 exhibited a RF below the control limit for chlorobenzene (0.476). The associated results in samples ACME-EB-15_51-53 and ACME-EB-15_5-5.5 are qualified as "UJ" based on potential indeterminate bias.

19G0564:

The LCSD for batch BG90874 exhibited percent recoveries below the LCL for tetrachloroethylene (81.7%) and 1,3-dichlorobenzene (84.1%). The associated results in sample SOFB01_071119 are qualified as "UJ" based on potential low bias.

The sample ACME-EB-16_0-2 exhibited a percent recovery above the UCL for the surrogate p-bromofluorobenzene (134%). The associated results are qualified as "J" based on potential high bias.

The sample VP-03_2.5-3 exhibited a percent recovery above the UCL for the surrogate toluene-d8 (125%). The associated results are qualified as "J" based on potential high bias.

The sample VP-03_2.5-3 exhibited a percent recovery below the LCL for the internal standard 1,2-dichlorobenzene-d4 (37%). The associated results are qualified as "UJ" based on potential loss of instrument sensitivity.

The ICAL for instrument MSVOA7 exhibited a relative standard deviation above the control limit for 1,4-dioxane (24.1%). The associated results in samples SOFB01_071119 and SOTB01_071119 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 7/17/2019 at 08:59 exhibited %Ds above the control limit for acetone (29.7%) and dichlorodifluoromethane (-31.6%). The associated results in samples ACME-EB-

16_17-17.5, VP-03_2.5-3, and SODUP01_071119 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 7/17/2019 at 10:16 exhibited %Ds above the control limit for bromomethane (-35.0%), dichlorodifluoromethane (-21.9%), and tert-butyl alcohol (30.1%). The associated results in samples SOFB01_071119 and SOTB01_071119 are qualified as "UJ" based on potential indeterminate bias.

1,4-Dioxane by SW-846 Method 8270D-SIM:

19G0564:

The sample SOFB01_071119 exhibited was prepared outside the holding time for 1,4-dioxane (6 days). The associated results are qualified as "UJ" based on potential low bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by SW-846 Method 8260C:

19G0399:

The LCSD for batch BG90616 exhibited a percent recovery above the UCL for dichlorodifluoromethane (173%). The associated results are non-detections. No qualification is necessary.

The LCSD for batch BG90667 exhibited percent recoveries above the UCL for 1,2-dibromoethane (124%) and methyl tert-butyl ether (135%). The associated results are non-detections. No qualification is necessary.

PFAS by USEPA Method 537M:

19G0399:

The sample ACME-EB-15_0-2 exhibited a percent recovery above the UCL for the standard isotope sodium 1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-decane sulfonate (8:2) (160%). The associated results are non-detections. No qualification is necessary.

19G0564:

The MB for batch BG91147 exhibited a detection of perfluorotetradecanoic acid (4.29 ng/L). The associated results are non-detections. No qualification is necessary.

COMMENTS:

One field duplicate and parent sample pair was collected and analyzed for all parameters. For results less than 5X the RL, analytes meet the precision criteria if the absolute difference is less than ±2X the RL. For results greater than 5X the RL, analytes meet the precision criteria if the relative percent difference is less than or equal to 50% for soil. The following field duplicate and parent sample pairs were compared to the precision criteria:

- SODUP01_071119 and ACME-EB-16_0-2: All analytes met the precision criteria.

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified, with the exception of the rejected results. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Emily Strake, CEP
Senior Project Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Kimberly Nagotko, Langan Senior Staff Geologist

From: Emily Strake, Langan Senior Project Chemist

Date: August 9, 2019

Re: Data Usability Summary Report
For Acme
July 2019 Groundwater Samples
Langan Project No.: 170157201

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of groundwater samples collected in July 2019 by Langan Engineering and Environmental Services ("Langan") at the Acme site ("the site"). The samples were analyzed by York Analytical Laboratories, Inc. (NYSDOH NELAP registration # 10854) for volatile organic compounds (VOCs), per- and polyfluoroalkyl substances (PFAS), and 1,4-dioxane by the methods specified below.

- VOCs by SW-846 Method 8260C
- PFAS by USEPA Method 537M
- 1,4-Dioxane by SW-846 Method 8270D-SIM

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	*Lab Sample ID*	*Client Sample ID*	*Sample Date*	*Analytical Parameters*
19G1029	19G1029-15	ACME-MW-15_072419	7/24/2019	VOCs, PFAS, 1,4-Dioxane
19G1029	19G1029-16	GWDUP01_072419	7/24/2019	VOCs, PFAS, 1,4-Dioxane
19G1029	19G1029-17	GWFB01_072419	7/24/2019	VOCs, PFAS, 1,4-Dioxane
19G1029	19G1029-18	GWTB01_072419	7/24/2019	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-34A, "Trace Volatile Data Validation" (September 2016, Revision 1),

USEPA Region II SOP #HW-33A, "Low/Medium Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-35A, "Semivolatile Data Validation" (September 2016, Revision 1), the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017), and the specifics of the methods employed.

EPA Method 537 was developed and validated for the analysis of finished drinking water from surface water and groundwater sources. Laboratories have modified Method 537 to enable the analysis of groundwater and soil, and to incorporate PFAS analytes not currently addressed by the promulgated method. NYSDOH offers certification for perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) in the drinking water category. Non-potable water and soil certification is not available; however, the method describes acceptable modifications. EPA recommends that modified methods be assessed relative to project goals and data quality objectives.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, internal standard area counts, isotope dilution recoveries, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, overall system performance, field duplicate, field blank, and trip blank sample results.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

- **R –** The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
- **J –** The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
- **UJ –** The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.
- **U –** The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.
- **NJ –** The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
ACME-MW-15_072419	8260C	123-91-1	1,4-DIOXANE	UJ
ACME-MW-15_072419	8260C	591-78-6	2-HEXANONE	UJ
ACME-MW-15_072419	8260C	74-83-9	BROMOMETHANE	UJ
ACME-MW-15_072419	8260C	78-93-3	2-BUTANONE	UJ
ACME-MW-15_072419	537M	375-73-5	PERFLUOROBUTANESULFONIC ACID	J
GWDUP01_072419	8260C	123-91-1	1,4-DIOXANE	UJ
GWDUP01_072419	8260C	591-78-6	2-HEXANONE	UJ
GWDUP01_072419	8260C	74-83-9	BROMOMETHANE	UJ
GWDUP01_072419	8260C	78-93-3	2-BUTANONE	UJ
GWDUP01_072419	537M	375-73-5	PERFLUOROBUTANESULFONIC ACID	J
GWFB01_072419	8260C	123-91-1	1,4-DIOXANE	UJ
GWFB01_072419	8260C	67-64-1	ACETONE	UJ
GWFB01_072419	8260C	74-83-9	BROMOMETHANE	UJ
GWFB01_072419	8260C	75-00-3	CHLOROETHANE	UJ
GWFB01_072419	537M	375-73-5	PERFLUOROBUTANESULFONIC ACID	UJ
GWFB01_072419	8260C	75-69-4	TRICHLOROFLUOROMETHANE	UJ
GWTB01_072419	8260C	123-91-1	1,4-DIOXANE	UJ
GWTB01_072419	8260C	591-78-6	2-HEXANONE	UJ
GWTB01_072419	8260C	74-83-9	BROMOMETHANE	UJ
GWTB01_072419	8260C	78-93-3	2-BUTANONE	UJ
GWTB01_072419	8260C	127-18-4	TETRACHLOROETHYLENE	UJ

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by SW-846 Method 8260C:

The laboratory control sample and duplicate for batch BG91381 exhibited a relative percent difference (RPD) above the control limit for 1,4-dioxane (45.5%). The associated results in samples ACME-MW-15_072419, GWDUP01_072419, and GWTB01_072419 are qualified as "UJ" based on potential indeterminate bias.

The initial calibration (ICAL) for instrument MSVOA7 exhibited relative standard deviations above the control limit for 1,4-dioxane (24.1%). The associated results in sample GWFB01_072419 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument VOA No. 8 exhibited response factors (RFs) below the control limit for 2-hexanone (0.0999). The associated results in samples ACME-MW-15_072419, GWDUP01_072419, and GWTB01_072419 are qualified as "UJ" based on potential indeterminate bias.

The continuing calibration verification (CCV) analyzed on 7/25/2019 at 14:21 exhibited RFs below the control limit for 2-butanone (0.0599). The associated results in samples ACME-MW-15_072419, GWDUP01_072419, and GWTB01_072419 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 7/25/2019 at 14:21 exhibited percent differences (%Ds) above the control limit for bromomethane (-29.5%). The associated results in samples ACME-MW-15_072419, GWDUP01_072419, and GWTB01_072419 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 7/25/2019 at 14:21 exhibited %Ds above the control limit for tetrachloroethene (25.8%). The associated results in sample GWTB01_072419 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 7/26/2019 at 09:30 exhibited %Ds above the control limit for acetone (-27.5%), bromomethane (-51.3%), chloroethane (-21.9%), and trichlorofluoromethane (-30.6%). The associated results in sample GWFB01_072419 are qualified as "UJ" based on potential indeterminate bias.

PFAS by USEPA Method 537M:

The CCV analyzed on 7/29/2019 at 14:57 exhibited %Ds above the control limit for perfluorobutanesulfonic acid (30.2%). The associated results in samples ACME-MW-15_072419, GWDUP01_072419, and GWFB01_072419 are qualified as "J" or "UJ" based on potential indeterminate bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. No other deficiencies were identified.

COMMENTS:

One field duplicate and parent sample pair was collected and analyzed for all parameters. For results less than 5X the RL, analytes meet the precision criteria if the absolute difference is less than ±1X the RL. For results greater than 5X the RL, analytes meet the precision criteria if the RPD is less than or equal to 30% for groundwater. The following field duplicate and parent sample pairs were compared to the precision criteria:

- GWDUP01_072419 and ACME-MW-15_072419: All analytes met the precision criteria.

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified, with the exception of the rejected results. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Emily Strake, CEP
Senior Project Chemist

ATTACHMENT C

MONITORING WELL SAMPLING LOG

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	72 Anthony Street	**Well No:**	ACME-MW-15	**Water Quality Device Model:**	Horiba U52	**Weather:**	Sunny, 80s		ACME-MW-15_072419
Project Number:	170517201	**Well Depth:**	62.99	**Pine Number:**	21202	**Background PID (ppm):**	0.1	**Sample(s):**	GWDUP01_072419
Site Location:	Brooklyn NY	**Well Diameter:**	2"	**Pump Make and Model:**	QED Bladder Pump	**PID Beneath Inner Cap (ppm):**	1,080		
Sampling	Katherine Racanelli	**Well Screen**	48'	**Pine Number:**	18684	**Pump Intake Depth:**	60'	**Sample Date:**	7/24/2019
Personnel:		**Interval:**	63'	**Tubing Diameter:**	1/4" ID x 3/8" OD	**Depth to Water Before Purge:**	54.76'	**Sample Time:**	12:10, 12:20

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
11:10	20.88	7.08	127	1.230	135.0	2.47	NA*		0.1	brownish yellow tint	**N/A**
11:15	18.82	7.23	77	1.250	236.0	1.45	NA*	0.06	0.4		**N/A**
11:20	18.14	7.20	36	1.250	131.0	1.48	NA*	0.06	0.7		**N**
11:25	17.72	7.15	5	1.240	87.0	7.67	NA*	0.06	1		**N**
11:30	17.62	7.11	-15	1.230	65.2	7.09	NA*	0.1	1.5		**N**
11:35	17.62	7.07	-24	1.220	62.7	6.65	NA*	0.05	1.75		**N**
11:40	17.51	7.04	-30	1.220	55.9	6.24	NA*	0.09	2.2		**N**
11:45	17.41	7.00	-46	1.210	48.6	5.96	NA*	0.06	2.5		**N**
11:50	17.51	6.97	-55	1.210	52.1	5.46	NA*	0.06	2.8		**N**
11:55	17.42	6.94	-60	1.210	46.1	5.20	NA*	0.09	3.25		**N**
12:00	17.51	6.92	-64	1.210	35.6	5.18	NA*	0.05	3.5		**N**
12:05	17.62	6.89	-67	1.210	38.7	5.01	NA*	0.05	3.75		**N**
12:10	17.62	6.88	-71	1.200	45.2	5.10	NA*	0.09	4.2		**N**

Notes:

1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit
11. NA* = ACME-MW-15 was not gauged during sampling due to potential emerging contaminant interference from the interface probe.
12. N/A = not applicable
13. gpm = gallons per minute
14. Well depth was measured following the sampling event.

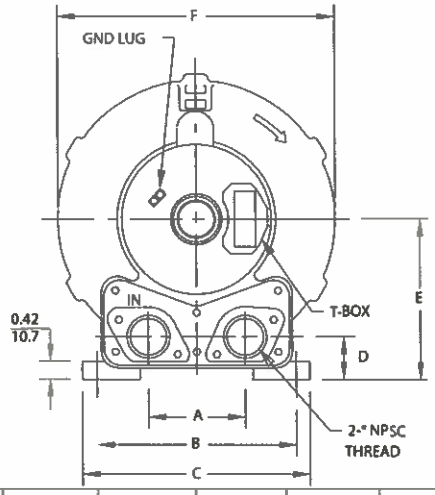
ATTACHMENT D

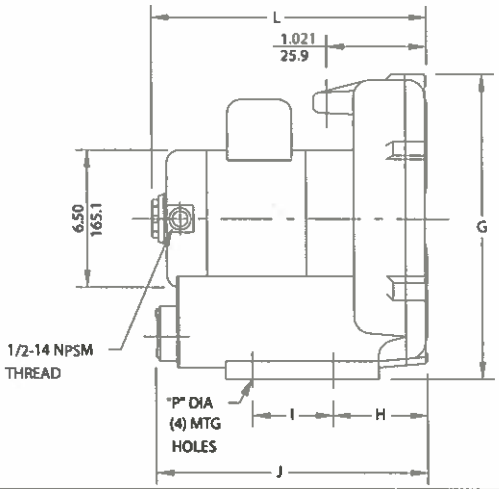
PILOT TEST EQUIPMENT SPECIFICATIONS, DATA AND LABORATORY ANALYTICAL RESULTS

DR 404/454/505/513/656

ROTRON®

Spa Blowers





IN
MM

NOTES
1 DRAWING NOT TO SCALE, CONTACT FACTORY FOR SCALE CAD DRAWING.
2 CONTACT FACTORY FOR BLOWER MODEL LENGTHS NOT SHOWN.

MODEL	A (IN/MM)	B (IN/MM)	C (IN/MM)	D (IN/MM)	E (IN/MM)	F (IN/MM)	G (IN/MM)	H (IN/MM)	I (IN/MM)	J (IN/MM)	K (IN/MM)	L (IN/MM)
DR404AQ58M	4.75/120.7	8.93/226.8	10.12/257	192/48.8	6.28/159.5	11.5/292.1	12.16/308.9	3.0/76.2	3.75/95.3	12.88/372.2	.59/15	12.91/327.9
DR454V58	4.75/120.7	10.30/261.6	11.38/289.1	1.92/48.8	6.98/177.3	12.55/318.8	13.52/343.4	3.25/82.6	4.50/114.3	10.81/274.6	.59/15	14.45/367
DR505AW58M	4.75/120.7	10.30/261.6	11.70/297.2	1.87/47.5	7.26/184.4	13.53/343.7	14.38/365.3	3.56/92.7	4.50/114.3	14.38/365.3	.59/15	15.0/381
DR513V58	4.75/120.7	11.42/290.1	13.0/330.2	2.23/56.6	8.69/220.7	14.21/360.9	15.8/401.3	3.72/94.5	5.50/139.7	13.74/349	.59/15	14.58/370.3
DR656K58X	4.92/125	11.42/290.1	12.8/325.1	2.25/57.2	7.46/189.5	15.42/391.7	15.17/385.3	4.14/105.2	5.5/139.7	15.12/384.1	.59/15	15.51/393.9

		Part/Model Number				
		DR404AQ58M	DR454V58M	DR505AW58M	DR513V58	DR656K58X
Specification	Units	037778	080485	037935	038143	080603
Motor Enclosure - Shaft Mtl.	-	SPA (ODP)-CS	SPA (ODP)-CS	SPA (ODP)-CS	SPA (ODP)-CS	TEFC-CS
Horsepower	-	1.0	1.5	2.0	1.5	3.0
Voltage	AC	115/230	115/230	115/230	115/230	115/230
Phase - Frequency	-	Single-50/60 Hz	Single-50/60 Hz	Single-50/60 Hz	Single-50/60 Hz	Single-50/60 Hz
Insulation Class	-	F	F	F	F	F
NEMA Rated Motor Amps	Amps (A)	15/7.5	15.2/7.6	21/10.5	15.2/7.6	31/15.5
Service Factor	-	1.4	1.3	1.2	1.3	1.0
Maximum Blower Amps	Amps (A)	8/4	17/8.5	26/13	17/8.5	27.8/13.9
Locked Rotor Amps	Amps (A)	32/16	85/43	136/68	85/43	200/100
Recommended NEMA Starter	Size-	0/00	1/0	1/0	1/0	1.5/1
Shipping Weight	Lbs	64	76	83	90	51
	Kg	29	34.5	37.6	40.8	23.1
Recommended Number of Jets	-	3-6	5-10	5-10	12-17	8-12

Voltage - ROTRON motors are designed to handle a broad range of world voltages and power supply variations. Our dual voltage 1 phase motors are factory tested and certified to operate on both: **104-115/208-230 VAC-1 ph-60 Hz** and **100-110/200-220 VAC-1 ph-50 Hz.** All voltages above can handle a ±10% voltage fluctuation. Special wound motors can be ordered for voltages outside our certified range.

Operating Temperatures - Maximum operating temperature: Motor winding temperature (winding rise plus ambient) should not exceed 140°C for Class F rated motors or 120°C for Class B rated motors. Blower outlet air temperature should not exceed 140°C (air temperature rise plus inlet temperature). Performance curve maximum pressure and suction points are based on a 40°C inlet and ambient temperature. Consult factory for inlet or ambient temperatures above 40°C.

Maximum Blower Amps - Corresponds to the performance point at which the motor or blower temperature rise with a 40°C inlet and/or ambient temperature reaches the maximum operating temperature.

Notes
- The blower should not be stopped/started more than four times an hour. - Use of relief valve 515092 is required for all blowers.

This document is for informational purposes only and should not be considered as a binding description of the products or their performance in all applications. The performance data on this page depicts typical performance under controlled laboratory conditions. AMETEK is not responsible for blowers driven beyond factory specified speed, temperature, pressure, flow or without proper alignment. Actual performance will vary depending on the operating environment and application. AMETEK products are not designed for and should not be used in medical life support applications. AMETEK reserves the right to revise its products without notification. The above characteristics represent standard products. For product designed to meet specific applications, contact AMETEK Technical & Industrial Products Sales department.

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Customer Service Fax: +1 215.256.1338
www.ametekdfs.com

AMETEK®
PRECISION MOTION CONTROL
DYNAMIC FLUID SOLUTIONS

Application Specific Blowers

ROTRON®

DR 404/454/505/513/656

Spa Blowers

FEATURES

- Manufactured in the USA - ISO 9001 and NAFTA compliant
- CE compliant - Declaration of Conformity on file
- Maximum flow: 105, 127, 160, 200 or 78 SCFM
- Maximum pressure: 56, 58, 74, 69 or 88 IWG
- Standard motor: 1.0, 1.5, 2.0, 3.0 HP, Spa Duty ODP
- Cast aluminum blower housing, impeller & cover; cast iron flanges (threaded)
- UL & CSA approved motor with permanently sealed ball bearings and Class B rated thermal protection
- Inlet & outlet internal muffling
- Quiet operation within OSHA standards

MOTOR OPTIONS

- International voltage & frequency (Hz)
- Chemical duty, high efficiency, inverter duty or industry-specific designs
- Various horsepowers for application-specific needs

BLOWER OPTIONS

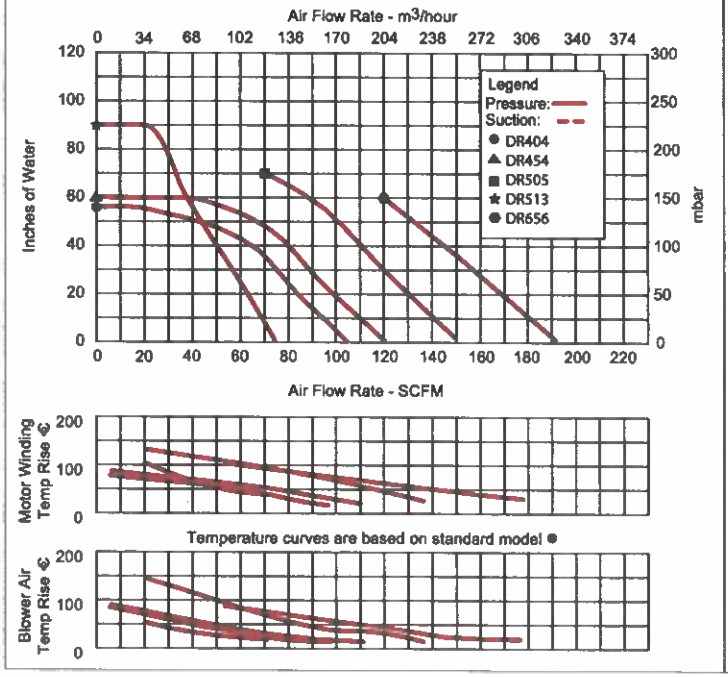
- Corrosion resistant surface treatments & sealing options
- Remote drive (motorless) models
- Slip-on or face flanges for application-specific needs

ACCESSORIES

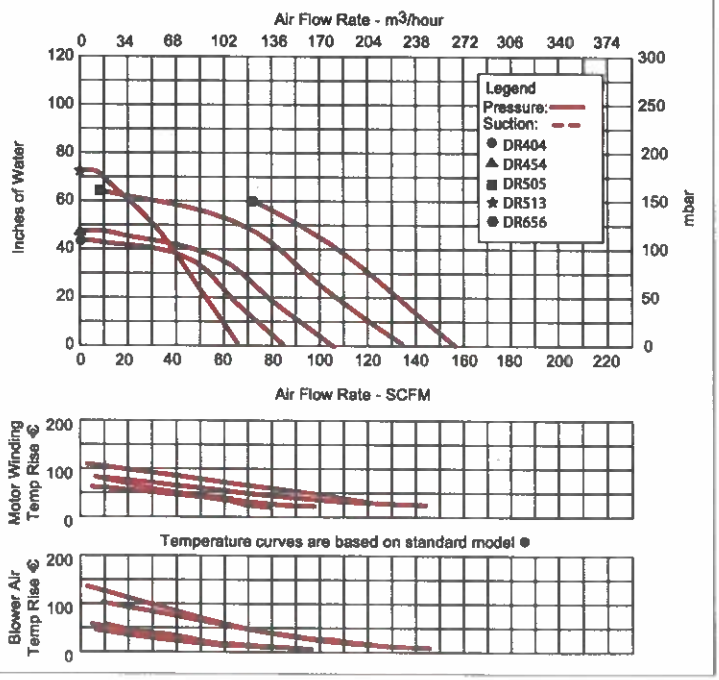
- Flowmeters reading in SCFM
- Filters & moisture separators
- Pressure gauges, vacuum gauges, & relief valves
- Switches - air flow, pressure, vacuum, or temperature
- External mufflers for additional silencing
- Variable frequency drive package

Blower Performance at Standard Conditions

60 Hz



50 Hz



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AMETEK®
PRECISION MOTION CONTROL
DYNAMIC FLUID SOLUTIONS

Enviro-Equipment Inc.
10120 Industrial Drive
Pineville NC 28134

SERIAL #: EEI-1346

DIMENSIONS: 1197 pounds, 96” L x 48” W x 80” Tall with stack, 70” Tall without stack

DESCRIPTION: Dual Phase Extraction Skid Including 75 CFM Dekker VMAX Vacuum Pump Model VMX0082 with 7.5HP 3PH Motor, Inlet Vacuum Air Filter, Vacuum Relief Valve, Brass Dilution Gate Valve with Filter Silencer, 80 Gallon KO Tank with SS Demister Pad, Sight Glass with LL HL HLA Level Float Tree, Moyno 34401 Transfer Pump with 1HP Motor, Gauges, 2” Steel Exhaust Stack, 230V 3PH Weatherproof UL508/698 Control Panel, Class 1 Div 2 Group D Skid Wiring, Skid Mounted with 4 Way Fork Lift Pockets.

Attachment D
Soil Vapor Extraction Pilot Test Memorandum
SVE Pilot Test Log - SVE-01_S

Former Acme Steel/Brass Foundry
Brooklyn, New York
NYSDEC Site No. 224132
Langan Project No. 170157201

Date: 7/17/19 and 7/19/19

Langan Staff: K. Racanelli and K. Novalis

SVE Well: SVE-01_S (shallow well)

Weather: Partly Sunny, 90s, 70% Humidity

Time	Prior to Dilution Valve (at SVE well)				Vacuum and PID Monitoring Points (IWC)[4]								Discharge PID (ppm)	Dilution Valve Percent Closed (%)	MultiRAE Readings *Prior to Dilution*				Notes
	Vacuum (IWC)[3]	Temp (°F)	PID (ppm)	Flow Rate (SCFM - Velocicalc)	VP-01_S Distance - 10'		VP-01_D Distance - 10'		VP-02_S Distance - 20'		VP-02_D Distance - 20'				Methane (%)	Carbon Monoxide (ppm)	Oxygen (% Vol)	Hydrogen Sulfide (ppm)	
					IWC	ppm	IWC	ppm	IWC	ppm	IWC	ppm							
Background	-	-	0.26	-	+0.014	1773	+0.011	400	+0.019	5.5	+0.010	8.1	-	-	0	8	20.5	0	
11:45	-6.4	90.3	15,000+	9.8	-0.382	55.7	+0.037	15,000+	-0.179	5.3	+0.035	875	0.0	100%	0	0	18.8	0	
12:15	-4	91.0	420	6.47	-0.233	248	+0.053	15,000+	-0.089	254	+0.039	4,500	0.0	N/A	0	15	16.4	0	
12:45	-2.5	91.9	15,000+	4.21	-0.019	245	+0.061	15,000+	-0.032	163	+0.043	15,000+	0.0	N/A	-	-	-	-	
Additional readings collected on 7/19/19 with Rotron DR505 blower																			
Background	-	-	2.70	-	-	-	-	-	-	-	-	-	-	-	0	50	20.9	0	Background VP readings not collected because had been running SVE-01_D prior
10:50	-10.414	81.5	8,000	10.80	-0.792	-	-0.130	-	-0.348	-	-0.047	-	0.0	25%	-	-	-	-	MultiRae battery depleted - use PID
11:10	-10.34	81.7	15,000+	13.30	-0.729	7.2	-0.032	1	-0.321	2.8	-0.028	1	0.0	25%	-	-	-	-	PID recalibrated, still spikes with no sample, may be erroneous
11:18	-24	82.1	0.8	28.39	-1.785	0.8	-0.061	0.3	-0.799	1.5	-0.024	1.5	0.0	75%	-	-	-	-	
11:33	-24	82.2	1.4	31.03	-1.863	0.1	-0.076	1.9	-0.854	0.5	-0.051	1.8	0.0	75%	-	-	-	-	
11:38	-52	82.8	N/A	69.51	-3.525	1.6	-0.119	0.3	-1.604	1.9	-0.100	0.7	0.0	100%	-	-	-	-	Vacuum too strong at SVE well for MultiRae and PID readings
11:54	-52	82.7	N/A	52.29	-3.607	0.5	-0.165	0.8	-1.670	0	-0.147	0.1	0.0	100%	-	-	-	-	VP-03_S vacuum -0.036 IWC, VP-03_D vacuum -0.081 IWC

Notes:

SVE - soil vapor extraction
VP - vacuum monitoring probe
IWC - inches of water column vacuum
°F - degrees Fahrenheit
ppm - parts per million
SCFM - standard cubic feet per minute
PID - photoionization detector

1. Distance between each VMP and their respective SVE Well should be noted.
2. Flow measurements collected with a Velocicalc.
3. Vacuum measurements collected using digital micro manometer, Velocicalc, or magnehelic gauges.

Constants

Pipe Diameter (in.)	3
Dwyer K-value	0.67
Specific Gravity Air	1
Baro Pressure (psi)	14.5

LANGAN

Attachment D
Soil Vapor Extraction Pilot Test Memorandum
SVE Pilot Test Log - SVE-01_D

Former Acme Steel/Brass Foundry
Brooklyn, New York
NYSDEC Site No. 224132
Langan Project No. 170157201

Date: 7/19/19 **Langan Staff: K. Racanelli**

SVE Well: SVE-01_D (deep well) **Weather: Partly Sunny, 90s, 70% Humidity**

Time	Prior to Dilution Valve (at SVE well)				Vacuum and PID Monitoring Points (IWC)[4]								Discharge PID (ppm)	Dilution Valve Percent Closed (%)	MultiRAE Readings *Prior to Dilution*				Notes
	Vacuum (IWC)[3]	Temp (°F)	PID (ppm)	Flow Rate (SCFM - Velocicalc)	VP-01_S Distance - 10'		VP-01_D Distance - 10'		VP-02_S Distance - 20'		VP-02_D Distance - 20'				Methane (%)	Carbon Monoxide (ppm)	Oxygen (% Vol)	Hydrogen Sulfide (ppm)	
					IWC	ppm	IWC	ppm	IWC	ppm	IWC	ppm							
Background	-	-	4	-	-0.016	0.9	-0.017	1.2	-0.011	155	-0.014	10.8	-	-	0	0	20.9	0	
7:13	-1.419	80.5	530	24.14	-0.120	4.8	-0.260	5.7	-0.076	112	-0.186	8	0.0	0%	0	0	20.9	0	
7:23	-1.495	79.9	830	25.97	-0.117	-	-0.249	-	-0.065	-	-0.176	-	0.0	0%	5	1	13.7	0	Ambient air Methane 5%
7:50	-4.916	79.5	115.4	68.46	-0.258	217	-0.604	218	-0.142	188	-0.411	69	0.0	25%	-	-	-	-	ppm with PID
8:10	-5.099	80.3	220	64.74	-0.380	49	-0.771	5.8	-0.245	38	-0.569	37	0.0	25%	4	0	14.1	0	Ambient air Methane 4%
8:18	-8.059	81.5	96	92.74	-0.492	1.2	-1.041	0	-0.311	2.3	-0.754	0.1	0.0	50%	4	0	14.7	0	Ambient air Methane 4% recalibrate and charge MultiRae
8:38	-8.114	81.3	70	96.52	-0.515	2.6	-1.065	2.8	-0.330	3.7	-0.783	1.7	0.0	50%	0	0	15	0	
8:47	-10.875	80.7	10	113.25	-0.584	2.2	-1.261	0.9	-0.362	2	-0.907	0.5	0.0	75%	0	1	15.3	0	
9:08	-11.033	81.3	5.5	118.62	-0.662	0.3	-1.357	0	-0.421	1	-0.991	0	0.0	75%	0	0	14.9	0	
9:16	-13.003	81.3	0.1	132.32	-0.726	0	-1.509	0	-0.469	0.7	-1.102	0	0.0	100%	0	0	20.9	0	
10:18	-12.991	81.1	0	130.63	-0.734	0	-1.507	0	-0.466	0	-1.103	0	0.0	100%	0	0	20.9	-	

Notes:

SVE - soil vapor extraction
VP - vacuum monitoring probe
IWC - inches of water column vacuum
°F - degrees Fahrenheit
ppm - parts per million
SCFM - standard cubic feet per minute
PID - photoionization detector

1. Distance between each VMP and their respective SVE Well should be noted.
2. Flow measurements collected with a Velocicalc.
3. Vacuum measurements collected using digital micro manometer, Velocicalc, or magnehelic gauges.

Constants

Pipe Diameter (in.)	3
Dwyer K-value	0.67
Specific Gravity Air	1
Baro Pressure (psi)	14.5

LANGAN

Attachment D
Soil Vapor Extraction Pilot Test Memorandum
SVE Pilot Test Log - SVE-02_S

Former Acme Steel/Brass Foundry
Brooklyn, New York
NYSDEC Site No. 224132
Langan Project No. 170157201

Date: 7/18/19 **Langan Staff: K. Racanelli, K. Novalis**

SVE Well: SVE-02_S (shallow well) **Weather: Rain, 70s, 91% Humidity**

Time	Prior to Dilution Valve (at SVE well)				Vacuum and PID Monitoring Points (IWC)[4]								Discharge PID (ppm)	Dilution Valve Percent Closed (%)	MultiRAE Readings *Prior to Dilution*				Notes
	Vacuum (IWC)[3]	Temp (°F)	PID (ppm)	Flow Rate (SCFM - Velocicalc)	VP-03_S Distance - 10'		VP-03_D Distance - 10'		VP-04_S Distance - 20'		VP-04_D Distance - 20'				Methane (%)	Carbon Monoxide (ppm)	Oxygen (% Vol)	Hydrogen Sulfide (ppm)	
					IWC	ppm	IWC	ppm	IWC	ppm	IWC	ppm							
Background	-	-	35.4	-	0	80.7	+0.022	78.7	+0.006	17.4	+0.007	44.7	-	-	0	0	20.9	0	
8:00	-1.6	84	120	24.46	-0.177	8.3	-0.212	7.1	-0.248	6.2	-0.215	5.4	0.0	0%	0	0	20.9	0	
8:30	-4.2	80.2	54	40.15	-0.311	9.2	-0.386	11.7	-0.414	2.6	-0.358	5	0.0	25%	0	0	20.9	0	
8:45	-4.14	78.2	100	36.55	-0.303	14.2	-0.360	11.7	-0.404	6	-0.350	6.7	0.0	25%	0	0	20.9	0	
9:05	-7.3	79.9	65	58.48	-0.493	23	-0.599	3	-0.639	2.7	-0.552	3.2	0.0	50%	0	0	13.7	0	
9:25	-7.25	80.6	75	62.12	-0.496	12.9	-0.595	6.9	-0.643	5.4	-0.556	5.2	0.0	50%	0	0	13.3	0	
9:30	-12.68	79.8	39.4	101.82	-0.777	8.8	-0.903	5	-0.983	5.3	-0.843	4.2	0.0	75%	0	0	13.5	0	
9:50	-12.75	78.3	25	101.05	-0.789	13.7	-0.945	2.4	-1.015	3.3	-0.881	2.6	0.0	75%	0	0	13.5	0	
10:15	15.6	78	24.1	118.65	-0.935	3.3	-1.093	1.6	-1.181	2.4	-1.022	2	0.3	100%	0	0	13.7	0	

Notes:

SVE - soil vapor extraction
VP - vacuum monitoring probe
IWC - inches of water column vacuum
°F - degrees Fahrenheit
ppm - parts per million
SCFM - standard cubic feet per minute
PID - photoionization detector

1. Distance between each VMP and their respective SVE Well should be noted.
2. Flow measurements collected with a Velocicalc.
3. Vacuum measurements collected using digital micro manometer, Velocicalc, or magnehelic gauges.

Constants

Pipe Diameter (in.)	3
Dwyer K-value	0.67
Specific Gravity Air	1
Baro Pressure (psi)	14.5

LANGAN

Attachment D
Soil Vapor Extraction Pilot Test Memorandum
SVE Pilot Test Log - SVE-02_D

Former Acme Steel/Brass Foundry
Brooklyn, New York
NYSDEC Site No. 224132
Langan Project No. 170157201

Date: 7/18/19

Langan Staff: K. Racanelli, K. Novalis

SVE Well: SVE-02_D (deep well)

Weather: Rain, 70s, 95% Humidity

Time	Prior to Dilution Valve (at SVE well)				Vacuum and PID Monitoring Points (IWC)[4]								Discharge PID (ppm)	Dilution Valve Percent Closed (%)	MultiRAE Readings *Prior to Dilution*				Notes
	Vacuum (IWC)[3]	Temp (°F)	PID (ppm)	Flow Rate (SCFM - Velocicalc)	VP-03_S Distance - 10'		VP-03_D Distance - 10'		VP-04_S Distance - 20'		VP-04_D Distance - 20'				Methane (%)	Carbon Monoxide (ppm)	Oxygen (% Vol)	Hydrogen Sulfide (ppm)	
					IWC	ppm	IWC	ppm	IWC	ppm	IWC	ppm							
Background	-	-	0.8	-	-	-	-	-	-	-	-	-	-	-	0	0	20.7	0	See SVE-02_S for background readings
10:30	-2.1	77.2	100	42.68	-0.137	5.3	-0.363	3.8	-0.287	4.2	-0.311	3.8	0.0	0%	0	0	12.9	0	
11:03	-2.002	77.7	103	25.13	-0.109	5.3	-0.303	4.7	-0.237	4.2	-0.261	4.1	0.0	0%	0	0	12.7	0	
11:15	-4.275	79.9	100	56.21	-0.183	6.9	-0.507	7.3	-0.401	6.1	-0.443	6.1	0.0	25%	0	0	12.7	0	
11:35	-4.86	79.1	100	53.61	-0.178	6.9	-0.511	7.3	-0.384	6.1	-0.423	6.1	0.0	25%	0	0	12.9	0	
11:41	-6.095	79.7	122	78.22	-0.239	6	-0.701	4.6	-0.514	4.6	-0.573	5	0.0	50%	0	0	12.9	0	
11:56	-6.708	81.6	120	74.92	-0.281	6	-0.780	4.6	-0.589	4.6	-0.652	5	0.0	50%	0	0	12.8	0	
12:05	-10.504	83.5	65	110.15	-0.354	-	-1.033	-	-0.757	-	-0.857	-	0.0	75%	0	0	12.8	0	
12:25	-10.699	81.2	80	110.91	-0.423	3.7	-1.171	3	-0.874	3.1	-0.965	2.3	0.0	75%	0	0	12.8	0	
12:40	-12.582	83.1	42	127.73	-0.454	2.7	-1.272	1.8	-0.948	2.2	-1.050	1.8	0.0	100%	0	0	12.9	0	VP-01_S vacuum -0.263 IWC, VP-01_D vacuum -0.418 IWC
13:10	-12.682	81.6	65	126.25	-0.448	1.7	-1.300	1	-0.974	1.5	-1.073	1	0.0	100%	0	0	12.7	0	

Notes:

SVE - soil vapor extraction
VP - vacuum monitoring probe
IWC - inches of water column vacuum
°F - degrees Fahrenheit
ppm - parts per million
SCFM - standard cubic feet per minute
PID - photoionization detector

1. Distance between each VMP and their respective SVE Well should be noted.
2. Flow measurements collected with a Velocicalc.
3. Vacuum measurements collected using digital micro manometer, Velocicalc, or magnehelic gauges.

Constants

Pipe Diameter (in.)	3
Dwyer K-value	0.67
Specific Gravity Air	1
Baro Pressure (psi)	14.5

LANGAN

Technical Report

prepared for:

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Patrick Farnham

Report Date: 07/15/2019
Client Project ID: 170157201
York Project (SDG) No.: 19G0296

Report Date: 07/15/2019
Client Project ID: 170157201
York Project (SDG) No.: 19G0296

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Patrick Farnham

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on July 08, 2019 and listed below. The project was identified as your project: **170157201**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
19G0296-01	SVE-01_09-10	Soil	07/08/2019	07/08/2019
19G0296-02	SVE-01_28-29	Soil	07/08/2019	07/08/2019

General Notes for York Project (SDG) No.: 19G0296

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By:

Date: 07/15/2019

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: SVE-01_09-10 **York Sample ID:** 19G0296-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0296	170157201	Soil	July 8, 2019 11:10 am	07/08/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	RDS
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 NELAC-NY10854,NELAC-NY12058,NJDEP	RDS
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
123-91-1	**1,4-Dioxane**	**0.24**		mg/kg dry	0.049	0.097	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-93-3	2-Butanone	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
591-78-6	2-Hexanone	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: SVE-01_09-10 **York Sample ID:** 19G0296-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0296	170157201	Soil	July 8, 2019 11:10 am	07/08/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-64-1	**Acetone**	**0.0076**	CCV-E, J	mg/kg dry	0.0049	0.0097	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-02-8	Acrolein	ND		mg/kg dry	0.0049	0.0097	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
71-43-2	Benzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-25-2	Bromoform	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-83-9	Bromomethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-00-3	Chloroethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-66-3	Chloroform	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-87-3	Chloromethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
156-59-2	cis-1,2-Dichloroethylene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
110-82-7	Cyclohexane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-95-3	Dibromomethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: SVE-01_09-10 **York Sample ID:** 19G0296-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0296	170157201	Soil	July 8, 2019 11:10 am	07/08/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-20-9	Methyl acetate	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-09-2	Methylene chloride	ND		mg/kg dry	0.0049	0.0097	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
95-47-6	o-Xylene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0049	0.0097	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-42-5	Styrene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	0.0024	0.024	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
127-18-4	**Tetrachloroethylene**	**0.031**		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-88-3	Toluene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH
79-01-6	Trichloroethylene	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0024	0.0049	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0073	0.015	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP

Surrogate Recoveries	Result	Acceptance Range

Sample Information

Client Sample ID: SVE-01_09-10 **York Sample ID:** 19G0296-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0296	170157201	Soil	July 8, 2019 11:10 am	07/08/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*90.4 %*			*77-125*						
2037-26-5	*Surrogate: SURR: Toluene-d8*	*91.1 %*			*85-120*						
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*103 %*			*76-130*						

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.0		mg/kg dry			1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:11	RDS

PFAS, NYSDEC Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
3871-99-6	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
1763-23-1	* Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT

Sample Information

Client Sample ID: SVE-01_09-10 **York Sample ID:** 19G0296-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0296	170157201	Soil	July 8, 2019 11:10 am	07/08/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.817	1	EPA 537m Certifications:	07/09/2019 09:37	07/11/2019 12:55	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*64.1 %*	*25-150*
Surrogate: M5PFHxA	*65.9 %*	*25-150*
Surrogate: M4PFHpA	*68.6 %*	*25-150*
Surrogate: M3PFHxS	*61.8 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*61.3 %*	*25-150*
Surrogate: M6PFDA	*55.8 %*	*25-150*
Surrogate: M7PFUdA	*50.7 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*54.4 %*	*25-150*
Surrogate: M2PFTeDA	*27.2 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*64.7 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*52.5 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*64.8 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*41.7 %*	*10-150*
Surrogate: d3-N-MeFOSAA	*56.1 %*	*25-150*
Surrogate: d5-N-EtFOSAA	*82.2 %*	*25-150*
Surrogate: M2-6:2 FTS	*71.9 %*	*25-150*
Surrogate: M2-8:2 FTS	*65.2 %*	*25-150*
Surrogate: M9PFNA	*57.2 %*	*25-150*

Sample Information

Client Sample ID: SVE-01_09-10 **York Sample ID:** 19G0296-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0296	170157201	Soil	July 8, 2019 11:10 am	07/08/2019

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	91.6		%	0.100	1	SM 2540G	07/10/2019 15:46	07/10/2019 15:48	KT
							Certifications: CTDOH			

Analyzed by: Phoenix Environmental Laboratories, Inc. S

Semi-Volatiles, 1,4-Dioxane by 8270-SIM (SUB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	180		ug/kg	69	1	SW8270D (SIM)	07/11/2019 00:00	07/12/2019 00:00	PHO
							Certifications:			

Sample Information

Client Sample ID: SVE-01_28-29 **York Sample ID:** 19G0296-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0296	170157201	Soil	July 8, 2019 11:15 am	07/08/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C	07/09/2019 12:30	07/09/2019 23:38	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C	07/09/2019 12:30	07/09/2019 23:38	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C	07/09/2019 12:30	07/09/2019 23:38	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C	07/09/2019 12:30	07/09/2019 23:38	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C	07/09/2019 12:30	07/09/2019 23:38	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C	07/09/2019 12:30	07/09/2019 23:38	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C	07/09/2019 12:30	07/09/2019 23:38	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C	07/09/2019 12:30	07/09/2019 23:38	RDS
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: SVE-01_28-29 **York Sample ID:** 19G0296-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0296	170157201	Soil	July 8, 2019 11:15 am	07/08/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS NELAC-NY10854,NELAC-NY12058,NJDEP
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
123-91-1	1,4-Dioxane	ND		mg/kg dry	0.047	0.094	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
78-93-3	2-Butanone	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
591-78-6	2-Hexanone	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-64-1	**Acetone**	**0.0048**	CCV-E, J	mg/kg dry	0.0047	0.0094	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-02-8	Acrolein	ND		mg/kg dry	0.0047	0.0094	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
71-43-2	Benzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-25-2	Bromoform	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-83-9	Bromomethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: SVE-01_28-29 **York Sample ID:** 19G0296-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0296	170157201	Soil	July 8, 2019 11:15 am	07/08/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-00-3	Chloroethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-66-3	Chloroform	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-87-3	Chloromethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-59-2	cis-1,2-Dichloroethylene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-82-7	Cyclohexane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-95-3	Dibromomethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-20-9	Methyl acetate	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-09-2	Methylene chloride	ND		mg/kg dry	0.0047	0.0094	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
95-47-6	o-Xylene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0047	0.0094	1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP

Sample Information

Client Sample ID: SVE-01_28-29 **York Sample ID:** 19G0296-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0296	170157201	Soil	July 8, 2019 11:15 am	07/08/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/09/2019 23:38	RDS
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/09/2019 23:38	RDS
100-42-5	Styrene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/09/2019 23:38	RDS
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	0.0024	0.024	1	EPA 8260C Certifications:	07/09/2019 12:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/09/2019 23:38	RDS
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/09/2019 23:38	RDS
127-18-4	**Tetrachloroethylene**	**0.034**		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/09/2019 23:38	RDS
108-88-3	Toluene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/09/2019 23:38	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/09/2019 23:38	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/09/2019 23:38	RDS
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30 CTDOH	07/09/2019 23:38	RDS
79-01-6	Trichloroethylene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/09/2019 23:38	RDS
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/09/2019 23:38	RDS
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/09/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/09/2019 23:38	RDS
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0071	0.014	1	EPA 8260C Certifications:	07/09/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/09/2019 23:38	RDS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*86.6 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*91.5 %*	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*102 %*	*76-130*

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.0		mg/kg dry			1	EPA 8260C Certifications:	07/09/2019 12:30	07/09/2019 23:38	RDS

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: SVE-01_28-29 **York Sample ID:** 19G0296-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0296	170157201	Soil	July 8, 2019 11:15 am	07/08/2019

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	99.5		%	0.100	1	SM 2540G	07/15/2019 09:34	07/15/2019 14:43	TAJ
							Certifications: CTDOH			

Analytical Batch Summary

Batch ID: 7/12/2019 **Preparation Method:** EPA 3535A **Prepared By:**

YORK Sample ID	Client Sample ID	Preparation Date
19G0296-01	SVE-01_09-10	07/11/19

Batch ID: BG90427 **Preparation Method:** SPE PFAS Extraction-Soil-EPA 537m **Prepared By:** KT

YORK Sample ID	Client Sample ID	Preparation Date
19G0296-01	SVE-01_09-10	07/09/19
BG90427-BLK1	Blank	07/09/19
BG90427-BS1	LCS	07/09/19

Batch ID: BG90429 **Preparation Method:** EPA 5035A **Prepared By:** AB

YORK Sample ID	Client Sample ID	Preparation Date
19G0296-01	SVE-01_09-10	07/09/19
19G0296-02	SVE-01_28-29	07/09/19
BG90429-BLK1	Blank	07/09/19
BG90429-BLK2	Blank	07/09/19
BG90429-BS1	LCS	07/09/19
BG90429-BSD1	LCS Dup	07/09/19

Batch ID: BG90539 **Preparation Method:** % Solids Prep **Prepared By:** KT

YORK Sample ID	Client Sample ID	Preparation Date
19G0296-01	SVE-01_09-10	07/10/19
BG90539-DUP1	Duplicate	07/10/19

Batch ID: BG90729 **Preparation Method:** % Solids Prep **Prepared By:** TAJ

YORK Sample ID	Client Sample ID	Preparation Date
19G0296-02	SVE-01_28-29	07/15/19

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90429 - EPA 5035A											
Blank (BG90429-BLK1)											Prepared & Analyzed: 07/09/2019
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet								
Tentatively Identified Compounds	0.0		"								
1,1,1-Trichloroethane	ND	0.0050	"								
1,1,2,2-Tetrachloroethane	ND	0.0050	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0050	"								
1,1,2-Trichloroethane	ND	0.0050	"								
1,1-Dichloroethane	ND	0.0050	"								
1,1-Dichloroethylene	ND	0.0050	"								
1,2,3-Trichlorobenzene	ND	0.0050	"								
1,2,3-Trichloropropane	ND	0.0050	"								
1,2,4-Trichlorobenzene	ND	0.0050	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,2-Dibromo-3-chloropropane	ND	0.0050	"								
1,2-Dibromoethane	ND	0.0050	"								
1,2-Dichlorobenzene	ND	0.0050	"								
1,2-Dichloroethane	ND	0.0050	"								
1,2-Dichloropropane	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
1,3-Dichlorobenzene	ND	0.0050	"								
1,4-Dichlorobenzene	ND	0.0050	"								
1,4-Dioxane	ND	0.10	"								
2-Butanone	ND	0.0050	"								
2-Hexanone	ND	0.0050	"								
4-Methyl-2-pentanone	ND	0.0050	"								
Acetone	ND	0.010	"								
Acrolein	ND	0.010	"								
Acrylonitrile	ND	0.0050	"								
Benzene	ND	0.0050	"								
Bromochloromethane	ND	0.0050	"								
Bromodichloromethane	ND	0.0050	"								
Bromoform	ND	0.0050	"								
Bromomethane	ND	0.0050	"								
Carbon disulfide	ND	0.0050	"								
Carbon tetrachloride	ND	0.0050	"								
Chlorobenzene	ND	0.0050	"								
Chloroethane	ND	0.0050	"								
Chloroform	ND	0.0050	"								
Chloromethane	ND	0.0050	"								
cis-1,2-Dichloroethylene	ND	0.0050	"								
cis-1,3-Dichloropropylene	ND	0.0050	"								
Cyclohexane	ND	0.0050	"								
Dibromochloromethane	ND	0.0050	"								
Dibromomethane	ND	0.0050	"								
Dichlorodifluoromethane	ND	0.0050	"								
Ethyl Benzene	ND	0.0050	"								
Hexachlorobutadiene	ND	0.0050	"								
Isopropylbenzene	ND	0.0050	"								
Methyl acetate	ND	0.0050	"								
Methyl tert-butyl ether (MTBE)	ND	0.0050	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90429 - EPA 5035A											
Blank (BG90429-BLK1)											Prepared & Analyzed: 07/09/2019
Methylcyclohexane	ND	0.0050	mg/kg wet								
Methylene chloride	ND	0.010	"								
n-Butylbenzene	ND	0.0050	"								
n-Propylbenzene	ND	0.0050	"								
o-Xylene	ND	0.0050	"								
p- & m- Xylenes	ND	0.010	"								
p-Isopropyltoluene	ND	0.0050	"								
sec-Butylbenzene	ND	0.0050	"								
Styrene	ND	0.0050	"								
tert-Butyl alcohol (TBA)	ND	0.025	"								
tert-Butylbenzene	ND	0.0050	"								
Tetrachloroethylene	ND	0.0050	"								
Toluene	ND	0.0050	"								
trans-1,2-Dichloroethylene	ND	0.0050	"								
trans-1,3-Dichloropropylene	ND	0.0050	"								
trans-1,4-dichloro-2-butene	ND	0.0050	"								
Trichloroethylene	ND	0.0050	"								
Trichlorofluoromethane	ND	0.0050	"								
Vinyl Chloride	ND	0.0050	"								
Xylenes, Total	ND	0.015	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*44.7*		*ug/L*	*50.0*		*89.4*	*77-125*				
Surrogate: SURR: Toluene-d8	*45.6*		*"*	*50.0*		*91.1*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*51.1*		*"*	*50.0*		*102*	*76-130*				
Blank (BG90429-BLK2)											Prepared & Analyzed: 07/09/2019
1,1,1,2-Tetrachloroethane	ND	0.50	mg/kg wet								
Tentatively Identified Compounds	0.0		"								
1,1,1-Trichloroethane	ND	0.50	"								
1,1,2,2-Tetrachloroethane	ND	0.50	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	"								
1,1,2-Trichloroethane	ND	0.50	"								
1,1-Dichloroethane	ND	0.50	"								
1,1-Dichloroethylene	ND	0.50	"								
1,2,3-Trichlorobenzene	ND	0.50	"								
1,2,3-Trichloropropane	ND	0.50	"								
1,2,4-Trichlorobenzene	ND	0.50	"								
1,2,4-Trimethylbenzene	ND	0.50	"								
1,2-Dibromo-3-chloropropane	ND	0.50	"								
1,2-Dibromoethane	ND	0.50	"								
1,2-Dichlorobenzene	ND	0.50	"								
1,2-Dichloroethane	ND	0.50	"								
1,2-Dichloropropane	ND	0.50	"								
1,3,5-Trimethylbenzene	ND	0.50	"								
1,3-Dichlorobenzene	ND	0.50	"								
1,4-Dichlorobenzene	ND	0.50	"								
1,4-Dioxane	ND	10	"								
2-Butanone	ND	0.50	"								
2-Hexanone	ND	0.50	"								
4-Methyl-2-pentanone	ND	0.50	"								
Acetone	ND	1.0	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90429 - EPA 5035A											
Blank (BG90429-BLK2)											
Prepared & Analyzed: 07/09/2019											
Acrolein	ND	1.0	mg/kg wet								
Acrylonitrile	ND	0.50	"								
Benzene	ND	0.50	"								
Bromochloromethane	ND	0.50	"								
Bromodichloromethane	ND	0.50	"								
Bromoform	ND	0.50	"								
Bromomethane	ND	0.50	"								
Carbon disulfide	ND	0.50	"								
Carbon tetrachloride	ND	0.50	"								
Chlorobenzene	ND	0.50	"								
Chloroethane	ND	0.50	"								
Chloroform	ND	0.50	"								
Chloromethane	ND	0.50	"								
cis-1,2-Dichloroethylene	ND	0.50	"								
cis-1,3-Dichloropropylene	ND	0.50	"								
Cyclohexane	ND	0.50	"								
Dibromochloromethane	ND	0.50	"								
Dibromomethane	ND	0.50	"								
Dichlorodifluoromethane	ND	0.50	"								
Ethyl Benzene	ND	0.50	"								
Hexachlorobutadiene	ND	0.50	"								
Isopropylbenzene	ND	0.50	"								
Methyl acetate	ND	0.50	"								
Methyl tert-butyl ether (MTBE)	ND	0.50	"								
Methylcyclohexane	ND	0.50	"								
Methylene chloride	ND	1.0	"								
n-Butylbenzene	ND	0.50	"								
n-Propylbenzene	ND	0.50	"								
o-Xylene	ND	0.50	"								
p- & m- Xylenes	ND	1.0	"								
p-Isopropyltoluene	ND	0.50	"								
sec-Butylbenzene	ND	0.50	"								
Styrene	ND	0.50	"								
tert-Butyl alcohol (TBA)	ND	2.5	"								
tert-Butylbenzene	ND	0.50	"								
Tetrachloroethylene	ND	0.50	"								
Toluene	ND	0.50	"								
trans-1,2-Dichloroethylene	ND	0.50	"								
trans-1,3-Dichloropropylene	ND	0.50	"								
trans-1,4-dichloro-2-butene	ND	0.50	"								
Trichloroethylene	ND	0.50	"								
Trichlorofluoromethane	ND	0.50	"								
Vinyl Chloride	ND	0.50	"								
Xylenes, Total	ND	1.5	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*43.4*		*ug/L*	*50.0*		*86.8*	*77-125*				
Surrogate: SURR: Toluene-d8	*45.8*		*"*	*50.0*		*91.5*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*50.7*		*"*	*50.0*		*101*	*76-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90429 - EPA 5035A											
LCS (BG90429-BS1)							Prepared & Analyzed: 07/09/2019				
1,1,1,2-Tetrachloroethane	46		ug/L	50.0		92.7	75-129				
1,1,1-Trichloroethane	50		"	50.0		100	71-137				
1,1,2,2-Tetrachloroethane	49		"	50.0		98.9	79-129				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	55		"	50.0		110	58-146				
1,1,2-Trichloroethane	47		"	50.0		93.7	83-123				
1,1-Dichloroethane	52		"	50.0		104	75-130				
1,1-Dichloroethylene	47		"	50.0		93.5	64-137				
1,2,3-Trichlorobenzene	39		"	50.0		78.7	81-140	Low Bias			
1,2,3-Trichloropropane	49		"	50.0		98.1	81-126				
1,2,4-Trichlorobenzene	37		"	50.0		73.1	80-141	Low Bias			
1,2,4-Trimethylbenzene	45		"	50.0		90.7	84-125				
1,2-Dibromo-3-chloropropane	39		"	50.0		77.4	74-142				
1,2-Dibromoethane	50		"	50.0		99.1	86-123				
1,2-Dichlorobenzene	47		"	50.0		93.6	85-122				
1,2-Dichloroethane	49		"	50.0		97.8	71-133				
1,2-Dichloropropane	44		"	50.0		87.8	81-122				
1,3,5-Trimethylbenzene	46		"	50.0		91.8	82-126				
1,3-Dichlorobenzene	44		"	50.0		88.7	84-124				
1,4-Dichlorobenzene	44		"	50.0		88.1	84-124				
1,4-Dioxane	1000		"	1050		95.6	10-228				
2-Butanone	53		"	50.0		105	58-147				
2-Hexanone	36		"	50.0		71.5	70-139				
4-Methyl-2-pentanone	38		"	50.0		75.6	72-132				
Acetone	40		"	50.0		79.1	36-155				
Acrolein	50		"	50.0		99.8	10-238				
Acrylonitrile	50		"	50.0		101	66-141				
Benzene	56		"	50.0		112	77-127				
Bromochloromethane	46		"	50.0		91.7	74-129				
Bromodichloromethane	44		"	50.0		88.4	81-124				
Bromoform	37		"	50.0		74.4	80-136	Low Bias			
Bromomethane	54		"	50.0		109	32-177				
Carbon disulfide	48		"	50.0		95.8	10-136				
Carbon tetrachloride	51		"	50.0		101	66-143				
Chlorobenzene	50		"	50.0		99.4	86-120				
Chloroethane	54		"	50.0		108	51-142				
Chloroform	55		"	50.0		110	76-131				
Chloromethane	38		"	50.0		76.7	49-132				
cis-1,2-Dichloroethylene	50		"	50.0		99.6	74-132				
cis-1,3-Dichloropropylene	42		"	50.0		84.8	81-129				
Cyclohexane	49		"	50.0		98.3	70-130				
Dibromochloromethane	45		"	50.0		90.2	10-200				
Dibromomethane	48		"	50.0		95.2	83-124				
Dichlorodifluoromethane	31		"	50.0		61.2	28-158				
Ethyl Benzene	48		"	50.0		96.8	84-125				
Hexachlorobutadiene	38		"	50.0		75.3	83-133	Low Bias			
Isopropylbenzene	47		"	50.0		93.2	81-127				
Methyl acetate	44		"	50.0		88.8	41-143				
Methyl tert-butyl ether (MTBE)	54		"	50.0		108	74-131				
Methylcyclohexane	47		"	50.0		94.4	70-130				
Methylene chloride	48		"	50.0		95.6	57-141				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90429 - EPA 5035A											
LCS (BG90429-BS1)								Prepared & Analyzed: 07/09/2019			
n-Butylbenzene	41		ug/L	50.0		82.9	80-130				
n-Propylbenzene	46		"	50.0		92.8	74-136				
o-Xylene	48		"	50.0		95.8	83-123				
p- & m- Xylenes	94		"	100		94.5	82-128				
p-Isopropyltoluene	47		"	50.0		94.6	85-125				
sec-Butylbenzene	49		"	50.0		98.4	83-125				
Styrene	49		"	50.0		97.1	86-126				
tert-Butyl alcohol (TBA)	260		"	250		105	70-130				
tert-Butylbenzene	43		"	50.0		85.5	80-127				
Tetrachloroethylene	44		"	50.0		87.5	80-129				
Toluene	49		"	50.0		98.4	85-121				
trans-1,2-Dichloroethylene	49		"	50.0		97.5	72-132				
trans-1,3-Dichloropropylene	40		"	50.0		80.8	78-132				
trans-1,4-dichloro-2-butene	44		"	50.0		88.2	75-135				
Trichloroethylene	48		"	50.0		96.1	84-123				
Trichlorofluoromethane	57		"	50.0		114	62-140				
Vinyl Chloride	46		"	50.0		91.3	52-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*44.8*		*"*	*50.0*		*89.5*	*77-125*				
Surrogate: SURR: Toluene-d8	*45.8*		*"*	*50.0*		*91.7*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*51.0*		*"*	*50.0*		*102*	*76-130*				
LCS Dup (BG90429-BSD1)								Prepared & Analyzed: 07/09/2019			
1,1,1,2-Tetrachloroethane	47		ug/L	50.0		94.0	75-129		1.35	30	
1,1,1-Trichloroethane	52		"	50.0		104	71-137		3.58	30	
1,1,2,2-Tetrachloroethane	47		"	50.0		94.9	79-129		4.11	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	57		"	50.0		115	58-146		4.40	30	
1,1,2-Trichloroethane	46		"	50.0		92.7	83-123		1.05	30	
1,1-Dichloroethane	53		"	50.0		107	75-130		3.15	30	
1,1-Dichloroethylene	49		"	50.0		97.1	64-137		3.80	30	
1,2,3-Trichlorobenzene	38		"	50.0		75.2	81-140	Low Bias	4.47	30	
1,2,3-Trichloropropane	46		"	50.0		91.4	81-126		7.14	30	
1,2,4-Trichlorobenzene	35		"	50.0		71.0	80-141	Low Bias	3.03	30	
1,2,4-Trimethylbenzene	46		"	50.0		91.5	84-125		0.966	30	
1,2-Dibromo-3-chloropropane	38		"	50.0		76.0	74-142		1.80	30	
1,2-Dibromoethane	48		"	50.0		96.1	86-123		3.01	30	
1,2-Dichlorobenzene	47		"	50.0		93.1	85-122		0.493	30	
1,2-Dichloroethane	50		"	50.0		101	71-133		2.88	30	
1,2-Dichloropropane	45		"	50.0		89.5	81-122		1.94	30	
1,3,5-Trimethylbenzene	47		"	50.0		94.1	82-126		2.47	30	
1,3-Dichlorobenzene	45		"	50.0		89.2	84-124		0.562	30	
1,4-Dichlorobenzene	45		"	50.0		89.3	84-124		1.29	30	
1,4-Dioxane	960		"	1050		91.0	10-228		4.95	30	
2-Butanone	49		"	50.0		98.3	58-147		6.76	30	
2-Hexanone	33		"	50.0		66.8	70-139	Low Bias	6.80	30	
4-Methyl-2-pentanone	35		"	50.0		69.2	72-132	Low Bias	8.76	30	
Acetone	36		"	50.0		72.7	36-155		8.51	30	
Acrolein	47		"	50.0		93.5	10-238		6.60	30	
Acrylonitrile	48		"	50.0		95.4	66-141		5.32	30	
Benzene	58		"	50.0		116	77-127		2.84	30	
Bromochloromethane	45		"	50.0		90.4	74-129		1.43	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90429 - EPA 5035A											
LCS Dup (BG90429-BSD1)								Prepared & Analyzed: 07/09/2019			
Bromodichloromethane	44		ug/L	50.0		88.1	81-124		0.340	30	
Bromoform	35		"	50.0		70.8	80-136	Low Bias	4.93	30	
Bromomethane	57		"	50.0		115	32-177		5.33	30	
Carbon disulfide	50		"	50.0		99.1	10-136		3.36	30	
Carbon tetrachloride	53		"	50.0		106	66-143		4.68	30	
Chlorobenzene	50		"	50.0		100	86-120		0.722	30	
Chloroethane	56		"	50.0		112	51-142		3.53	30	
Chloroform	56		"	50.0		112	76-131		2.20	30	
Chloromethane	40		"	50.0		79.1	49-132		3.03	30	
cis-1,2-Dichloroethylene	51		"	50.0		103	74-132		2.89	30	
cis-1,3-Dichloropropylene	43		"	50.0		85.0	81-129		0.235	30	
Cyclohexane	52		"	50.0		103	70-130		5.08	30	
Dibromochloromethane	44		"	50.0		87.8	10-200		2.67	30	
Dibromomethane	46		"	50.0		92.2	83-124		3.20	30	
Dichlorodifluoromethane	31		"	50.0		62.7	28-158		2.36	30	
Ethyl Benzene	49		"	50.0		97.7	84-125		0.925	30	
Hexachlorobutadiene	38		"	50.0		77.0	83-133	Low Bias	2.21	30	
Isopropylbenzene	48		"	50.0		96.8	81-127		3.75	30	
Methyl acetate	42		"	50.0		84.1	41-143		5.37	30	
Methyl tert-butyl ether (MTBE)	52		"	50.0		104	74-131		3.05	30	
Methylcyclohexane	49		"	50.0		98.2	70-130		3.95	30	
Methylene chloride	47		"	50.0		94.6	57-141		1.09	30	
n-Butylbenzene	47		"	50.0		93.1	80-130		11.6	30	
n-Propylbenzene	48		"	50.0		95.3	74-136		2.66	30	
o-Xylene	48		"	50.0		96.8	83-123		0.976	30	
p- & m- Xylenes	96		"	100		96.1	82-128		1.70	30	
p-Isopropyltoluene	48		"	50.0		96.3	85-125		1.82	30	
sec-Butylbenzene	51		"	50.0		102	83-125		4.06	30	
Styrene	49		"	50.0		97.5	86-126		0.370	30	
tert-Butyl alcohol (TBA)	230		"	250		93.2	70-130		11.5	30	
tert-Butylbenzene	44		"	50.0		88.5	80-127		3.38	30	
Tetrachloroethylene	44		"	50.0		88.7	80-129		1.34	30	
Toluene	50		"	50.0		100	85-121		2.13	30	
trans-1,2-Dichloroethylene	51		"	50.0		102	72-132		4.37	30	
trans-1,3-Dichloropropylene	40		"	50.0		79.3	78-132		1.87	30	
trans-1,4-dichloro-2-butene	48		"	50.0		96.8	75-135		9.28	30	
Trichloroethylene	49		"	50.0		98.0	84-123		1.90	30	
Trichlorofluoromethane	59		"	50.0		119	62-140		3.93	30	
Vinyl Chloride	47		"	50.0		94.2	52-130		3.17	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*44.0*		*"*	*50.0*		*88.1*	*77-125*				
Surrogate: SURR: Toluene-d8	*45.9*		*"*	*50.0*		*91.7*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*51.3*		*"*	*50.0*		*103*	*76-130*				

PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90427 - SPE PFAS Extraction-Soil-EPA 537m											
Blank (BG90427-BLK1)								Prepared: 07/09/2019 Analyzed: 07/10/2019			
Perfluorobutanesulfonic acid (PFBS)	ND	0.740	ug/kg wet								
Perfluorohexanoic acid (PFHxA)	ND	0.740	"								
Perfluoroheptanoic acid (PFHpA)	ND	0.740	"								
Perfluorohexanesulfonic acid (PFHxS)	ND	0.740	"								
Perfluorooctanoic acid (PFOA)	ND	0.740	"								
Perfluorooctanesulfonic acid (PFOS)	ND	0.740	"								
Perfluorononanoic acid (PFNA)	ND	0.740	"								
Perfluorodecanoic acid (PFDA)	ND	0.740	"								
Perfluoroundecanoic acid (PFUnA)	ND	0.740	"								
Perfluorododecanoic acid (PFDoA)	ND	0.740	"								
Perfluorotridecanoic acid (PFTrDA)	ND	0.740	"								
Perfluorotetradecanoic acid (PFTA)	ND	0.740	"								
N-MeFOSAA	ND	0.740	"								
N-EtFOSAA	ND	0.740	"								
Perfluoropentanoic acid (PFPeA)	ND	0.740	"								
Perfluoro-1-octanesulfonamide (FOSA)	ND	0.740	"								
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	0.740	"								
Perfluoro-1-decanesulfonic acid (PFDS)	ND	0.740	"								
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	0.740	"								
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	0.740	"								
Perfluoro-n-butanoic acid (PFBA)	ND	0.740	"								
Surrogate: M3PFBS	*2.84*		"	*4.58*		*62.0*	*25-150*				
Surrogate: M5PFHxA	*3.03*		"	*4.93*		*61.4*	*25-150*				
Surrogate: M4PFHpA	*3.25*		"	*4.93*		*65.9*	*25-150*				
Surrogate: M3PFHxS	*2.94*		"	*4.67*		*62.9*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*2.92*		"	*4.93*		*59.2*	*25-150*				
Surrogate: M6PFDA	*3.43*		"	*4.93*		*69.5*	*25-150*				
Surrogate: M7PFUdA	*2.42*		"	*4.93*		*49.1*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*2.89*		"	*4.93*		*58.5*	*25-150*				
Surrogate: M2PFTeDA	*2.76*		"	*4.93*		*55.9*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*3.07*		"	*4.93*		*62.3*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*2.99*		"	*4.72*		*63.3*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*3.06*		"	*4.93*		*62.1*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*2.82*		"	*4.93*		*57.2*	*10-150*				
Surrogate: d3-N-MeFOSAA	*3.26*		"	*4.93*		*66.1*	*25-150*				
Surrogate: d5-N-EtFOSAA	*3.14*		"	*4.93*		*63.7*	*25-150*				
Surrogate: M2-6:2 FTS	*3.72*		"	*4.68*		*79.5*	*25-150*				
Surrogate: M2-8:2 FTS	*3.40*		"	*4.73*		*71.9*	*25-150*				
Surrogate: M9PFNA	*2.91*		"	*4.93*		*59.0*	*25-150*				

PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90427 - SPE PFAS Extraction-Soil-EPA 537m											
LCS (BG90427-BS1)								Prepared: 07/09/2019 Analyzed: 07/10/2019			
Perfluorobutanesulfonic acid (PFBS)	4.40	0.705	ug/kg wet	4.16		106	50-130				
Perfluorohexanoic acid (PFHxA)	4.41	0.705	"	4.70		93.9	50-130				
Perfluoroheptanoic acid (PFHpA)	4.40	0.705	"	4.70		93.6	50-130				
Perfluorohexanesulfonic acid (PFHxS)	3.48	0.705	"	3.48		100	50-130				
Perfluorooctanoic acid (PFOA)	4.04	0.705	"	4.70		86.0	50-130				
Perfluorooctanesulfonic acid (PFOS)	3.43	0.705	"	3.43		100	50-130				
Perfluorononanoic acid (PFNA)	4.46	0.705	"	4.51		99.0	50-130				
Perfluorodecanoic acid (PFDA)	4.78	0.705	"	4.70		102	50-130				
Perfluoroundecanoic acid (PFUnA)	5.77	0.705	"	4.70		123	50-130				
Perfluorododecanoic acid (PFDoA)	4.66	0.705	"	4.70		99.2	50-130				
Perfluorotridecanoic acid (PFTrDA)	3.53	0.705	"	4.70		75.1	50-130				
Perfluorotetradecanoic acid (PFTA)	4.09	0.705	"	4.70		87.1	50-130				
N-MeFOSAA	4.29	0.705	"	4.70		91.4	50-130				
N-EtFOSAA	4.30	0.705	"	4.70		91.6	50-130				
Perfluoropentanoic acid (PFPeA)	4.47	0.705	"	4.70		95.2	50-130				
Perfluoro-1-octanesulfonamide (FOSA)	4.65	0.705	"	4.70		99.0	50-130				
Perfluoro-1-heptanesulfonic acid (PFHpS)	4.85	0.705	"	4.68		104	50-130				
Perfluoro-1-decanesulfonic acid (PFDS)	3.85	0.705	"	4.53		84.9	50-130				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	4.73	0.705	"	4.46		106	50-130				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	4.48	0.705	"	4.51		99.3	50-130				
Perfluoro-n-butanoic acid (PFBA)	4.57	0.705	"	4.70		97.2	50-130				
Surrogate: M3PFBS	*3.02*		*"*	*4.37*		*69.2*	*25-150*				
Surrogate: M5PFHxA	*3.41*		*"*	*4.70*		*72.6*	*25-150*				
Surrogate: M4PFHpA	*3.24*		*"*	*4.70*		*69.0*	*25-150*				
Surrogate: M3PFHxS	*3.04*		*"*	*4.45*		*68.4*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*3.20*		*"*	*4.70*		*68.1*	*25-150*				
Surrogate: M6PFDA	*2.98*		*"*	*4.70*		*63.4*	*25-150*				
Surrogate: M7PFUdA	*2.28*		*"*	*4.70*		*48.6*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*2.76*		*"*	*4.70*		*58.7*	*25-150*				
Surrogate: M2PFTeDA	*3.41*		*"*	*4.70*		*72.6*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*3.37*		*"*	*4.70*		*71.7*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*2.84*		*"*	*4.50*		*63.2*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*3.31*		*"*	*4.70*		*70.5*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*2.91*		*"*	*4.70*		*61.9*	*10-150*				
Surrogate: d3-N-MeFOSAA	*3.33*		*"*	*4.70*		*70.9*	*25-150*				
Surrogate: d5-N-EtFOSAA	*3.26*		*"*	*4.70*		*69.3*	*25-150*				
Surrogate: M2-6:2 FTS	*3.70*		*"*	*4.46*		*83.0*	*25-150*				
Surrogate: M2-8:2 FTS	*3.43*		*"*	*4.50*		*76.1*	*25-150*				
Surrogate: M9PFNA	*3.25*		*"*	*4.70*		*69.2*	*25-150*				

Miscellaneous Physical Parameters - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90539 - % Solids Prep											
Duplicate (BG90539-DUP1)	*Source sample: 19G0296-01 (SVE-01_09-10)								Prepared & Analyzed: 07/10/2019		
% Solids	91.9	0.100	%		91.6				0.415	20	

Volatile Analysis Sample Containers

Lab ID	Client Sample ID	Volatile Sample Container
19G0296-01	SVE-01_09-10	40mL Vial with Stir Bar-Cool 4° C
19G0296-02	SVE-01_28-29	40mL Vial with Stir Bar-Cool 4° C

Sample and Data Qualifiers Relating to This Work Order

QL-02	This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
J	Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.
CCV-E	The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

York Analytical Laboratories, Inc.
120 Research Drive, Stratford, CT 06615
132-02 89th Ave, Queens, NY 11418
clientservices@yorklab.com
www.yorklab.com

Field Chain-of-Custody Record

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document.
This document serves as your written authorization for YORK to proceed with the analyses requested below.
Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 19G0296

Page 1 of 1

YOUR Information	Report To:	Invoice To:
Company: LANGAN Engineering	Company:	Company:
Address: 360 W 31st St New York, NY	Address:	Address:
Phone.: 2124795400	Phone.:	Phone.:
Contact: Patrick Farnham	Contact:	Contact:
E-mail: pfarnham@langan.com	E-mail:	E-mail:

YOUR Project Number: 170157201

YOUR Project Name: ACME Site #2 72 Anthony St

YOUR PO#:

Turn-Around Time

- RUSH - Next Day
- RUSH - Two Day
- RUSH - Three Day
- RUSH - Four Day
- Standard (5-7 Day) X

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Katherine Raccanelli

Samples Collected by: (print your name above and sign below)

KR

Matrix Codes

- S - soil / solid
- GW - groundwater
- DW - drinking water
- WW - wastewater
- O - Oil | Other

Samples From

- New York X
- New Jersey
- Connecticut
- Pennsylvania
- Other

Report / EDD Type (circle selections)

- Summary Report
- QA Report
- NY ASP A Package
- NY ASP B Package
- CT RCP
- CT RCP DQA/DUE
- NJDEP Reduced Deliverables
- NJDKQP
- Standard Excel EDD
- EQuIS (Standard)
- NYSDEC EQuIS
- NJDEP SRP HazSite
- Other:

YORK Reg. Comp.

Compared to the following Regulation(s): (please fill in)

Sample Identification	Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
SVE-01_9-10	S	7/8/19 11:10	TCL PAH 375 NJDEP VOCS+TICS, PFAS, 1,4 Dioxane	
SVE-01_28-29	S	7/8/19 11:15	TCL PAH 375 NJDEP VOCS+TICS	

Comments:

please cc results to datamanagement@langan.com

Preservation: (check all that apply)

HCl ___ MeOH ___ HNO_3 ___ H_2SO_4 ___ NaOH ___ ZnAc ___
Ascorbic Acid ___ Other: ___

Special Instruction

Field Filtered ___
Lab to Filter ___

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
KR LANGAN	7/8/19 1400		7-8-19 1400		7-8-19
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
Alliance Ventures YORK	7/8/19 2:00	Alliance Ventures YORK	7/8/19 1545	Tom A /York	7/8/19 1545
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by / Date/Time	Temp. Received at Lab
Tom A /York	7/8/19 1836			J. Gale 7-8-19/1836	2.2 Degrees C

Technical Report

prepared for:

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Patrick Farnham

Report Date: 07/24/2019
Client Project ID: 170157201
York Project (SDG) No.: 19G0399

Report Date: 07/24/2019
Client Project ID: 170157201
York Project (SDG) No.: 19G0399

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Patrick Farnham

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on July 10, 2019 and listed below. The project was identified as your project: **170157201**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
19G0399-01	ACME-EB-15_0-2	Soil	07/10/2019	07/10/2019
19G0399-02	ACME-EB-15_5-5.5	Soil	07/10/2019	07/10/2019
19G0399-03	ACME-EB-15_51-53	Soil	07/10/2019	07/10/2019

General Notes for York Project (SDG) No.: 19G0399

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By:

Date: 07/24/2019

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: ACME-EB-15_0-2 **York Sample ID:** 19G0399-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0399	170157201	Soil	July 10, 2019 8:00 am	07/10/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP		
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
123-91-1	1,4-Dioxane	ND		mg/kg dry	0.065	0.13	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
78-93-3	**2-Butanone**	**0.0087**	J, B	mg/kg dry	0.0033	0.013	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: ACME-EB-15_0-2 **York Sample ID:** 19G0399-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0399	170157201	Soil	July 10, 2019 8:00 am	07/10/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
591-78-6	2-Hexanone	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
67-64-1	**Acetone**	**0.022**		mg/kg dry	0.0065	0.013	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
107-02-8	Acrolein	ND		mg/kg dry	0.0065	0.013	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-43-2	Benzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-25-2	Bromoform	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-83-9	Bromomethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-00-3	Chloroethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
67-66-3	Chloroform	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-87-3	Chloromethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
156-59-2	**cis-1,2-Dichloroethylene**	**0.11**		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
110-82-7	Cyclohexane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-95-3	Dibromomethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: ACME-EB-15_0-2 **York Sample ID:** 19G0399-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0399	170157201	Soil	July 10, 2019 8:00 am	07/10/2019

Volatile Organics, 8260 - Comprehensive **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-20-9	Methyl acetate	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-09-2	Methylene chloride	ND		mg/kg dry	0.0065	0.013	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-47-6	o-Xylene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0065	0.013	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
100-42-5	Styrene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
127-18-4	**Tetrachloroethylene**	**63**		mg/kg dry	1.6	3.3	500	EPA 8260C	07/16/2019 07:27	07/16/2019 18:18	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-88-3	Toluene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH		
79-01-6	**Trichloroethylene**	**0.047**		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: ACME-EB-15_0-2 **York Sample ID:** 19G0399-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0399	170157201	Soil	July 10, 2019 8:00 am	07/10/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0033	0.0065	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0098	0.020	1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*100 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*101 %*	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*102 %*	*76-130*

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.0		mg/kg dry			1	EPA 8260C	07/12/2019 07:27	07/12/2019 14:24	TMP
								Certifications:			

PFAS, NYSDEC Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.818	1	EPA 537m	07/22/2019 11:53	07/24/2019 05:03	KT
							Certifications:			
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.818	1	EPA 537m	07/22/2019 11:53	07/24/2019 05:03	KT
							Certifications:			
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.818	1	EPA 537m	07/22/2019 11:53	07/24/2019 05:03	KT
							Certifications:			
3871-99-6	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.818	1	EPA 537m	07/22/2019 11:53	07/24/2019 05:03	KT
							Certifications:			
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.818	1	EPA 537m	07/22/2019 11:53	07/24/2019 05:03	KT
							Certifications:			
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**2.99**		ug/kg dry	0.818	1	EPA 537m	07/22/2019 11:53	07/24/2019 05:03	KT
							Certifications:			
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.818	1	EPA 537m	07/22/2019 11:53	07/24/2019 05:03	KT
							Certifications:			
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.818	1	EPA 537m	07/22/2019 11:53	07/24/2019 05:03	KT
							Certifications:			
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.818	1	EPA 537m	07/22/2019 11:53	07/24/2019 05:03	KT
							Certifications:			
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.818	1	EPA 537m	07/22/2019 11:53	07/24/2019 05:03	KT
							Certifications:			

Sample Information

Client Sample ID: ACME-EB-15_0-2 **York Sample ID:** 19G0399-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0399	170157201	Soil	July 10, 2019 8:00 am	07/10/2019

PFAS, NYSDEC Target List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 05:03	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 05:03	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 05:03	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 05:03	KT
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 05:03	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 05:03	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 05:03	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 05:03	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 05:03	KT
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 05:03	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 05:03	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*55.6 %*	*25-150*
Surrogate: M5PFHxA	*56.8 %*	*25-150*
Surrogate: M4PFHpA	*67.6 %*	*25-150*
Surrogate: M3PFHxS	*55.8 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic aci	*66.5 %*	*25-150*
Surrogate: M6PFDA	*65.8 %*	*25-150*
Surrogate: M7PFUdA	*47.3 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecan	*51.1 %*	*25-150*
Surrogate: M2PFTeDA	*50.7 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic aci	*55.0 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfor	*47.6 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic ac	*58.6 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfor	*31.8 %*	*10-150*
Surrogate: d3-N-MeFOSAA	*84.6 %*	*25-150*
Surrogate: d5-N-EtFOSAA	*88.5 %*	*25-150*
Surrogate: M2-6:2 FTS	*141 %*	*25-150*
Surrogate: M2-8:2 FTS	*160 %*	*25-150*
Surrogate: M9PFNA	*62.7 %*	*25-150*

Sample Information

Client Sample ID: ACME-EB-15_0-2 **York Sample ID:** 19G0399-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0399	170157201	Soil	July 10, 2019 8:00 am	07/10/2019

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**87.6**		%	0.100	1	SM 2540G	07/16/2019 12:07	07/16/2019 14:44	MAO
							Certifications: CTDOH			

Analyzed by: Phoenix Environmental Laboratories, Inc. S

Semi-Volatiles, 1,4-Dioxane by 8270-SIM (SUB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/kg	75	1	SW8270D (SIM)	07/15/2019 00:00	07/16/2019 00:00	PHO
							Certifications:			

Sample Information

Client Sample ID: ACME-EB-15_5-5.5 **York Sample ID:** 19G0399-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0399	170157201	Soil	July 10, 2019 9:40 am	07/10/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP		
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-63-6	**1,2,4-Trimethylbenzene**	**0.46**	J	mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
123-91-1	1,4-Dioxane	ND		mg/kg dry	6.1	12	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
78-93-3	**2-Butanone**	**0.81**	CCV-E, J, B	mg/kg dry	0.30	1.2	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: ACME-EB-15_5-5.5 **York Sample ID:** 19G0399-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0399	170157201	Soil	July 10, 2019 9:40 am	07/10/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
591-78-6	2-Hexanone	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
67-64-1	**Acetone**	**0.65**	J, B	mg/kg dry	0.61	1.2	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
107-02-8	Acrolein	ND		mg/kg dry	0.61	1.2	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
107-13-1	Acrylonitrile	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-43-2	Benzene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-97-5	Bromochloromethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-25-2	Bromoform	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-83-9	Bromomethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-15-0	Carbon disulfide	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-90-7	Chlorobenzene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-00-3	Chloroethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
67-66-3	Chloroform	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-87-3	Chloromethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
156-59-2	**cis-1,2-Dichloroethylene**	**1.5**		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
110-82-7	Cyclohexane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-95-3	Dibromomethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: ACME-EB-15_5-5.5 **York Sample ID:** 19G0399-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0399	170157201	Soil	July 10, 2019 9:40 am	07/10/2019

Volatile Organics, 8260 - Comprehensive **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-20-9	Methyl acetate	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-09-2	Methylene chloride	ND		mg/kg dry	0.61	1.2	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-47-6	o-Xylene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.61	1.2	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
99-87-6	**p-Isopropyltoluene**	**0.44**	J	mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
100-42-5	Styrene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
127-18-4	**Tetrachloroethylene**	**28**		mg/kg dry	1.5	3.0	500	EPA 8260C	07/16/2019 07:27	07/16/2019 16:04	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-88-3	Toluene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH		
79-01-6	**Trichloroethylene**	**0.83**		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: ACME-EB-15_5-5.5 **York Sample ID:** 19G0399-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0399	170157201	Soil	July 10, 2019 9:40 am	07/10/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.30	0.61	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.91	1.8	100	EPA 8260C	07/16/2019 07:52	07/16/2019 15:38	TMP
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			

	Surrogate Recoveries	Result		Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*96.9 %*		*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*94.0 %*		*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*167 %*	S-03	*76-130*

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
NA	**butyl Cyclohexane isomer**	**39**		mg/kg dry			100	EPA 8260C	07/16/2019 07:27	07/16/2019 15:38	TMP
								Certifications:			
NA	**C9 to C12 aliphatic hydrocarbons**	**140**		mg/kg dry			100	EPA 8260C	07/16/2019 07:27	07/16/2019 15:38	TMP
								Certifications:			
NA	**dimethyl Cyclohexane isomers**	**38**		mg/kg dry			100	EPA 8260C	07/16/2019 07:27	07/16/2019 15:38	TMP
								Certifications:			
NA	**Ethyl Dimethyl cyclohexane isomers**	**33**		mg/kg dry			100	EPA 8260C	07/16/2019 07:27	07/16/2019 15:38	TMP
								Certifications:			
NA	**ethyl methyl cyclohexane isomers**	**210**		mg/kg dry			100	EPA 8260C	07/16/2019 07:27	07/16/2019 15:38	TMP
								Certifications:			
NA	**methyl propyl cyclohexane isomers**	**51**		mg/kg dry			100	EPA 8260C	07/16/2019 07:27	07/16/2019 15:38	TMP
								Certifications:			
NA	**propyl Cyclohexane isomer**	**80**		mg/kg dry			100	EPA 8260C	07/16/2019 07:27	07/16/2019 15:38	TMP
								Certifications:			

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**82.2**		%	0.100	1	SM 2540G	07/17/2019 16:08	07/17/2019 16:15	TMP
							Certifications: CTDOH			

Sample Information

Client Sample ID: ACME-EB-15_51-53 **York Sample ID:** 19G0399-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0399	170157201	Soil	July 10, 2019 11:40 am	07/10/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP		
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
123-91-1	1,4-Dioxane	ND		mg/kg dry	0.051	0.10	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
78-93-3	**2-Butanone**	**0.0042**	CCV-E, J, B	mg/kg dry	0.0025	0.010	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: ACME-EB-15_51-53 **York Sample ID:** 19G0399-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0399	170157201	Soil	July 10, 2019 11:40 am	07/10/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
591-78-6	2-Hexanone	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
67-64-1	**Acetone**	**0.011**	B	mg/kg dry	0.0051	0.010	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
107-02-8	Acrolein	ND		mg/kg dry	0.0051	0.010	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-43-2	Benzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-25-2	Bromoform	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-83-9	Bromomethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-00-3	Chloroethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
67-66-3	Chloroform	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-87-3	Chloromethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
156-59-2	cis-1,2-Dichloroethylene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
110-82-7	Cyclohexane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-95-3	Dibromomethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: ACME-EB-15_51-53 **York Sample ID:** 19G0399-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0399	170157201	Soil	July 10, 2019 11:40 am	07/10/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-20-9	Methyl acetate	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-09-2	Methylene chloride	ND		mg/kg dry	0.0051	0.010	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-47-6	o-Xylene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0051	0.010	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
100-42-5	Styrene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
127-18-4	**Tetrachloroethylene**	**0.020**		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-88-3	Toluene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH		
79-01-6	Trichloroethylene	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: ACME-EB-15_51-53 **York Sample ID:** 19G0399-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0399	170157201	Soil	July 10, 2019 11:40 am	07/10/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0025	0.0051	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0076	0.015	1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*92.5 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*98.7 %*	*85-120*

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.0		mg/kg dry			1	EPA 8260C	07/16/2019 07:27	07/16/2019 11:37	TMP
								Certifications:			

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**98.3**		%	0.100	1	SM 2540G	07/17/2019 16:08	07/17/2019 16:15	TMP
							Certifications:	CTDOH		

Analytical Batch Summary

Batch ID: 7/16/2019 **Preparation Method:** EPA 3535A **Prepared By:**

YORK Sample ID	Client Sample ID	Preparation Date
19G0399-01	ACME-EB-15_0-2	07/15/19

Batch ID: BG90616 **Preparation Method:** EPA 5035A **Prepared By:** TMP

YORK Sample ID	Client Sample ID	Preparation Date
19G0399-01	ACME-EB-15_0-2	07/12/19
BG90616-BLK1	Blank	07/12/19
BG90616-BS1	LCS	07/12/19
BG90616-BSD1	LCS Dup	07/12/19

Batch ID: BG90667 **Preparation Method:** EPA 5035A **Prepared By:** TMP

YORK Sample ID	Client Sample ID	Preparation Date
19G0399-01RE1	ACME-EB-15_0-2	07/16/19
19G0399-02	ACME-EB-15_5-5.5	07/16/19
19G0399-02	ACME-EB-15_5-5.5	07/16/19
19G0399-02RE1	ACME-EB-15_5-5.5	07/16/19
19G0399-03	ACME-EB-15_51-53	07/16/19
BG90667-BLK1	Blank	07/16/19
BG90667-BLK2	Blank	07/16/19
BG90667-BS1	LCS	07/16/19
BG90667-BSD1	LCS Dup	07/16/19

Batch ID: BG90826 **Preparation Method:** % Solids Prep **Prepared By:** TJM

YORK Sample ID	Client Sample ID	Preparation Date
19G0399-01	ACME-EB-15_0-2	07/16/19

Batch ID: BG90930 **Preparation Method:** % Solids Prep **Prepared By:** PP

YORK Sample ID	Client Sample ID	Preparation Date
19G0399-02	ACME-EB-15_5-5.5	07/17/19
19G0399-03	ACME-EB-15_51-53	07/17/19

Batch ID: BG91148 **Preparation Method:** SPE PFAS Extraction-Soil-EPA 537m **Prepared By:** KT

YORK Sample ID	Client Sample ID	Preparation Date
19G0399-01	ACME-EB-15_0-2	07/22/19
BG91148-BLK1	Blank	07/22/19
BG91148-BS1	LCS	07/22/19
BG91148-MS1	Matrix Spike	07/22/19
BG91148-MSD1	Matrix Spike Dup	07/22/19

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90616 - EPA 5035A											
Blank (BG90616-BLK1)											
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet								
Tentatively Identified Compounds	0.0		"								
1,1,1-Trichloroethane	ND	0.0050	"								
1,1,2,2-Tetrachloroethane	ND	0.0050	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0050	"								
1,1,2-Trichloroethane	ND	0.0050	"								
1,1-Dichloroethane	ND	0.0050	"								
1,1-Dichloroethylene	ND	0.0050	"								
1,2,3-Trichlorobenzene	ND	0.0050	"								
1,2,3-Trichloropropane	ND	0.0050	"								
1,2,4-Trichlorobenzene	ND	0.0050	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,2-Dibromo-3-chloropropane	ND	0.0050	"								
1,2-Dibromoethane	ND	0.0050	"								
1,2-Dichlorobenzene	ND	0.0050	"								
1,2-Dichloroethane	ND	0.0050	"								
1,2-Dichloropropane	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
1,3-Dichlorobenzene	ND	0.0050	"								
1,4-Dichlorobenzene	ND	0.0050	"								
1,4-Dioxane	ND	0.10	"								
2-Butanone	0.0051	0.0050	"								
2-Hexanone	ND	0.0050	"								
4-Methyl-2-pentanone	ND	0.0050	"								
Acetone	ND	0.010	"								
Acrolein	ND	0.010	"								
Acrylonitrile	ND	0.0050	"								
Benzene	ND	0.0050	"								
Bromochloromethane	ND	0.0050	"								
Bromodichloromethane	ND	0.0050	"								
Bromoform	ND	0.0050	"								
Bromomethane	ND	0.0050	"								
Carbon disulfide	ND	0.0050	"								
Carbon tetrachloride	ND	0.0050	"								
Chlorobenzene	ND	0.0050	"								
Chloroethane	ND	0.0050	"								
Chloroform	ND	0.0050	"								
Chloromethane	ND	0.0050	"								
cis-1,2-Dichloroethylene	ND	0.0050	"								
cis-1,3-Dichloropropylene	ND	0.0050	"								
Cyclohexane	ND	0.0050	"								
Dibromochloromethane	ND	0.0050	"								
Dibromomethane	ND	0.0050	"								
Dichlorodifluoromethane	ND	0.0050	"								
Ethyl Benzene	ND	0.0050	"								
Hexachlorobutadiene	ND	0.0050	"								
Isopropylbenzene	ND	0.0050	"								
Methyl acetate	ND	0.0050	"								
Methyl tert-butyl ether (MTBE)	ND	0.0050	"								
Methylcyclohexane	ND	0.0050	"								

Prepared & Analyzed: 07/12/2019

Volatile Organic Compounds by GC/MS - Quality Control Data

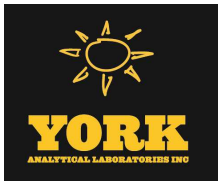
York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90616 - EPA 5035A											
Blank (BG90616-BLK1)								Prepared & Analyzed: 07/12/2019			
Methylene chloride	ND	0.010	mg/kg wet								
n-Butylbenzene	ND	0.0050	"								
n-Propylbenzene	ND	0.0050	"								
o-Xylene	ND	0.0050	"								
p- & m- Xylenes	ND	0.010	"								
p-Isopropyltoluene	ND	0.0050	"								
sec-Butylbenzene	ND	0.0050	"								
Styrene	ND	0.0050	"								
tert-Butyl alcohol (TBA)	ND	0.0050	"								
tert-Butylbenzene	ND	0.0050	"								
Tetrachloroethylene	ND	0.0050	"								
Toluene	ND	0.0050	"								
trans-1,2-Dichloroethylene	ND	0.0050	"								
trans-1,3-Dichloropropylene	ND	0.0050	"								
trans-1,4-dichloro-2-butene	ND	0.0050	"								
Trichloroethylene	ND	0.0050	"								
Trichlorofluoromethane	ND	0.0050	"								
Vinyl Chloride	ND	0.0050	"								
Xylenes, Total	ND	0.015	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.8*		*ug/L*	*50.0*		*99.6*	*77-125*				
Surrogate: SURR: Toluene-d8	*49.1*		*"*	*50.0*		*98.2*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*49.8*		*"*	*50.0*		*99.6*	*76-130*				
LCS (BG90616-BS1)								Prepared & Analyzed: 07/12/2019			
1,1,1,2-Tetrachloroethane	45		ug/L	50.0		89.1	75-129				
1,1,1-Trichloroethane	51		"	50.0		102	71-137				
1,1,2,2-Tetrachloroethane	46		"	50.0		92.8	79-129				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	49		"	50.0		98.4	58-146				
1,1,2-Trichloroethane	47		"	50.0		93.2	83-123				
1,1-Dichloroethane	50		"	50.0		101	75-130				
1,1-Dichloroethylene	45		"	50.0		89.2	64-137				
1,2,3-Trichlorobenzene	53		"	50.0		106	81-140				
1,2,3-Trichloropropane	45		"	50.0		89.8	81-126				
1,2,4-Trichlorobenzene	53		"	50.0		106	80-141				
1,2,4-Trimethylbenzene	48		"	50.0		96.4	84-125				
1,2-Dibromo-3-chloropropane	39		"	50.0		77.6	74-142				
1,2-Dibromoethane	49		"	50.0		97.8	86-123				
1,2-Dichlorobenzene	47		"	50.0		94.9	85-122				
1,2-Dichloroethane	49		"	50.0		97.3	71-133				
1,2-Dichloropropane	47		"	50.0		94.9	81-122				
1,3,5-Trimethylbenzene	48		"	50.0		96.5	82-126				
1,3-Dichlorobenzene	48		"	50.0		96.2	84-124				
1,4-Dichlorobenzene	49		"	50.0		97.2	84-124				
1,4-Dioxane	890		"	1050		84.9	10-228				
2-Butanone	51		"	50.0		102	58-147				
2-Hexanone	43		"	50.0		85.2	70-139				
4-Methyl-2-pentanone	42		"	50.0		83.1	72-132				
Acetone	35		"	50.0		69.6	36-155				
Acrolein	0.0		"	50.0			10-238	Low Bias			
Acrylonitrile	47		"	50.0		93.2	66-141				
Benzene	52		"	50.0		104	77-127				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

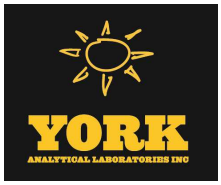
Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90616 - EPA 5035A											
LCS (BG90616-BS1)							Prepared & Analyzed: 07/12/2019				
Bromochloromethane	50		ug/L	50.0		99.5	74-129				
Bromodichloromethane	44		"	50.0		88.0	81-124				
Bromoform	41		"	50.0		81.8	80-136				
Bromomethane	51		"	50.0		102	32-177				
Carbon disulfide	55		"	50.0		110	10-136				
Carbon tetrachloride	47		"	50.0		93.1	66-143				
Chlorobenzene	48		"	50.0		96.7	86-120				
Chloroethane	51		"	50.0		101	51-142				
Chloroform	51		"	50.0		102	76-131				
Chloromethane	47		"	50.0		94.8	49-132				
cis-1,2-Dichloroethylene	51		"	50.0		101	74-132				
cis-1,3-Dichloropropylene	49		"	50.0		97.1	81-129				
Cyclohexane	52		"	50.0		105	70-130				
Dibromochloromethane	44		"	50.0		88.6	10-200				
Dibromomethane	48		"	50.0		95.3	83-124				
Dichlorodifluoromethane	74		"	50.0		149	28-158				
Ethyl Benzene	48		"	50.0		96.7	84-125				
Hexachlorobutadiene	54		"	50.0		107	83-133				
Isopropylbenzene	48		"	50.0		96.4	81-127				
Methyl acetate	46		"	50.0		92.3	41-143				
Methyl tert-butyl ether (MTBE)	52		"	50.0		103	74-131				
Methylcyclohexane	50		"	50.0		101	70-130				
Methylene chloride	51		"	50.0		102	57-141				
n-Butylbenzene	47		"	50.0		94.9	80-130				
n-Propylbenzene	47		"	50.0		94.2	74-136				
o-Xylene	48		"	50.0		95.8	83-123				
p- & m- Xylenes	95		"	100		94.6	82-128				
p-Isopropyltoluene	50		"	50.0		100	85-125				
sec-Butylbenzene	51		"	50.0		102	83-125				
Styrene	49		"	50.0		98.1	86-126				
tert-Butyl alcohol (TBA)	200		"	250		79.1	70-130				
tert-Butylbenzene	49		"	50.0		97.2	80-127				
Tetrachloroethylene	48		"	50.0		96.6	80-129				
Toluene	48		"	50.0		95.4	85-121				
trans-1,2-Dichloroethylene	52		"	50.0		104	72-132				
trans-1,3-Dichloropropylene	43		"	50.0		85.1	78-132				
trans-1,4-dichloro-2-butene	44		"	50.0		87.5	75-135				
Trichloroethylene	50		"	50.0		99.3	84-123				
Trichlorofluoromethane	50		"	50.0		99.2	62-140				
Vinyl Chloride	45		"	50.0		89.0	52-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*48.8*		*"*	*50.0*		*97.6*	*77-125*				
Surrogate: SURR: Toluene-d8	*49.0*		*"*	*50.0*		*97.9*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*50.6*		*"*	*50.0*		*101*	*76-130*				



Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90616 - EPA 5035A											
LCS Dup (BG90616-BSD1)								Prepared & Analyzed: 07/12/2019			
1,1,1,2-Tetrachloroethane	53		ug/L	50.0		106	75-129		17.0	30	
1,1,1-Trichloroethane	61		"	50.0		122	71-137		17.2	30	
1,1,2,2-Tetrachloroethane	56		"	50.0		111	79-129		18.0	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	57		"	50.0		115	58-146		15.4	30	
1,1,2-Trichloroethane	56		"	50.0		113	83-123		18.9	30	
1,1-Dichloroethane	59		"	50.0		119	75-130		16.6	30	
1,1-Dichloroethylene	52		"	50.0		104	64-137		15.4	30	
1,2,3-Trichlorobenzene	63		"	50.0		126	81-140		17.2	30	
1,2,3-Trichloropropane	55		"	50.0		110	81-126		20.1	30	
1,2,4-Trichlorobenzene	63		"	50.0		126	80-141		17.3	30	
1,2,4-Trimethylbenzene	57		"	50.0		114	84-125		16.4	30	
1,2-Dibromo-3-chloropropane	47		"	50.0		93.7	74-142		18.8	30	
1,2-Dibromoethane	58		"	50.0		117	86-123		17.8	30	
1,2-Dichlorobenzene	57		"	50.0		113	85-122		17.4	30	
1,2-Dichloroethane	57		"	50.0		115	71-133		16.6	30	
1,2-Dichloropropane	57		"	50.0		113	81-122		17.7	30	
1,3,5-Trimethylbenzene	57		"	50.0		113	82-126		16.0	30	
1,3-Dichlorobenzene	57		"	50.0		114	84-124		17.2	30	
1,4-Dichlorobenzene	57		"	50.0		115	84-124		16.6	30	
1,4-Dioxane	1100		"	1050		102	10-228		17.8	30	
2-Butanone	60		"	50.0		119	58-147		15.6	30	
2-Hexanone	51		"	50.0		102	70-139		18.1	30	
4-Methyl-2-pentanone	50		"	50.0		99.8	72-132		18.2	30	
Acetone	42		"	50.0		83.1	36-155		17.7	30	
Acrolein	0.0		"	50.0			10-238	Low Bias		30	
Acrylonitrile	56		"	50.0		111	66-141		17.7	30	
Benzene	61		"	50.0		122	77-127		16.5	30	
Bromochloromethane	60		"	50.0		120	74-129		18.7	30	
Bromodichloromethane	52		"	50.0		104	81-124		17.1	30	
Bromoform	49		"	50.0		97.4	80-136		17.5	30	
Bromomethane	46		"	50.0		91.2	32-177		11.1	30	
Carbon disulfide	66		"	50.0		132	10-136		17.8	30	
Carbon tetrachloride	55		"	50.0		109	66-143		15.9	30	
Chlorobenzene	57		"	50.0		114	86-120		16.8	30	
Chloroethane	58		"	50.0		116	51-142		13.8	30	
Chloroform	61		"	50.0		122	76-131		17.9	30	
Chloromethane	55		"	50.0		109	49-132		14.0	30	
cis-1,2-Dichloroethylene	60		"	50.0		119	74-132		16.4	30	
cis-1,3-Dichloropropylene	59		"	50.0		117	81-129		18.9	30	
Cyclohexane	62		"	50.0		124	70-130		16.5	30	
Dibromochloromethane	54		"	50.0		107	10-200		18.8	30	
Dibromomethane	57		"	50.0		115	83-124		18.6	30	
Dichlorodifluoromethane	87		"	50.0		173	28-158	High Bias	15.3	30	
Ethyl Benzene	57		"	50.0		115	84-125		16.9	30	
Hexachlorobutadiene	63		"	50.0		127	83-133		16.6	30	
Isopropylbenzene	56		"	50.0		112	81-127		15.2	30	
Methyl acetate	55		"	50.0		110	41-143		17.3	30	
Methyl tert-butyl ether (MTBE)	62		"	50.0		123	74-131		17.8	30	
Methylcyclohexane	59		"	50.0		119	70-130		16.3	30	
Methylene chloride	60		"	50.0		120	57-141		16.4	30	
n-Butylbenzene	55		"	50.0		109	80-130		14.2	30	



Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90616 - EPA 5035A											
LCS Dup (BG90616-BSD1)							Prepared & Analyzed: 07/12/2019				
n-Propylbenzene	55		ug/L	50.0		111	74-136		16.2	30	
o-Xylene	56		"	50.0		113	83-123		16.2	30	
p- & m- Xylenes	110		"	100		113	82-128		17.3	30	
p-Isopropyltoluene	59		"	50.0		118	85-125		16.0	30	
sec-Butylbenzene	60		"	50.0		121	83-125		16.3	30	
Styrene	59		"	50.0		117	86-126		17.9	30	
tert-Butyl alcohol (TBA)	240		"	250		96.1	70-130		19.3	30	
tert-Butylbenzene	57		"	50.0		114	80-127		15.5	30	
Tetrachloroethylene	57		"	50.0		114	80-129		16.7	30	
Toluene	56		"	50.0		113	85-121		16.7	30	
trans-1,2-Dichloroethylene	61		"	50.0		122	72-132		16.2	30	
trans-1,3-Dichloropropylene	51		"	50.0		102	78-132		18.0	30	
trans-1,4-dichloro-2-butene	53		"	50.0		106	75-135		19.6	30	
Trichloroethylene	58		"	50.0		117	84-123		16.0	30	
Trichlorofluoromethane	58		"	50.0		116	62-140		15.4	30	
Vinyl Chloride	52		"	50.0		103	52-130		14.7	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.0*		*"*	*50.0*		*98.0*	*77-125*				
Surrogate: SURR: Toluene-d8	*48.6*		*"*	*50.0*		*97.3*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*50.0*		*"*	*50.0*		*99.9*	*76-130*				
Batch BG90667 - EPA 5035A											
Blank (BG90667-BLK1)							Prepared & Analyzed: 07/16/2019				
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet								
Tentatively Identified Compounds	0.0		"								
1,1,1-Trichloroethane	ND	0.0050	"								
1,1,2,2-Tetrachloroethane	ND	0.0050	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0050	"								
1,1,2-Trichloroethane	ND	0.0050	"								
1,1-Dichloroethane	ND	0.0050	"								
1,1-Dichloroethylene	ND	0.0050	"								
1,2,3-Trichlorobenzene	ND	0.0050	"								
1,2,3-Trichloropropane	ND	0.0050	"								
1,2,4-Trichlorobenzene	ND	0.0050	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,2-Dibromo-3-chloropropane	ND	0.0050	"								
1,2-Dibromoethane	ND	0.0050	"								
1,2-Dichlorobenzene	ND	0.0050	"								
1,2-Dichloroethane	ND	0.0050	"								
1,2-Dichloropropane	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
1,3-Dichlorobenzene	ND	0.0050	"								
1,4-Dichlorobenzene	ND	0.0050	"								
1,4-Dioxane	ND	0.10	"								
2-Butanone	0.0052	0.0050	"								
2-Hexanone	ND	0.0050	"								
4-Methyl-2-pentanone	ND	0.0050	"								
Acetone	ND	0.010	"								
Acrolein	ND	0.010	"								
Acrylonitrile	ND	0.0050	"								
Benzene	ND	0.0050	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90667 - EPA 5035A											
Blank (BG90667-BLK1)											
Prepared & Analyzed: 07/16/2019											
Bromochloromethane	ND	0.0050	mg/kg wet								
Bromodichloromethane	ND	0.0050	"								
Bromoform	ND	0.0050	"								
Bromomethane	ND	0.0050	"								
Carbon disulfide	ND	0.0050	"								
Carbon tetrachloride	ND	0.0050	"								
Chlorobenzene	ND	0.0050	"								
Chloroethane	ND	0.0050	"								
Chloroform	ND	0.0050	"								
Chloromethane	ND	0.0050	"								
cis-1,2-Dichloroethylene	ND	0.0050	"								
cis-1,3-Dichloropropylene	ND	0.0050	"								
Cyclohexane	ND	0.0050	"								
Dibromochloromethane	ND	0.0050	"								
Dibromomethane	ND	0.0050	"								
Dichlorodifluoromethane	ND	0.0050	"								
Ethyl Benzene	ND	0.0050	"								
Hexachlorobutadiene	ND	0.0050	"								
Isopropylbenzene	ND	0.0050	"								
Methyl acetate	ND	0.0050	"								
Methyl tert-butyl ether (MTBE)	ND	0.0050	"								
Methylcyclohexane	ND	0.0050	"								
Methylene chloride	ND	0.010	"								
n-Butylbenzene	ND	0.0050	"								
n-Propylbenzene	ND	0.0050	"								
o-Xylene	ND	0.0050	"								
p- & m- Xylenes	ND	0.010	"								
p-Isopropyltoluene	ND	0.0050	"								
sec-Butylbenzene	ND	0.0050	"								
Styrene	ND	0.0050	"								
tert-Butyl alcohol (TBA)	ND	0.0050	"								
tert-Butylbenzene	ND	0.0050	"								
Tetrachloroethylene	ND	0.0050	"								
Toluene	ND	0.0050	"								
trans-1,2-Dichloroethylene	ND	0.0050	"								
trans-1,3-Dichloropropylene	ND	0.0050	"								
trans-1,4-dichloro-2-butene	ND	0.0050	"								
Trichloroethylene	ND	0.0050	"								
Trichlorofluoromethane	ND	0.0050	"								
Vinyl Chloride	ND	0.0050	"								
Xylenes, Total	ND	0.015	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.9*		*ug/L*	*50.0*		*99.8*	*77-125*				
Surrogate: SURR: Toluene-d8	*48.4*		*"*	*50.0*		*96.9*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*49.1*		*"*	*50.0*		*98.1*	*76-130*				

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90667 - EPA 5035A											
Blank (BG90667-BLK2)											
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet								
Tentatively Identified Compounds	0.0		"								
1,1,1-Trichloroethane	ND	0.0050	"								
1,1,2,2-Tetrachloroethane	ND	0.0050	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0050	"								
1,1,2-Trichloroethane	ND	0.0050	"								
1,1-Dichloroethane	ND	0.0050	"								
1,1-Dichloroethylene	ND	0.0050	"								
1,2,3-Trichlorobenzene	ND	0.0050	"								
1,2,3-Trichloropropane	ND	0.0050	"								
1,2,4-Trichlorobenzene	ND	0.0050	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,2-Dibromo-3-chloropropane	ND	0.0050	"								
1,2-Dibromoethane	ND	0.0050	"								
1,2-Dichlorobenzene	ND	0.0050	"								
1,2-Dichloroethane	ND	0.0050	"								
1,2-Dichloropropane	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
1,3-Dichlorobenzene	ND	0.0050	"								
1,4-Dichlorobenzene	ND	0.0050	"								
1,4-Dioxane	ND	0.10	"								
2-Butanone	0.0062	0.0050	"								
2-Hexanone	ND	0.0050	"								
4-Methyl-2-pentanone	ND	0.0050	"								
Acetone	0.0064	0.010	"								
Acrolein	ND	0.010	"								
Acrylonitrile	ND	0.0050	"								
Benzene	ND	0.0050	"								
Bromochloromethane	ND	0.0050	"								
Bromodichloromethane	ND	0.0050	"								
Bromoform	ND	0.0050	"								
Bromomethane	ND	0.0050	"								
Carbon disulfide	ND	0.0050	"								
Carbon tetrachloride	ND	0.0050	"								
Chlorobenzene	ND	0.0050	"								
Chloroethane	ND	0.0050	"								
Chloroform	ND	0.0050	"								
Chloromethane	ND	0.0050	"								
cis-1,2-Dichloroethylene	ND	0.0050	"								
cis-1,3-Dichloropropylene	ND	0.0050	"								
Cyclohexane	ND	0.0050	"								
Dibromochloromethane	ND	0.0050	"								
Dibromomethane	ND	0.0050	"								
Dichlorodifluoromethane	ND	0.0050	"								
Ethyl Benzene	ND	0.0050	"								
Hexachlorobutadiene	ND	0.0050	"								
Isopropylbenzene	ND	0.0050	"								
Methyl acetate	ND	0.0050	"								
Methyl tert-butyl ether (MTBE)	ND	0.0050	"								
Methylcyclohexane	ND	0.0050	"								
Methylene chloride	ND	0.010	"								

Prepared & Analyzed: 07/16/2019

Volatile Organic Compounds by GC/MS - Quality Control Data

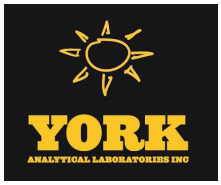
York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90667 - EPA 5035A											
Blank (BG90667-BLK2)								Prepared & Analyzed: 07/16/2019			
n-Butylbenzene	ND	0.0050	mg/kg wet								
n-Propylbenzene	ND	0.0050	"								
o-Xylene	ND	0.0050	"								
p- & m- Xylenes	ND	0.010	"								
p-Isopropyltoluene	ND	0.0050	"								
sec-Butylbenzene	ND	0.0050	"								
Styrene	ND	0.0050	"								
tert-Butyl alcohol (TBA)	ND	0.0050	"								
tert-Butylbenzene	ND	0.0050	"								
Tetrachloroethylene	ND	0.0050	"								
Toluene	ND	0.0050	"								
trans-1,2-Dichloroethylene	ND	0.0050	"								
trans-1,3-Dichloropropylene	ND	0.0050	"								
trans-1,4-dichloro-2-butene	ND	0.0050	"								
Trichloroethylene	ND	0.0050	"								
Trichlorofluoromethane	ND	0.0050	"								
Vinyl Chloride	ND	0.0050	"								
Xylenes, Total	ND	0.015	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*50.4*		*ug/L*	*50.0*		*101*	*77-125*				
Surrogate: SURR: Toluene-d8	*48.3*		*"*	*50.0*		*96.5*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*48.4*		*"*	*50.0*		*96.8*	*76-130*				
LCS (BG90667-BS1)								Prepared & Analyzed: 07/16/2019			
1,1,1,2-Tetrachloroethane	52		ug/L	50.0		104	75-129				
1,1,1-Trichloroethane	60		"	50.0		120	71-137				
1,1,2,2-Tetrachloroethane	57		"	50.0		114	79-129				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	55		"	50.0		110	58-146				
1,1,2-Trichloroethane	56		"	50.0		113	83-123				
1,1-Dichloroethane	60		"	50.0		119	75-130				
1,1-Dichloroethylene	50		"	50.0		101	64-137				
1,2,3-Trichlorobenzene	63		"	50.0		127	81-140				
1,2,3-Trichloropropane	56		"	50.0		111	81-126				
1,2,4-Trichlorobenzene	64		"	50.0		127	80-141				
1,2,4-Trimethylbenzene	55		"	50.0		110	84-125				
1,2-Dibromo-3-chloropropane	48		"	50.0		96.9	74-142				
1,2-Dibromoethane	60		"	50.0		119	86-123				
1,2-Dichlorobenzene	55		"	50.0		110	85-122				
1,2-Dichloroethane	60		"	50.0		120	71-133				
1,2-Dichloropropane	55		"	50.0		110	81-122				
1,3,5-Trimethylbenzene	54		"	50.0		109	82-126				
1,3-Dichlorobenzene	56		"	50.0		112	84-124				
1,4-Dichlorobenzene	56		"	50.0		113	84-124				
1,4-Dioxane	1200		"	1050		110	10-228				
2-Butanone	66		"	50.0		133	58-147				
2-Hexanone	57		"	50.0		113	70-139				
4-Methyl-2-pentanone	54		"	50.0		108	72-132				
Acetone	46		"	50.0		91.7	36-155				
Acrolein	0.0		"	50.0			10-238	Low Bias			
Acrylonitrile	60		"	50.0		119	66-141				
Benzene	62		"	50.0		123	77-127				
Bromochloromethane	61		"	50.0		121	74-129				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90667 - EPA 5035A											
LCS (BG90667-BS1)								Prepared & Analyzed: 07/16/2019			
Bromodichloromethane	52		ug/L	50.0		103	81-124				
Bromoform	51		"	50.0		102	80-136				
Bromomethane	57		"	50.0		114	32-177				
Carbon disulfide	64		"	50.0		128	10-136				
Carbon tetrachloride	54		"	50.0		108	66-143				
Chlorobenzene	56		"	50.0		113	86-120				
Chloroethane	53		"	50.0		105	51-142				
Chloroform	60		"	50.0		121	76-131				
Chloromethane	49		"	50.0		98.3	49-132				
cis-1,2-Dichloroethylene	60		"	50.0		120	74-132				
cis-1,3-Dichloropropylene	58		"	50.0		115	81-129				
Cyclohexane	60		"	50.0		120	70-130				
Dibromochloromethane	54		"	50.0		107	10-200				
Dibromomethane	58		"	50.0		115	83-124				
Dichlorodifluoromethane	69		"	50.0		138	28-158				
Ethyl Benzene	56		"	50.0		112	84-125				
Hexachlorobutadiene	62		"	50.0		123	83-133				
Isopropylbenzene	54		"	50.0		108	81-127				
Methyl acetate	48		"	50.0		96.6	41-143				
Methyl tert-butyl ether (MTBE)	65		"	50.0		130	74-131				
Methylcyclohexane	57		"	50.0		114	70-130				
Methylene chloride	60		"	50.0		120	57-141				
n-Butylbenzene	54		"	50.0		107	80-130				
n-Propylbenzene	53		"	50.0		107	74-136				
o-Xylene	56		"	50.0		111	83-123				
p- & m- Xylenes	110		"	100		110	82-128				
p-Isopropyltoluene	57		"	50.0		113	85-125				
sec-Butylbenzene	58		"	50.0		115	83-125				
Styrene	58		"	50.0		117	86-126				
tert-Butyl alcohol (TBA)	270		"	250		108	70-130				
tert-Butylbenzene	54		"	50.0		109	80-127				
Tetrachloroethylene	57		"	50.0		113	80-129				
Toluene	55		"	50.0		110	85-121				
trans-1,2-Dichloroethylene	59		"	50.0		119	72-132				
trans-1,3-Dichloropropylene	50		"	50.0		101	78-132				
trans-1,4-dichloro-2-butene	54		"	50.0		108	75-135				
Trichloroethylene	56		"	50.0		113	84-123				
Trichlorofluoromethane	56		"	50.0		111	62-140				
Vinyl Chloride	48		"	50.0		96.1	52-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.2*		*"*	*50.0*		*98.5*	*77-125*				
Surrogate: SURR: Toluene-d8	*47.6*		*"*	*50.0*		*95.2*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*48.8*		*"*	*50.0*		*97.7*	*76-130*				



Volatile Organic Compounds by GC/MS - Quality Control Data

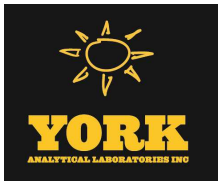
York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90667 - EPA 5035A											
LCS Dup (BG90667-BSD1)								Prepared & Analyzed: 07/16/2019			
1,1,1,2-Tetrachloroethane	54		ug/L	50.0		107	75-129		2.70	30	
1,1,1-Trichloroethane	62		"	50.0		124	71-137		3.21	30	
1,1,2,2-Tetrachloroethane	59		"	50.0		117	79-129		2.98	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	55		"	50.0		110	58-146		0.0181	30	
1,1,2-Trichloroethane	59		"	50.0		118	83-123		4.36	30	
1,1-Dichloroethane	61		"	50.0		122	75-130		2.60	30	
1,1-Dichloroethylene	51		"	50.0		101	64-137		0.534	30	
1,2,3-Trichlorobenzene	66		"	50.0		132	81-140		3.98	30	
1,2,3-Trichloropropane	58		"	50.0		115	81-126		3.67	30	
1,2,4-Trichlorobenzene	66		"	50.0		132	80-141		3.91	30	
1,2,4-Trimethylbenzene	56		"	50.0		113	84-125		2.79	30	
1,2-Dibromo-3-chloropropane	50		"	50.0		100	74-142		3.51	30	
1,2-Dibromoethane	62		"	50.0		124	86-123	High Bias	3.96	30	
1,2-Dichlorobenzene	57		"	50.0		113	85-122		3.21	30	
1,2-Dichloroethane	61		"	50.0		122	71-133		2.00	30	
1,2-Dichloropropane	57		"	50.0		114	81-122		3.19	30	
1,3,5-Trimethylbenzene	56		"	50.0		112	82-126		2.78	30	
1,3-Dichlorobenzene	57		"	50.0		114	84-124		2.16	30	
1,4-Dichlorobenzene	58		"	50.0		116	84-124		2.61	30	
1,4-Dioxane	1200		"	1050		111	10-228		0.447	30	
2-Butanone	71		"	50.0		143	58-147		7.35	30	
2-Hexanone	58		"	50.0		117	70-139		3.02	30	
4-Methyl-2-pentanone	56		"	50.0		112	72-132		3.61	30	
Acetone	52		"	50.0		104	36-155		12.9	30	
Acrolein	0.0		"	50.0			10-238	Low Bias		30	
Acrylonitrile	62		"	50.0		123	66-141		3.22	30	
Benzene	63		"	50.0		126	77-127		2.43	30	
Bromochloromethane	62		"	50.0		125	74-129		2.59	30	
Bromodichloromethane	53		"	50.0		107	81-124		3.47	30	
Bromoform	53		"	50.0		105	80-136		2.84	30	
Bromomethane	57		"	50.0		114	32-177		0.351	30	
Carbon disulfide	66		"	50.0		133	10-136		3.70	30	
Carbon tetrachloride	56		"	50.0		111	66-143		3.05	30	
Chlorobenzene	58		"	50.0		116	86-120		3.28	30	
Chloroethane	52		"	50.0		105	51-142		0.590	30	
Chloroform	62		"	50.0		125	76-131		3.32	30	
Chloromethane	49		"	50.0		98.1	49-132		0.224	30	
cis-1,2-Dichloroethylene	61		"	50.0		122	74-132		2.41	30	
cis-1,3-Dichloropropylene	59		"	50.0		119	81-129		2.87	30	
Cyclohexane	62		"	50.0		124	70-130		2.61	30	
Dibromochloromethane	55		"	50.0		110	10-200		2.90	30	
Dibromomethane	60		"	50.0		119	83-124		3.32	30	
Dichlorodifluoromethane	70		"	50.0		139	28-158		1.10	30	
Ethyl Benzene	58		"	50.0		115	84-125		2.94	30	
Hexachlorobutadiene	64		"	50.0		128	83-133		4.25	30	
Isopropylbenzene	56		"	50.0		111	81-127		2.61	30	
Methyl acetate	49		"	50.0		98.6	41-143		2.09	30	
Methyl tert-butyl ether (MTBE)	68		"	50.0		135	74-131	High Bias	3.76	30	
Methylcyclohexane	59		"	50.0		117	70-130		2.68	30	
Methylene chloride	62		"	50.0		124	57-141		3.54	30	
n-Butylbenzene	54		"	50.0		107	80-130		0.0373	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90667 - EPA 5035A											
LCS Dup (BG90667-BSD1)								Prepared & Analyzed: 07/16/2019			
n-Propylbenzene	55		ug/L	50.0		109	74-136		2.63	30	
o-Xylene	57		"	50.0		115	83-123		3.42	30	
p- & m- Xylenes	110		"	100		113	82-128		2.70	30	
p-Isopropyltoluene	58		"	50.0		117	85-125		3.06	30	
sec-Butylbenzene	59		"	50.0		118	83-125		2.74	30	
Styrene	60		"	50.0		120	86-126		3.24	30	
tert-Butyl alcohol (TBA)	280		"	250		111	70-130		2.71	30	
tert-Butylbenzene	56		"	50.0		112	80-127		2.67	30	
Tetrachloroethylene	58		"	50.0		115	80-129		1.89	30	
Toluene	57		"	50.0		113	85-121		3.01	30	
trans-1,2-Dichloroethylene	62		"	50.0		124	72-132		4.17	30	
trans-1,3-Dichloropropylene	52		"	50.0		104	78-132		3.28	30	
trans-1,4-dichloro-2-butene	56		"	50.0		112	75-135		2.97	30	
Trichloroethylene	58		"	50.0		116	84-123		2.77	30	
Trichlorofluoromethane	56		"	50.0		111	62-140		0.0180	30	
Vinyl Chloride	48		"	50.0		95.3	52-130		0.836	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*50.1*		*"*	*50.0*		*100*	*77-125*				
Surrogate: SURR: Toluene-d8	*47.9*		*"*	*50.0*		*95.7*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*48.9*		*"*	*50.0*		*97.8*	*76-130*				



PFAS Target compounds by LC/MS-MS - Quality Control Data

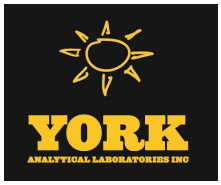
York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag

Batch BG91148 - SPE PFAS Extraction-Soil-EPA 537m

Blank (BG91148-BLK1) Prepared: 07/22/2019 Analyzed: 07/24/2019

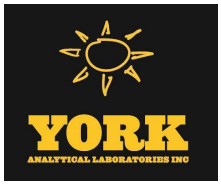
Perfluorobutanesulfonic acid (PFBS)	ND	0.720	ug/kg wet								
Perfluorohexanoic acid (PFHxA)	ND	0.720	"								
Perfluoroheptanoic acid (PFHpA)	ND	0.720	"								
Perfluorohexanesulfonic acid (PFHxS)	ND	0.720	"								
Perfluorooctanoic acid (PFOA)	ND	0.720	"								
Perfluorooctanesulfonic acid (PFOS)	ND	0.720	"								
Perfluorononanoic acid (PFNA)	ND	0.720	"								
Perfluorodecanoic acid (PFDA)	ND	0.720	"								
Perfluoroundecanoic acid (PFUnA)	ND	0.720	"								
Perfluorododecanoic acid (PFDoA)	ND	0.720	"								
Perfluorotridecanoic acid (PFTrDA)	ND	0.720	"								
Perfluorotetradecanoic acid (PFTA)	ND	0.720	"								
N-MeFOSAA	ND	0.720	"								
N-EtFOSAA	ND	0.720	"								
Perfluoropentanoic acid (PFPeA)	ND	0.720	"								
Perfluoro-1-octanesulfonamide (FOSA)	ND	0.720	"								
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	0.720	"								
Perfluoro-1-decanesulfonic acid (PFDS)	ND	0.720	"								
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 F	ND	0.720	"								
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 F	ND	0.720	"								
Perfluoro-n-butanoic acid (PFBA)	ND	0.720	"								
Surrogate: M3PFBS	*2.62*		*"*	*4.46*		*58.7*	*25-150*				
Surrogate: M5PFHxA	*2.70*		*"*	*4.80*		*56.3*	*25-150*				
Surrogate: M4PFHpA	*2.97*		*"*	*4.80*		*61.8*	*25-150*				
Surrogate: M3PFHxS	*2.69*		*"*	*4.54*		*59.3*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*2.79*		*"*	*4.80*		*58.2*	*25-150*				
Surrogate: M6PFDA	*2.95*		*"*	*4.80*		*61.5*	*25-150*				
Surrogate: M7PFUdA	*2.71*		*"*	*4.80*		*56.5*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*2.76*		*"*	*4.80*		*57.5*	*25-150*				
Surrogate: M2PFTeDA	*2.68*		*"*	*4.80*		*55.9*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*2.69*		*"*	*4.80*		*56.0*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*2.64*		*"*	*4.59*		*57.6*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*2.71*		*"*	*4.80*		*56.5*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*2.49*		*"*	*4.80*		*51.9*	*10-150*				
Surrogate: d3-N-MeFOSAA	*2.80*		*"*	*4.80*		*58.3*	*25-150*				
Surrogate: d5-N-EtFOSAA	*2.79*		*"*	*4.80*		*58.2*	*25-150*				
Surrogate: M2-6:2 FTS	*2.60*		*"*	*4.55*		*57.0*	*25-150*				
Surrogate: M2-8:2 FTS	*2.67*		*"*	*4.60*		*58.1*	*25-150*				
Surrogate: M9PFNA	*2.63*		*"*	*4.80*		*54.8*	*25-150*				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

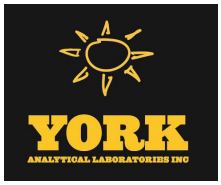
Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91148 - SPE PFAS Extraction-Soil-EPA 537m											
LCS (BG91148-BS1)									Prepared: 07/22/2019 Analyzed: 07/24/2019		
Perfluorobutanesulfonic acid (PFBS)	3.66	0.656	ug/kg wet	3.87		94.7	50-130				
Perfluorohexanoic acid (PFHxA)	4.08	0.656	"	4.37		93.4	50-130				
Perfluoroheptanoic acid (PFHpA)	3.49	0.656	"	4.37		79.8	50-130				
Perfluorohexanesulfonic acid (PFHxS)	2.97	0.656	"	3.23		91.9	50-130				
Perfluorooctanoic acid (PFOA)	3.47	0.656	"	4.37		79.5	50-130				
Perfluorooctanesulfonic acid (PFOS)	2.82	0.656	"	3.19		88.5	50-130				
Perfluorononanoic acid (PFNA)	3.69	0.656	"	4.20		87.9	50-130				
Perfluorodecanoic acid (PFDA)	4.44	0.656	"	4.37		102	50-130				
Perfluoroundecanoic acid (PFUnA)	3.50	0.656	"	4.37		80.0	50-130				
Perfluorododecanoic acid (PFDoA)	3.63	0.656	"	4.37		83.0	50-130				
Perfluorotridecanoic acid (PFTrDA)	4.06	0.656	"	4.37		92.8	50-130				
Perfluorotetradecanoic acid (PFTA)	3.43	0.656	"	4.37		78.4	50-130				
N-MeFOSAA	3.58	0.656	"	4.37		82.0	50-130				
N-EtFOSAA	3.41	0.656	"	4.37		78.0	50-130				
Perfluoropentanoic acid (PFPeA)	3.78	0.656	"	4.37		86.5	50-130				
Perfluoro-1-octanesulfonamide (FOSA)	3.75	0.656	"	4.37		85.8	50-130				
Perfluoro-1-heptanesulfonic acid (PFHpS)	4.04	0.656	"	4.35		92.9	50-130				
Perfluoro-1-decanesulfonic acid (PFDS)	3.38	0.656	"	4.22		80.2	50-130				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 F	3.68	0.656	"	4.15		88.7	50-130				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 F	3.75	0.656	"	4.20		89.3	50-130				
Perfluoro-n-butanoic acid (PFBA)	4.10	0.656	"	4.37		93.8	50-130				
Surrogate: M3PFBS	*2.86*		"	*4.06*		*70.3*	*25-150*				
Surrogate: M5PFHxA	*2.90*		"	*4.37*		*66.3*	*25-150*				
Surrogate: M4PFHpA	*3.20*		"	*4.37*		*73.3*	*25-150*				
Surrogate: M3PFHxS	*2.89*		"	*4.14*		*70.0*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*3.25*		"	*4.37*		*74.3*	*25-150*				
Surrogate: M6PFDA	*2.66*		"	*4.37*		*61.0*	*25-150*				
Surrogate: M7PFUdA	*3.14*		"	*4.37*		*71.7*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*2.63*		"	*4.37*		*60.1*	*25-150*				
Surrogate: M2PFTeDA	*2.81*		"	*4.37*		*64.4*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*2.96*		"	*4.37*		*67.8*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*2.80*		"	*4.18*		*66.8*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*3.06*		"	*4.37*		*70.1*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*2.79*		"	*4.37*		*63.8*	*10-150*				
Surrogate: d3-N-MeFOSAA	*3.07*		"	*4.37*		*70.2*	*25-150*				
Surrogate: d5-N-EtFOSAA	*3.08*		"	*4.37*		*70.4*	*25-150*				
Surrogate: M2-6:2 FTS	*3.05*		"	*4.15*		*73.5*	*25-150*				
Surrogate: M2-8:2 FTS	*2.97*		"	*4.19*		*70.8*	*25-150*				
Surrogate: M9PFNA	*3.26*		"	*4.37*		*74.6*	*25-150*				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91148 - SPE PFAS Extraction-Soil-EPA 537m											
Matrix Spike (BG91148-MS1)	*Source sample: 19G0399-01 (ACME-EB-15_0-2)							Prepared: 07/22/2019 Analyzed: 07/24/2019			
Perfluorobutanesulfonic acid (PFBS)	4.95	0.814	ug/kg dry	4.80	ND	103	25-150				
Perfluorohexanoic acid (PFHxA)	5.69	0.814	"	5.42	ND	105	25-150				
Perfluoroheptanoic acid (PFHpA)	4.56	0.814	"	5.42	ND	84.0	25-150				
Perfluorohexanesulfonic acid (PFHxS)	4.93	0.814	"	4.01	ND	123	25-150				
Perfluorooctanoic acid (PFOA)	5.13	0.814	"	5.42	ND	94.6	25-150				
Perfluorooctanesulfonic acid (PFOS)	8.41	0.814	"	3.96	2.99	137	25-150				
Perfluorononanoic acid (PFNA)	5.21	0.814	"	5.21	ND	100	25-150				
Perfluorodecanoic acid (PFDA)	4.76	0.814	"	5.42	ND	87.8	25-150				
Perfluoroundecanoic acid (PFUnA)	6.42	0.814	"	5.42	ND	118	25-150				
Perfluorododecanoic acid (PFDoA)	5.87	0.814	"	5.42	ND	108	25-150				
Perfluorotridecanoic acid (PFTrDA)	5.00	0.814	"	5.42	ND	92.1	25-150				
Perfluorotetradecanoic acid (PFTA)	4.69	0.814	"	5.42	ND	86.4	25-150				
N-MeFOSAA	4.94	0.814	"	5.42	ND	91.1	25-150				
N-EtFOSAA	4.78	0.814	"	5.42	ND	88.1	25-150				
Perfluoropentanoic acid (PFPeA)	5.28	0.814	"	5.42	ND	97.3	25-150				
Perfluoro-1-octanesulfonamide (FOSA)	5.14	0.814	"	5.42	ND	94.8	25-150				
Perfluoro-1-heptanesulfonic acid (PFHpS)	5.74	0.814	"	5.40	ND	106	25-150				
Perfluoro-1-decanesulfonic acid (PFDS)	4.00	0.814	"	5.23	ND	76.4	25-150				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 F	5.01	0.814	"	5.15	ND	97.2	25-150				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 F	4.91	0.814	"	5.21	ND	94.3	25-150				
Perfluoro-n-butanoic acid (PFBA)	5.39	0.814	"	5.42	ND	99.3	25-150				
Surrogate: M3PFBS	*2.73*		"	*5.04*		*54.2*	*25-150*				
Surrogate: M5PFHxA	*2.98*		"	*5.42*		*55.0*	*25-150*				
Surrogate: M4PFHpA	*3.64*		"	*5.42*		*67.2*	*25-150*				
Surrogate: M3PFHxS	*2.77*		"	*5.13*		*54.0*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*3.62*		"	*5.42*		*66.6*	*25-150*				
Surrogate: M6PFDA	*3.09*		"	*5.42*		*57.0*	*25-150*				
Surrogate: M7PFUdA	*2.11*		"	*5.42*		*39.0*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*2.81*		"	*5.42*		*51.8*	*25-150*				
Surrogate: M2PFTeDA	*2.71*		"	*5.42*		*50.0*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*2.98*		"	*5.42*		*55.0*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*2.58*		"	*5.19*		*49.7*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*3.09*		"	*5.42*		*56.9*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*1.92*		"	*5.42*		*35.4*	*10-150*				
Surrogate: d3-N-MeFOSAA	*4.53*		"	*5.42*		*83.5*	*25-150*				
Surrogate: d5-N-EtFOSAA	*4.79*		"	*5.42*		*88.2*	*25-150*				
Surrogate: M2-6:2 FTS	*6.61*		"	*5.15*		*128*	*25-150*				
Surrogate: M2-8:2 FTS	*9.03*		"	*5.20*		*174*	*25-150*				
Surrogate: M9PFNA	*3.42*		"	*5.42*		*63.0*	*25-150*				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91148 - SPE PFAS Extraction-Soil-EPA 537m											
Matrix Spike Dup (BG91148-MSD1)	*Source sample: 19G0399-01 (ACME-EB-15_0-2)								Prepared: 07/22/2019 Analyzed: 07/24/2019		
Perfluorobutanesulfonic acid (PFBS)	4.98	0.856	ug/kg dry	5.05	ND	98.7	25-150		0.632	35	
Perfluorohexanoic acid (PFHxA)	5.42	0.856	"	5.71	ND	95.0	25-150		4.90	35	
Perfluoroheptanoic acid (PFHpA)	4.82	0.856	"	5.71	ND	84.4	25-150		5.55	35	
Perfluorohexanesulfonic acid (PFHxS)	4.86	0.856	"	4.22	ND	115	25-150		1.48	35	
Perfluorooctanoic acid (PFOA)	5.65	0.856	"	5.71	ND	99.0	25-150		9.57	35	
Perfluorooctanesulfonic acid (PFOS)	9.21	0.856	"	4.16	2.99	149	25-150		9.07	35	
Perfluorononanoic acid (PFNA)	6.30	0.856	"	5.48	ND	115	25-150		18.8	35	
Perfluorodecanoic acid (PFDA)	5.09	0.856	"	5.71	ND	89.1	25-150		6.62	35	
Perfluoroundecanoic acid (PFUnA)	4.67	0.856	"	5.71	ND	81.8	25-150		31.7	35	
Perfluorododecanoic acid (PFDoA)	5.16	0.856	"	5.71	ND	90.4	25-150		13.0	35	
Perfluorotridecanoic acid (PFTrDA)	5.98	0.856	"	5.71	ND	105	25-150		17.9	35	
Perfluorotetradecanoic acid (PFTA)	5.17	0.856	"	5.71	ND	90.6	25-150		9.80	35	
N-MeFOSAA	4.96	0.856	"	5.71	ND	86.9	25-150		0.304	35	
N-EtFOSAA	4.88	0.856	"	5.71	ND	85.5	25-150		2.05	35	
Perfluoropentanoic acid (PFPeA)	5.37	0.856	"	5.71	ND	94.2	25-150		1.84	35	
Perfluoro-1-octanesulfonamide (FOSA)	5.24	0.856	"	5.71	ND	91.9	25-150		1.92	35	
Perfluoro-1-heptanesulfonic acid (PFHpS)	6.18	0.856	"	5.68	ND	109	25-150		7.45	35	
Perfluoro-1-decanesulfonic acid (PFDS)	4.40	0.856	"	5.51	ND	79.9	25-150		9.59	35	
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 F	5.09	0.856	"	5.42	ND	93.9	25-150		1.60	35	
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 F	5.06	0.856	"	5.48	ND	92.5	25-150		3.06	35	
Perfluoro-n-butanoic acid (PFBA)	5.46	0.856	"	5.71	ND	95.6	25-150		1.24	35	
Surrogate: M3PFBS	*3.15*		*"*	*5.30*		*59.4*	*25-150*				
Surrogate: M5PFHxA	*3.58*		*"*	*5.71*		*62.7*	*25-150*				
Surrogate: M4PFHpA	*4.01*		*"*	*5.71*		*70.3*	*25-150*				
Surrogate: M3PFHxS	*3.28*		*"*	*5.40*		*60.7*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*3.92*		*"*	*5.71*		*68.7*	*25-150*				
Surrogate: M6PFDA	*3.65*		*"*	*5.71*		*64.1*	*25-150*				
Surrogate: M7PFUdA	*2.70*		*"*	*5.71*		*47.2*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*2.69*		*"*	*5.71*		*47.2*	*25-150*				
Surrogate: M2PFTeDA	*3.01*		*"*	*5.71*		*52.7*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*3.44*		*"*	*5.71*		*60.2*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*2.77*		*"*	*5.46*		*50.7*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*3.62*		*"*	*5.71*		*63.5*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*2.05*		*"*	*5.71*		*36.0*	*10-150*				
Surrogate: d3-N-MeFOSAA	*5.48*		*"*	*5.71*		*96.0*	*25-150*				
Surrogate: d5-N-EtFOSAA	*5.72*		*"*	*5.71*		*100*	*25-150*				
Surrogate: M2-6:2 FTS	*9.28*		*"*	*5.41*		*171*	*25-150*				
Surrogate: M2-8:2 FTS	*10.5*		*"*	*5.47*		*193*	*25-150*				
Surrogate: M9PFNA	*3.36*		*"*	*5.71*		*58.9*	*25-150*				

Volatile Analysis Sample Containers

Lab ID	Client Sample ID	Volatile Sample Container
19G0399-01	ACME-EB-15_0-2	40mL Vial with Stir Bar-Cool 4° C
19G0399-01	ACME-EB-15_0-2	40mL Vial with Stir Bar-Cool 4° C
19G0399-02	ACME-EB-15_5-5.5	40mL Pre-Tared Vial + 10mL MeOH; Cool to 4° C
19G0399-03	ACME-EB-15_51-53	40mL Vial with Stir Bar-Cool 4° C

Sample and Data Qualifiers Relating to This Work Order

S-03	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect. This effect was confirmed by reanalysis.
QL-02	This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
J	Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.
CCV-E	The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).
B	Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants.

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

Field Chain-of-Custody Record

York Analytical Laboratories, Inc.
120 Research Drive, Stratford, CT 06615
132-02 89th Ave, Queens, NY 11418
clientservices@yorklab.com
www.yorklab.com

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document.
This document serves as your written authorization for YORK to proceed with the analyses requested below.
Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 19G0399

Page 1 of 1

YOUR Information	Report To:	Invoice To:
Company: LANGAN Engineering	Company:	Company:
Address: 360 W 31st St New York, NY	Address:	Address:
Phone.: 212 479 5400	Phone.:	Phone.:
Contact: Patrick Farnham	Contact:	Contact:
E-mail: pfarnham@langan.com	E-mail:	E-mail:

YOUR Project Number: 170157201

YOUR Project Name: ACME Site #2 72 Anthony St

YOUR PO#:

Turn-Around Time

RUSH - Next Day	
RUSH - Two Day	
RUSH - Three Day	
RUSH - Four Day	
Standard (5-7 Day)	X

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Samples Collected by: (print your name above and sign below)
Katherine Racanelli

Matrix Codes
S - soil / solid
GW - groundwater
DW - drinking water
WW - wastewater
O - Oil | Other

Samples From
New York X
New Jersey
Connecticut
Pennsylvania
Other

Report / EDD Type (circle selections)
Summary Report
QA Report
NY ASP A Package
NY ASP B Package
CT RCP
CT RCP DQA/DUE
NJDEP Reduced Deliverables
NJDKQP
Standard Excel EDD
EQuIS (Standard)
NYSDEC EQuIS
NJDEP SRP HazSite
Other:

YORK Reg. Comp.
Compared to the following Regulation(s): (please fill in)

Sample Identification	Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
ACME-EB-15_0-2	S	7/10/19 800	TCL/PARA375/NJDEP VOCs+TICs, PFAS, 1,4-Dioxane	
ACME-EB-15_5-5.5	S	940	TCL/PARA375/NJDEP VOCs+TICs	
ACME-EB-15_51-53	S	1140		

Comments:
cc results to datamanagement@langan.com

Preservation: (check all that apply)
HCl ___ MeOH ___ HNO3 ___ H2SO4 ___ NaOH ___ ZnAc ___
Ascorbic Acid ___ Other: ___

Special Instruction
Field Filtered ___
Lab to Filter ___

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
K Langan	7/10/19 1325	Allie Ventura York	7/10/19 1:30	Allie Ventura York	7/10/19 1430
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
Tom A / York	7/10/19 1430	Tom A / York	7/10/19 1912		
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by	Date/Time
				[illegible]	7-10-19 1912

Temp. Received at Lab: 1-6 Degrees C

Technical Report

prepared for:

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Patrick Farnham

Report Date: 07/26/2019
Client Project ID: 170157201
York Project (SDG) No.: 19G0564

CT Cert. No. PH-0723 New Jersey Cert. No. CT005 and NY037 New York Cert. Nos. 10854 and 12058 PA Cert. No. 68-04440

120 RESEARCH DRIVE STRATFORD, CT 06615 ■ 132-02 89th AVENUE RICHMOND HILL, NY 11418
www.YORKLAB.com (203) 325-1371 FAX (203) 357-0166 ClientServices@yorklab.com

Report Date: 07/26/2019
Client Project ID: 170157201
York Project (SDG) No.: 19G0564

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Patrick Farnham

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on July 12, 2019 and listed below. The project was identified as your project: **170157201**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
19G0564-01	ACME-EB-16_0-2	Soil	07/11/2019	07/12/2019
19G0564-02	ACME-EB-16_17-17.5	Soil	07/11/2019	07/12/2019
19G0564-03	VP-03_2.5-3	Soil	07/11/2019	07/12/2019
19G0564-04	SODUP01_071119	Soil	07/11/2019	07/12/2019
19G0564-05	SOFB01_071119	Water	07/11/2019	07/12/2019
19G0564-06	SOTB01_071119	Water	07/11/2019	07/12/2019

General Notes for York Project (SDG) No.: 19G0564

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By:

Date: 07/26/2019

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: ACME-EB-16_0-2 **York Sample ID:** 19G0564-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 2:30 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
71-55-6	**1,1,1-Trichloroethane**	**0.0031**	J	mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	RDS
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 NELAC-NY10854,NELAC-NY12058,NJDEP	RDS
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
123-91-1	1,4-Dioxane	ND		mg/kg dry	0.050	0.10	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-93-3	2-Butanone	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
591-78-6	2-Hexanone	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: ACME-EB-16_0-2 **York Sample ID:** 19G0564-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 2:30 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-64-1	**Acetone**	**0.0094**	CCV-E, J	mg/kg dry	0.0050	0.010	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-02-8	Acrolein	ND		mg/kg dry	0.0050	0.010	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
71-43-2	Benzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-25-2	Bromoform	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-83-9	Bromomethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-00-3	Chloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-66-3	Chloroform	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-87-3	Chloromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-59-2	**cis-1,2-Dichloroethylene**	**0.17**		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-82-7	Cyclohexane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-95-3	Dibromomethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: ACME-EB-16_0-2 **York Sample ID:** 19G0564-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 2:30 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
79-20-9	Methyl acetate	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-09-2	**Methylene chloride**	**0.0063**	J	mg/kg dry	0.0050	0.010	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-47-6	o-Xylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	RDS
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0050	0.010	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	RDS
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
100-42-5	Styrene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	0.0025	0.025	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
127-18-4	**Tetrachloroethylene**	**160**		mg/kg dry	3.3	6.5	1000	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 17:07 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-88-3	Toluene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
156-60-5	**trans-1,2-Dichloroethylene**	**0.0034**	J	mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH	RDS
79-01-6	**Trichloroethylene**	**0.31**		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0076	0.015	1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	RDS

Sample Information

Client Sample ID: ACME-EB-16_0-2 **York Sample ID:** 19G0564-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 2:30 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate Recoveries	**Result**		**Acceptance Range**							
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*102 %*		*77-125*							
2037-26-5	*Surrogate: SURR: Toluene-d8*	*106 %*		*85-120*							
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*134 %*	S-HI	*76-130*							

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
NA	**UNKNOWN METHYL CYCLOHEPTANE ISOMER**	**0.037**	J, N	mg/kg dry			1	EPA 8260C Certifications:	07/16/2019 07:30	07/16/2019 18:25	RDS

PFAS, NYSDEC Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
3871-99-6	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
1763-23-1	* Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT

Sample Information

Client Sample ID: ACME-EB-16_0-2 **York Sample ID:** 19G0564-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 2:30 pm	07/12/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.802	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 06:51	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*57.3 %*	*25-150*
Surrogate: M5PFHxA	*57.2 %*	*25-150*
Surrogate: M4PFHpA	*66.7 %*	*25-150*
Surrogate: M3PFHxS	*58.5 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*72.2 %*	*25-150*
Surrogate: M6PFDA	*62.1 %*	*25-150*
Surrogate: M7PFUdA	*57.5 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*53.8 %*	*25-150*
Surrogate: M2PFTeDA	*57.4 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*57.3 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*54.3 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*59.4 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*40.2 %*	*10-150*
Surrogate: d3-N-MeFOSAA	*71.5 %*	*25-150*
Surrogate: d5-N-EtFOSAA	*82.3 %*	*25-150*
Surrogate: M2-6:2 FTS	*99.2 %*	*25-150*
Surrogate: M2-8:2 FTS	*140 %*	*25-150*
Surrogate: M9PFNA	*71.7 %*	*25-150*

Sample Information

Client Sample ID: ACME-EB-16_0-2 **York Sample ID:** 19G0564-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 2:30 pm	07/12/2019

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	89.4		%	0.100	1	SM 2540G Certifications: CTDOH	07/17/2019 14:30	07/17/2019 21:11	MAC

Analyzed by: Phoenix Environmental Laboratories, Inc. S

Semi-Volatiles, 1,4-Dioxane by 8270-SIM (SUB)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/kg	75	1	SW8270D (SIM) Certifications:	07/15/2019 00:00	07/16/2019 00:00	PHO

Sample Information

Client Sample ID: ACME-EB-16_17-17.5 **York Sample ID:** 19G0564-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 3:40 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 15:47	RDS
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 15:47	RDS
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 15:47	RDS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/17/2019 07:30	07/17/2019 15:47	RDS
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 15:47	RDS
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 15:47	RDS
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 15:47	RDS
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 15:47	RDS

Sample Information

Client Sample ID: ACME-EB-16_17-17.5 **York Sample ID:** 19G0564-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 3:40 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP	07/17/2019 15:47	RDS
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
123-91-1	1,4-Dioxane	ND		mg/kg dry	0.050	0.10	1	EPA 8260C Certifications:	07/17/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
78-93-3	2-Butanone	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
591-78-6	2-Hexanone	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
67-64-1	**Acetone**	**0.017**	CCV-E	mg/kg dry	0.0050	0.010	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
107-02-8	Acrolein	ND		mg/kg dry	0.0050	0.010	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
71-43-2	Benzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
75-25-2	Bromoform	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS
74-83-9	Bromomethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 15:47	RDS

Sample Information

Client Sample ID: ACME-EB-16_17-17.5 **York Sample ID:** 19G0564-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 3:40 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-00-3	Chloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-66-3	Chloroform	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-87-3	Chloromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
156-59-2	**cis-1,2-Dichloroethylene**	**0.0050**	J	mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
110-82-7	Cyclohexane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-95-3	Dibromomethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
79-20-9	**Methyl acetate**	**0.0039**	J	mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-09-2	**Methylene chloride**	**0.0070**	J	mg/kg dry	0.0050	0.010	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-47-6	o-Xylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	RDS
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0050	0.010	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	RDS

Sample Information

Client Sample ID: ACME-EB-16_17-17.5 **York Sample ID:** 19G0564-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 3:40 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
100-42-5	Styrene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	0.0025	0.025	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
127-18-4	**Tetrachloroethylene**	**0.072**		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-88-3	Toluene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH	RDS
79-01-6	**Trichloroethylene**	**0.0051**		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0076	0.015	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	RDS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*100 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*99.6 %*	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*105 %*	*76-130*

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
NA	**Decane (TIC)**	**0.044**	J, N	mg/kg dry			1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47	RDS
NA	**unknown dimethyl cyclohexane isomers**	**0.14**	J, N	mg/kg dry			1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47	RDS
NA	**unknown methyl cyclohexane isomer**	**0.037**	J, N	mg/kg dry			1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47	RDS

Sample Information

Client Sample ID: ACME-EB-16_17-17.5 **York Sample ID:** 19G0564-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 3:40 pm	07/12/2019

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
NA	**UNKNOWN METHYL DECANE ISOMER**	**0.067**	J, N	mg/kg dry			1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47	RDS
NA	**unknown methyl nonane isomer**	**0.035**	J, N	mg/kg dry			1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47	RDS
NA	**UNKNOWN OCTAHYDRO INDENE ISOMERS**	**0.091**	J, N	mg/kg dry			1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47	RDS
NA	**unknown propyl cyclohexane isomer**	**0.037**	J, N	mg/kg dry			1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47	RDS
NA	**unknown TRIMETHYL DECANE ISOMER**	**0.042**	J, N	mg/kg dry			1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 15:47	RDS

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**92.3**		%	0.100	1	SM 2540G Certifications: CTDOH	07/17/2019 14:30	07/17/2019 21:11	MAC

Sample Information

Client Sample ID: VP-03_2.5-3 **York Sample ID:** 19G0564-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 1:50 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 16:14	RDS
71-55-6	**1,1,1-Trichloroethane**	**0.0078**		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 16:14	RDS
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 16:14	RDS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/17/2019 07:30	07/17/2019 16:14	RDS
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 16:14	RDS
75-34-3	**1,1-Dichloroethane**	**0.0032**	J	mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 16:14	RDS

Sample Information

Client Sample ID: VP-03_2.5-3 **York Sample ID:** 19G0564-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 1:50 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS NELAC-NY10854,NELAC-NY12058,NJDEP
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
123-91-1	1,4-Dioxane	ND		mg/kg dry	0.057	0.11	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
78-93-3	2-Butanone	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
591-78-6	2-Hexanone	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-64-1	**Acetone**	**0.058**	CCV-E	mg/kg dry	0.0057	0.011	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-02-8	Acrolein	ND		mg/kg dry	0.0057	0.011	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
71-43-2	Benzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: VP-03_2.5-3 **York Sample ID:** 19G0564-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 1:50 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-25-2	Bromoform	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-83-9	Bromomethane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-00-3	Chloroethane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-66-3	Chloroform	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-87-3	Chloromethane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-59-2	**cis-1,2-Dichloroethylene**	**0.063**		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-82-7	Cyclohexane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-95-3	Dibromomethane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-20-9	Methyl acetate	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-87-2	**Methylcyclohexane**	**0.0078**		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-09-2	Methylene chloride	ND		mg/kg dry	0.0057	0.011	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: VP-03_2.5-3 **York Sample ID:** 19G0564-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 1:50 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-47-6	o-Xylene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/17/2019 16:14	RDS
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0057	0.011	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/17/2019 16:14	RDS
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 16:14	RDS
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 16:14	RDS
100-42-5	Styrene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 16:14	RDS
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	0.0029	0.029	1	EPA 8260C Certifications:	07/17/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 16:14	RDS
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 16:14	RDS
127-18-4	**Tetrachloroethylene**	**200**		mg/kg dry	1.5	2.9	500	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 19:47	RDS
108-88-3	**Toluene**	**0.022**		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 16:14	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 16:14	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 16:14	RDS
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH	07/17/2019 16:14	RDS
79-01-6	**Trichloroethylene**	**0.11**		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 16:14	RDS
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 16:14	RDS
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0029	0.0057	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 16:14	RDS
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0086	0.017	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/17/2019 16:14	RDS

	Surrogate Recoveries	Result		Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*106 %*		*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*125 %*	S-09	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*122 %*		*76-130*

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.0		mg/kg dry			1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 16:14	RDS

Sample Information

Client Sample ID: VP-03_2.5-3 **York Sample ID:** 19G0564-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 1:50 pm	07/12/2019

Total Solids **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**91.9**		%	0.100	1	SM 2540G Certifications: CTDOH	07/17/2019 14:30	07/17/2019 21:11	MAC

Sample Information

Client Sample ID: SODUP01_071119 **York Sample ID:** 19G0564-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 3:50 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 18:27	RDS
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 18:27	RDS
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 18:27	RDS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/17/2019 07:30	07/17/2019 18:27	RDS
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 18:27	RDS
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 18:27	RDS
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 18:27	RDS
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 18:27	RDS
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP	07/17/2019 07:30	07/17/2019 18:27	RDS
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 18:27	RDS
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 18:27	RDS
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 18:27	RDS
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 18:27	RDS
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 07:30	07/17/2019 18:27	RDS

Sample Information

Client Sample ID: SODUP01_071119 **York Sample ID:** 19G0564-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 3:50 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
123-91-1	1,4-Dioxane	ND		mg/kg dry	0.046	0.092	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
78-93-3	2-Butanone	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
591-78-6	2-Hexanone	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-64-1	**Acetone**	**0.015**	CCV-E	mg/kg dry	0.0046	0.0092	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-02-8	Acrolein	ND		mg/kg dry	0.0046	0.0092	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
71-43-2	Benzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-25-2	Bromoform	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-83-9	Bromomethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-00-3	Chloroethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-66-3	Chloroform	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-87-3	Chloromethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: SODUP01_071119 **York Sample ID:** 19G0564-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 3:50 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
156-59-2	**cis-1,2-Dichloroethylene**	**0.076**		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
110-82-7	Cyclohexane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-95-3	Dibromomethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-20-9	Methyl acetate	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-09-2	Methylene chloride	ND		mg/kg dry	0.0046	0.0092	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-47-6	o-Xylene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0046	0.0092	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
100-42-5	Styrene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	0.0023	0.023	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/17/2019 07:30	07/17/2019 18:27	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
127-18-4	**Tetrachloroethylene**	**54**		mg/kg dry	1.5	3.0	500	EPA 8260C	07/17/2019 07:30	07/17/2019 20:14	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: SODUP01_071119 **York Sample ID:** 19G0564-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 3:50 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
108-88-3	Toluene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH
79-01-6	**Trichloroethylene**	**0.12**		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0069	0.014	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*106 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*103 %*	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*114 %*	*76-130*

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
NA	**unknown dimethyl cyclohexane isomer**	**0.016**	J, N	mg/kg dry			1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 18:27	RDS

PFAS, NYSDEC Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
3871-99-6	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT

Sample Information

Client Sample ID: SODUP01_071119 **York Sample ID:** 19G0564-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 3:50 pm	07/12/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
1763-23-1	* Perfluorooctanesulfonic acid (PFOS)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.818	1	EPA 537m Certifications:	07/22/2019 11:53	07/24/2019 07:18	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*64.4 %*	*25-150*
Surrogate: M5PFHxA	*67.8 %*	*25-150*
Surrogate: M4PFHpA	*78.2 %*	*25-150*
Surrogate: M3PFHxS	*66.0 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*70.5 %*	*25-150*
Surrogate: M6PFDA	*72.2 %*	*25-150*
Surrogate: M7PFUdA	*61.2 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*58.1 %*	*25-150*

Sample Information

Client Sample ID: SODUP01_071119 **York Sample ID:** 19G0564-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Soil	July 11, 2019 3:50 pm	07/12/2019

PFAS, NYSDEC Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: M2PFTeDA	*67.4 %*			*10-150*					
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*65.0 %*			*25-150*					
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*59.6 %*			*25-150*					
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*67.5 %*			*25-150*					
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*43.9 %*			*10-150*					
	Surrogate: d3-N-MeFOSAA	*77.2 %*			*25-150*					
	Surrogate: d5-N-EtFOSAA	*86.7 %*			*25-150*					
	Surrogate: M2-6:2 FTS	*110 %*			*25-150*					
	Surrogate: M2-8:2 FTS	*129 %*			*25-150*					
	Surrogate: M9PFNA	*72.9 %*			*25-150*					

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**89.4**		%	0.100	1	SM 2540G Certifications: CTDOH	07/17/2019 14:30	07/17/2019 21:11	MAC

Analyzed by: Phoenix Environmental Laboratories, Inc. S

Semi-Volatiles, 1,4-Dioxane by 8270-SIM (SUB)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/kg	89	1	SW8270D (SIM) Certifications:	07/15/2019 00:00	07/16/2019 00:00	PHO

Sample Information

Client Sample ID: SOFB01_071119 **York Sample ID:** 19G0564-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Water	July 11, 2019 4:40 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Information

Client Sample ID: SOFB01_071119 **York Sample ID:** 19G0564-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Water	July 11, 2019 4:40 pm	07/12/2019

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
79-00-5	1,1,2-Trichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
75-34-3	1,1-Dichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
87-61-6	1,2,3-Trichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
96-18-4	1,2,3-Trichloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
106-93-4	1,2-Dibromoethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
107-06-2	1,2-Dichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
78-87-5	1,2-Dichloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
123-91-1	1,4-Dioxane	ND		ug/L	40	40	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
78-93-3	2-Butanone	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
591-78-6	2-Hexanone	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
108-10-1	4-Methyl-2-pentanone	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
67-64-1	Acetone	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS

Sample Information

Client Sample ID: SOFB01_071119 **York Sample ID:** 19G0564-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Water	July 11, 2019 4:40 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
107-02-8	Acrolein	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-13-1	Acrylonitrile	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
71-43-2	Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-97-5	Bromochloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-27-4	Bromodichloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-25-2	Bromoform	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-83-9	Bromomethane	ND		ug/L	0.20	2.0	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-15-0	Carbon disulfide	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
56-23-5	Carbon tetrachloride	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-90-7	Chlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-00-3	Chloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-66-3	Chloroform	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-87-3	Chloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-59-2	cis-1,2-Dichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-82-7	Cyclohexane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
124-48-1	Dibromochloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-95-3	Dibromomethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-71-8	Dichlorodifluoromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-41-4	Ethyl Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-68-3	Hexachlorobutadiene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-82-8	Isopropylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-20-9	Methyl acetate	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: SOFB01_071119 **York Sample ID:** 19G0564-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Water	July 11, 2019 4:40 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
108-87-2	Methylcyclohexane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
75-09-2	Methylene chloride	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
103-65-1	n-Propylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
95-47-6	o-Xylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	SS
179601-23-1	p- & m- Xylenes	ND		ug/L	0.50	1.0	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	SS
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
100-42-5	Styrene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
75-65-0	tert-Butyl alcohol (TBA)	ND		ug/L	0.50	2.5	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
127-18-4	Tetrachloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
108-88-3	Toluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	SS
79-01-6	Trichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
75-69-4	Trichlorofluoromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
75-01-4	Vinyl Chloride	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
1330-20-7	Xylenes, Total	ND		ug/L	0.60	1.5	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	SS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*96.1 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*93.8 %*	*81-117*

Sample Information

Client Sample ID: SOFB01_071119 **York Sample ID:** 19G0564-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Water	July 11, 2019 4:40 pm	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*106 %*			*79-122*						

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.0		ug/L		1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:11	SS

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes: **Sample Notes:** HT-01

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/L	0.200	1	EPA 8270D SIM Certifications: NJDEP,NELAC-NY10854	07/25/2019 10:32	07/26/2019 14:07	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*72.0 %*	*50-130*

PFAS, NYSDEC Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
3871-99-6	* Perfluorohexanesulfonic acid (PFHxS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
1763-23-1	* Perfluorooctanesulfonic acid (PFOS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT

Sample Information

Client Sample ID: SOFB01_071119 **York Sample ID:** 19G0564-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Water	July 11, 2019 4:40 pm	07/12/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
2355-31-9	* N-MeFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
2991-50-6	* N-EtFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ng/L	5.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/22/2019 11:45	07/24/2019 01:01	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*56.1 %*	*25-150*
Surrogate: M5PFHxA	*55.4 %*	*25-150*
Surrogate: M4PFHpA	*59.4 %*	*25-150*
Surrogate: M3PFHxS	*55.9 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*59.5 %*	*25-150*
Surrogate: M6PFDA	*58.8 %*	*25-150*
Surrogate: M7PFUdA	*50.0 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*42.3 %*	*25-150*
Surrogate: M2PFTeDA	*35.0 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*53.9 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*56.6 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*57.5 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*54.2 %*	*10-150*
Surrogate: d3-N-MeFOSAA	*56.9 %*	*25-150*

Sample Information

Client Sample ID: SOFB01_071119 **York Sample ID:** 19G0564-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Water	July 11, 2019 4:40 pm	07/12/2019

PFAS, NYSDEC Target List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: d5-N-EtFOSAA	*57.5 %*		*25-150*						
	Surrogate: M2-6:2 FTS	*51.3 %*		*25-150*						
	Surrogate: M2-8:2 FTS	*51.8 %*		*25-150*						
	Surrogate: M9PFNA	*55.2 %*		*25-150*						

Sample Information

Client Sample ID: SOTB01_071119 **York Sample ID:** 19G0564-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Water	July 11, 2019 12:00 am	07/12/2019

Volatile Organics, 8260 - Comprehensive **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
79-00-5	1,1,2-Trichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
75-34-3	1,1-Dichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
87-61-6	1,2,3-Trichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
96-18-4	1,2,3-Trichloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
106-93-4	1,2-Dibromoethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS

Sample Information

Client Sample ID: SOTB01_071119 **York Sample ID:** 19G0564-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Water	July 11, 2019 12:00 am	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
107-06-2	1,2-Dichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
78-87-5	1,2-Dichloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
123-91-1	1,4-Dioxane	ND		ug/L	40	40	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
78-93-3	2-Butanone	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
591-78-6	2-Hexanone	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
108-10-1	4-Methyl-2-pentanone	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
67-64-1	Acetone	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
107-02-8	Acrolein	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
107-13-1	Acrylonitrile	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
71-43-2	Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
74-97-5	Bromochloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
75-27-4	Bromodichloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
75-25-2	Bromoform	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
74-83-9	Bromomethane	ND		ug/L	0.20	2.0	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
75-15-0	Carbon disulfide	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
56-23-5	Carbon tetrachloride	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
108-90-7	Chlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
75-00-3	Chloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS
67-66-3	Chloroform	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	SS

Sample Information

Client Sample ID: SOTB01_071119 **York Sample ID:** 19G0564-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Water	July 11, 2019 12:00 am	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-87-3	Chloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-59-2	cis-1,2-Dichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-82-7	Cyclohexane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
124-48-1	Dibromochloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-95-3	Dibromomethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-71-8	Dichlorodifluoromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-41-4	Ethyl Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-68-3	Hexachlorobutadiene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-82-8	Isopropylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-20-9	Methyl acetate	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-87-2	Methylcyclohexane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-09-2	Methylene chloride	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
103-65-1	n-Propylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
95-47-6	o-Xylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP
179601-23-1	p- & m- Xylenes	ND		ug/L	0.50	1.0	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-42-5	Styrene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-65-0	tert-Butyl alcohol (TBA)	ND		ug/L	0.50	2.5	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: SOTB01_071119 **York Sample ID:** 19G0564-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0564	170157201	Water	July 11, 2019 12:00 am	07/12/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
127-18-4	Tetrachloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
108-88-3	Toluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/17/2019 20:40	SS
79-01-6	Trichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
75-69-4	Trichlorofluoromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
75-01-4	Vinyl Chloride	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/17/2019 20:40	SS
1330-20-7	Xylenes, Total	ND		ug/L	0.60	1.5	1	EPA 8260C Certifications:	07/17/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/17/2019 20:40	SS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*99.3 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*92.9 %*	*81-117*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*105 %*	*79-122*

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.0		ug/L		1	EPA 8260C Certifications:	07/17/2019 07:30	07/17/2019 20:40	SS

Analytical Batch Summary

Batch ID: 7/16/2019 **Preparation Method:** EPA 3535A **Prepared By:**

YORK Sample ID	Client Sample ID	Preparation Date
19G0564-01	ACME-EB-16_0-2	07/15/19
19G0564-04	SODUP01_071119	07/15/19

Batch ID: BG90810 **Preparation Method:** EPA 5035A **Prepared By:** AB

YORK Sample ID	Client Sample ID	Preparation Date
19G0564-01	ACME-EB-16_0-2	07/16/19
BG90810-BLK1	Blank	07/16/19
BG90810-BLK2	Blank	07/16/19
BG90810-BS1	LCS	07/16/19
BG90810-BSD1	LCS Dup	07/16/19

Batch ID: BG90872 **Preparation Method:** EPA 5035A **Prepared By:** AB

YORK Sample ID	Client Sample ID	Preparation Date
19G0564-01RE1	ACME-EB-16_0-2	07/17/19
19G0564-01RE2	ACME-EB-16_0-2	07/17/19
19G0564-02	ACME-EB-16_17-17.5	07/17/19
19G0564-03	VP-03_2.5-3	07/17/19
19G0564-03RE1	VP-03_2.5-3	07/17/19
19G0564-03RE2	VP-03_2.5-3	07/17/19
19G0564-04	SODUP01_071119	07/17/19
19G0564-04RE1	SODUP01_071119	07/17/19
19G0564-04RE2	SODUP01_071119	07/17/19
BG90872-BLK1	Blank	07/17/19
BG90872-BLK2	Blank	07/17/19
BG90872-BS1	LCS	07/17/19
BG90872-BSD1	LCS Dup	07/17/19

Batch ID: BG90874 **Preparation Method:** EPA 5030B **Prepared By:** AB

YORK Sample ID	Client Sample ID	Preparation Date
19G0564-05	SOFB01_071119	07/17/19
19G0564-06	SOTB01_071119	07/17/19
BG90874-BLK1	Blank	07/17/19
BG90874-BS1	LCS	07/17/19
BG90874-BSD1	LCS Dup	07/17/19

Batch ID: BG90918 **Preparation Method:** % Solids Prep **Prepared By:** TJM

YORK Sample ID	Client Sample ID	Preparation Date
19G0564-01	ACME-EB-16_0-2	07/17/19
19G0564-02	ACME-EB-16_17-17.5	07/17/19

19G0564-03	VP-03_2.5-3	07/17/19
19G0564-04	SODUP01_071119	07/17/19
BG90918-DUP1	Duplicate	07/17/19

Batch ID: BG91147 **Preparation Method:** SPE Ext-PFAS-EPA 537.1M **Prepared By:** KT

YORK Sample ID	Client Sample ID	Preparation Date
19G0564-05	SOFB01_071119	07/22/19
BG91147-BLK1	Blank	07/22/19
BG91147-BS1	LCS	07/22/19

Batch ID: BG91148 **Preparation Method:** SPE PFAS Extraction-Soil-EPA 537m **Prepared By:** KT

YORK Sample ID	Client Sample ID	Preparation Date
19G0564-01	ACME-EB-16_0-2	07/22/19
19G0564-04	SODUP01_071119	07/22/19
BG91148-BLK1	Blank	07/22/19
BG91148-BS1	LCS	07/22/19

Batch ID: BG91371 **Preparation Method:** EPA 3535A **Prepared By:** CTD

YORK Sample ID	Client Sample ID	Preparation Date
19G0564-05	SOFB01_071119	07/25/19

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90810 - EPA 5035A											
Blank (BG90810-BLK1)											Prepared & Analyzed: 07/16/2019
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet								
Tentatively Identified Compounds	0.0		"								
1,1,1-Trichloroethane	ND	0.0050	"								
1,1,2,2-Tetrachloroethane	ND	0.0050	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0050	"								
1,1,2-Trichloroethane	ND	0.0050	"								
1,1-Dichloroethane	ND	0.0050	"								
1,1-Dichloroethylene	ND	0.0050	"								
1,2,3-Trichlorobenzene	ND	0.0050	"								
1,2,3-Trichloropropane	ND	0.0050	"								
1,2,4-Trichlorobenzene	ND	0.0050	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,2-Dibromo-3-chloropropane	ND	0.0050	"								
1,2-Dibromoethane	ND	0.0050	"								
1,2-Dichlorobenzene	ND	0.0050	"								
1,2-Dichloroethane	ND	0.0050	"								
1,2-Dichloropropane	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
1,3-Dichlorobenzene	ND	0.0050	"								
1,4-Dichlorobenzene	ND	0.0050	"								
1,4-Dioxane	ND	0.10	"								
2-Butanone	ND	0.0050	"								
2-Hexanone	ND	0.0050	"								
4-Methyl-2-pentanone	ND	0.0050	"								
Acetone	ND	0.010	"								
Acrolein	ND	0.010	"								
Acrylonitrile	ND	0.0050	"								
Benzene	ND	0.0050	"								
Bromochloromethane	ND	0.0050	"								
Bromodichloromethane	ND	0.0050	"								
Bromoform	ND	0.0050	"								
Bromomethane	ND	0.0050	"								
Carbon disulfide	ND	0.0050	"								
Carbon tetrachloride	ND	0.0050	"								
Chlorobenzene	ND	0.0050	"								
Chloroethane	ND	0.0050	"								
Chloroform	ND	0.0050	"								
Chloromethane	ND	0.0050	"								
cis-1,2-Dichloroethylene	ND	0.0050	"								
cis-1,3-Dichloropropylene	ND	0.0050	"								
Cyclohexane	ND	0.0050	"								
Dibromochloromethane	ND	0.0050	"								
Dibromomethane	ND	0.0050	"								
Dichlorodifluoromethane	ND	0.0050	"								
Ethyl Benzene	ND	0.0050	"								
Hexachlorobutadiene	ND	0.0050	"								
Isopropylbenzene	ND	0.0050	"								
Methyl acetate	ND	0.0050	"								
Methyl tert-butyl ether (MTBE)	ND	0.0050	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90810 - EPA 5035A											
Blank (BG90810-BLK1)											Prepared & Analyzed: 07/16/2019
Methylcyclohexane	ND	0.0050	mg/kg wet								
Methylene chloride	ND	0.010	"								
n-Butylbenzene	ND	0.0050	"								
n-Propylbenzene	ND	0.0050	"								
o-Xylene	ND	0.0050	"								
p- & m- Xylenes	ND	0.010	"								
p-Isopropyltoluene	ND	0.0050	"								
sec-Butylbenzene	ND	0.0050	"								
Styrene	ND	0.0050	"								
tert-Butyl alcohol (TBA)	ND	0.025	"								
tert-Butylbenzene	ND	0.0050	"								
Tetrachloroethylene	ND	0.0050	"								
Toluene	ND	0.0050	"								
trans-1,2-Dichloroethylene	ND	0.0050	"								
trans-1,3-Dichloropropylene	ND	0.0050	"								
trans-1,4-dichloro-2-butene	ND	0.0050	"								
Trichloroethylene	ND	0.0050	"								
Trichlorofluoromethane	ND	0.0050	"								
Vinyl Chloride	ND	0.0050	"								
Xylenes, Total	ND	0.015	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*50.4*		*ug/L*	*50.0*		*101*	*77-125*				
Surrogate: SURR: Toluene-d8	*50.2*		*"*	*50.0*		*100*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*52.3*		*"*	*50.0*		*105*	*76-130*				
Blank (BG90810-BLK2)											Prepared & Analyzed: 07/16/2019
1,1,1,2-Tetrachloroethane	ND	0.50	mg/kg wet								
Tentatively Identified Compounds	0.0		"								
1,1,1-Trichloroethane	ND	0.50	"								
1,1,2,2-Tetrachloroethane	ND	0.50	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	"								
1,1,2-Trichloroethane	ND	0.50	"								
1,1-Dichloroethane	ND	0.50	"								
1,1-Dichloroethylene	ND	0.50	"								
1,2,3-Trichlorobenzene	ND	0.50	"								
1,2,3-Trichloropropane	ND	0.50	"								
1,2,4-Trichlorobenzene	ND	0.50	"								
1,2,4-Trimethylbenzene	ND	0.50	"								
1,2-Dibromo-3-chloropropane	ND	0.50	"								
1,2-Dibromoethane	ND	0.50	"								
1,2-Dichlorobenzene	ND	0.50	"								
1,2-Dichloroethane	ND	0.50	"								
1,2-Dichloropropane	ND	0.50	"								
1,3,5-Trimethylbenzene	ND	0.50	"								
1,3-Dichlorobenzene	ND	0.50	"								
1,4-Dichlorobenzene	ND	0.50	"								
1,4-Dioxane	ND	10	"								
2-Butanone	ND	0.50	"								
2-Hexanone	ND	0.50	"								
4-Methyl-2-pentanone	ND	0.50	"								
Acetone	ND	1.0	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90810 - EPA 5035A											
Blank (BG90810-BLK2)											
Prepared & Analyzed: 07/16/2019											
Acrolein	ND	1.0	mg/kg wet								
Acrylonitrile	ND	0.50	"								
Benzene	ND	0.50	"								
Bromochloromethane	ND	0.50	"								
Bromodichloromethane	ND	0.50	"								
Bromoform	ND	0.50	"								
Bromomethane	ND	0.50	"								
Carbon disulfide	ND	0.50	"								
Carbon tetrachloride	ND	0.50	"								
Chlorobenzene	ND	0.50	"								
Chloroethane	ND	0.50	"								
Chloroform	ND	0.50	"								
Chloromethane	ND	0.50	"								
cis-1,2-Dichloroethylene	ND	0.50	"								
cis-1,3-Dichloropropylene	ND	0.50	"								
Cyclohexane	ND	0.50	"								
Dibromochloromethane	ND	0.50	"								
Dibromomethane	ND	0.50	"								
Dichlorodifluoromethane	ND	0.50	"								
Ethyl Benzene	ND	0.50	"								
Hexachlorobutadiene	ND	0.50	"								
Isopropylbenzene	ND	0.50	"								
Methyl acetate	ND	0.50	"								
Methyl tert-butyl ether (MTBE)	ND	0.50	"								
Methylcyclohexane	ND	0.50	"								
Methylene chloride	ND	1.0	"								
n-Butylbenzene	ND	0.50	"								
n-Propylbenzene	ND	0.50	"								
o-Xylene	ND	0.50	"								
p- & m- Xylenes	ND	1.0	"								
p-Isopropyltoluene	ND	0.50	"								
sec-Butylbenzene	ND	0.50	"								
Styrene	ND	0.50	"								
tert-Butyl alcohol (TBA)	ND	2.5	"								
tert-Butylbenzene	ND	0.50	"								
Tetrachloroethylene	ND	0.50	"								
Toluene	ND	0.50	"								
trans-1,2-Dichloroethylene	ND	0.50	"								
trans-1,3-Dichloropropylene	ND	0.50	"								
trans-1,4-dichloro-2-butene	ND	0.50	"								
Trichloroethylene	ND	0.50	"								
Trichlorofluoromethane	ND	0.50	"								
Vinyl Chloride	ND	0.50	"								
Xylenes, Total	ND	1.5	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*50.5*		*ug/L*	*50.0*		*101*	*77-125*				
Surrogate: SURR: Toluene-d8	*50.0*		*"*	*50.0*		*100*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*52.5*		*"*	*50.0*		*105*	*76-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90810 - EPA 5035A											
LCS (BG90810-BS1)							Prepared & Analyzed: 07/16/2019				
1,1,1,2-Tetrachloroethane	50		ug/L	50.0		100	75-129				
1,1,1-Trichloroethane	49		"	50.0		98.5	71-137				
1,1,2,2-Tetrachloroethane	52		"	50.0		105	79-129				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	50		"	50.0		99.8	58-146				
1,1,2-Trichloroethane	49		"	50.0		97.4	83-123				
1,1-Dichloroethane	51		"	50.0		101	75-130				
1,1-Dichloroethylene	48		"	50.0		96.5	64-137				
1,2,3-Trichlorobenzene	49		"	50.0		97.8	81-140				
1,2,3-Trichloropropane	50		"	50.0		99.4	81-126				
1,2,4-Trichlorobenzene	49		"	50.0		98.5	80-141				
1,2,4-Trimethylbenzene	50		"	50.0		101	84-125				
1,2-Dibromo-3-chloropropane	50		"	50.0		100	74-142				
1,2-Dibromoethane	52		"	50.0		104	86-123				
1,2-Dichlorobenzene	50		"	50.0		100	85-122				
1,2-Dichloroethane	50		"	50.0		101	71-133				
1,2-Dichloropropane	50		"	50.0		99.9	81-122				
1,3,5-Trimethylbenzene	50		"	50.0		100	82-126				
1,3-Dichlorobenzene	49		"	50.0		98.2	84-124				
1,4-Dichlorobenzene	49		"	50.0		98.5	84-124				
1,4-Dioxane	1100		"	1050		100	10-228				
2-Butanone	54		"	50.0		108	58-147				
2-Hexanone	53		"	50.0		107	70-139				
4-Methyl-2-pentanone	51		"	50.0		103	72-132				
Acetone	56		"	50.0		112	36-155				
Acrolein	48		"	50.0		95.2	10-238				
Acrylonitrile	50		"	50.0		99.9	66-141				
Benzene	51		"	50.0		102	77-127				
Bromochloromethane	50		"	50.0		100	74-129				
Bromodichloromethane	50		"	50.0		100	81-124				
Bromoform	48		"	50.0		95.3	80-136				
Bromomethane	44		"	50.0		88.0	32-177				
Carbon disulfide	50		"	50.0		101	10-136				
Carbon tetrachloride	50		"	50.0		100	66-143				
Chlorobenzene	49		"	50.0		98.7	86-120				
Chloroethane	46		"	50.0		93.0	51-142				
Chloroform	50		"	50.0		100	76-131				
Chloromethane	40		"	50.0		79.9	49-132				
cis-1,2-Dichloroethylene	50		"	50.0		100	74-132				
cis-1,3-Dichloropropylene	51		"	50.0		102	81-129				
Cyclohexane	52		"	50.0		104	70-130				
Dibromochloromethane	50		"	50.0		99.9	10-200				
Dibromomethane	49		"	50.0		98.0	83-124				
Dichlorodifluoromethane	31		"	50.0		62.5	28-158				
Ethyl Benzene	51		"	50.0		102	84-125				
Hexachlorobutadiene	49		"	50.0		97.5	83-133				
Isopropylbenzene	50		"	50.0		99.2	81-127				
Methyl acetate	47		"	50.0		94.0	41-143				
Methyl tert-butyl ether (MTBE)	51		"	50.0		101	74-131				
Methylcyclohexane	52		"	50.0		104	70-130				
Methylene chloride	50		"	50.0		100	57-141				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90810 - EPA 5035A											
LCS (BG90810-BS1)							Prepared & Analyzed: 07/16/2019				
n-Butylbenzene	53		ug/L	50.0		106	80-130				
n-Propylbenzene	51		"	50.0		102	74-136				
o-Xylene	51		"	50.0		101	83-123				
p- & m- Xylenes	100		"	100		101	82-128				
p-Isopropyltoluene	51		"	50.0		102	85-125				
sec-Butylbenzene	53		"	50.0		105	83-125				
Styrene	51		"	50.0		102	86-126				
tert-Butyl alcohol (TBA)	260		"	250		105	70-130				
tert-Butylbenzene	50		"	50.0		100	80-127				
Tetrachloroethylene	45		"	50.0		91.0	80-129				
Toluene	50		"	50.0		100	85-121				
trans-1,2-Dichloroethylene	49		"	50.0		98.6	72-132				
trans-1,3-Dichloropropylene	50		"	50.0		101	78-132				
trans-1,4-dichloro-2-butene	52		"	50.0		103	75-135				
Trichloroethylene	50		"	50.0		99.2	84-123				
Trichlorofluoromethane	44		"	50.0		87.3	62-140				
Vinyl Chloride	43		"	50.0		86.1	52-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.4*		*"*	*50.0*		*98.9*	*77-125*				
Surrogate: SURR: Toluene-d8	*49.7*		*"*	*50.0*		*99.5*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*50.7*		*"*	*50.0*		*101*	*76-130*				
LCS Dup (BG90810-BSD1)							Prepared & Analyzed: 07/16/2019				
1,1,1,2-Tetrachloroethane	51		ug/L	50.0		102	75-129		1.68	30	
1,1,1-Trichloroethane	50		"	50.0		100	71-137		1.57	30	
1,1,2,2-Tetrachloroethane	55		"	50.0		110	79-129		5.05	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	51		"	50.0		101	58-146		1.41	30	
1,1,2-Trichloroethane	51		"	50.0		101	83-123		3.90	30	
1,1-Dichloroethane	52		"	50.0		103	75-130		1.72	30	
1,1-Dichloroethylene	49		"	50.0		97.6	64-137		1.13	30	
1,2,3-Trichlorobenzene	50		"	50.0		99.9	81-140		2.14	30	
1,2,3-Trichloropropane	52		"	50.0		103	81-126		3.69	30	
1,2,4-Trichlorobenzene	51		"	50.0		101	80-141		3.00	30	
1,2,4-Trimethylbenzene	51		"	50.0		103	84-125		1.87	30	
1,2-Dibromo-3-chloropropane	53		"	50.0		106	74-142		5.61	30	
1,2-Dibromoethane	54		"	50.0		109	86-123		4.41	30	
1,2-Dichlorobenzene	51		"	50.0		101	85-122		0.933	30	
1,2-Dichloroethane	52		"	50.0		104	71-133		3.40	30	
1,2-Dichloropropane	51		"	50.0		102	81-122		2.08	30	
1,3,5-Trimethylbenzene	51		"	50.0		102	82-126		1.76	30	
1,3-Dichlorobenzene	50		"	50.0		99.5	84-124		1.36	30	
1,4-Dichlorobenzene	50		"	50.0		100	84-124		1.63	30	
1,4-Dioxane	1100		"	1050		109	10-228		8.35	30	
2-Butanone	60		"	50.0		119	58-147		9.65	30	
2-Hexanone	58		"	50.0		116	70-139		8.55	30	
4-Methyl-2-pentanone	56		"	50.0		112	72-132		8.86	30	
Acetone	62		"	50.0		124	36-155		9.47	30	
Acrolein	51		"	50.0		102	10-238		7.07	30	
Acrylonitrile	54		"	50.0		108	66-141		7.96	30	
Benzene	52		"	50.0		104	77-127		2.41	30	
Bromochloromethane	51		"	50.0		103	74-129		2.42	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90810 - EPA 5035A											
LCS Dup (BG90810-BSD1)								Prepared & Analyzed: 07/16/2019			
Bromodichloromethane	51		ug/L	50.0		103	81-124		2.76	30	
Bromoform	50		"	50.0		100	80-136		5.35	30	
Bromomethane	46		"	50.0		92.1	32-177		4.58	30	
Carbon disulfide	51		"	50.0		103	10-136		1.81	30	
Carbon tetrachloride	51		"	50.0		102	66-143		2.04	30	
Chlorobenzene	50		"	50.0		101	86-120		2.14	30	
Chloroethane	49		"	50.0		97.6	51-142		4.85	30	
Chloroform	52		"	50.0		103	76-131		2.95	30	
Chloromethane	41		"	50.0		81.5	49-132		1.96	30	
cis-1,2-Dichloroethylene	51		"	50.0		103	74-132		2.09	30	
cis-1,3-Dichloropropylene	52		"	50.0		104	81-129		2.11	30	
Cyclohexane	53		"	50.0		106	70-130		1.75	30	
Dibromochloromethane	52		"	50.0		104	10-200		3.89	30	
Dibromomethane	51		"	50.0		101	83-124		3.37	30	
Dichlorodifluoromethane	32		"	50.0		64.0	28-158		2.34	30	
Ethyl Benzene	52		"	50.0		104	84-125		2.21	30	
Hexachlorobutadiene	49		"	50.0		98.5	83-133		1.04	30	
Isopropylbenzene	50		"	50.0		100	81-127		1.28	30	
Methyl acetate	51		"	50.0		102	41-143		8.36	30	
Methyl tert-butyl ether (MTBE)	53		"	50.0		105	74-131		4.06	30	
Methylcyclohexane	53		"	50.0		106	70-130		1.97	30	
Methylene chloride	51		"	50.0		102	57-141		1.58	30	
n-Butylbenzene	54		"	50.0		107	80-130		1.33	30	
n-Propylbenzene	51		"	50.0		103	74-136		1.17	30	
o-Xylene	52		"	50.0		103	83-123		1.68	30	
p- & m- Xylenes	100		"	100		104	82-128		2.09	30	
p-Isopropyltoluene	52		"	50.0		104	85-125		1.40	30	
sec-Butylbenzene	53		"	50.0		107	83-125		1.38	30	
Styrene	52		"	50.0		104	86-126		1.98	30	
tert-Butyl alcohol (TBA)	300		"	250		120	70-130		13.5	30	
tert-Butylbenzene	51		"	50.0		102	80-127		1.55	30	
Tetrachloroethylene	47		"	50.0		94.4	80-129		3.75	30	
Toluene	51		"	50.0		103	85-121		2.34	30	
trans-1,2-Dichloroethylene	51		"	50.0		101	72-132		2.76	30	
trans-1,3-Dichloropropylene	52		"	50.0		104	78-132		3.15	30	
trans-1,4-dichloro-2-butene	54		"	50.0		108	75-135		5.05	30	
Trichloroethylene	51		"	50.0		102	84-123		2.80	30	
Trichlorofluoromethane	45		"	50.0		89.1	62-140		2.06	30	
Vinyl Chloride	43		"	50.0		86.9	52-130		0.832	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.7*		*"*	*50.0*		*99.3*	*77-125*				
Surrogate: SURR: Toluene-d8	*50.0*		*"*	*50.0*		*99.9*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*50.5*		*"*	*50.0*		*101*	*76-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90872 - EPA 5035A											
Blank (BG90872-BLK1)											Prepared & Analyzed: 07/17/2019
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet								
Tentatively Identified Compounds	0.0		"								
1,1,1-Trichloroethane	ND	0.0050	"								
1,1,2,2-Tetrachloroethane	ND	0.0050	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0050	"								
1,1,2-Trichloroethane	ND	0.0050	"								
1,1-Dichloroethane	ND	0.0050	"								
1,1-Dichloroethylene	ND	0.0050	"								
1,2,3-Trichlorobenzene	ND	0.0050	"								
1,2,3-Trichloropropane	ND	0.0050	"								
1,2,4-Trichlorobenzene	ND	0.0050	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,2-Dibromo-3-chloropropane	ND	0.0050	"								
1,2-Dibromoethane	ND	0.0050	"								
1,2-Dichlorobenzene	ND	0.0050	"								
1,2-Dichloroethane	ND	0.0050	"								
1,2-Dichloropropane	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
1,3-Dichlorobenzene	ND	0.0050	"								
1,4-Dichlorobenzene	ND	0.0050	"								
1,4-Dioxane	ND	0.10	"								
2-Butanone	ND	0.0050	"								
2-Hexanone	ND	0.0050	"								
4-Methyl-2-pentanone	ND	0.0050	"								
Acetone	ND	0.010	"								
Acrolein	ND	0.010	"								
Acrylonitrile	ND	0.0050	"								
Benzene	ND	0.0050	"								
Bromochloromethane	ND	0.0050	"								
Bromodichloromethane	ND	0.0050	"								
Bromoform	ND	0.0050	"								
Bromomethane	ND	0.0050	"								
Carbon disulfide	ND	0.0050	"								
Carbon tetrachloride	ND	0.0050	"								
Chlorobenzene	ND	0.0050	"								
Chloroethane	ND	0.0050	"								
Chloroform	ND	0.0050	"								
Chloromethane	ND	0.0050	"								
cis-1,2-Dichloroethylene	ND	0.0050	"								
cis-1,3-Dichloropropylene	ND	0.0050	"								
Cyclohexane	ND	0.0050	"								
Dibromochloromethane	ND	0.0050	"								
Dibromomethane	ND	0.0050	"								
Dichlorodifluoromethane	ND	0.0050	"								
Ethyl Benzene	ND	0.0050	"								
Hexachlorobutadiene	ND	0.0050	"								
Isopropylbenzene	ND	0.0050	"								
Methyl acetate	ND	0.0050	"								
Methyl tert-butyl ether (MTBE)	ND	0.0050	"								
Methylcyclohexane	ND	0.0050	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90872 - EPA 5035A											
Blank (BG90872-BLK1)									Prepared & Analyzed: 07/17/2019		
Methylene chloride	ND	0.010	mg/kg wet								
n-Butylbenzene	ND	0.0050	"								
n-Propylbenzene	ND	0.0050	"								
o-Xylene	ND	0.0050	"								
p- & m- Xylenes	ND	0.010	"								
p-Isopropyltoluene	ND	0.0050	"								
sec-Butylbenzene	ND	0.0050	"								
Styrene	ND	0.0050	"								
tert-Butyl alcohol (TBA)	ND	0.025	"								
tert-Butylbenzene	ND	0.0050	"								
Tetrachloroethylene	ND	0.0050	"								
Toluene	ND	0.0050	"								
trans-1,2-Dichloroethylene	ND	0.0050	"								
trans-1,3-Dichloropropylene	ND	0.0050	"								
trans-1,4-dichloro-2-butene	ND	0.0050	"								
Trichloroethylene	ND	0.0050	"								
Trichlorofluoromethane	ND	0.0050	"								
Vinyl Chloride	ND	0.0050	"								
Xylenes, Total	ND	0.015	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*50.9*		*ug/L*	*50.0*		*102*	*77-125*				
Surrogate: SURR: Toluene-d8	*50.0*		*"*	*50.0*		*100*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*51.0*		*"*	*50.0*		*102*	*76-130*				
Blank (BG90872-BLK2)									Prepared & Analyzed: 07/17/2019		
1,1,1,2-Tetrachloroethane	ND	0.50	mg/kg wet								
Tentatively Identified Compounds	0.0		"								
1,1,1-Trichloroethane	ND	0.50	"								
1,1,2,2-Tetrachloroethane	ND	0.50	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	"								
1,1,2-Trichloroethane	ND	0.50	"								
1,1-Dichloroethane	ND	0.50	"								
1,1-Dichloroethylene	ND	0.50	"								
1,2,3-Trichlorobenzene	ND	0.50	"								
1,2,3-Trichloropropane	ND	0.50	"								
1,2,4-Trichlorobenzene	ND	0.50	"								
1,2,4-Trimethylbenzene	ND	0.50	"								
1,2-Dibromo-3-chloropropane	ND	0.50	"								
1,2-Dibromoethane	ND	0.50	"								
1,2-Dichlorobenzene	ND	0.50	"								
1,2-Dichloroethane	ND	0.50	"								
1,2-Dichloropropane	ND	0.50	"								
1,3,5-Trimethylbenzene	ND	0.50	"								
1,3-Dichlorobenzene	ND	0.50	"								
1,4-Dichlorobenzene	ND	0.50	"								
1,4-Dioxane	ND	10	"								
2-Butanone	ND	0.50	"								
2-Hexanone	ND	0.50	"								
4-Methyl-2-pentanone	ND	0.50	"								
Acetone	ND	1.0	"								
Acrolein	ND	1.0	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90872 - EPA 5035A											
Blank (BG90872-BLK2)											Prepared & Analyzed: 07/17/2019
Acrylonitrile	ND	0.50	mg/kg wet								
Benzene	ND	0.50	"								
Bromochloromethane	ND	0.50	"								
Bromodichloromethane	ND	0.50	"								
Bromoform	ND	0.50	"								
Bromomethane	ND	0.50	"								
Carbon disulfide	ND	0.50	"								
Carbon tetrachloride	ND	0.50	"								
Chlorobenzene	ND	0.50	"								
Chloroethane	ND	0.50	"								
Chloroform	ND	0.50	"								
Chloromethane	ND	0.50	"								
cis-1,2-Dichloroethylene	ND	0.50	"								
cis-1,3-Dichloropropylene	ND	0.50	"								
Cyclohexane	ND	0.50	"								
Dibromochloromethane	ND	0.50	"								
Dibromomethane	ND	0.50	"								
Dichlorodifluoromethane	ND	0.50	"								
Ethyl Benzene	ND	0.50	"								
Hexachlorobutadiene	ND	0.50	"								
Isopropylbenzene	ND	0.50	"								
Methyl acetate	ND	0.50	"								
Methyl tert-butyl ether (MTBE)	ND	0.50	"								
Methylcyclohexane	ND	0.50	"								
Methylene chloride	ND	1.0	"								
n-Butylbenzene	ND	0.50	"								
n-Propylbenzene	ND	0.50	"								
o-Xylene	ND	0.50	"								
p- & m- Xylenes	ND	1.0	"								
p-Isopropyltoluene	ND	0.50	"								
sec-Butylbenzene	ND	0.50	"								
Styrene	ND	0.50	"								
tert-Butyl alcohol (TBA)	ND	2.5	"								
tert-Butylbenzene	ND	0.50	"								
Tetrachloroethylene	ND	0.50	"								
Toluene	ND	0.50	"								
trans-1,2-Dichloroethylene	ND	0.50	"								
trans-1,3-Dichloropropylene	ND	0.50	"								
trans-1,4-dichloro-2-butene	ND	0.50	"								
Trichloroethylene	ND	0.50	"								
Trichlorofluoromethane	ND	0.50	"								
Vinyl Chloride	ND	0.50	"								
Xylenes, Total	ND	1.5	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*50.9*		*ug/L*	*50.0*		*102*	*77-125*				
Surrogate: SURR: Toluene-d8	*50.3*		*"*	*50.0*		*101*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*50.0*		*"*	*50.0*		*100*	*76-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90872 - EPA 5035A											
LCS (BG90872-BS1)							Prepared & Analyzed: 07/17/2019				
1,1,1,2-Tetrachloroethane	47		ug/L	50.0		95.0	75-129				
1,1,1-Trichloroethane	42		"	50.0		83.9	71-137				
1,1,2,2-Tetrachloroethane	53		"	50.0		105	79-129				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	45		"	50.0		89.8	58-146				
1,1,2-Trichloroethane	48		"	50.0		95.9	83-123				
1,1-Dichloroethane	49		"	50.0		98.7	75-130				
1,1-Dichloroethylene	46		"	50.0		91.4	64-137				
1,2,3-Trichlorobenzene	50		"	50.0		99.4	81-140				
1,2,3-Trichloropropane	51		"	50.0		103	81-126				
1,2,4-Trichlorobenzene	50		"	50.0		99.4	80-141				
1,2,4-Trimethylbenzene	52		"	50.0		104	84-125				
1,2-Dibromo-3-chloropropane	44		"	50.0		87.6	74-142				
1,2-Dibromoethane	49		"	50.0		98.1	86-123				
1,2-Dichlorobenzene	51		"	50.0		102	85-122				
1,2-Dichloroethane	48		"	50.0		96.1	71-133				
1,2-Dichloropropane	52		"	50.0		104	81-122				
1,3,5-Trimethylbenzene	52		"	50.0		104	82-126				
1,3-Dichlorobenzene	50		"	50.0		99.3	84-124				
1,4-Dichlorobenzene	50		"	50.0		100	84-124				
1,4-Dioxane	1000		"	1050		98.9	10-228				
2-Butanone	55		"	50.0		110	58-147				
2-Hexanone	57		"	50.0		113	70-139				
4-Methyl-2-pentanone	54		"	50.0		108	72-132				
Acetone	72		"	50.0		144	36-155				
Acrolein	59		"	50.0		118	10-238				
Acrylonitrile	54		"	50.0		107	66-141				
Benzene	48		"	50.0		95.9	77-127				
Bromochloromethane	52		"	50.0		103	74-129				
Bromodichloromethane	46		"	50.0		92.0	81-124				
Bromoform	40		"	50.0		80.9	80-136				
Bromomethane	40		"	50.0		79.7	32-177				
Carbon disulfide	40		"	50.0		80.5	10-136				
Carbon tetrachloride	43		"	50.0		85.2	66-143				
Chlorobenzene	50		"	50.0		99.4	86-120				
Chloroethane	47		"	50.0		95.0	51-142				
Chloroform	45		"	50.0		90.2	76-131				
Chloromethane	41		"	50.0		82.5	49-132				
cis-1,2-Dichloroethylene	49		"	50.0		98.4	74-132				
cis-1,3-Dichloropropylene	46		"	50.0		93.0	81-129				
Cyclohexane	52		"	50.0		104	70-130				
Dibromochloromethane	44		"	50.0		87.6	10-200				
Dibromomethane	49		"	50.0		97.8	83-124				
Dichlorodifluoromethane	26		"	50.0		51.2	28-158				
Ethyl Benzene	51		"	50.0		102	84-125				
Hexachlorobutadiene	54		"	50.0		109	83-133				
Isopropylbenzene	52		"	50.0		104	81-127				
Methyl acetate	51		"	50.0		101	41-143				
Methyl tert-butyl ether (MTBE)	46		"	50.0		91.6	74-131				
Methylcyclohexane	48		"	50.0		96.9	70-130				
Methylene chloride	54		"	50.0		107	57-141				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90872 - EPA 5035A											
LCS (BG90872-BS1)							Prepared & Analyzed: 07/17/2019				
n-Butylbenzene	56		ug/L	50.0		112	80-130				
n-Propylbenzene	53		"	50.0		106	74-136				
o-Xylene	51		"	50.0		101	83-123				
p- & m- Xylenes	100		"	100		101	82-128				
p-Isopropyltoluene	50		"	50.0		101	85-125				
sec-Butylbenzene	56		"	50.0		111	83-125				
Styrene	50		"	50.0		101	86-126				
tert-Butyl alcohol (TBA)	250		"	250		99.4	70-130				
tert-Butylbenzene	44		"	50.0		87.2	80-127				
Tetrachloroethylene	47		"	50.0		94.6	80-129				
Toluene	51		"	50.0		102	85-121				
trans-1,2-Dichloroethylene	48		"	50.0		95.9	72-132				
trans-1,3-Dichloropropylene	45		"	50.0		89.2	78-132				
trans-1,4-dichloro-2-butene	51		"	50.0		102	75-135				
Trichloroethylene	48		"	50.0		96.2	84-123				
Trichlorofluoromethane	40		"	50.0		81.0	62-140				
Vinyl Chloride	42		"	50.0		83.8	52-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.9*		*"*	*50.0*		*99.8*	*77-125*				
Surrogate: SURR: Toluene-d8	*50.3*		*"*	*50.0*		*101*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*50.0*		*"*	*50.0*		*100*	*76-130*				
LCS Dup (BG90872-BSD1)							Prepared & Analyzed: 07/17/2019				
1,1,1,2-Tetrachloroethane	48		ug/L	50.0		96.5	75-129		1.59	30	
1,1,1-Trichloroethane	43		"	50.0		86.7	71-137		3.33	30	
1,1,2,2-Tetrachloroethane	54		"	50.0		109	79-129		3.33	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	46		"	50.0		91.9	58-146		2.33	30	
1,1,2-Trichloroethane	48		"	50.0		96.2	83-123		0.375	30	
1,1-Dichloroethane	50		"	50.0		101	75-130		2.04	30	
1,1-Dichloroethylene	47		"	50.0		94.5	64-137		3.25	30	
1,2,3-Trichlorobenzene	51		"	50.0		103	81-140		3.23	30	
1,2,3-Trichloropropane	53		"	50.0		106	81-126		3.54	30	
1,2,4-Trichlorobenzene	51		"	50.0		102	80-141		2.74	30	
1,2,4-Trimethylbenzene	54		"	50.0		108	84-125		3.31	30	
1,2-Dibromo-3-chloropropane	46		"	50.0		91.5	74-142		4.33	30	
1,2-Dibromoethane	50		"	50.0		100	86-123		2.00	30	
1,2-Dichlorobenzene	53		"	50.0		105	85-122		3.23	30	
1,2-Dichloroethane	49		"	50.0		97.1	71-133		1.04	30	
1,2-Dichloropropane	52		"	50.0		105	81-122		0.959	30	
1,3,5-Trimethylbenzene	54		"	50.0		107	82-126		2.59	30	
1,3-Dichlorobenzene	51		"	50.0		101	84-124		1.84	30	
1,4-Dichlorobenzene	51		"	50.0		102	84-124		1.66	30	
1,4-Dioxane	1000		"	1050		97.5	10-228		1.39	30	
2-Butanone	59		"	50.0		118	58-147		6.62	30	
2-Hexanone	59		"	50.0		119	70-139		4.83	30	
4-Methyl-2-pentanone	55		"	50.0		111	72-132		2.62	30	
Acetone	75		"	50.0		149	36-155		3.43	30	
Acrolein	63		"	50.0		126	10-238		6.14	30	
Acrylonitrile	55		"	50.0		111	66-141		2.93	30	
Benzene	49		"	50.0		97.4	77-127		1.57	30	
Bromochloromethane	54		"	50.0		107	74-129		3.89	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90872 - EPA 5035A											
LCS Dup (BG90872-BSD1)							Prepared & Analyzed: 07/17/2019				
Bromodichloromethane	46		ug/L	50.0		92.9	81-124		0.952	30	
Bromoform	42		"	50.0		84.0	80-136		3.83	30	
Bromomethane	41		"	50.0		82.1	32-177		2.94	30	
Carbon disulfide	42		"	50.0		83.1	10-136		3.18	30	
Carbon tetrachloride	43		"	50.0		87.0	66-143		2.09	30	
Chlorobenzene	50		"	50.0		100	86-120		0.961	30	
Chloroethane	49		"	50.0		98.3	51-142		3.44	30	
Chloroform	47		"	50.0		93.7	76-131		3.76	30	
Chloromethane	42		"	50.0		83.1	49-132		0.701	30	
cis-1,2-Dichloroethylene	50		"	50.0		101	74-132		2.41	30	
cis-1,3-Dichloropropylene	47		"	50.0		94.8	81-129		1.92	30	
Cyclohexane	53		"	50.0		107	70-130		2.20	30	
Dibromochloromethane	45		"	50.0		90.2	10-200		2.90	30	
Dibromomethane	50		"	50.0		99.4	83-124		1.64	30	
Dichlorodifluoromethane	26		"	50.0		51.4	28-158		0.429	30	
Ethyl Benzene	52		"	50.0		103	84-125		1.45	30	
Hexachlorobutadiene	57		"	50.0		114	83-133		4.33	30	
Isopropylbenzene	53		"	50.0		106	81-127		1.55	30	
Methyl acetate	52		"	50.0		104	41-143		3.12	30	
Methyl tert-butyl ether (MTBE)	47		"	50.0		94.7	74-131		3.24	30	
Methylcyclohexane	49		"	50.0		97.4	70-130		0.597	30	
Methylene chloride	55		"	50.0		109	57-141		1.64	30	
n-Butylbenzene	52		"	50.0		105	80-130		6.61	30	
n-Propylbenzene	54		"	50.0		108	74-136		1.59	30	
o-Xylene	51		"	50.0		102	83-123		1.06	30	
p- & m- Xylenes	100		"	100		102	82-128		1.30	30	
p-Isopropyltoluene	51		"	50.0		102	85-125		1.93	30	
sec-Butylbenzene	56		"	50.0		113	83-125		1.32	30	
Styrene	51		"	50.0		101	86-126		0.574	30	
tert-Butyl alcohol (TBA)	260		"	250		105	70-130		5.55	30	
tert-Butylbenzene	45		"	50.0		89.3	80-127		2.42	30	
Tetrachloroethylene	48		"	50.0		96.1	80-129		1.55	30	
Toluene	52		"	50.0		103	85-121		1.54	30	
trans-1,2-Dichloroethylene	49		"	50.0		98.4	72-132		2.51	30	
trans-1,3-Dichloropropylene	46		"	50.0		91.0	78-132		2.06	30	
trans-1,4-dichloro-2-butene	47		"	50.0		93.5	75-135		8.81	30	
Trichloroethylene	49		"	50.0		97.8	84-123		1.61	30	
Trichlorofluoromethane	41		"	50.0		83.0	62-140		2.41	30	
Vinyl Chloride	43		"	50.0		86.0	52-130		2.57	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*50.3*		*"*	*50.0*		*101*	*77-125*				
Surrogate: SURR: Toluene-d8	*50.1*		*"*	*50.0*		*100*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*50.2*		*"*	*50.0*		*100*	*76-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90874 - EPA 5030B											
Blank (BG90874-BLK1)											Prepared & Analyzed: 07/17/2019
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L								
Tentatively Identified Compounds	0.0		"								
1,1,1-Trichloroethane	ND	0.50	"								
1,1,2,2-Tetrachloroethane	ND	0.50	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	"								
1,1,2-Trichloroethane	ND	0.50	"								
1,1-Dichloroethane	ND	0.50	"								
1,1-Dichloroethylene	ND	0.50	"								
1,2,3-Trichlorobenzene	ND	0.50	"								
1,2,3-Trichloropropane	ND	0.50	"								
1,2,4-Trichlorobenzene	ND	0.50	"								
1,2,4-Trimethylbenzene	ND	0.50	"								
1,2-Dibromo-3-chloropropane	ND	0.50	"								
1,2-Dibromoethane	ND	0.50	"								
1,2-Dichlorobenzene	ND	0.50	"								
1,2-Dichloroethane	ND	0.50	"								
1,2-Dichloropropane	ND	0.50	"								
1,3,5-Trimethylbenzene	ND	0.50	"								
1,3-Dichlorobenzene	ND	0.50	"								
1,4-Dichlorobenzene	ND	0.50	"								
1,4-Dioxane	ND	40	"								
2-Butanone	ND	0.50	"								
2-Hexanone	ND	0.50	"								
4-Methyl-2-pentanone	ND	0.50	"								
Acetone	ND	2.0	"								
Acrolein	ND	0.50	"								
Acrylonitrile	ND	0.50	"								
Benzene	ND	0.50	"								
Bromochloromethane	ND	0.50	"								
Bromodichloromethane	ND	0.50	"								
Bromoform	ND	0.50	"								
Bromomethane	ND	0.50	"								
Carbon disulfide	ND	0.50	"								
Carbon tetrachloride	ND	0.50	"								
Chlorobenzene	ND	0.50	"								
Chloroethane	ND	0.50	"								
Chloroform	ND	0.50	"								
Chloromethane	ND	0.50	"								
cis-1,2-Dichloroethylene	ND	0.50	"								
cis-1,3-Dichloropropylene	ND	0.50	"								
Cyclohexane	ND	0.50	"								
Dibromochloromethane	ND	0.50	"								
Dibromomethane	ND	0.50	"								
Dichlorodifluoromethane	ND	0.50	"								
Ethyl Benzene	ND	0.50	"								
Hexachlorobutadiene	ND	0.50	"								
Isopropylbenzene	ND	0.50	"								
Methyl acetate	ND	0.50	"								
Methyl tert-butyl ether (MTBE)	ND	0.50	"								
Methylcyclohexane	ND	0.50	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90874 - EPA 5030B											
Blank (BG90874-BLK1)									Prepared & Analyzed: 07/17/2019		
Methylene chloride	ND	2.0	ug/L								
n-Butylbenzene	ND	0.50	"								
n-Propylbenzene	ND	0.50	"								
o-Xylene	ND	0.50	"								
p- & m- Xylenes	ND	1.0	"								
p-Isopropyltoluene	ND	0.50	"								
sec-Butylbenzene	ND	0.50	"								
Styrene	ND	0.50	"								
tert-Butyl alcohol (TBA)	ND	1.0	"								
tert-Butylbenzene	ND	0.50	"								
Tetrachloroethylene	ND	0.50	"								
Toluene	ND	0.50	"								
trans-1,2-Dichloroethylene	ND	0.50	"								
trans-1,3-Dichloropropylene	ND	0.50	"								
trans-1,4-dichloro-2-butene	ND	0.50	"								
Trichloroethylene	ND	0.50	"								
Trichlorofluoromethane	ND	0.50	"								
Vinyl Chloride	ND	0.50	"								
Xylenes, Total	ND	1.5	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*9.48*		*"*	*10.0*		*94.8*	*69-130*				
Surrogate: SURR: Toluene-d8	*9.56*		*"*	*10.0*		*95.6*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*10.4*		*"*	*10.0*		*104*	*79-122*				
LCS (BG90874-BS1)									Prepared & Analyzed: 07/17/2019		
1,1,1,2-Tetrachloroethane	9.6		ug/L	10.0		95.8	82-126				
1,1,1-Trichloroethane	11		"	10.0		114	78-136				
1,1,2,2-Tetrachloroethane	8.7		"	10.0		86.8	76-129				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	12		"	10.0		117	54-165				
1,1,2-Trichloroethane	9.3		"	10.0		93.1	82-123				
1,1-Dichloroethane	11		"	10.0		110	82-129				
1,1-Dichloroethylene	11		"	10.0		109	68-138				
1,2,3-Trichlorobenzene	9.8		"	10.0		97.9	76-136				
1,2,3-Trichloropropane	8.6		"	10.0		86.3	77-128				
1,2,4-Trichlorobenzene	9.4		"	10.0		94.1	76-137				
1,2,4-Trimethylbenzene	9.1		"	10.0		91.1	82-132				
1,2-Dibromo-3-chloropropane	9.1		"	10.0		90.6	45-147				
1,2-Dibromoethane	9.6		"	10.0		96.0	83-124				
1,2-Dichlorobenzene	9.2		"	10.0		91.7	79-123				
1,2-Dichloroethane	11		"	10.0		107	73-132				
1,2-Dichloropropane	9.5		"	10.0		95.1	78-126				
1,3,5-Trimethylbenzene	9.2		"	10.0		91.6	80-131				
1,3-Dichlorobenzene	8.8		"	10.0		88.5	86-122				
1,4-Dichlorobenzene	9.1		"	10.0		90.6	85-124				
1,4-Dioxane	260		"	210		124	10-349				
2-Butanone	11		"	10.0		108	49-152				
2-Hexanone	9.1		"	10.0		90.6	51-146				
4-Methyl-2-pentanone	8.6		"	10.0		86.4	57-145				
Acetone	12		"	10.0		115	14-150				
Acrolein	12		"	10.0		120	10-153				
Acrylonitrile	10		"	10.0		102	51-150				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90874 - EPA 5030B											
LCS (BG90874-BS1)							Prepared & Analyzed: 07/17/2019				
Benzene	11		ug/L	10.0		110	85-126				
Bromochloromethane	10		"	10.0		99.6	77-128				
Bromodichloromethane	9.9		"	10.0		98.6	79-128				
Bromoform	9.4		"	10.0		93.9	78-133				
Bromomethane	8.5		"	10.0		85.1	43-168				
Carbon disulfide	11		"	10.0		111	68-146				
Carbon tetrachloride	12		"	10.0		117	77-141				
Chlorobenzene	9.7		"	10.0		96.7	88-120				
Chloroethane	9.5		"	10.0		95.2	65-136				
Chloroform	11		"	10.0		112	82-128				
Chloromethane	7.9		"	10.0		79.3	43-155				
cis-1,2-Dichloroethylene	11		"	10.0		110	83-129				
cis-1,3-Dichloropropylene	9.7		"	10.0		97.1	80-131				
Cyclohexane	11		"	10.0		111	63-149				
Dibromochloromethane	9.8		"	10.0		97.8	80-130				
Dibromomethane	9.4		"	10.0		94.5	72-134				
Dichlorodifluoromethane	6.2		"	10.0		62.2	44-144				
Ethyl Benzene	9.7		"	10.0		96.6	80-131				
Hexachlorobutadiene	10		"	10.0		101	67-146				
Isopropylbenzene	9.1		"	10.0		90.8	76-140				
Methyl acetate	10		"	10.0		99.7	51-139				
Methyl tert-butyl ether (MTBE)	11		"	10.0		115	76-135				
Methylcyclohexane	10		"	10.0		102	72-143				
Methylene chloride	11		"	10.0		106	55-137				
n-Butylbenzene	8.1		"	10.0		81.1	79-132				
n-Propylbenzene	9.0		"	10.0		89.8	78-133				
o-Xylene	9.6		"	10.0		95.7	78-130				
p- & m- Xylenes	20		"	20.0		97.5	77-133				
p-Isopropyltoluene	9.1		"	10.0		90.9	81-136				
sec-Butylbenzene	9.7		"	10.0		96.7	79-137				
Styrene	9.2		"	10.0		92.1	67-132				
tert-Butyl alcohol (TBA)	61		"	50.0		121	25-162				
tert-Butylbenzene	9.2		"	10.0		91.9	77-138				
Tetrachloroethylene	8.5		"	10.0		85.2	82-131				
Toluene	9.7		"	10.0		97.1	80-127				
trans-1,2-Dichloroethylene	11		"	10.0		108	80-132				
trans-1,3-Dichloropropylene	9.5		"	10.0		94.8	78-131				
trans-1,4-dichloro-2-butene	8.2		"	10.0		81.9	63-141				
Trichloroethylene	10		"	10.0		99.6	82-128				
Trichlorofluoromethane	8.8		"	10.0		88.0	67-139				
Vinyl Chloride	8.7		"	10.0		87.2	58-145				
Surrogate: SURR: 1,2-Dichloroethane-d4	*9.74*		*"*	*10.0*		*97.4*	*69-130*				
Surrogate: SURR: Toluene-d8	*9.45*		*"*	*10.0*		*94.5*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*9.83*		*"*	*10.0*		*98.3*	*79-122*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

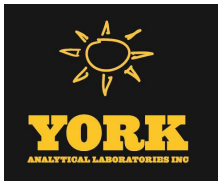
Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90874 - EPA 5030B											
LCS Dup (BG90874-BSD1)								Prepared & Analyzed: 07/17/2019			
1,1,1,2-Tetrachloroethane	9.3		ug/L	10.0		92.8	82-126		3.18	30	
1,1,1-Trichloroethane	11		"	10.0		107	78-136		6.15	30	
1,1,2,2-Tetrachloroethane	8.5		"	10.0		85.2	76-129		1.86	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11		"	10.0		108	54-165		8.09	30	
1,1,2-Trichloroethane	9.0		"	10.0		90.4	82-123		2.94	30	
1,1-Dichloroethane	10		"	10.0		103	82-129		6.00	30	
1,1-Dichloroethylene	10		"	10.0		99.7	68-138		9.19	30	
1,2,3-Trichlorobenzene	9.8		"	10.0		97.5	76-136		0.409	30	
1,2,3-Trichloropropane	8.3		"	10.0		83.3	77-128		3.54	30	
1,2,4-Trichlorobenzene	9.2		"	10.0		92.4	76-137		1.82	30	
1,2,4-Trimethylbenzene	8.6		"	10.0		85.7	82-132		6.11	30	
1,2-Dibromo-3-chloropropane	8.8		"	10.0		87.7	45-147		3.25	30	
1,2-Dibromoethane	9.5		"	10.0		95.1	83-124		0.942	30	
1,2-Dichlorobenzene	8.7		"	10.0		87.4	79-123		4.80	30	
1,2-Dichloroethane	10		"	10.0		104	73-132		3.32	30	
1,2-Dichloropropane	9.1		"	10.0		90.8	78-126		4.63	30	
1,3,5-Trimethylbenzene	8.8		"	10.0		87.7	80-131		4.35	30	
1,3-Dichlorobenzene	8.4		"	10.0		84.1	86-122	Low Bias	5.10	30	
1,4-Dichlorobenzene	8.7		"	10.0		86.6	85-124		4.51	30	
1,4-Dioxane	270		"	210		130	10-349		4.39	30	
2-Butanone	11		"	10.0		109	49-152		0.461	30	
2-Hexanone	8.8		"	10.0		88.0	51-146		2.91	30	
4-Methyl-2-pentanone	8.5		"	10.0		85.4	57-145		1.16	30	
Acetone	10		"	10.0		102	14-150		11.8	30	
Acrolein	12		"	10.0		124	10-153		2.95	30	
Acrylonitrile	9.6		"	10.0		96.2	51-150		6.24	30	
Benzene	10		"	10.0		103	85-126		5.92	30	
Bromochloromethane	9.7		"	10.0		96.8	77-128		2.85	30	
Bromodichloromethane	9.6		"	10.0		96.2	79-128		2.46	30	
Bromoform	9.3		"	10.0		92.9	78-133		1.07	30	
Bromomethane	8.5		"	10.0		85.1	43-168		0.00	30	
Carbon disulfide	10		"	10.0		100	68-146		10.1	30	
Carbon tetrachloride	11		"	10.0		109	77-141		6.82	30	
Chlorobenzene	9.3		"	10.0		92.9	88-120		4.01	30	
Chloroethane	8.6		"	10.0		85.7	65-136		10.5	30	
Chloroform	11		"	10.0		107	82-128		5.03	30	
Chloromethane	7.5		"	10.0		74.9	43-155		5.71	30	
cis-1,2-Dichloroethylene	10		"	10.0		103	83-129		5.92	30	
cis-1,3-Dichloropropylene	9.3		"	10.0		93.3	80-131		3.99	30	
Cyclohexane	10		"	10.0		102	63-149		7.99	30	
Dibromochloromethane	9.6		"	10.0		96.5	80-130		1.34	30	
Dibromomethane	9.2		"	10.0		91.7	72-134		3.01	30	
Dichlorodifluoromethane	5.8		"	10.0		57.5	44-144		7.85	30	
Ethyl Benzene	9.2		"	10.0		92.2	80-131		4.66	30	
Hexachlorobutadiene	9.7		"	10.0		96.7	67-146		3.95	30	
Isopropylbenzene	8.6		"	10.0		86.4	76-140		4.97	30	
Methyl acetate	9.6		"	10.0		95.8	51-139		3.99	30	
Methyl tert-butyl ether (MTBE)	11		"	10.0		108	76-135		5.83	30	
Methylcyclohexane	9.6		"	10.0		96.0	72-143		5.86	30	
Methylene chloride	10		"	10.0		99.9	55-137		5.93	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90874 - EPA 5030B											
LCS Dup (BG90874-BSD1)								Prepared & Analyzed: 07/17/2019			
n-Butylbenzene	8.8		ug/L	10.0		88.0	79-132		8.16	30	
n-Propylbenzene	8.5		"	10.0		85.3	78-133		5.14	30	
o-Xylene	9.2		"	10.0		92.5	78-130		3.40	30	
p- & m- Xylenes	19		"	20.0		93.1	77-133		4.62	30	
p-Isopropyltoluene	8.7		"	10.0		86.7	81-136		4.73	30	
sec-Butylbenzene	9.2		"	10.0		92.0	79-137		4.98	30	
Styrene	8.9		"	10.0		89.3	67-132		3.09	30	
tert-Butyl alcohol (TBA)	59		"	50.0		118	25-162		2.40	30	
tert-Butylbenzene	8.8		"	10.0		87.8	77-138		4.56	30	
Tetrachloroethylene	8.2		"	10.0		81.7	82-131	Low Bias	4.19	30	
Toluene	9.3		"	10.0		92.7	80-127		4.64	30	
trans-1,2-Dichloroethylene	10		"	10.0		99.7	80-132		7.99	30	
trans-1,3-Dichloropropylene	9.1		"	10.0		90.8	78-131		4.31	30	
trans-1,4-dichloro-2-butene	8.2		"	10.0		81.5	63-141		0.490	30	
Trichloroethylene	9.3		"	10.0		93.0	82-128		6.85	30	
Trichlorofluoromethane	7.9		"	10.0		78.9	67-139		10.9	30	
Vinyl Chloride	8.3		"	10.0		83.3	58-145		4.57	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*9.48*		*"*	*10.0*		*94.8*	*69-130*				
Surrogate: SURR: Toluene-d8	*9.46*		*"*	*10.0*		*94.6*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*9.89*		*"*	*10.0*		*98.9*	*79-122*				

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91147 - SPE Ext-PFAS-EPA 537.1M											
Blank (BG91147-BLK1)											
Prepared: 07/22/2019 Analyzed: 07/23/2019											
Perfluorobutanesulfonic acid (PFBS)	ND	2.00	ng/L								
Perfluorohexanoic acid (PFHxA)	ND	2.00	"								
Perfluoroheptanoic acid (PFHpA)	ND	2.00	"								
Perfluorohexanesulfonic acid (PFHxS)	ND	2.00	"								
Perfluorooctanoic acid (PFOA)	ND	2.00	"								
Perfluorooctanesulfonic acid (PFOS)	ND	2.00	"								
Perfluorononanoic acid (PFNA)	ND	2.00	"								
Perfluorodecanoic acid (PFDA)	ND	2.00	"								
Perfluoroundecanoic acid (PFUnA)	ND	2.00	"								
Perfluorododecanoic acid (PFDoA)	ND	2.00	"								
Perfluorotridecanoic acid (PFTrDA)	ND	2.00	"								
Perfluorotetradecanoic acid (PFTA)	4.29	2.00	"								
N-MeFOSAA	ND	2.00	"								
N-EtFOSAA	ND	2.00	"								
Perfluoropentanoic acid (PFPeA)	ND	2.00	"								
Perfluoro-1-octanesulfonamide (FOSA)	ND	2.00	"								
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	2.00	"								
Perfluoro-1-decanesulfonic acid (PFDS)	ND	2.00	"								
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	5.00	"								
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	2.00	"								
Perfluoro-n-butanoic acid (PFBA)	ND	2.00	"								
Surrogate: M3PFBS	*35.3*		"	*74.3*		*47.5*	*25-150*				
Surrogate: M5PFHxA	*36.8*		"	*80.0*		*46.0*	*25-150*				
Surrogate: M4PFHpA	*36.6*		"	*80.0*		*45.7*	*25-150*				
Surrogate: M3PFHxS	*35.8*		"	*75.7*		*47.3*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*38.9*		"	*80.0*		*48.6*	*25-150*				
Surrogate: M6PFDA	*38.9*		"	*80.0*		*48.6*	*25-150*				
Surrogate: M7PFUdA	*33.8*		"	*80.0*		*42.2*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*32.3*		"	*80.0*		*40.4*	*25-150*				
Surrogate: M2PFTeDA	*15.9*		"	*80.0*		*19.9*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*37.4*		"	*80.0*		*46.7*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*36.1*		"	*76.6*		*47.2*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*38.5*		"	*80.0*		*48.1*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*34.8*		"	*80.0*		*43.5*	*10-150*				
Surrogate: d3-N-MeFOSAA	*38.0*		"	*80.0*		*47.5*	*25-150*				
Surrogate: d5-N-EtFOSAA	*36.8*		"	*80.0*		*46.0*	*25-150*				
Surrogate: M2-6:2 FTS	*34.5*		"	*75.9*		*45.5*	*25-150*				
Surrogate: M2-8:2 FTS	*33.9*		"	*76.6*		*44.3*	*25-150*				
Surrogate: M9PFNA	*38.5*		"	*80.0*		*48.1*	*25-150*				



PFAS Target compounds by LC/MS-MS - Quality Control Data

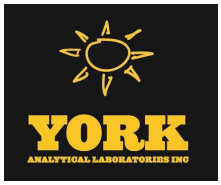
York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91147 - SPE Ext-PFAS-EPA 537.1M											
LCS (BG91147-BS1)								Prepared: 07/22/2019 Analyzed: 07/23/2019			
Perfluorobutanesulfonic acid (PFBS)	65.5	2.00	ng/L	70.8		92.5	50-130				
Perfluorohexanoic acid (PFHxA)	71.1	2.00	"	80.0		88.9	50-130				
Perfluoroheptanoic acid (PFHpA)	64.6	2.00	"	80.0		80.8	50-130				
Perfluorohexanesulfonic acid (PFHxS)	54.1	2.00	"	59.2		91.4	50-130				
Perfluorooctanoic acid (PFOA)	66.7	2.00	"	80.0		83.3	50-130				
Perfluorooctanesulfonic acid (PFOS)	52.7	2.00	"	58.4		90.3	50-130				
Perfluorononanoic acid (PFNA)	68.5	2.00	"	76.8		89.2	50-130				
Perfluorodecanoic acid (PFDA)	66.8	2.00	"	80.0		83.6	50-130				
Perfluoroundecanoic acid (PFUnA)	50.7	2.00	"	80.0		63.4	50-130				
Perfluorododecanoic acid (PFDoA)	87.3	2.00	"	80.0		109	50-130				
Perfluorotridecanoic acid (PFTrDA)	70.9	2.00	"	80.0		88.6	50-130				
Perfluorotetradecanoic acid (PFTA)	60.1	2.00	"	80.0		75.1	50-130				
N-MeFOSAA	64.6	2.00	"	80.0		80.8	50-130				
N-EtFOSAA	65.0	2.00	"	80.0		81.2	50-130				
Perfluoropentanoic acid (PFPeA)	69.3	2.00	"	80.0		86.6	50-130				
Perfluoro-1-octanesulfonamide (FOSA)	68.1	2.00	"	80.0		85.1	50-130				
Perfluoro-1-heptanesulfonic acid (PFHpS)	72.3	2.00	"	79.6		90.9	50-130				
Perfluoro-1-decanesulfonic acid (PFDS)	60.9	2.00	"	77.2		78.9	50-130				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	68.8	5.00	"	76.0		90.6	50-130				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	68.5	2.00	"	76.8		89.2	50-130				
Perfluoro-n-butanoic acid (PFBA)	69.3	2.00	"	80.0		86.6	50-130				
Surrogate: M3PFBS	*45.2*		*"*	*74.3*		*60.9*	*25-150*				
Surrogate: M5PFHxA	*48.4*		*"*	*80.0*		*60.5*	*25-150*				
Surrogate: M4PFHpA	*50.3*		*"*	*80.0*		*62.9*	*25-150*				
Surrogate: M3PFHxS	*45.5*		*"*	*75.7*		*60.1*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*50.0*		*"*	*80.0*		*62.6*	*25-150*				
Surrogate: M6PFDA	*43.1*		*"*	*80.0*		*53.9*	*25-150*				
Surrogate: M7PFUdA	*51.3*		*"*	*80.0*		*64.1*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*33.4*		*"*	*80.0*		*41.7*	*25-150*				
Surrogate: M2PFTeDA	*27.7*		*"*	*80.0*		*34.6*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*47.9*		*"*	*80.0*		*59.9*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*45.8*		*"*	*76.6*		*59.8*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*49.8*		*"*	*80.0*		*62.2*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*43.7*		*"*	*80.0*		*54.6*	*10-150*				
Surrogate: d3-N-MeFOSAA	*49.7*		*"*	*80.0*		*62.1*	*25-150*				
Surrogate: d5-N-EtFOSAA	*47.1*		*"*	*80.0*		*58.9*	*25-150*				
Surrogate: M2-6:2 FTS	*44.1*		*"*	*75.9*		*58.1*	*25-150*				
Surrogate: M2-8:2 FTS	*41.7*		*"*	*76.6*		*54.4*	*25-150*				
Surrogate: M9PFNA	*42.8*		*"*	*80.0*		*53.5*	*25-150*				

PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91148 - SPE PFAS Extraction-Soil-EPA 537m											
Blank (BG91148-BLK1)											
Prepared: 07/22/2019 Analyzed: 07/24/2019											
Perfluorobutanesulfonic acid (PFBS)	ND	0.720	ug/kg wet								
Perfluorohexanoic acid (PFHxA)	ND	0.720	"								
Perfluoroheptanoic acid (PFHpA)	ND	0.720	"								
Perfluorohexanesulfonic acid (PFHxS)	ND	0.720	"								
Perfluorooctanoic acid (PFOA)	ND	0.720	"								
Perfluorooctanesulfonic acid (PFOS)	ND	0.720	"								
Perfluorononanoic acid (PFNA)	ND	0.720	"								
Perfluorodecanoic acid (PFDA)	ND	0.720	"								
Perfluoroundecanoic acid (PFUnA)	ND	0.720	"								
Perfluorododecanoic acid (PFDoA)	ND	0.720	"								
Perfluorotridecanoic acid (PFTrDA)	ND	0.720	"								
Perfluorotetradecanoic acid (PFTA)	ND	0.720	"								
N-MeFOSAA	ND	0.720	"								
N-EtFOSAA	ND	0.720	"								
Perfluoropentanoic acid (PFPeA)	ND	0.720	"								
Perfluoro-1-octanesulfonamide (FOSA)	ND	0.720	"								
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	0.720	"								
Perfluoro-1-decanesulfonic acid (PFDS)	ND	0.720	"								
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	0.720	"								
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	0.720	"								
Perfluoro-n-butanoic acid (PFBA)	ND	0.720	"								
Surrogate: M3PFBS	*2.62*		"	*4.46*		*58.7*	*25-150*				
Surrogate: M5PFHxA	*2.70*		"	*4.80*		*56.3*	*25-150*				
Surrogate: M4PFHpA	*2.97*		"	*4.80*		*61.8*	*25-150*				
Surrogate: M3PFHxS	*2.69*		"	*4.54*		*59.3*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*2.79*		"	*4.80*		*58.2*	*25-150*				
Surrogate: M6PFDA	*2.95*		"	*4.80*		*61.5*	*25-150*				
Surrogate: M7PFUdA	*2.71*		"	*4.80*		*56.5*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*2.76*		"	*4.80*		*57.5*	*25-150*				
Surrogate: M2PFTeDA	*2.68*		"	*4.80*		*55.9*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*2.69*		"	*4.80*		*56.0*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*2.64*		"	*4.59*		*57.6*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*2.71*		"	*4.80*		*56.5*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*2.49*		"	*4.80*		*51.9*	*10-150*				
Surrogate: d3-N-MeFOSAA	*2.80*		"	*4.80*		*58.3*	*25-150*				
Surrogate: d5-N-EtFOSAA	*2.79*		"	*4.80*		*58.2*	*25-150*				
Surrogate: M2-6:2 FTS	*2.60*		"	*4.55*		*57.0*	*25-150*				
Surrogate: M2-8:2 FTS	*2.67*		"	*4.60*		*58.1*	*25-150*				
Surrogate: M9PFNA	*2.63*		"	*4.80*		*54.8*	*25-150*				



PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91148 - SPE PFAS Extraction-Soil-EPA 537m											
LCS (BG91148-BS1)									Prepared: 07/22/2019 Analyzed: 07/24/2019		
Perfluorobutanesulfonic acid (PFBS)	3.66	0.656	ug/kg wet	3.87		94.7	50-130				
Perfluorohexanoic acid (PFHxA)	4.08	0.656	"	4.37		93.4	50-130				
Perfluoroheptanoic acid (PFHpA)	3.49	0.656	"	4.37		79.8	50-130				
Perfluorohexanesulfonic acid (PFHxS)	2.97	0.656	"	3.23		91.9	50-130				
Perfluorooctanoic acid (PFOA)	3.47	0.656	"	4.37		79.5	50-130				
Perfluorooctanesulfonic acid (PFOS)	2.82	0.656	"	3.19		88.5	50-130				
Perfluorononanoic acid (PFNA)	3.69	0.656	"	4.20		87.9	50-130				
Perfluorodecanoic acid (PFDA)	4.44	0.656	"	4.37		102	50-130				
Perfluoroundecanoic acid (PFUnA)	3.50	0.656	"	4.37		80.0	50-130				
Perfluorododecanoic acid (PFDoA)	3.63	0.656	"	4.37		83.0	50-130				
Perfluorotridecanoic acid (PFTrDA)	4.06	0.656	"	4.37		92.8	50-130				
Perfluorotetradecanoic acid (PFTA)	3.43	0.656	"	4.37		78.4	50-130				
N-MeFOSAA	3.58	0.656	"	4.37		82.0	50-130				
N-EtFOSAA	3.41	0.656	"	4.37		78.0	50-130				
Perfluoropentanoic acid (PFPeA)	3.78	0.656	"	4.37		86.5	50-130				
Perfluoro-1-octanesulfonamide (FOSA)	3.75	0.656	"	4.37		85.8	50-130				
Perfluoro-1-heptanesulfonic acid (PFHpS)	4.04	0.656	"	4.35		92.9	50-130				
Perfluoro-1-decanesulfonic acid (PFDS)	3.38	0.656	"	4.22		80.2	50-130				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	3.68	0.656	"	4.15		88.7	50-130				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	3.75	0.656	"	4.20		89.3	50-130				
Perfluoro-n-butanoic acid (PFBA)	4.10	0.656	"	4.37		93.8	50-130				
Surrogate: M3PFBS	*2.86*		*"*	*4.06*		*70.3*	*25-150*				
Surrogate: M5PFHxA	*2.90*		*"*	*4.37*		*66.3*	*25-150*				
Surrogate: M4PFHpA	*3.20*		*"*	*4.37*		*73.3*	*25-150*				
Surrogate: M3PFHxS	*2.89*		*"*	*4.14*		*70.0*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*3.25*		*"*	*4.37*		*74.3*	*25-150*				
Surrogate: M6PFDA	*2.66*		*"*	*4.37*		*61.0*	*25-150*				
Surrogate: M7PFUdA	*3.14*		*"*	*4.37*		*71.7*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*2.63*		*"*	*4.37*		*60.1*	*25-150*				
Surrogate: M2PFTeDA	*2.81*		*"*	*4.37*		*64.4*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*2.96*		*"*	*4.37*		*67.8*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*2.80*		*"*	*4.18*		*66.8*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*3.06*		*"*	*4.37*		*70.1*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*2.79*		*"*	*4.37*		*63.8*	*10-150*				
Surrogate: d3-N-MeFOSAA	*3.07*		*"*	*4.37*		*70.2*	*25-150*				
Surrogate: d5-N-EtFOSAA	*3.08*		*"*	*4.37*		*70.4*	*25-150*				
Surrogate: M2-6:2 FTS	*3.05*		*"*	*4.15*		*73.5*	*25-150*				
Surrogate: M2-8:2 FTS	*2.97*		*"*	*4.19*		*70.8*	*25-150*				
Surrogate: M9PFNA	*3.26*		*"*	*4.37*		*74.6*	*25-150*				

Miscellaneous Physical Parameters - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG90918 - % Solids Prep											
Duplicate (BG90918-DUP1)	*Source sample: 19G0564-04 (SODUP01_071119)								Prepared & Analyzed: 07/17/2019		
% Solids	88.3	0.100	%		89.4				1.24	20	

Volatile Analysis Sample Containers

Lab ID	Client Sample ID	Volatile Sample Container
19G0564-01	ACME-EB-16_0-2	40mL Vial with Stir Bar-Cool 4° C
19G0564-02	ACME-EB-16_17-17.5	40mL Vial with Stir Bar-Cool 4° C
19G0564-03	VP-03_2.5-3	40mL Vial with Stir Bar-Cool 4° C
19G0564-04	SODUP01_071119	40mL Vial with Stir Bar-Cool 4° C
19G0564-05	SOFB01_071119	40mL 01_Clear Vial Cool to 4° C
19G0564-06	SOTB01_071119	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C

Sample and Data Qualifiers Relating to This Work Order

S-HI	Surrogate recovery is above acceptance limits. No target compound is detected in sample.
S-09	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect confirmed by re-extraction and re-analysis of the sample.
QL-02	This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
N	The Tentatively Identified Compound reported indicates the presence of an possible analyte or class of analyte that has been 'tentatively identified' and the associated numerical value represents its estimated concentration.
J	Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.
HT-01	This result was reported from an analysis conducted outside of the EPA recommended holding time.
CCV-E	The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).
B	Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants.

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

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YORK ANALYTICAL LABORATORIES INC

Field Chain-of-Custody Record

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document. This document serves as your written authorization for YORK to proceed with the analyses requested below. Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 19G0564

Page 1 of 1

YOUR Information	Report To:	Invoice To:	YOUR Project Number	Turn-Around Time
Company: LANGAN Engineering	Company:	Company:	170157201	RUSH - Next Day
Address: 360 W 31st St New York, NY	Address:	Address:	YOUR Project Name: ACME Site #2 72 Anthony St	RUSH - Two Day
Phone.: 212 479 5400	Phone.:	Phone.:		RUSH - Three Day
Contact: Patrick Farnham	Contact:	Contact:		RUSH - Four Day
E-mail: pfarnham@langan.com	E-mail:	E-mail:	YOUR PO#:	Standard (5-7 Day) X

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Katherine Racanelli

Samples Collected by: (print your name above and sign below)

KR

Matrix Codes	Samples From		Report / EDD Type (circle selections)			YORK Reg. Comp.
S - soil / solid	New York	X	Summary Report	CT RCP	Standard Excel EDD	Compared to the following Regulation(s): (please fill in)
GW - groundwater	New Jersey		QA Report	CT RCP DQA/DUE	EQuIS (Standard)	
DW - drinking water	Connecticut		NY ASP A Package	NJDEP Reduced Deliverables	NYSDEC EQuIS	
WW - wastewater	Pennsylvania		NY ASP B Package		NJDEP SRP HazSite	
O - Oil ⋮ Other	Other			NJDKQP	Other:	

Sample Identification	Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
ACME-EB-16-0-2	S	7/11/19 1430	TCL/PCA375/NJDEP VOCs+TICs, PFAS, 1,4-Dioxane	(4) vials, (1) 4oz, (1) pl
ACME-EB-16-17-17.5	S	1540	VOCs+TICs	(4) vials
VP-03-2.5-3	S	1350	VOCs+TICs	(4) vials
SODUPOL-071119	S	1550	VOCs+TICs, PFAS, 1,4-Dioxane	(4 vials) (1) 4oz (1)
SOFBOL-071119	aq	1640	VOCs+TICs, PFAS, 1-4 Dioxane	(1) 8oz, (4) vials, (1) pl
SOTBOL-071119	aq	-	VOCs+TICs	(2) vials

Comments:

cc results to datamanagement@langan.com

Preservation: (check all that apply)

HCl ___ MeOH ___ HNO_3 ___ H_2SO_4 ___ NaOH ___ ZnAc ___
Ascorbic Acid ___ Other: ___

Special Instruction

Field Filtered ___
Lab to Filter ___

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
KR Langan	7/12/19 9:30	Allie Ventura YORK	7/12/19	Allie Ventura YORK	7/12/19
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
[signature]	7-12-19 1723	[signature]	7-12-19 1922		
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by	Date/Time
				TC [signature]	7/12/19 1922

Temp. Received at Lab: 1.8 Degrees C

Technical Report

prepared for:

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Patrick Farnham

Report Date: 07/26/2019
Client Project ID: 170157201
York Project (SDG) No.: 19G0825

Report Date: 07/26/2019
Client Project ID: 170157201
York Project (SDG) No.: 19G0825

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Patrick Farnham

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on July 18, 2019 and listed below. The project was identified as your project: **170157201**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
19G0825-01	SVE-01_S_071719	Vapor Extraction	07/17/2019	07/18/2019
19G0825-02	SVE-02_S_071819	Vapor Extraction	07/18/2019	07/18/2019
19G0825-03	SVE-02_D_071819	Vapor Extraction	07/18/2019	07/18/2019

General Notes for York Project (SDG) No.: 19G0825

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By:

Date: 07/26/2019

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: SVE-01_S_071719 **York Sample ID:** 19G0825-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0825	170157201	Vapor Extraction	July 17, 2019 1:00 pm	07/18/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m³	78	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:			
71-55-6	**1,1,1-Trichloroethane**	**4100**	IS-LO	ug/m³	62	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	78	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	IS-LO	ug/m³	88	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	62	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-34-3	**1,1-Dichloroethane**	**990**	IS-LO	ug/m³	46	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-35-4	**1,1-Dichloroethylene**	**68**	IS-LO	ug/m³	11	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m³	85	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/m³	56	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
106-93-4	1,2-Dibromoethane	ND		ug/m³	88	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	69	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
107-06-2	1,2-Dichloroethane	ND	IS-LO	ug/m³	46	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
78-87-5	1,2-Dichloropropane	ND		ug/m³	53	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-14-2	1,2-Dichlorotetrafluoroethane	ND	IS-LO	ug/m³	80	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/m³	56	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
106-99-0	1,3-Butadiene	ND	IS-LO	ug/m³	76	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	69	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
142-28-9	* 1,3-Dichloropropane	ND		ug/m³	53	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:			
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	69	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
123-91-1	1,4-Dioxane	ND		ug/m³	82	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
78-93-3	2-Butanone	ND	IS-LO	ug/m³	34	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		

Sample Information

Client Sample ID: SVE-01_S_071719 **York Sample ID:** 19G0825-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0825	170157201	Vapor Extraction	July 17, 2019 1:00 pm	07/18/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
591-78-6	* 2-Hexanone	ND		ug/m³	94	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:			
107-05-1	3-Chloropropene	ND	IS-LO	ug/m³	180	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-10-1	4-Methyl-2-pentanone	ND		ug/m³	47	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
67-64-1	Acetone	ND	IS-LO	ug/m³	54	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
107-13-1	Acrylonitrile	ND	IS-LO	ug/m³	25	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
71-43-2	Benzene	ND	IS-LO	ug/m³	37	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
100-44-7	Benzyl chloride	ND		ug/m³	59	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-27-4	Bromodichloromethane	ND		ug/m³	77	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-25-2	Bromoform	ND		ug/m³	120	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
74-83-9	Bromomethane	ND	IS-LO	ug/m³	44	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-15-0	Carbon disulfide	ND	IS-LO	ug/m³	36	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
56-23-5	Carbon tetrachloride	ND	IS-LO	ug/m³	18	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-90-7	Chlorobenzene	ND		ug/m³	53	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-00-3	Chloroethane	ND	IS-LO	ug/m³	30	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
67-66-3	**Chloroform**	**150**	IS-LO	ug/m³	56	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
74-87-3	Chloromethane	ND	IS-LO	ug/m³	24	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
156-59-2	**cis-1,2-Dichloroethylene**	**16000**	IS-LO	ug/m³	11	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	52	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
110-82-7	Cyclohexane	ND	IS-LO	ug/m³	39	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
124-48-1	Dibromochloromethane	ND		ug/m³	97	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-71-8	Dichlorodifluoromethane	ND	IS-LO	ug/m³	57	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
141-78-6	* Ethyl acetate	ND	IS-LO	ug/m³	82	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:			

Sample Information

Client Sample ID: SVE-01_S_071719 **York Sample ID:** 19G0825-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0825	170157201	Vapor Extraction	July 17, 2019 1:00 pm	07/18/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
100-41-4	Ethyl Benzene	ND		ug/m³	50	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
87-68-3	Hexachlorobutadiene	ND		ug/m³	120	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
67-63-0	Isopropanol	ND	IS-LO	ug/m³	56	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
80-62-6	Methyl Methacrylate	ND		ug/m³	47	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
1634-04-4	Methyl tert-butyl ether (MTBE)	ND	IS-LO	ug/m³	41	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-09-2	Methylene chloride	ND	IS-LO	ug/m³	79	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
142-82-5	n-Heptane	ND	IS-LO	ug/m³	47	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
110-54-3	n-Hexane	ND	IS-LO	ug/m³	40	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-47-6	o-Xylene	ND		ug/m³	50	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
179601-23-1	p- & m- Xylenes	ND		ug/m³	99	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
622-96-8	* p-Ethyltoluene	ND		ug/m³	56	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:			
115-07-1	* Propylene	ND	IS-LO	ug/m³	20	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:			
100-42-5	Styrene	ND		ug/m³	49	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
127-18-4	**Tetrachloroethylene**	**970000**		ug/m³	1500	8699	EPA TO-15	07/24/2019 07:00	07/25/2019 03:29	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
109-99-9	* Tetrahydrofuran	ND	IS-LO	ug/m³	67	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:			
108-88-3	Toluene	ND		ug/m³	43	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
156-60-5	**trans-1,2-Dichloroethylene**	**410**	IS-LO	ug/m³	45	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	52	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-01-6	**Trichloroethylene**	**22000**		ug/m³	15	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-69-4	Trichlorofluoromethane (Freon 11)	ND	IS-LO	ug/m³	64	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-05-4	Vinyl acetate	ND	IS-LO	ug/m³	40	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
593-60-2	Vinyl bromide	ND	IS-LO	ug/m³	50	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		

Sample Information

Client Sample ID: SVE-01_S_071719 **York Sample ID:** 19G0825-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0825	170157201	Vapor Extraction	July 17, 2019 1:00 pm	07/18/2019

Volatile Organics, EPA TO15 Full List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-01-4	Vinyl Chloride	ND	IS-LO	ug/m³	7.3	114.3	EPA TO-15	07/24/2019 07:00	07/24/2019 17:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		

	Surrogate Recoveries	Result	Acceptance Range
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*103 %*	*70-130*

Sample Information

Client Sample ID: SVE-02_S_071819 **York Sample ID:** 19G0825-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0825	170157201	Vapor Extraction	July 18, 2019 10:09 am	07/18/2019

Volatile Organics, EPA TO15 Full List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* **1,1,1,2-Tetrachloroethane**	**1300**	IS-LO	ug/m³	91	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:			
71-55-6	**1,1,1-Trichloroethane**	**37000**		ug/m³	5300	9635	EPA TO-15	07/24/2019 07:00	07/25/2019 04:29	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-34-5	1,1,2,2-Tetrachloroethane	ND	IS-LO	ug/m³	91	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	100	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	72	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-34-3	**1,1-Dichloroethane**	**560**		ug/m³	54	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-35-4	**1,1-Dichloroethylene**	**120**		ug/m³	13	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
120-82-1	1,2,4-Trichlorobenzene	ND	IS-LO	ug/m³	98	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-63-6	**1,2,4-Trimethylbenzene**	**110**	IS-LO	ug/m³	65	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
106-93-4	1,2-Dibromoethane	ND		ug/m³	100	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-50-1	1,2-Dichlorobenzene	ND	IS-LO	ug/m³	80	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
107-06-2	1,2-Dichloroethane	ND		ug/m³	54	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
78-87-5	1,2-Dichloropropane	ND		ug/m³	61	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	92	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-67-8	**1,3,5-Trimethylbenzene**	**190**	IS-LO	ug/m³	65	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
106-99-0	1,3-Butadiene	ND		ug/m³	88	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
541-73-1	1,3-Dichlorobenzene	ND	IS-LO	ug/m³	80	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
142-28-9	* 1,3-Dichloropropane	ND		ug/m³	61	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:			
106-46-7	1,4-Dichlorobenzene	ND	IS-LO	ug/m³	80	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
123-91-1	1,4-Dioxane	ND		ug/m³	95	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
78-93-3	2-Butanone	ND		ug/m³	39	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
591-78-6	* 2-Hexanone	ND		ug/m³	110	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:			

Sample Information

Client Sample ID: SVE-02_S_071819 **York Sample ID:** 19G0825-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0825	170157201	Vapor Extraction	July 18, 2019 10:09 am	07/18/2019

Volatile Organics, EPA TO15 Full List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
107-05-1	3-Chloropropene	ND		ug/m³	210	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
108-10-1	4-Methyl-2-pentanone	ND		ug/m³	54	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
67-64-1	Acetone	ND		ug/m³	63	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
107-13-1	Acrylonitrile	ND		ug/m³	29	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
71-43-2	**Benzene**	**440**		ug/m³	42	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
100-44-7	Benzyl chloride	ND	IS-LO	ug/m³	68	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-27-4	Bromodichloromethane	ND		ug/m³	89	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-25-2	Bromoform	ND	IS-LO	ug/m³	140	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
74-83-9	Bromomethane	ND		ug/m³	51	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-15-0	Carbon disulfide	ND		ug/m³	41	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
56-23-5	Carbon tetrachloride	ND		ug/m³	21	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
108-90-7	Chlorobenzene	ND	IS-LO	ug/m³	61	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-00-3	Chloroethane	ND		ug/m³	35	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
67-66-3	**Chloroform**	**2300**		ug/m³	65	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
74-87-3	Chloromethane	ND		ug/m³	27	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
156-59-2	**cis-1,2-Dichloroethylene**	**40000**		ug/m³	960	9635	EPA TO-15	07/24/2019 07:00	07/25/2019 04:29	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	60	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
110-82-7	**Cyclohexane**	**7600**		ug/m³	46	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
124-48-1	Dibromochloromethane	ND		ug/m³	110	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-71-8	Dichlorodifluoromethane	ND		ug/m³	65	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
141-78-6	* Ethyl acetate	ND		ug/m³	95	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:			
100-41-4	**Ethyl Benzene**	**350**	IS-LO	ug/m³	57	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			

Sample Information

Client Sample ID: SVE-02_S_071819 **York Sample ID:** 19G0825-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0825	170157201	Vapor Extraction	July 18, 2019 10:09 am	07/18/2019

Volatile Organics, EPA TO15 Full List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
87-68-3	Hexachlorobutadiene	ND	IS-LO	ug/m³	140	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
67-63-0	Isopropanol	ND		ug/m³	65	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
80-62-6	Methyl Methacrylate	ND		ug/m³	54	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
1634-04-4	**Methyl tert-butyl ether (MTBE)**	**560**		ug/m³	48	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-09-2	Methylene chloride	ND		ug/m³	92	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
142-82-5	n-Heptane	ND		ug/m³	54	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
110-54-3	n-Hexane	ND		ug/m³	47	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-47-6	**o-Xylene**	**2700**	IS-LO	ug/m³	57	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
179601-23-1	**p- & m- Xylenes**	**1200**	IS-LO	ug/m³	110	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
622-96-8	*** p-Ethyltoluene**	**130**	IS-LO	ug/m³	65	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:			
115-07-1	* Propylene	ND		ug/m³	23	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:			
100-42-5	Styrene	ND	IS-LO	ug/m³	56	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
127-18-4	**Tetrachloroethylene**	**34000000**		ug/m³	33000	192691	EPA TO-15	07/25/2019 07:00	07/25/2019 23:16	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
109-99-9	* Tetrahydrofuran	ND		ug/m³	78	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:			
108-88-3	**Toluene**	**570**		ug/m³	50	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
156-60-5	**trans-1,2-Dichloroethylene**	**480**		ug/m³	52	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	60	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-01-6	**Trichloroethylene**	**35000**		ug/m³	18	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-69-4	Trichlorofluoromethane (Freon 11)	ND		ug/m³	74	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-05-4	Vinyl acetate	ND		ug/m³	47	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
593-60-2	Vinyl bromide	ND		ug/m³	58	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-01-4	Vinyl Chloride	ND		ug/m³	8.5	132.3	EPA TO-15	07/24/2019 07:00	07/24/2019 16:56	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		

Sample Information

Client Sample ID: SVE-02_S_071819 **York Sample ID:** 19G0825-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0825	170157201	Vapor Extraction	July 18, 2019 10:09 am	07/18/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate Recoveries	**Result**		**Acceptance Range**						
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*111 %*	IS-LO	*70-130*						

Sample Information

Client Sample ID: SVE-02_D_071819 **York Sample ID:** 19G0825-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0825	170157201	Vapor Extraction	July 18, 2019 1:22 pm	07/18/2019

Volatile Organics, EPA TO15 Full List **Log-in Notes:** **Sample Notes:** TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m³	78	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:			
71-55-6	**1,1,1-Trichloroethane**	**2200**		ug/m³	62	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	78	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	87	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	62	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-34-3	**1,1-Dichloroethane**	**390**		ug/m³	46	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-35-4	**1,1-Dichloroethylene**	**45**		ug/m³	11	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m³	85	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/m³	56	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
106-93-4	1,2-Dibromoethane	ND		ug/m³	88	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	69	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
107-06-2	1,2-Dichloroethane	ND		ug/m³	46	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
78-87-5	1,2-Dichloropropane	ND		ug/m³	53	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	80	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/m³	56	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
106-99-0	1,3-Butadiene	ND		ug/m³	76	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	69	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
142-28-9	* 1,3-Dichloropropane	ND		ug/m³	53	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:			
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	69	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
123-91-1	1,4-Dioxane	ND		ug/m³	82	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
78-93-3	2-Butanone	ND		ug/m³	34	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
591-78-6	* 2-Hexanone	ND		ug/m³	93	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:			

Sample Information

Client Sample ID: SVE-02_D_071819 **York Sample ID:** 19G0825-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0825	170157201	Vapor Extraction	July 18, 2019 1:22 pm	07/18/2019

Volatile Organics, EPA TO15 Full List **Log-in Notes:** **Sample Notes:** TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
107-05-1	3-Chloropropene	ND		ug/m³	180	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-10-1	4-Methyl-2-pentanone	ND		ug/m³	47	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
67-64-1	Acetone	ND		ug/m³	54	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
107-13-1	Acrylonitrile	ND		ug/m³	25	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
71-43-2	Benzene	ND		ug/m³	36	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
100-44-7	Benzyl chloride	ND		ug/m³	59	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-27-4	Bromodichloromethane	ND		ug/m³	76	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-25-2	Bromoform	ND		ug/m³	120	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
74-83-9	Bromomethane	ND		ug/m³	44	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-15-0	Carbon disulfide	ND		ug/m³	36	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
56-23-5	Carbon tetrachloride	ND		ug/m³	18	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-90-7	Chlorobenzene	ND		ug/m³	53	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-00-3	Chloroethane	ND		ug/m³	30	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
67-66-3	**Chloroform**	**100**		ug/m³	56	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
74-87-3	Chloromethane	ND		ug/m³	24	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
156-59-2	**cis-1,2-Dichloroethylene**	**12000**		ug/m³	11	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	52	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
110-82-7	Cyclohexane	ND		ug/m³	39	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
124-48-1	Dibromochloromethane	ND		ug/m³	97	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-71-8	Dichlorodifluoromethane	ND		ug/m³	56	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
141-78-6	* Ethyl acetate	ND		ug/m³	82	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:			
100-41-4	Ethyl Benzene	ND		ug/m³	50	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		

Sample Information

Client Sample ID: SVE-02_D_071819 **York Sample ID:** 19G0825-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0825	170157201	Vapor Extraction	July 18, 2019 1:22 pm	07/18/2019

Volatile Organics, EPA TO15 Full List **Log-in Notes:** **Sample Notes:** TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
87-68-3	Hexachlorobutadiene	ND		ug/m³	120	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
67-63-0	Isopropanol	ND		ug/m³	56	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
80-62-6	Methyl Methacrylate	ND		ug/m³	47	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m³	41	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-09-2	Methylene chloride	ND		ug/m³	79	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
142-82-5	n-Heptane	ND		ug/m³	47	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
110-54-3	n-Hexane	ND		ug/m³	40	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-47-6	o-Xylene	ND		ug/m³	50	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
179601-23-1	p- & m- Xylenes	ND		ug/m³	99	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
622-96-8	* p-Ethyltoluene	ND		ug/m³	56	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:			
115-07-1	* Propylene	ND		ug/m³	20	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:			
100-42-5	Styrene	ND		ug/m³	49	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
127-18-4	**Tetrachloroethylene**	**1600000**		ug/m³	1400	8257	EPA TO-15	07/24/2019 07:00	07/25/2019 05:29	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
109-99-9	* Tetrahydrofuran	ND		ug/m³	67	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:			
108-88-3	Toluene	ND		ug/m³	43	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
156-60-5	**trans-1,2-Dichloroethylene**	**180**		ug/m³	45	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	52	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-01-6	**Trichloroethylene**	**12000**		ug/m³	15	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-69-4	Trichlorofluoromethane (Freon 11)	ND		ug/m³	64	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-05-4	Vinyl acetate	ND		ug/m³	40	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
593-60-2	Vinyl bromide	ND		ug/m³	50	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-01-4	Vinyl Chloride	ND		ug/m³	7.3	114.1	EPA TO-15	07/18/2019 18:00	07/19/2019 18:50	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		

Sample Information

Client Sample ID: SVE-02_D_071819 **York Sample ID:** 19G0825-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0825	170157201	Vapor Extraction	July 18, 2019 1:22 pm	07/18/2019

Volatile Organics, EPA TO15 Full List **Log-in Notes:** **Sample Notes:** TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate Recoveries	**Result**		**Acceptance Range**						
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*98.7 %*		*70-130*						

Analytical Batch Summary

Batch ID: BG91038 **Preparation Method:** EPA TO15 PREP **Prepared By:** AS

YORK Sample ID	Client Sample ID	Preparation Date
19G0825-03	SVE-02_D_071819	07/18/19
BG91038-BLK1	Blank	07/18/19
BG91038-BS1	LCS	07/18/19

Batch ID: BG91186 **Preparation Method:** EPA TO15 PREP **Prepared By:** AS

YORK Sample ID	Client Sample ID	Preparation Date
19G0825-01	SVE-01_S_071719	07/24/19
19G0825-01RE1	SVE-01_S_071719	07/24/19
19G0825-02	SVE-02_S_071819	07/24/19
19G0825-02RE1	SVE-02_S_071819	07/24/19
19G0825-03RE1	SVE-02_D_071819	07/24/19
BG91186-BLK1	Blank	07/24/19
BG91186-BS1	LCS	07/24/19

Batch ID: BG91483 **Preparation Method:** EPA TO15 PREP **Prepared By:** AS

YORK Sample ID	Client Sample ID	Preparation Date
19G0825-02RE2	SVE-02_S_071819	07/25/19
BG91483-BLK1	Blank	07/25/19
BG91483-BS1	LCS	07/25/19

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91038 - EPA TO15 PREP											
Blank (BG91038-BLK1)											Prepared & Analyzed: 07/18/2019
1,1,1,2-Tetrachloroethane	ND	0.69	ug/m³								
1,1,1-Trichloroethane	ND	0.55	"								
1,1,2,2-Tetrachloroethane	ND	0.69	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.77	"								
1,1,2-Trichloroethane	ND	0.55	"								
1,1-Dichloroethane	ND	0.40	"								
1,1-Dichloroethylene	ND	0.099	"								
1,2,4-Trichlorobenzene	ND	0.74	"								
1,2,4-Trimethylbenzene	ND	0.49	"								
1,2-Dibromoethane	ND	0.77	"								
1,2-Dichlorobenzene	ND	0.60	"								
1,2-Dichloroethane	ND	0.40	"								
1,2-Dichloropropane	ND	0.46	"								
1,2-Dichlorotetrafluoroethane	ND	0.70	"								
1,3,5-Trimethylbenzene	ND	0.49	"								
1,3-Butadiene	ND	0.66	"								
1,3-Dichlorobenzene	ND	0.60	"								
1,3-Dichloropropane	ND	0.46	"								
1,4-Dichlorobenzene	ND	0.60	"								
1,4-Dioxane	ND	0.72	"								
2-Butanone	ND	0.29	"								
2-Hexanone	ND	0.82	"								
3-Chloropropene	ND	1.6	"								
4-Methyl-2-pentanone	ND	0.41	"								
Acetone	ND	0.48	"								
Acrylonitrile	ND	0.22	"								
Benzene	ND	0.32	"								
Benzyl chloride	ND	0.52	"								
Bromodichloromethane	ND	0.67	"								
Bromoform	ND	1.0	"								
Bromomethane	ND	0.39	"								
Carbon disulfide	ND	0.31	"								
Carbon tetrachloride	ND	0.16	"								
Chlorobenzene	ND	0.46	"								
Chloroethane	ND	0.26	"								
Chloroform	ND	0.49	"								
Chloromethane	ND	0.21	"								
cis-1,2-Dichloroethylene	ND	0.099	"								
cis-1,3-Dichloropropylene	ND	0.45	"								
Cyclohexane	ND	0.34	"								
Dibromochloromethane	ND	0.85	"								
Dichlorodifluoromethane	ND	0.49	"								
Ethyl acetate	ND	0.72	"								
Ethyl Benzene	ND	0.43	"								
Hexachlorobutadiene	ND	1.1	"								
Isopropanol	ND	0.49	"								
Methyl Methacrylate	ND	0.41	"								
Methyl tert-butyl ether (MTBE)	ND	0.36	"								
Methylene chloride	ND	0.69	"								
n-Heptane	ND	0.41	"								

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91038 - EPA TO15 PREP											
Blank (BG91038-BLK1)								Prepared & Analyzed: 07/18/2019			
n-Hexane	ND	0.35	ug/m³								
o-Xylene	ND	0.43	"								
p- & m- Xylenes	ND	0.87	"								
p-Ethyltoluene	ND	0.49	"								
Propylene	ND	0.17	"								
Styrene	ND	0.43	"								
Tetrachloroethylene	ND	0.17	"								
Tetrahydrofuran	ND	0.59	"								
Toluene	ND	0.38	"								
trans-1,2-Dichloroethylene	ND	0.40	"								
trans-1,3-Dichloropropylene	ND	0.45	"								
Trichloroethylene	ND	0.13	"								
Trichlorofluoromethane (Freon 11)	ND	0.56	"								
Vinyl acetate	ND	0.35	"								
Vinyl bromide	ND	0.44	"								
Vinyl Chloride	ND	0.064	"								
Surrogate: SURR: p-Bromofluorobenzene	*8.88*		*ppbv*	*10.0*		*88.8*	*70-130*				
LCS (BG91038-BS1)								Prepared & Analyzed: 07/18/2019			
1,1,1,2-Tetrachloroethane	9.78		ppbv	10.0		97.8	70-130				
1,1,1-Trichloroethane	10.9		"	10.0		109	70-130				
1,1,2,2-Tetrachloroethane	9.73		"	10.0		97.3	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.6		"	10.0		106	70-130				
1,1,2-Trichloroethane	9.85		"	10.0		98.5	70-130				
1,1-Dichloroethane	10.1		"	10.0		101	70-130				
1,1-Dichloroethylene	9.54		"	10.0		95.4	70-130				
1,2,4-Trichlorobenzene	9.12		"	10.0		91.2	70-130				
1,2,4-Trimethylbenzene	9.80		"	10.0		98.0	70-130				
1,2-Dibromoethane	10.0		"	10.0		100	70-130				
1,2-Dichlorobenzene	11.2		"	10.0		112	70-130				
1,2-Dichloroethane	10.0		"	10.0		100	70-130				
1,2-Dichloropropane	9.28		"	10.0		92.8	70-130				
1,2-Dichlorotetrafluoroethane	10.6		"	10.0		106	70-130				
1,3,5-Trimethylbenzene	9.83		"	10.0		98.3	70-130				
1,3-Butadiene	10.5		"	10.0		105	70-130				
1,3-Dichlorobenzene	10.9		"	10.0		109	70-130				
1,3-Dichloropropane	9.48		"	10.0		94.8	70-130				
1,4-Dichlorobenzene	11.1		"	10.0		111	70-130				
1,4-Dioxane	7.42		"	10.0		74.2	70-130				
2-Butanone	8.74		"	10.0		87.4	70-130				
2-Hexanone	8.63		"	10.0		86.3	70-130				
3-Chloropropene	9.83		"	10.0		98.3	70-130				
4-Methyl-2-pentanone	7.92		"	10.0		79.2	70-130				
Acetone	11.0		"	10.0		110	70-130				
Acrylonitrile	8.90		"	10.0		89.0	70-130				
Benzene	10.5		"	10.0		105	70-130				
Benzyl chloride	12.2		"	10.0		122	70-130				
Bromodichloromethane	9.93		"	10.0		99.3	70-130				
Bromoform	11.2		"	10.0		112	70-130				
Bromomethane	10.5		"	10.0		105	70-130				
Carbon disulfide	11.0		"	10.0		110	70-130				

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91038 - EPA TO15 PREP											
LCS (BG91038-BS1)								Prepared & Analyzed: 07/18/2019			
Carbon tetrachloride	10.7		ppbv	10.0		107	70-130				
Chlorobenzene	9.85		"	10.0		98.5	70-130				
Chloroethane	10.5		"	10.0		105	70-130				
Chloroform	10.3		"	10.0		103	70-130				
Chloromethane	8.65		"	10.0		86.5	70-130				
cis-1,2-Dichloroethylene	9.10		"	10.0		91.0	70-130				
cis-1,3-Dichloropropylene	10.1		"	10.0		101	70-130				
Cyclohexane	10.2		"	10.0		102	70-130				
Dibromochloromethane	10.2		"	10.0		102	70-130				
Dichlorodifluoromethane	10.7		"	10.0		107	70-130				
Ethyl acetate	9.80		"	10.0		98.0	70-130				
Ethyl Benzene	9.52		"	10.0		95.2	70-130				
Hexachlorobutadiene	12.2		"	10.0		122	70-130				
Isopropanol	8.18		"	10.0		81.8	70-130				
Methyl Methacrylate	8.89		"	10.0		88.9	70-130				
Methyl tert-butyl ether (MTBE)	10.0		"	10.0		100	70-130				
Methylene chloride	9.42		"	10.0		94.2	70-130				
n-Heptane	9.86		"	10.0		98.6	70-130				
n-Hexane	10.2		"	10.0		102	70-130				
o-Xylene	9.73		"	10.0		97.3	70-130				
p- & m- Xylenes	19.5		"	20.0		97.3	70-130				
p-Ethyltoluene	10.5		"	10.0		105	70-130				
Propylene	9.09		"	10.0		90.9	70-130				
Styrene	10.3		"	10.0		103	70-130				
Tetrachloroethylene	9.65		"	10.0		96.5	70-130				
Tetrahydrofuran	8.92		"	10.0		89.2	70-130				
Toluene	9.35		"	10.0		93.5	70-130				
trans-1,2-Dichloroethylene	10.3		"	10.0		103	70-130				
trans-1,3-Dichloropropylene	9.31		"	10.0		93.1	70-130				
Trichloroethylene	9.31		"	10.0		93.1	70-130				
Trichlorofluoromethane (Freon 11)	10.8		"	10.0		108	70-130				
Vinyl acetate	9.25		"	10.0		92.5	70-130				
Vinyl bromide	11.1		"	10.0		111	70-130				
Vinyl Chloride	10.7		"	10.0		107	70-130				
Surrogate: SURR: p-Bromofluorobenzene	*10.2*		*"*	*10.0*		*102*	*70-130*				

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91186 - EPA TO15 PREP											
Blank (BG91186-BLK1)											
1,1,1,2-Tetrachloroethane	ND	0.69	ug/m³								
1,1,1-Trichloroethane	ND	0.55	"								
1,1,2,2-Tetrachloroethane	ND	0.69	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.77	"								
1,1,2-Trichloroethane	ND	0.55	"								
1,1-Dichloroethane	ND	0.40	"								
1,1-Dichloroethylene	ND	0.099	"								
1,2,4-Trichlorobenzene	ND	0.74	"								
1,2,4-Trimethylbenzene	ND	0.49	"								
1,2-Dibromoethane	ND	0.77	"								
1,2-Dichlorobenzene	ND	0.60	"								
1,2-Dichloroethane	ND	0.40	"								
1,2-Dichloropropane	ND	0.46	"								
1,2-Dichlorotetrafluoroethane	ND	0.70	"								
1,3,5-Trimethylbenzene	ND	0.49	"								
1,3-Butadiene	ND	0.66	"								
1,3-Dichlorobenzene	ND	0.60	"								
1,3-Dichloropropane	ND	0.46	"								
1,4-Dichlorobenzene	ND	0.60	"								
1,4-Dioxane	ND	0.72	"								
2-Butanone	ND	0.29	"								
2-Hexanone	ND	0.82	"								
3-Chloropropene	ND	1.6	"								
4-Methyl-2-pentanone	ND	0.41	"								
Acetone	ND	0.48	"								
Acrylonitrile	ND	0.22	"								
Benzene	ND	0.32	"								
Benzyl chloride	ND	0.52	"								
Bromodichloromethane	ND	0.67	"								
Bromoform	ND	1.0	"								
Bromomethane	ND	0.39	"								
Carbon disulfide	ND	0.31	"								
Carbon tetrachloride	ND	0.16	"								
Chlorobenzene	ND	0.46	"								
Chloroethane	ND	0.26	"								
Chloroform	ND	0.49	"								
Chloromethane	ND	0.21	"								
cis-1,2-Dichloroethylene	ND	0.099	"								
cis-1,3-Dichloropropylene	ND	0.45	"								
Cyclohexane	ND	0.34	"								
Dibromochloromethane	ND	0.85	"								
Dichlorodifluoromethane	ND	0.49	"								
Ethyl acetate	ND	0.72	"								
Ethyl Benzene	ND	0.43	"								
Hexachlorobutadiene	ND	1.1	"								
Isopropanol	ND	0.49	"								
Methyl Methacrylate	ND	0.41	"								
Methyl tert-butyl ether (MTBE)	ND	0.36	"								
Methylene chloride	ND	0.69	"								
n-Heptane	ND	0.41	"								
n-Hexane	ND	0.35	"								

Prepared & Analyzed: 07/24/2019

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91186 - EPA TO15 PREP											
Blank (BG91186-BLK1)								Prepared & Analyzed: 07/24/2019			
o-Xylene	ND	0.43	ug/m³								
p- & m- Xylenes	ND	0.87	"								
p-Ethyltoluene	ND	0.49	"								
Propylene	ND	0.17	"								
Styrene	ND	0.43	"								
Tetrachloroethylene	ND	0.17	"								
Tetrahydrofuran	ND	0.59	"								
Toluene	ND	0.38	"								
trans-1,2-Dichloroethylene	ND	0.40	"								
trans-1,3-Dichloropropylene	ND	0.45	"								
Trichloroethylene	ND	0.13	"								
Trichlorofluoromethane (Freon 11)	ND	0.56	"								
Vinyl acetate	ND	0.35	"								
Vinyl bromide	ND	0.44	"								
Vinyl Chloride	ND	0.064	"								
Surrogate: SURR: p-Bromofluorobenzene	*8.88*		*ppbv*	*10.0*		*88.8*	*70-130*				
LCS (BG91186-BS1)								Prepared & Analyzed: 07/24/2019			
1,1,1,2-Tetrachloroethane	10.2		ppbv	10.0		102	70-130				
1,1,1-Trichloroethane	10.5		"	10.0		105	70-130				
1,1,2,2-Tetrachloroethane	9.62		"	10.0		96.2	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	9.92		"	10.0		99.2	70-130				
1,1,2-Trichloroethane	9.57		"	10.0		95.7	70-130				
1,1-Dichloroethane	9.86		"	10.0		98.6	70-130				
1,1-Dichloroethylene	9.64		"	10.0		96.4	70-130				
1,2,4-Trichlorobenzene	8.54		"	10.0		85.4	70-130				
1,2,4-Trimethylbenzene	9.70		"	10.0		97.0	70-130				
1,2-Dibromoethane	10.2		"	10.0		102	70-130				
1,2-Dichlorobenzene	11.1		"	10.0		111	70-130				
1,2-Dichloroethane	10.2		"	10.0		102	70-130				
1,2-Dichloropropane	9.53		"	10.0		95.3	70-130				
1,2-Dichlorotetrafluoroethane	7.99		"	10.0		79.9	70-130				
1,3,5-Trimethylbenzene	9.92		"	10.0		99.2	70-130				
1,3-Butadiene	7.81		"	10.0		78.1	70-130				
1,3-Dichlorobenzene	11.1		"	10.0		111	70-130				
1,3-Dichloropropane	9.51		"	10.0		95.1	70-130				
1,4-Dichlorobenzene	11.2		"	10.0		112	70-130				
1,4-Dioxane	7.48		"	10.0		74.8	70-130				
2-Butanone	8.97		"	10.0		89.7	70-130				
2-Hexanone	8.84		"	10.0		88.4	70-130				
3-Chloropropene	10.6		"	10.0		106	70-130				
4-Methyl-2-pentanone	8.49		"	10.0		84.9	70-130				
Acetone	11.0		"	10.0		110	70-130				
Acrylonitrile	9.24		"	10.0		92.4	70-130				
Benzene	9.36		"	10.0		93.6	70-130				
Benzyl chloride	11.8		"	10.0		118	70-130				
Bromodichloromethane	9.93		"	10.0		99.3	70-130				
Bromoform	11.7		"	10.0		117	70-130				
Bromomethane	10.6		"	10.0		106	70-130				
Carbon disulfide	10.0		"	10.0		100	70-130				
Carbon tetrachloride	10.4		"	10.0		104	70-130				

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91186 - EPA TO15 PREP											
LCS (BG91186-BS1)								Prepared & Analyzed: 07/24/2019			
Chlorobenzene	10.1		ppbv	10.0		101	70-130				
Chloroethane	10.8		"	10.0		108	70-130				
Chloroform	9.77		"	10.0		97.7	70-130				
Chloromethane	6.60		"	10.0		66.0	70-130	Low Bias			
cis-1,2-Dichloroethylene	9.14		"	10.0		91.4	70-130				
cis-1,3-Dichloropropylene	10.3		"	10.0		103	70-130				
Cyclohexane	10.4		"	10.0		104	70-130				
Dibromochloromethane	10.6		"	10.0		106	70-130				
Dichlorodifluoromethane	8.90		"	10.0		89.0	70-130				
Ethyl acetate	9.80		"	10.0		98.0	70-130				
Ethyl Benzene	9.47		"	10.0		94.7	70-130				
Hexachlorobutadiene	11.6		"	10.0		116	70-130				
Isopropanol	8.93		"	10.0		89.3	70-130				
Methyl Methacrylate	8.76		"	10.0		87.6	70-130				
Methyl tert-butyl ether (MTBE)	9.82		"	10.0		98.2	70-130				
Methylene chloride	9.75		"	10.0		97.5	70-130				
n-Heptane	9.95		"	10.0		99.5	70-130				
n-Hexane	10.5		"	10.0		105	70-130				
o-Xylene	9.60		"	10.0		96.0	70-130				
p- & m- Xylenes	18.7		"	20.0		93.5	70-130				
p-Ethyltoluene	10.2		"	10.0		102	70-130				
Propylene	8.43		"	10.0		84.3	70-130				
Styrene	10.2		"	10.0		102	70-130				
Tetrachloroethylene	9.89		"	10.0		98.9	70-130				
Tetrahydrofuran	9.23		"	10.0		92.3	70-130				
Toluene	9.16		"	10.0		91.6	70-130				
trans-1,2-Dichloroethylene	10.4		"	10.0		104	70-130				
trans-1,3-Dichloropropylene	9.55		"	10.0		95.5	70-130				
Trichloroethylene	9.61		"	10.0		96.1	70-130				
Trichlorofluoromethane (Freon 11)	10.4		"	10.0		104	70-130				
Vinyl acetate	9.35		"	10.0		93.5	70-130				
Vinyl bromide	11.0		"	10.0		110	70-130				
Vinyl Chloride	8.16		"	10.0		81.6	70-130				
Surrogate: SURR: p-Bromofluorobenzene	*10.5*		*"*	*10.0*		*105*	*70-130*				

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91483 - EPA TO15 PREP											
Blank (BG91483-BLK1)											Prepared & Analyzed: 07/25/2019
1,1,1,2-Tetrachloroethane	ND	0.69	ug/m³								
1,1,1-Trichloroethane	ND	0.55	"								
1,1,2,2-Tetrachloroethane	ND	0.69	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.77	"								
1,1,2-Trichloroethane	ND	0.55	"								
1,1-Dichloroethane	ND	0.40	"								
1,1-Dichloroethylene	ND	0.099	"								
1,2,4-Trichlorobenzene	ND	0.74	"								
1,2,4-Trimethylbenzene	ND	0.49	"								
1,2-Dibromoethane	ND	0.77	"								
1,2-Dichlorobenzene	ND	0.60	"								
1,2-Dichloroethane	ND	0.40	"								
1,2-Dichloropropane	ND	0.46	"								
1,2-Dichlorotetrafluoroethane	ND	0.70	"								
1,3,5-Trimethylbenzene	ND	0.49	"								
1,3-Butadiene	ND	0.66	"								
1,3-Dichlorobenzene	ND	0.60	"								
1,3-Dichloropropane	ND	0.46	"								
1,4-Dichlorobenzene	ND	0.60	"								
1,4-Dioxane	ND	0.72	"								
2-Butanone	ND	0.29	"								
2-Hexanone	ND	0.82	"								
3-Chloropropene	ND	1.6	"								
4-Methyl-2-pentanone	ND	0.41	"								
Acetone	ND	0.48	"								
Acrylonitrile	ND	0.22	"								
Benzene	ND	0.32	"								
Benzyl chloride	ND	0.52	"								
Bromodichloromethane	ND	0.67	"								
Bromoform	ND	1.0	"								
Bromomethane	ND	0.39	"								
Carbon disulfide	ND	0.31	"								
Carbon tetrachloride	ND	0.16	"								
Chlorobenzene	ND	0.46	"								
Chloroethane	ND	0.26	"								
Chloroform	ND	0.49	"								
Chloromethane	ND	0.21	"								
cis-1,2-Dichloroethylene	ND	0.099	"								
cis-1,3-Dichloropropylene	ND	0.45	"								
Cyclohexane	ND	0.34	"								
Dibromochloromethane	ND	0.85	"								
Dichlorodifluoromethane	ND	0.49	"								
Ethyl acetate	ND	0.72	"								
Ethyl Benzene	ND	0.43	"								
Hexachlorobutadiene	ND	1.1	"								
Isopropanol	ND	0.49	"								
Methyl Methacrylate	ND	0.41	"								
Methyl tert-butyl ether (MTBE)	ND	0.36	"								
Methylene chloride	ND	0.69	"								
n-Heptane	ND	0.41	"								
n-Hexane	ND	0.35	"								

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91483 - EPA TO15 PREP											
Blank (BG91483-BLK1)								Prepared & Analyzed: 07/25/2019			
o-Xylene	ND	0.43	ug/m³								
p- & m- Xylenes	ND	0.87	"								
p-Ethyltoluene	ND	0.49	"								
Propylene	ND	0.17	"								
Styrene	ND	0.43	"								
Tetrachloroethylene	ND	0.17	"								
Tetrahydrofuran	ND	0.59	"								
Toluene	ND	0.38	"								
trans-1,2-Dichloroethylene	ND	0.40	"								
trans-1,3-Dichloropropylene	ND	0.45	"								
Trichloroethylene	ND	0.13	"								
Trichlorofluoromethane (Freon 11)	ND	0.56	"								
Vinyl acetate	ND	0.35	"								
Vinyl bromide	ND	0.44	"								
Vinyl Chloride	ND	0.064	"								
Surrogate: SURR: p-Bromofluorobenzene	*8.77*		*ppbv*	*10.0*		*87.7*	*70-130*				
LCS (BG91483-BS1)								Prepared & Analyzed: 07/25/2019			
1,1,1,2-Tetrachloroethane	10.0		ppbv	10.0		100	70-130				
1,1,1-Trichloroethane	11.1		"	10.0		111	70-130				
1,1,2,2-Tetrachloroethane	9.48		"	10.0		94.8	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.6		"	10.0		106	70-130				
1,1,2-Trichloroethane	9.44		"	10.0		94.4	70-130				
1,1-Dichloroethane	10.2		"	10.0		102	70-130				
1,1-Dichloroethylene	9.72		"	10.0		97.2	70-130				
1,2,4-Trichlorobenzene	9.04		"	10.0		90.4	70-130				
1,2,4-Trimethylbenzene	9.61		"	10.0		96.1	70-130				
1,2-Dibromoethane	10.0		"	10.0		100	70-130				
1,2-Dichlorobenzene	11.4		"	10.0		114	70-130				
1,2-Dichloroethane	10.2		"	10.0		102	70-130				
1,2-Dichloropropane	9.01		"	10.0		90.1	70-130				
1,2-Dichlorotetrafluoroethane	8.90		"	10.0		89.0	70-130				
1,3,5-Trimethylbenzene	9.81		"	10.0		98.1	70-130				
1,3-Butadiene	8.02		"	10.0		80.2	70-130				
1,3-Dichlorobenzene	11.2		"	10.0		112	70-130				
1,3-Dichloropropane	9.22		"	10.0		92.2	70-130				
1,4-Dichlorobenzene	11.4		"	10.0		114	70-130				
1,4-Dioxane	7.26		"	10.0		72.6	70-130				
2-Butanone	8.78		"	10.0		87.8	70-130				
2-Hexanone	7.86		"	10.0		78.6	70-130				
3-Chloropropene	10.0		"	10.0		100	70-130				
4-Methyl-2-pentanone	7.54		"	10.0		75.4	70-130				
Acetone	11.1		"	10.0		111	70-130				
Acrylonitrile	8.98		"	10.0		89.8	70-130				
Benzene	10.2		"	10.0		102	70-130				
Benzyl chloride	11.5		"	10.0		115	70-130				
Bromodichloromethane	9.50		"	10.0		95.0	70-130				
Bromoform	11.7		"	10.0		117	70-130				
Bromomethane	10.9		"	10.0		109	70-130				
Carbon disulfide	10.8		"	10.0		108	70-130				
Carbon tetrachloride	10.9		"	10.0		109	70-130				

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91483 - EPA TO15 PREP											
LCS (BG91483-BS1)								Prepared & Analyzed: 07/25/2019			
Chlorobenzene	10.1		ppbv	10.0		101	70-130				
Chloroethane	10.8		"	10.0		108	70-130				
Chloroform	10.3		"	10.0		103	70-130				
Chloromethane	6.63		"	10.0		66.3	70-130	Low Bias			
cis-1,2-Dichloroethylene	9.20		"	10.0		92.0	70-130				
cis-1,3-Dichloropropylene	9.99		"	10.0		99.9	70-130				
Cyclohexane	10.4		"	10.0		104	70-130				
Dibromochloromethane	10.4		"	10.0		104	70-130				
Dichlorodifluoromethane	9.80		"	10.0		98.0	70-130				
Ethyl acetate	9.71		"	10.0		97.1	70-130				
Ethyl Benzene	9.32		"	10.0		93.2	70-130				
Hexachlorobutadiene	12.0		"	10.0		120	70-130				
Isopropanol	8.48		"	10.0		84.8	70-130				
Methyl Methacrylate	8.54		"	10.0		85.4	70-130				
Methyl tert-butyl ether (MTBE)	10.4		"	10.0		104	70-130				
Methylene chloride	9.45		"	10.0		94.5	70-130				
n-Heptane	9.95		"	10.0		99.5	70-130				
n-Hexane	10.5		"	10.0		105	70-130				
o-Xylene	9.37		"	10.0		93.7	70-130				
p- & m- Xylenes	18.3		"	20.0		91.4	70-130				
p-Ethyltoluene	10.2		"	10.0		102	70-130				
Propylene	8.45		"	10.0		84.5	70-130				
Styrene	10.2		"	10.0		102	70-130				
Tetrachloroethylene	10.0		"	10.0		100	70-130				
Tetrahydrofuran	8.92		"	10.0		89.2	70-130				
Toluene	9.15		"	10.0		91.5	70-130				
trans-1,2-Dichloroethylene	10.6		"	10.0		106	70-130				
trans-1,3-Dichloropropylene	9.06		"	10.0		90.6	70-130				
Trichloroethylene	9.35		"	10.0		93.5	70-130				
Trichlorofluoromethane (Freon 11)	10.7		"	10.0		107	70-130				
Vinyl acetate	9.18		"	10.0		91.8	70-130				
Vinyl bromide	11.6		"	10.0		116	70-130				
Vinyl Chloride	8.29		"	10.0		82.9	70-130				
Surrogate: SURR: p-Bromofluorobenzene	*10.2*		*"*	*10.0*		*102*	*70-130*				

Sample and Data Qualifiers Relating to This Work Order

TO-VAC	The final vacuum in the canister was less than -2 inches Hg vacuum. The time integrated sampling may be affected and not reflect proper sampling over the time period. The data user should take note.
TO-LCS-L	The result reported for this compound may be biased low due to its behavior in the analysis batch LCS where it recovered less 70% of the expected value.
TO-CCV	The value reported is ESTIMATED for this compound due to its behavior during continuing calibration verification (>30% Difference from initial calibration).
IS-LO	The internal std associated with this target compound did not meet acceptance criteria (area <50% CCV) at the stated dilution due to matrix effects. Sample was rerun to confirm matrix effects.

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

York Analytical Laboratories, Inc.
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Field Chain-of-Custody Record - AIR

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document. This document serves as your written authorization for YORK to proceed with the analyses requested below. Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 19G0825

Page 1 of 1

YOUR Information	Report To:	Invoice To:	YOUR Project Number	Turn-Around Time
Company: LANGAN Engineering	Company:	Company:	A0157201	RUSH - Next Day
Address: 360 W 31st St New York, NY	Address:	Address:	YOUR Project Name: Acme Site No. 2 72 Anthony St	RUSH - Two Day
Phone: 2124795400	Phone:	Phone:		RUSH - Three Day
Contact: Patrick Farnham	Contact:	Contact:		RUSH - Four Day
E-mail: pfarnham@langan.com	E-mail:	E-mail:	YOUR PO#:	Standard (5-7 Day) X

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Katherine Racanelli

Samples Collected by: (print your name above and sign below)

KR

Air Matrix Codes	Samples From	Report / EDD Type (circle selections)			YORK Reg. Comp.
AI - Indoor Ambient Air	New York	X Summary Report	CT RCP	Standard Excel EDD	Compared to the following Regulation(s): (please fill in)
AO - Outdoor Amb. Air	New Jersey	QA Report	CT RCP DQA/DUE	EQuIS (Standard)	
AE - Vapor Extraction Well/ Process Gas/Effluent	Connecticut	NY ASP A Package	NJDEP Reduced Deliv.	NYSDEC EQuIS	
AS - Soil Vapor/Sub-Slab	Pennsylvania	NY ASP B Package	NJDKQP	NJDEP SRP HazSite	
	Other	Other:			

Certified Canisters: Batch ___ Individual ___

Please enter the following REQUIRED Field Data

Reporting Units: ug/m³ ___ ppbv ___ ppmv ___

Sample Identification	Date/Time Sampled	Air Matrix	Canister Vacuum Before Sampling (in Hg)	Canister Vacuum After Sampling (in Hg)	Canister ID	Flow Cont. ID	Analysis Requested
SVE-01-S-071719	7/17/19 1300	~~AS~~ AE	30	5	24108	N/A	TO-15 VOCS
SVE-02-S-071819	7/18/19 1009	~~AS~~ AE	30	5	18294	N/A	↓
SVE-02-D-071819	7/18/19 1322	~~AS~~ AE	30	7	24114	N/A	↓

Comments:

Detection Limits Required: ≤ 1 ug/m³ ___ NYSDEC V1 Limits ___ Routine Survey ___ Other ___

Sampling Media: 6 Liter Canister / Tedlar Bag

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
KR LANGAN	7/18/19 14:18	[signature] York	7-18-19 14:18	[signature]	7-18-19 1542
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by	Date/Time
				[signature]	7/18/19 1545

Technical Report

prepared for:

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Patrick Farnham

Report Date: 07/26/2019
Client Project ID: 170157201
York Project (SDG) No.: 19G0858

CT Cert. No. PH-0723 New Jersey Cert. No. CT005 and NY037 New York Cert. Nos. 10854 and 12058 PA Cert. No. 68-04440

120 RESEARCH DRIVE STRATFORD, CT 06615 ■ 132-02 89th AVENUE RICHMOND HILL, NY 11418
www.YORKLAB.com (203) 325-1371 FAX (203) 357-0166 ClientServices@yorklab.com

Report Date: 07/26/2019
Client Project ID: 170157201
York Project (SDG) No.: 19G0858

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Patrick Farnham

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on July 22, 2019 and listed below. The project was identified as your project: **170157201**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
19G0858-01	SVE-01_D_071919	Vapor Extraction	07/19/2019	07/22/2019

General Notes for York Project (SDG) No.: 19G0858

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By:

Date: 07/26/2019

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: SVE-01_D_071919 **York Sample ID:** 19G0858-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0858	170157201	Vapor Extraction	July 19, 2019 9:45 am	07/22/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	*** 1,1,1,2-Tetrachloroethane**	**160**		ug/m³	54	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:			
71-55-6	**1,1,1-Trichloroethane**	**5100**		ug/m³	43	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m³	54	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m³	60	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
79-00-5	1,1,2-Trichloroethane	ND		ug/m³	43	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-34-3	**1,1-Dichloroethane**	**390**		ug/m³	32	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
75-35-4	**1,1-Dichloroethylene**	**78**		ug/m³	7.8	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m³	58	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/m³	39	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
106-93-4	1,2-Dibromoethane	ND		ug/m³	60	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
95-50-1	1,2-Dichlorobenzene	ND		ug/m³	47	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
107-06-2	1,2-Dichloroethane	ND		ug/m³	32	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
78-87-5	1,2-Dichloropropane	ND		ug/m³	36	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m³	55	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/m³	39	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
106-99-0	1,3-Butadiene	ND		ug/m³	52	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
541-73-1	1,3-Dichlorobenzene	ND		ug/m³	47	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
142-28-9	* 1,3-Dichloropropane	ND		ug/m³	36	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:			
106-46-7	1,4-Dichlorobenzene	ND		ug/m³	47	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
123-91-1	1,4-Dioxane	ND		ug/m³	57	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
78-93-3	2-Butanone	ND		ug/m³	23	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:	NELAC-NY12058,NJDEP-Queens		
591-78-6	* 2-Hexanone	ND		ug/m³	64	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:			

Sample Information

Client Sample ID: SVE-01_D_071919 **York Sample ID:** 19G0858-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0858	170157201	Vapor Extraction	July 19, 2019 9:45 am	07/22/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
107-05-1	3-Chloropropene	ND		ug/m³	120	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
108-10-1	4-Methyl-2-pentanone	ND		ug/m³	32	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
67-64-1	**Acetone**	**47**		ug/m³	37	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
107-13-1	Acrylonitrile	ND		ug/m³	17	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
71-43-2	**Benzene**	**60**		ug/m³	25	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
100-44-7	Benzyl chloride	ND		ug/m³	41	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
75-27-4	Bromodichloromethane	ND		ug/m³	53	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
75-25-2	Bromoform	ND		ug/m³	81	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
74-83-9	Bromomethane	ND		ug/m³	31	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
75-15-0	Carbon disulfide	ND		ug/m³	24	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
56-23-5	Carbon tetrachloride	ND		ug/m³	12	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
108-90-7	Chlorobenzene	ND		ug/m³	36	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
75-00-3	Chloroethane	ND		ug/m³	21	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
67-66-3	**Chloroform**	**320**		ug/m³	38	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
74-87-3	Chloromethane	ND		ug/m³	16	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
156-59-2	**cis-1,2-Dichloroethylene**	**43000**		ug/m³	1500	15164	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/25/2019 07:00	07/25/2019 21:10	AS
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m³	36	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
110-82-7	**Cyclohexane**	**41**		ug/m³	27	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
124-48-1	Dibromochloromethane	ND		ug/m³	67	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
75-71-8	Dichlorodifluoromethane	ND		ug/m³	39	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
141-78-6	* Ethyl acetate	ND		ug/m³	57	78.65	EPA TO-15 Certifications:	07/24/2019 07:00	07/25/2019 01:24	AS
100-41-4	Ethyl Benzene	ND		ug/m³	34	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS
87-68-3	Hexachlorobutadiene	ND		ug/m³	84	78.65	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	07/24/2019 07:00	07/25/2019 01:24	AS

Sample Information

Client Sample ID: SVE-01_D_071919 **York Sample ID:** 19G0858-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G0858	170157201	Vapor Extraction	July 19, 2019 9:45 am	07/22/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
67-63-0	Isopropanol	ND		ug/m³	39	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
80-62-6	Methyl Methacrylate	ND		ug/m³	32	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
1634-04-4	**Methyl tert-butyl ether (MTBE)**	**110**		ug/m³	28	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-09-2	Methylene chloride	ND		ug/m³	55	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
142-82-5	n-Heptane	ND		ug/m³	32	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
110-54-3	n-Hexane	ND		ug/m³	28	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
95-47-6	o-Xylene	ND		ug/m³	34	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
179601-23-1	p- & m- Xylenes	ND		ug/m³	68	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
622-96-8	* p-Ethyltoluene	ND		ug/m³	39	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:			
115-07-1	* Propylene	ND		ug/m³	14	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:			
100-42-5	Styrene	ND		ug/m³	34	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
127-18-4	**Tetrachloroethylene**	**4100000**		ug/m³	2600	15164	EPA TO-15	07/25/2019 07:00	07/25/2019 21:10	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
109-99-9	* Tetrahydrofuran	ND		ug/m³	46	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications:			
108-88-3	Toluene	ND		ug/m³	30	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
156-60-5	**trans-1,2-Dichloroethylene**	**300**		ug/m³	31	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m³	36	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
79-01-6	**Trichloroethylene**	**15000**		ug/m³	11	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-69-4	Trichlorofluoromethane (Freon 11)	ND		ug/m³	44	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
108-05-4	Vinyl acetate	ND		ug/m³	28	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
593-60-2	Vinyl bromide	ND		ug/m³	34	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			
75-01-4	Vinyl Chloride	ND		ug/m³	5.0	78.65	EPA TO-15	07/24/2019 07:00	07/25/2019 01:24	AS
							Certifications: NELAC-NY12058,NJDEP-Queens			

	Surrogate Recoveries	Result	Acceptance Range
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*110 %*	*70-130*

Analytical Batch Summary

Batch ID: BG91186 **Preparation Method:** EPA TO15 PREP **Prepared By:** AS

YORK Sample ID	Client Sample ID	Preparation Date
19G0858-01	SVE-01_D_071919	07/24/19
BG91186-BLK1	Blank	07/24/19
BG91186-BS1	LCS	07/24/19

Batch ID: BG91483 **Preparation Method:** EPA TO15 PREP **Prepared By:** AS

YORK Sample ID	Client Sample ID	Preparation Date
19G0858-01RE1	SVE-01_D_071919	07/25/19
BG91483-BLK1	Blank	07/25/19
BG91483-BS1	LCS	07/25/19

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91186 - EPA TO15 PREP											
Blank (BG91186-BLK1)											Prepared & Analyzed: 07/24/2019
1,1,1,2-Tetrachloroethane	ND	0.69	ug/m³								
1,1,1-Trichloroethane	ND	0.55	"								
1,1,2,2-Tetrachloroethane	ND	0.69	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.77	"								
1,1,2-Trichloroethane	ND	0.55	"								
1,1-Dichloroethane	ND	0.40	"								
1,1-Dichloroethylene	ND	0.099	"								
1,2,4-Trichlorobenzene	ND	0.74	"								
1,2,4-Trimethylbenzene	ND	0.49	"								
1,2-Dibromoethane	ND	0.77	"								
1,2-Dichlorobenzene	ND	0.60	"								
1,2-Dichloroethane	ND	0.40	"								
1,2-Dichloropropane	ND	0.46	"								
1,2-Dichlorotetrafluoroethane	ND	0.70	"								
1,3,5-Trimethylbenzene	ND	0.49	"								
1,3-Butadiene	ND	0.66	"								
1,3-Dichlorobenzene	ND	0.60	"								
1,3-Dichloropropane	ND	0.46	"								
1,4-Dichlorobenzene	ND	0.60	"								
1,4-Dioxane	ND	0.72	"								
2-Butanone	ND	0.29	"								
2-Hexanone	ND	0.82	"								
3-Chloropropene	ND	1.6	"								
4-Methyl-2-pentanone	ND	0.41	"								
Acetone	ND	0.48	"								
Acrylonitrile	ND	0.22	"								
Benzene	ND	0.32	"								
Benzyl chloride	ND	0.52	"								
Bromodichloromethane	ND	0.67	"								
Bromoform	ND	1.0	"								
Bromomethane	ND	0.39	"								
Carbon disulfide	ND	0.31	"								
Carbon tetrachloride	ND	0.16	"								
Chlorobenzene	ND	0.46	"								
Chloroethane	ND	0.26	"								
Chloroform	ND	0.49	"								
Chloromethane	ND	0.21	"								
cis-1,2-Dichloroethylene	ND	0.099	"								
cis-1,3-Dichloropropylene	ND	0.45	"								
Cyclohexane	ND	0.34	"								
Dibromochloromethane	ND	0.85	"								
Dichlorodifluoromethane	ND	0.49	"								
Ethyl acetate	ND	0.72	"								
Ethyl Benzene	ND	0.43	"								
Hexachlorobutadiene	ND	1.1	"								
Isopropanol	ND	0.49	"								
Methyl Methacrylate	ND	0.41	"								
Methyl tert-butyl ether (MTBE)	ND	0.36	"								
Methylene chloride	ND	0.69	"								

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91186 - EPA TO15 PREP											
Blank (BG91186-BLK1)										Prepared & Analyzed: 07/24/2019	
n-Heptane	ND	0.41	ug/m³								
n-Hexane	ND	0.35	"								
o-Xylene	ND	0.43	"								
p- & m- Xylenes	ND	0.87	"								
p-Ethyltoluene	ND	0.49	"								
Propylene	ND	0.17	"								
Styrene	ND	0.43	"								
Tetrachloroethylene	ND	0.17	"								
Tetrahydrofuran	ND	0.59	"								
Toluene	ND	0.38	"								
trans-1,2-Dichloroethylene	ND	0.40	"								
trans-1,3-Dichloropropylene	ND	0.45	"								
Trichloroethylene	ND	0.13	"								
Trichlorofluoromethane (Freon 11)	ND	0.56	"								
Vinyl acetate	ND	0.35	"								
Vinyl bromide	ND	0.44	"								
Vinyl Chloride	ND	0.064	"								
Surrogate: SURR: p-Bromofluorobenzene	*8.88*		*ppbv*	*10.0*		*88.8*	*70-130*				
LCS (BG91186-BS1)										Prepared & Analyzed: 07/24/2019	
1,1,1,2-Tetrachloroethane	10.2		ppbv	10.0		102	70-130				
1,1,1-Trichloroethane	10.5		"	10.0		105	70-130				
1,1,2,2-Tetrachloroethane	9.62		"	10.0		96.2	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	9.92		"	10.0		99.2	70-130				
1,1,2-Trichloroethane	9.57		"	10.0		95.7	70-130				
1,1-Dichloroethane	9.86		"	10.0		98.6	70-130				
1,1-Dichloroethylene	9.64		"	10.0		96.4	70-130				
1,2,4-Trichlorobenzene	8.54		"	10.0		85.4	70-130				
1,2,4-Trimethylbenzene	9.70		"	10.0		97.0	70-130				
1,2-Dibromoethane	10.2		"	10.0		102	70-130				
1,2-Dichlorobenzene	11.1		"	10.0		111	70-130				
1,2-Dichloroethane	10.2		"	10.0		102	70-130				
1,2-Dichloropropane	9.53		"	10.0		95.3	70-130				
1,2-Dichlorotetrafluoroethane	7.99		"	10.0		79.9	70-130				
1,3,5-Trimethylbenzene	9.92		"	10.0		99.2	70-130				
1,3-Butadiene	7.81		"	10.0		78.1	70-130				
1,3-Dichlorobenzene	11.1		"	10.0		111	70-130				
1,3-Dichloropropane	9.51		"	10.0		95.1	70-130				
1,4-Dichlorobenzene	11.2		"	10.0		112	70-130				
1,4-Dioxane	7.48		"	10.0		74.8	70-130				
2-Butanone	8.97		"	10.0		89.7	70-130				
2-Hexanone	8.84		"	10.0		88.4	70-130				
3-Chloropropene	10.6		"	10.0		106	70-130				
4-Methyl-2-pentanone	8.49		"	10.0		84.9	70-130				
Acetone	11.0		"	10.0		110	70-130				
Acrylonitrile	9.24		"	10.0		92.4	70-130				
Benzene	9.36		"	10.0		93.6	70-130				
Benzyl chloride	11.8		"	10.0		118	70-130				
Bromodichloromethane	9.93		"	10.0		99.3	70-130				
Bromoform	11.7		"	10.0		117	70-130				

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91186 - EPA TO15 PREP											
LCS (BG91186-BS1)								Prepared & Analyzed: 07/24/2019			
Bromomethane	10.6		ppbv	10.0		106	70-130				
Carbon disulfide	10.0		"	10.0		100	70-130				
Carbon tetrachloride	10.4		"	10.0		104	70-130				
Chlorobenzene	10.1		"	10.0		101	70-130				
Chloroethane	10.8		"	10.0		108	70-130				
Chloroform	9.77		"	10.0		97.7	70-130				
Chloromethane	6.60		"	10.0		66.0	70-130	Low Bias			
cis-1,2-Dichloroethylene	9.14		"	10.0		91.4	70-130				
cis-1,3-Dichloropropylene	10.3		"	10.0		103	70-130				
Cyclohexane	10.4		"	10.0		104	70-130				
Dibromochloromethane	10.6		"	10.0		106	70-130				
Dichlorodifluoromethane	8.90		"	10.0		89.0	70-130				
Ethyl acetate	9.80		"	10.0		98.0	70-130				
Ethyl Benzene	9.47		"	10.0		94.7	70-130				
Hexachlorobutadiene	11.6		"	10.0		116	70-130				
Isopropanol	8.93		"	10.0		89.3	70-130				
Methyl Methacrylate	8.76		"	10.0		87.6	70-130				
Methyl tert-butyl ether (MTBE)	9.82		"	10.0		98.2	70-130				
Methylene chloride	9.75		"	10.0		97.5	70-130				
n-Heptane	9.95		"	10.0		99.5	70-130				
n-Hexane	10.5		"	10.0		105	70-130				
o-Xylene	9.60		"	10.0		96.0	70-130				
p- & m- Xylenes	18.7		"	20.0		93.5	70-130				
p-Ethyltoluene	10.2		"	10.0		102	70-130				
Propylene	8.43		"	10.0		84.3	70-130				
Styrene	10.2		"	10.0		102	70-130				
Tetrachloroethylene	9.89		"	10.0		98.9	70-130				
Tetrahydrofuran	9.23		"	10.0		92.3	70-130				
Toluene	9.16		"	10.0		91.6	70-130				
trans-1,2-Dichloroethylene	10.4		"	10.0		104	70-130				
trans-1,3-Dichloropropylene	9.55		"	10.0		95.5	70-130				
Trichloroethylene	9.61		"	10.0		96.1	70-130				
Trichlorofluoromethane (Freon 11)	10.4		"	10.0		104	70-130				
Vinyl acetate	9.35		"	10.0		93.5	70-130				
Vinyl bromide	11.0		"	10.0		110	70-130				
Vinyl Chloride	8.16		"	10.0		81.6	70-130				
Surrogate: SURR: p-Bromofluorobenzene	*10.5*		*"*	*10.0*		*105*	*70-130*				

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91483 - EPA TO15 PREP											
Blank (BG91483-BLK1)									Prepared & Analyzed: 07/25/2019		
1,1,1,2-Tetrachloroethane	ND	0.69	ug/m³								
1,1,1-Trichloroethane	ND	0.55	"								
1,1,2,2-Tetrachloroethane	ND	0.69	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.77	"								
1,1,2-Trichloroethane	ND	0.55	"								
1,1-Dichloroethane	ND	0.40	"								
1,1-Dichloroethylene	ND	0.099	"								
1,2,4-Trichlorobenzene	ND	0.74	"								
1,2,4-Trimethylbenzene	ND	0.49	"								
1,2-Dibromoethane	ND	0.77	"								
1,2-Dichlorobenzene	ND	0.60	"								
1,2-Dichloroethane	ND	0.40	"								
1,2-Dichloropropane	ND	0.46	"								
1,2-Dichlorotetrafluoroethane	ND	0.70	"								
1,3,5-Trimethylbenzene	ND	0.49	"								
1,3-Butadiene	ND	0.66	"								
1,3-Dichlorobenzene	ND	0.60	"								
1,3-Dichloropropane	ND	0.46	"								
1,4-Dichlorobenzene	ND	0.60	"								
1,4-Dioxane	ND	0.72	"								
2-Butanone	ND	0.29	"								
2-Hexanone	ND	0.82	"								
3-Chloropropene	ND	1.6	"								
4-Methyl-2-pentanone	ND	0.41	"								
Acetone	ND	0.48	"								
Acrylonitrile	ND	0.22	"								
Benzene	ND	0.32	"								
Benzyl chloride	ND	0.52	"								
Bromodichloromethane	ND	0.67	"								
Bromoform	ND	1.0	"								
Bromomethane	ND	0.39	"								
Carbon disulfide	ND	0.31	"								
Carbon tetrachloride	ND	0.16	"								
Chlorobenzene	ND	0.46	"								
Chloroethane	ND	0.26	"								
Chloroform	ND	0.49	"								
Chloromethane	ND	0.21	"								
cis-1,2-Dichloroethylene	ND	0.099	"								
cis-1,3-Dichloropropylene	ND	0.45	"								
Cyclohexane	ND	0.34	"								
Dibromochloromethane	ND	0.85	"								
Dichlorodifluoromethane	ND	0.49	"								
Ethyl acetate	ND	0.72	"								
Ethyl Benzene	ND	0.43	"								
Hexachlorobutadiene	ND	1.1	"								
Isopropanol	ND	0.49	"								
Methyl Methacrylate	ND	0.41	"								
Methyl tert-butyl ether (MTBE)	ND	0.36	"								
Methylene chloride	ND	0.69	"								
n-Heptane	ND	0.41	"								

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91483 - EPA TO15 PREP											
Blank (BG91483-BLK1)									Prepared & Analyzed: 07/25/2019		
n-Hexane	ND	0.35	ug/m³								
o-Xylene	ND	0.43	"								
p- & m- Xylenes	ND	0.87	"								
p-Ethyltoluene	ND	0.49	"								
Propylene	ND	0.17	"								
Styrene	ND	0.43	"								
Tetrachloroethylene	ND	0.17	"								
Tetrahydrofuran	ND	0.59	"								
Toluene	ND	0.38	"								
trans-1,2-Dichloroethylene	ND	0.40	"								
trans-1,3-Dichloropropylene	ND	0.45	"								
Trichloroethylene	ND	0.13	"								
Trichlorofluoromethane (Freon 11)	ND	0.56	"								
Vinyl acetate	ND	0.35	"								
Vinyl bromide	ND	0.44	"								
Vinyl Chloride	ND	0.064	"								
Surrogate: SURR: p-Bromofluorobenzene	*8.77*		*ppbv*	*10.0*		*87.7*	*70-130*				
LCS (BG91483-BS1)									Prepared & Analyzed: 07/25/2019		
1,1,1,2-Tetrachloroethane	10.0		ppbv	10.0		100	70-130				
1,1,1-Trichloroethane	11.1		"	10.0		111	70-130				
1,1,2,2-Tetrachloroethane	9.48		"	10.0		94.8	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.6		"	10.0		106	70-130				
1,1,2-Trichloroethane	9.44		"	10.0		94.4	70-130				
1,1-Dichloroethane	10.2		"	10.0		102	70-130				
1,1-Dichloroethylene	9.72		"	10.0		97.2	70-130				
1,2,4-Trichlorobenzene	9.04		"	10.0		90.4	70-130				
1,2,4-Trimethylbenzene	9.61		"	10.0		96.1	70-130				
1,2-Dibromoethane	10.0		"	10.0		100	70-130				
1,2-Dichlorobenzene	11.4		"	10.0		114	70-130				
1,2-Dichloroethane	10.2		"	10.0		102	70-130				
1,2-Dichloropropane	9.01		"	10.0		90.1	70-130				
1,2-Dichlorotetrafluoroethane	8.90		"	10.0		89.0	70-130				
1,3,5-Trimethylbenzene	9.81		"	10.0		98.1	70-130				
1,3-Butadiene	8.02		"	10.0		80.2	70-130				
1,3-Dichlorobenzene	11.2		"	10.0		112	70-130				
1,3-Dichloropropane	9.22		"	10.0		92.2	70-130				
1,4-Dichlorobenzene	11.4		"	10.0		114	70-130				
1,4-Dioxane	7.26		"	10.0		72.6	70-130				
2-Butanone	8.78		"	10.0		87.8	70-130				
2-Hexanone	7.86		"	10.0		78.6	70-130				
3-Chloropropene	10.0		"	10.0		100	70-130				
4-Methyl-2-pentanone	7.54		"	10.0		75.4	70-130				
Acetone	11.1		"	10.0		111	70-130				
Acrylonitrile	8.98		"	10.0		89.8	70-130				
Benzene	10.2		"	10.0		102	70-130				
Benzyl chloride	11.5		"	10.0		115	70-130				
Bromodichloromethane	9.50		"	10.0		95.0	70-130				
Bromoform	11.7		"	10.0		117	70-130				
Bromomethane	10.9		"	10.0		109	70-130				

Volatile Organic Compounds in Air by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91483 - EPA TO15 PREP											
LCS (BG91483-BS1)								Prepared & Analyzed: 07/25/2019			
Carbon disulfide	10.8		ppbv	10.0		108	70-130				
Carbon tetrachloride	10.9		"	10.0		109	70-130				
Chlorobenzene	10.1		"	10.0		101	70-130				
Chloroethane	10.8		"	10.0		108	70-130				
Chloroform	10.3		"	10.0		103	70-130				
Chloromethane	6.63		"	10.0		66.3	70-130	Low Bias			
cis-1,2-Dichloroethylene	9.20		"	10.0		92.0	70-130				
cis-1,3-Dichloropropylene	9.99		"	10.0		99.9	70-130				
Cyclohexane	10.4		"	10.0		104	70-130				
Dibromochloromethane	10.4		"	10.0		104	70-130				
Dichlorodifluoromethane	9.80		"	10.0		98.0	70-130				
Ethyl acetate	9.71		"	10.0		97.1	70-130				
Ethyl Benzene	9.32		"	10.0		93.2	70-130				
Hexachlorobutadiene	12.0		"	10.0		120	70-130				
Isopropanol	8.48		"	10.0		84.8	70-130				
Methyl Methacrylate	8.54		"	10.0		85.4	70-130				
Methyl tert-butyl ether (MTBE)	10.4		"	10.0		104	70-130				
Methylene chloride	9.45		"	10.0		94.5	70-130				
n-Heptane	9.95		"	10.0		99.5	70-130				
n-Hexane	10.5		"	10.0		105	70-130				
o-Xylene	9.37		"	10.0		93.7	70-130				
p- & m- Xylenes	18.3		"	20.0		91.4	70-130				
p-Ethyltoluene	10.2		"	10.0		102	70-130				
Propylene	8.45		"	10.0		84.5	70-130				
Styrene	10.2		"	10.0		102	70-130				
Tetrachloroethylene	10.0		"	10.0		100	70-130				
Tetrahydrofuran	8.92		"	10.0		89.2	70-130				
Toluene	9.15		"	10.0		91.5	70-130				
trans-1,2-Dichloroethylene	10.6		"	10.0		106	70-130				
trans-1,3-Dichloropropylene	9.06		"	10.0		90.6	70-130				
Trichloroethylene	9.35		"	10.0		93.5	70-130				
Trichlorofluoromethane (Freon 11)	10.7		"	10.0		107	70-130				
Vinyl acetate	9.18		"	10.0		91.8	70-130				
Vinyl bromide	11.6		"	10.0		116	70-130				
Vinyl Chloride	8.29		"	10.0		82.9	70-130				
Surrogate: SURR: p-Bromofluorobenzene	*10.2*		*"*	*10.0*		*102*	*70-130*				

Sample and Data Qualifiers Relating to This Work Order

TO-LCS-L The result reported for this compound may be biased low due to its behavior in the analysis batch LCS where it recovered less 70% of the expected value.

TO-CCV The value reported is ESTIMATED for this compound due to its behavior during continuing calibration verification (>30% Difference from initial calibration).

Definitions and Other Explanations

* Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.

ND NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)

RL REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.

LOQ LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.

LOD LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.

MDL METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.

Reported to This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.

NR Not reported

RPD Relative Percent Difference

Wet The data has been reported on an as-received (wet weight) basis

Low Bias Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.

High Bias High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.

Non-Dir. Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

York Analytical Laboratories, Inc.
120 Research Drive, Stratford, CT 06615
132-02 89th Ave Queens, NY 11418

YORK ANALYTICAL LABORATORIES INC

clientservices@yorklab.com
www.yorklab.com

Field Chain-of-Custody Record - AIR

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document. This document serves as your written authorization for YORK to proceed with the analyses requested below. Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 19G0858

YOUR Information	Report To:	Invoice To:
Company: LANBAN Engineering	Company:	Company:
Address: 360 W 31st St New York NY	Address:	Address:
Phone.: 2129479400	Phone.:	Phone:
Contact: Patrick Farnham	Contact:	Contact:
E-mail: pfarnham@lanbanllc.com	E-mail:	E-mail:

YOUR Project Number: 170157201

YOUR Project Name: Acme Site No2 72 Anthon St

YOUR PO#:

Turn-Around Time

- RUSH - Next Day
- RUSH - Two Day
- RUSH - Three Day
- RUSH - Four Day
- Standard (5-7 Day) [X]

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Samples Collected by: (print your name above and sign below) Katherine Racanelli

Air Matrix Codes

- AI - Indoor Ambient Air
- AO - Outdoor Amb. Air
- AE - Vapor Extraction Well/ Process Gas/Effluent
- AS - Soil Vapor/Sub-Slab

Samples From

- [X] New York
- [ ] New Jersey
- [ ] Connecticut
- [ ] Pennsylvania
- [ ] Other

Report / EDD Type (circle selections)

Summary Report	CT RCP	Standard Excel EDD
QA Report	CT RCP DQA/DUE	EQuIS (Standard)
NY ASP A Package	NJDEP Reduced Deliv.	NYSDEC EQuIS
NY ASP B Package	NJDKQP	NJDEP SRP HazSite
Other:		

YORK Reg. Comp.

Compared to the following Regulation(s): (please fill in)

Certified Canisters: Batch ___ Individual ___

Please enter the following REQUIRED Field Data

Reporting Units: ug/m^3 ___ ppbv ___ ppmv ___

Sample Identification	Date/Time Sampled	Air Matrix	Canister Vacuum Before Sampling (in Hg)	Canister Vacuum After Sampling (in Hg)	Canister ID	Flow Cont. ID	Analysis Requested
SVE-01-D-071919	7/19/19 945	AE	30	7	23200	N/A	TO-15 VOCs

Comments: sample ran for ~50 min

Detection Limits Required

≤ 1 ug/m^3 ____ NYSDEC V1 Limits ____

Routine Survey ____ Other ____

Sampling Media

- [ ] 6 Liter Canister
- [ ] Tedlar Bag

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
KR LANBAN	7/19/19 11:00	Alie Ventura YORK	7/19/19 11:10	Alie Ventura YORK	7/19/19 20:30
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by	Date/Time
				York	7/22/19 7:22 am

Technical Report

prepared for:

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Patrick Farnham

Report Date: 08/01/2019
Client Project ID: 170157201
York Project (SDG) No.: 19G1029

Report Date: 08/01/2019
Client Project ID: 170157201
York Project (SDG) No.: 19G1029

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Patrick Farnham

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on July 24, 2019 and listed below. The project was identified as your project: **170157201**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
19G1029-01	SO_DRO1_072419	Soil	07/24/2019	07/24/2019
19G1029-02	SO_DRO2_072419	Soil	07/24/2019	07/24/2019
19G1029-03	SO_DRO3_072419	Soil	07/24/2019	07/24/2019
19G1029-04	SO_DRO4_072419	Soil	07/24/2019	07/24/2019
19G1029-05	SO_DRO5_072419	Soil	07/24/2019	07/24/2019
19G1029-06	SO_DRO6_072419	Soil	07/24/2019	07/24/2019
19G1029-07	SO_DRO7_072419	Soil	07/24/2019	07/24/2019
19G1029-08	SO_DRO8_072419	Soil	07/24/2019	07/24/2019
19G1029-09	SO_COMP01_072419	Soil	07/24/2019	07/24/2019
19G1029-10	SO_COMP02_072419	Soil	07/24/2019	07/24/2019
19G1029-11	GW_DRO9_072419	Water	07/24/2019	07/24/2019
19G1029-12	CU_DR10_072419	Soil	07/24/2019	07/24/2019
19G1029-13	CU_DR11_072419	Soil	07/24/2019	07/24/2019
19G1029-14	CU_COMP01_072419	Soil	07/24/2019	07/24/2019
19G1029-15	ACME-MW-15_072419	Water	07/24/2019	07/24/2019
19G1029-16	GWDUP01_072419	Water	07/24/2019	07/24/2019
19G1029-17	GWFB01_072419	Water	07/24/2019	07/24/2019
19G1029-18	GWTB01_072419	Water	07/24/2019	07/24/2019

General Notes for York Project (SDG) No.: 19G1029

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By:

Date: 08/01/2019

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: SO_DRO1_072419 **York Sample ID:** 19G1029-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:00 pm	07/24/2019

Volatiles, TCLP RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:28	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:28	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:28	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:28	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:28	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:28	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:28	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:28	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	Tetrachloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:28	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	Trichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:28	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:28	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*94.6 %*	*65-135*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.5 %*	*86-118*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*97.7 %*	*81-114*

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C	07/26/2019 07:30	07/26/2019 14:59	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C	07/26/2019 07:30	07/26/2019 14:59	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C	07/26/2019 07:30	07/26/2019 14:59	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C	07/26/2019 07:30	07/26/2019 14:59	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C	07/26/2019 07:30	07/26/2019 14:59	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C	07/26/2019 07:30	07/26/2019 14:59	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: SO_DRO1_072419 **York Sample ID:** 19G1029-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:00 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP	07/26/2019 14:59	RDS
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
123-91-1	1,4-Dioxane	ND		mg/kg dry	0.061	0.12	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
78-93-3	2-Butanone	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
591-78-6	2-Hexanone	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
67-64-1	Acetone	ND		mg/kg dry	0.0061	0.012	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
107-02-8	Acrolein	ND		mg/kg dry	0.0061	0.012	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
71-43-2	Benzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS

Sample Information

Client Sample ID: SO_DRO1_072419 **York Sample ID:** 19G1029-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:00 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-25-2	Bromoform	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
74-83-9	Bromomethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
75-00-3	Chloroethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
67-66-3	Chloroform	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
74-87-3	Chloromethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
156-59-2	**cis-1,2-Dichloroethylene**	**0.017**		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
110-82-7	Cyclohexane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
74-95-3	Dibromomethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
79-20-9	Methyl acetate	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
75-09-2	Methylene chloride	ND		mg/kg dry	0.0061	0.012	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS

Sample Information

Client Sample ID: SO_DRO1_072419 **York Sample ID:** 19G1029-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:00 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-47-6	o-Xylene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/26/2019 14:59	RDS
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0061	0.012	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/26/2019 14:59	RDS
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
100-42-5	Styrene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	0.0031	0.031	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
127-18-4	**Tetrachloroethylene**	**0.34**		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
108-88-3	Toluene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH	07/26/2019 14:59	RDS
79-01-6	**Trichloroethylene**	**0.034**		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0031	0.0061	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 14:59	RDS
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0092	0.018	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/26/2019 14:59	RDS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*103 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*103 %*	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*113 %*	*76-130*

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**86.4**		%	0.100	1	SM 2540G Certifications: CTDOH	07/25/2019 20:21	07/25/2019 22:53	MJA

Sample Information

Client Sample ID: SO_DRO1_072419 **York Sample ID:** 19G1029-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:00 pm	07/24/2019

TCLP Extraction for VOA by EPA 1311 ZHE **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA SW 846-1311 TCLP ZHE for VOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/30/2019 16:20	07/31/2019 10:29	TAJ
							Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: SO_DRO2_072419 **York Sample ID:** 19G1029-02

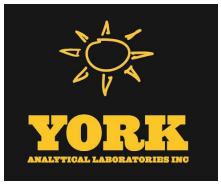
York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:05 pm	07/24/2019

Volatiles, TCLP RCRA **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 15:11	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 15:11	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 15:11	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 15:11	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 15:11	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 15:11	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 15:11	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 15:11	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	**Tetrachloroethylene**	**0.18**		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 15:11	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	Trichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 15:11	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 15:11	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*94.7 %*	*65-135*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*97.2 %*	*86-118*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*97.5 %*	*81-114*



Sample Information

Client Sample ID: SO_DRO2_072419 **York Sample ID:** 19G1029-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:05 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP		
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
123-91-1	1,4-Dioxane	ND		mg/kg dry	0.054	0.11	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
78-93-3	2-Butanone	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
591-78-6	2-Hexanone	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
67-64-1	**Acetone**	**0.015**	CCV-E	mg/kg dry	0.0054	0.011	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:26	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: SO_DRO2_072419 **York Sample ID:** 19G1029-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:05 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
107-02-8	Acrolein	ND		mg/kg dry	0.0054	0.011	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
71-43-2	Benzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-25-2	Bromoform	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-83-9	Bromomethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-00-3	Chloroethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-66-3	Chloroform	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-87-3	Chloromethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-59-2	cis-1,2-Dichloroethylene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-82-7	Cyclohexane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-95-3	Dibromomethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-20-9	Methyl acetate	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: SO_DRO2_072419 **York Sample ID:** 19G1029-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:05 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-09-2	Methylene chloride	ND		mg/kg dry	0.0054	0.011	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-47-6	o-Xylene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	RDS
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0054	0.011	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	RDS
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
100-42-5	Styrene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-65-0	**tert-Butyl alcohol (TBA)**	**0.0043**	J	mg/kg dry	0.0027	0.027	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
127-18-4	**Tetrachloroethylene**	**64**		mg/kg dry	0.41	0.82	100	EPA 8260C Certifications:	07/26/2019 07:30	07/29/2019 13:41 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-88-3	Toluene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH	RDS
79-01-6	**Trichloroethylene**	**0.012**		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0027	0.0054	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0081	0.016	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:26 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	RDS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*104 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*100 %*	*85-120*

Sample Information

Client Sample ID: SO_DRO2_072419 **York Sample ID:** 19G1029-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:05 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*105 %*			*76-130*						

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**87.4**		%	0.100	1	SM 2540G	07/25/2019 20:21	07/25/2019 22:53	MJA
							Certifications: CTDOH			

TCLP Extraction for VOA by EPA 1311 ZHE

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW 846-1311 TCLP ZHE for VOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/30/2019 16:20	07/31/2019 10:29	TAJ
							Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: SO_DRO3_072419 **York Sample ID:** 19G1029-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:10 pm	07/24/2019

Volatiles, TCLP RCRA

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 16:07	RDS
							Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP				
107-06-2	1,2-Dichloroethane	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 16:07	RDS
							Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP				
106-46-7	1,4-Dichlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 16:07	RDS
							Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP				
78-93-3	2-Butanone	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 16:07	RDS
							Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP				
71-43-2	Benzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 16:07	RDS
							Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP				
56-23-5	Carbon tetrachloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 16:07	RDS
							Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP				

Sample Information

Client Sample ID: SO_DRO3_072419 **York Sample ID:** 19G1029-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:10 pm	07/24/2019

Volatiles, TCLP RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
108-90-7	Chlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 16:07	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 16:07	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	**Tetrachloroethylene**	**0.036**	J	mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 16:07	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	Trichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 16:07	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 16:07	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*95.6 %*	*65-135*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*97.4 %*	*86-118*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*98.5 %*	*81-114*

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP			
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: SO_DRO3_072419 **York Sample ID:** 19G1029-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:10 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
123-91-1	**1,4-Dioxane**	**0.27**		mg/kg dry	0.058	0.12	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-93-3	2-Butanone	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
591-78-6	2-Hexanone	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-64-1	Acetone	ND		mg/kg dry	0.0058	0.012	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-02-8	Acrolein	ND		mg/kg dry	0.0058	0.012	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
71-43-2	Benzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-25-2	Bromoform	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-83-9	Bromomethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-00-3	Chloroethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-66-3	Chloroform	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: SO_DRO3_072419 **York Sample ID:** 19G1029-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:10 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-87-3	Chloromethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
156-59-2	cis-1,2-Dichloroethylene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
110-82-7	Cyclohexane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-95-3	Dibromomethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
79-20-9	Methyl acetate	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-09-2	Methylene chloride	ND		mg/kg dry	0.0058	0.012	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-47-6	o-Xylene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	RDS
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0058	0.012	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	RDS
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
100-42-5	Styrene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-65-0	**tert-Butyl alcohol (TBA)**	**0.032**		mg/kg dry	0.0029	0.029	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 15:54 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: SO_DRO3_072419 **York Sample ID:** 19G1029-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:10 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
127-18-4	**Tetrachloroethylene**	**73**		mg/kg dry	2.1	4.1	500	EPA 8260C	07/26/2019 07:30	07/29/2019 15:32	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-88-3	Toluene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications:	CTDOH		
79-01-6	**Trichloroethylene**	**0.0033**	J	mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0029	0.0058	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0087	0.017	1	EPA 8260C	07/26/2019 07:30	07/26/2019 15:54	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*104 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*100 %*	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*108 %*	*76-130*

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**81.9**		%	0.100	1	SM 2540G	07/25/2019 20:21	07/25/2019 22:53	MJA
							Certifications:	CTDOH		

TCLP Extraction for VOA by EPA 1311 ZHE

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW 846-1311 TCLP ZHE for VOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/30/2019 16:20	07/31/2019 10:29	TAJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		

Sample Information

Client Sample ID: SO_DRO4_072419 **York Sample ID:** 19G1029-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:15 pm	07/24/2019

Volatiles, TCLP RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:56	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:56	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:56	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:56	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:56	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:56	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:56	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:56	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	Tetrachloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:56	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	Trichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:56	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 11:56	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*95.3 %*	*65-135*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*97.0 %*	*86-118*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*98.5 %*	*81-114*

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C	07/26/2019 07:30	07/26/2019 16:22	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C	07/26/2019 07:30	07/26/2019 16:22	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C	07/26/2019 07:30	07/26/2019 16:22	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C	07/26/2019 07:30	07/26/2019 16:22	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C	07/26/2019 07:30	07/26/2019 16:22	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C	07/26/2019 07:30	07/26/2019 16:22	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: SO_DRO4_072419 **York Sample ID:** 19G1029-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:15 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 NELAC-NY10854,NELAC-NY12058,NJDEP	RDS
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
123-91-1	1,4-Dioxane	ND		mg/kg dry	0.047	0.095	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-93-3	2-Butanone	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
591-78-6	2-Hexanone	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-64-1	Acetone	ND		mg/kg dry	0.0047	0.0095	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-02-8	Acrolein	ND		mg/kg dry	0.0047	0.0095	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
71-43-2	Benzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: SO_DRO4_072419 **York Sample ID:** 19G1029-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:15 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-25-2	Bromoform	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-83-9	Bromomethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-00-3	Chloroethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-66-3	Chloroform	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-87-3	Chloromethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-59-2	**cis-1,2-Dichloroethylene**	**0.010**		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-82-7	Cyclohexane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-95-3	Dibromomethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-20-9	Methyl acetate	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-09-2	Methylene chloride	ND		mg/kg dry	0.0047	0.0095	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 16:22	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: SO_DRO4_072419 **York Sample ID:** 19G1029-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:15 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-47-6	o-Xylene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/26/2019 16:22	RDS
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0047	0.0095	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/26/2019 16:22	RDS
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 16:22	RDS
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 16:22	RDS
100-42-5	Styrene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 16:22	RDS
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	0.0024	0.024	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 16:22	RDS
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 16:22	RDS
127-18-4	**Tetrachloroethylene**	**0.30**		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 16:22	RDS
108-88-3	Toluene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 16:22	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 16:22	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 16:22	RDS
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH	07/26/2019 16:22	RDS
79-01-6	**Trichloroethylene**	**0.049**		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 16:22	RDS
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 16:22	RDS
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0024	0.0047	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 16:22	RDS
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0071	0.014	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/26/2019 16:22	RDS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*103 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*99.4 %*	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*103 %*	*76-130*

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**90.6**		%	0.100	1	SM 2540G Certifications: CTDOH	07/25/2019 20:21	07/25/2019 22:53	MJA

Sample Information

Client Sample ID: SO_DRO4_072419 **York Sample ID:** 19G1029-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:15 pm	07/24/2019

TCLP Extraction for VOA by EPA 1311 ZHE **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA SW 846-1311 TCLP ZHE for VOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/30/2019 16:20	07/31/2019 10:29	TAJ
							Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: SO_DRO5_072419 **York Sample ID:** 19G1029-05

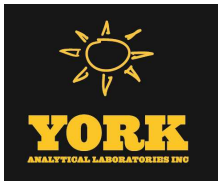
York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:25 pm	07/24/2019

Volatiles, TCLP RCRA **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:24	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:24	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:24	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:24	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:24	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:24	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:24	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:24	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	Tetrachloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:24	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	Trichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:24	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:24	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*97.5 %*	*65-135*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.1 %*	*86-118*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*98.8 %*	*81-114*



Sample Information

Client Sample ID: SO_DRO5_072419 **York Sample ID:** 19G1029-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:25 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP		
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
123-91-1	1,4-Dioxane	ND		mg/kg dry	0.040	0.081	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
78-93-3	2-Butanone	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
591-78-6	2-Hexanone	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
67-64-1	**Acetone**	**0.028**		mg/kg dry	0.0040	0.0081	1	EPA 8260C	07/29/2019 07:30	07/29/2019 14:37	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: SO_DRO5_072419 **York Sample ID:** 19G1029-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:25 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
107-02-8	Acrolein	ND		mg/kg dry	0.0040	0.0081	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
71-43-2	Benzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-25-2	Bromoform	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-83-9	Bromomethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-00-3	Chloroethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-66-3	Chloroform	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-87-3	Chloromethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-59-2	cis-1,2-Dichloroethylene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-82-7	Cyclohexane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-95-3	Dibromomethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-20-9	Methyl acetate	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: SO_DRO5_072419 **York Sample ID:** 19G1029-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:25 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-09-2	Methylene chloride	ND		mg/kg dry	0.0040	0.0081	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-47-6	o-Xylene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	RDS
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0040	0.0081	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	RDS
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
100-42-5	Styrene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	0.0020	0.020	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
127-18-4	**Tetrachloroethylene**	**0.023**		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-88-3	Toluene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH	RDS
79-01-6	Trichloroethylene	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0020	0.0040	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0061	0.012	1	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 14:37 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	RDS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*102 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*98.2 %*	*85-120*

Sample Information

Client Sample ID: SO_DRO5_072419 **York Sample ID:** 19G1029-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:25 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*98.6 %*			*76-130*						

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**95.3**		%	0.100	1	SM 2540G	07/25/2019 20:21	07/25/2019 22:53	MJA
							Certifications: CTDOH			

TCLP Extraction for VOA by EPA 1311 ZHE

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW 846-1311 TCLP ZHE for VOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/30/2019 16:20	07/31/2019 10:29	TAJ
							Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: SO_DRO6_072419 **York Sample ID:** 19G1029-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:30 pm	07/24/2019

Volatiles, TCLP RCRA

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:52	RDS
							Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP				
107-06-2	1,2-Dichloroethane	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:52	RDS
							Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP				
106-46-7	1,4-Dichlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:52	RDS
							Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP				
78-93-3	2-Butanone	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:52	RDS
							Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP				
71-43-2	Benzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:52	RDS
							Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP				
56-23-5	Carbon tetrachloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:52	RDS
							Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP				

Sample Information

Client Sample ID: SO_DRO6_072419 **York Sample ID:** 19G1029-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:30 pm	07/24/2019

Volatiles, TCLP RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
108-90-7	Chlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:52	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
67-66-3	Chloroform	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:52	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
127-18-4	Tetrachloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:52	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-01-6	Trichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:52	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-01-4	Vinyl Chloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 12:52	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*98.0 %*	*65-135*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.1 %*	*86-118*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*96.9 %*	*81-114*

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP		
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: SO_DRO6_072419 **York Sample ID:** 19G1029-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:30 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
123-91-1	1,4-Dioxane	ND		mg/kg dry	0.046	0.092	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-93-3	2-Butanone	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
591-78-6	2-Hexanone	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-64-1	**Acetone**	**0.0050**	CCV-E, J	mg/kg dry	0.0046	0.0092	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-02-8	Acrolein	ND		mg/kg dry	0.0046	0.0092	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
71-43-2	Benzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-25-2	Bromoform	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-83-9	Bromomethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-00-3	Chloroethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-66-3	Chloroform	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:17 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: SO_DRO6_072419 **York Sample ID:** 19G1029-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:30 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-87-3	Chloromethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
156-59-2	**cis-1,2-Dichloroethylene**	**0.029**		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
110-82-7	Cyclohexane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
74-95-3	Dibromomethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
79-20-9	Methyl acetate	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
75-09-2	Methylene chloride	ND		mg/kg dry	0.0046	0.0092	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
95-47-6	o-Xylene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/26/2019 17:17	RDS
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0046	0.0092	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/26/2019 17:17	RDS
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
100-42-5	Styrene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	0.0023	0.023	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:17	RDS

Sample Information

Client Sample ID: SO_DRO6_072419 **York Sample ID:** 19G1029-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:30 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
127-18-4	**Tetrachloroethylene**	**0.056**		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-88-3	Toluene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH		
79-01-6	**Trichloroethylene**	**0.089**		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0023	0.0046	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0069	0.014	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:17	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*102 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*99.9 %*	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*102 %*	*76-130*

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**89.2**		%	0.100	1	SM 2540G	07/25/2019 20:21	07/25/2019 22:53	MJA
							Certifications:	CTDOH		

TCLP Extraction for VOA by EPA 1311 ZHE

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW 846-1311 TCLP ZHE for VOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/30/2019 16:20	07/31/2019 10:29	TAJ
							Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP		

Sample Information

Client Sample ID: SO_DRO7_072419 **York Sample ID:** 19G1029-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:35 pm	07/24/2019

Volatiles, TCLP RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:02	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:02	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:02	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:02	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:02	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:02	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:02	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:02	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	**Tetrachloroethylene**	**0.072**		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:02	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	Trichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:02	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:02	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*96.6 %*	*65-135*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.2 %*	*86-118*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*97.9 %*	*81-114*

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:45	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:45	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:45	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:45	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:45	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C	07/26/2019 07:30	07/26/2019 17:45	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: SO_DRO7_072419 **York Sample ID:** 19G1029-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:35 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 NELAC-NY10854,NELAC-NY12058,NJDEP	RDS
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
123-91-1	**1,4-Dioxane**	**0.46**		mg/kg dry	0.050	0.099	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-93-3	2-Butanone	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
591-78-6	2-Hexanone	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-64-1	**Acetone**	**0.038**	CCV-E	mg/kg dry	0.0050	0.0099	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-02-8	Acrolein	ND		mg/kg dry	0.0050	0.0099	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-13-1	Acrylonitrile	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
71-43-2	Benzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-97-5	Bromochloromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: SO_DRO7_072419 **York Sample ID:** 19G1029-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:35 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-25-2	Bromoform	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-83-9	Bromomethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-15-0	Carbon disulfide	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-90-7	Chlorobenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-00-3	Chloroethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-66-3	Chloroform	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-87-3	Chloromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
156-59-2	cis-1,2-Dichloroethylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
110-82-7	Cyclohexane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-95-3	Dibromomethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
79-20-9	Methyl acetate	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-09-2	Methylene chloride	ND		mg/kg dry	0.0050	0.0099	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 17:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: SO_DRO7_072419 **York Sample ID:** 19G1029-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:35 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-47-6	o-Xylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/26/2019 17:45	RDS
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.0050	0.0099	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/26/2019 17:45	RDS
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:45	RDS
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:45	RDS
100-42-5	Styrene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:45	RDS
75-65-0	**tert-Butyl alcohol (TBA)**	**0.043**		mg/kg dry	0.0025	0.025	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:45	RDS
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:45	RDS
127-18-4	**Tetrachloroethylene**	**15**		mg/kg dry	0.24	0.49	100	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 15:05	RDS
108-88-3	**Toluene**	**0.0028**	J	mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:45	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:45	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:45	RDS
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH	07/26/2019 17:45	RDS
79-01-6	**Trichloroethylene**	**0.0064**		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:45	RDS
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:45	RDS
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.0025	0.0050	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 17:45	RDS
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.0074	0.015	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/26/2019 17:45	RDS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*103 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*106 %*	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*114 %*	*76-130*

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**91.5**		%	0.100	1	SM 2540G Certifications:	07/25/2019 20:21 CTDOH	07/25/2019 22:53	MJA

Sample Information

Client Sample ID: SO_DRO7_072419 **York Sample ID:** 19G1029-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:35 pm	07/24/2019

TCLP Extraction for VOA by EPA 1311 ZHE **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA SW 846-1311 TCLP ZHE for VOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/30/2019 16:20	07/31/2019 10:29	TAJ
							Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: SO_DRO8_072419 **York Sample ID:** 19G1029-08

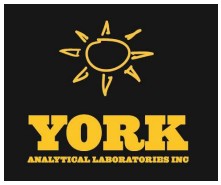
York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:40 pm	07/24/2019

Volatiles, TCLP RCRA **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:58	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:58	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:58	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:58	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:58	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:58	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:58	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:58	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	Tetrachloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:58	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	Trichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:58	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 17:58	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*96.7 %*	*65-135*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.0 %*	*86-118*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*97.5 %*	*81-114*



Sample Information

Client Sample ID: SO_DRO8_072419 **York Sample ID:** 19G1029-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:40 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	RDS
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 NELAC-NY10854,NELAC-NY12058,NJDEP	RDS
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
123-91-1	1,4-Dioxane	ND		mg/kg dry	4.6	9.2	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-93-3	2-Butanone	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
591-78-6	2-Hexanone	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-64-1	Acetone	ND		mg/kg dry	0.46	0.92	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: SO_DRO8_072419 **York Sample ID:** 19G1029-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:40 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
107-02-8	Acrolein	ND		mg/kg dry	0.46	0.92	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-13-1	Acrylonitrile	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
71-43-2	Benzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-97-5	Bromochloromethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-27-4	Bromodichloromethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-25-2	Bromoform	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-83-9	Bromomethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-15-0	Carbon disulfide	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
56-23-5	Carbon tetrachloride	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-90-7	Chlorobenzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-00-3	Chloroethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-66-3	Chloroform	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-87-3	Chloromethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
156-59-2	**cis-1,2-Dichloroethylene**	**0.71**		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
110-82-7	Cyclohexane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
124-48-1	Dibromochloromethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-95-3	Dibromomethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
100-41-4	Ethyl Benzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
98-82-8	Isopropylbenzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
79-20-9	Methyl acetate	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: SO_DRO8_072419 **York Sample ID:** 19G1029-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:40 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-87-2	Methylcyclohexane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-09-2	Methylene chloride	ND		mg/kg dry	0.46	0.92	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
104-51-8	n-Butylbenzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
103-65-1	n-Propylbenzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-47-6	o-Xylene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	RDS
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	0.46	0.92	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	RDS
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
135-98-8	sec-Butylbenzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
100-42-5	Styrene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	0.23	2.3	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
98-06-6	tert-Butylbenzene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
127-18-4	**Tetrachloroethylene**	**14**		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-88-3	Toluene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH	RDS
79-01-6	**Trichloroethylene**	**0.37**	J	mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-01-4	Vinyl Chloride	ND		mg/kg dry	0.23	0.46	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
1330-20-7	Xylenes, Total	ND		mg/kg dry	0.69	1.4	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:18 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	RDS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*96.3 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*98.5 %*	*85-120*

Sample Information

Client Sample ID: SO_DRO8_072419 **York Sample ID:** 19G1029-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:40 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*97.7 %*			*76-130*						

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**96.7**		%	0.100	1	SM 2540G	07/25/2019 20:21	07/25/2019 22:53	MJA
							Certifications: CTDOH			

TCLP Extraction for VOA by EPA 1311 ZHE

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW 846-1311 TCLP ZHE for VOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/30/2019 16:20	07/31/2019 10:29	TAJ
							Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: SO_COMP01_072419 **York Sample ID:** 19G1029-09

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:20 pm	07/24/2019

Semivolatiles, TCLP RCRA

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3510C/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
106-46-7	1,4-Dichlorobenzene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 12:58	SR
							Certifications: NELAC-NY10854,PADEP				
95-95-4	2,4,5-Trichlorophenol	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 12:58	SR
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP				
88-06-2	2,4,6-Trichlorophenol	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 12:58	SR
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP				
121-14-2	2,4-Dinitrotoluene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 12:58	SR
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP				
95-48-7	2-Methylphenol	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 12:58	SR
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP				
65794-96-9	3- & 4-Methylphenols	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 12:58	SR
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP				

Sample Information

Client Sample ID: SO_COMP01_072419 **York Sample ID:** 19G1029-09

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:20 pm	07/24/2019

Semivolatiles, TCLP RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
1319-77-3	Cresols, total	ND		mg/L	0.0200	0.0300	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854	07/30/2019 16:09	07/31/2019 12:58	SR
118-74-1	Hexachlorobenzene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 16:09	07/31/2019 12:58	SR
87-68-3	Hexachlorobutadiene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 16:09	07/31/2019 12:58	SR
67-72-1	Hexachloroethane	ND		mg/L	0.00250	0.00500	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 16:09	07/31/2019 12:58	SR
98-95-3	Nitrobenzene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 16:09	07/31/2019 12:58	SR
87-86-5	Pentachlorophenol	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 16:09	07/31/2019 12:58	SR
110-86-1	Pyridine	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 16:09	07/31/2019 12:58	SR

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*51.2 %*	*10-90.9*
4165-62-2	*Surrogate: SURR: Phenol-d5*	*38.5 %*	*10-69.2*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*67.2 %*	*19.2-141*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*63.9 %*	*24.8-127*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*77.1 %*	*23-163*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*76.3 %*	*25.8-110*

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0179	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/25/2019 14:22	07/26/2019 19:41	SR
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0179	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/25/2019 14:22	07/26/2019 19:41	SR
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0179	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/25/2019 14:22	07/26/2019 19:41	SR
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0179	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/25/2019 14:22	07/26/2019 19:41	SR
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0179	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/25/2019 14:22	07/26/2019 19:41	SR
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0179	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/25/2019 14:22	07/26/2019 19:41	SR
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0179	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/25/2019 14:22	07/26/2019 19:41	SR
1336-36-3	* Total PCBs	ND		mg/kg dry	0.0179	1	EPA 8082A Certifications:	07/25/2019 14:22	07/26/2019 19:41	SR

	Surrogate Recoveries	Result	Acceptance Range

Sample Information

Client Sample ID: SO_COMP01_072419 **York Sample ID:** 19G1029-09

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:20 pm	07/24/2019

Polychlorinated Biphenyls (PCB)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*78.0 %*			*30-140*					
2051-24-3	*Surrogate: Decachlorobiphenyl*	*63.5 %*			*30-140*					

Metals, TCLP RCRA

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-38-2	Arsenic	ND		mg/L	0.375	1	EPA 6010D/1311	07/30/2019 12:29	07/30/2019 16:16	KML
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7440-39-3	Barium	ND		mg/L	0.625	1	EPA 6010D/1311	07/30/2019 12:29	07/30/2019 16:16	KML
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7440-43-9	Cadmium	ND		mg/L	0.075	1	EPA 6010D/1311	07/30/2019 12:29	07/30/2019 16:16	KML
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7440-47-3	Chromium	ND		mg/L	0.125	1	EPA 6010D/1311	07/30/2019 12:29	07/30/2019 16:16	KML
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7439-92-1	Lead	ND		mg/L	0.125	1	EPA 6010D/1311	07/30/2019 12:29	07/30/2019 16:16	KML
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7782-49-2	Selenium	ND		mg/L	0.625	1	EPA 6010D/1311	07/30/2019 12:29	07/30/2019 16:16	KML
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7440-22-4	Silver	ND		mg/L	0.125	1	EPA 6010D/1311	07/30/2019 12:29	07/30/2019 16:16	KML
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			

Mercury TCLP by 7473

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 7473 water

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	**Mercury**	**0.0012855**		mg/L	0.0002000	1	EPA 7473/1311	07/30/2019 12:05	07/30/2019 16:14	SY
							Certifications: CTDOH,NJDEP,PADEP,NELAC-NY10854			

Ignitability

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	* Ignitability	Non-Ignit.		-	1	1	EPA 1030P	07/29/2019 19:25	07/30/2019 16:35	AA
							Certifications:			

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**92.3**		%	0.100	1	SM 2540G	07/25/2019 20:21	07/25/2019 22:53	MJA
							Certifications: CTDOH			

Sample Information

Client Sample ID: SO_COMP01_072419 **York Sample ID:** 19G1029-09

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:20 pm	07/24/2019

Corrosivity by SM 4500/EPA 9045D

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	pH	**9.07**		pH units	0.500	1	EPA 9045D	07/26/2019 09:34	07/29/2019 11:00	TJM
							Certifications: NELAC-NY10854,CTDOH,PADEP			

TCLP Extraction for METALS EPA 1311

Log-in Notes: **Sample Notes:** **EXT-Temp**

Sample Prepared by Method: EPA SW 846-1311 TCLP ext. for metals

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/29/2019 16:02	07/30/2019 09:45	TAJ
							Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP			

TCLP Extraction for SVOCS/PEST/HERB

Log-in Notes: **Sample Notes:** **EXT-Temp**

Sample Prepared by Method: EPA SW 846-1311 TCLP extr. for SVOA/PEST/HERBS

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/29/2019 15:58	07/30/2019 14:27	TAJ
							Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP			

Temperature

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	*** Temperature**	**23.8**		°C	1.00	1	EPA 170.1	07/26/2019 09:34	07/29/2019 11:00	TJM
							Certifications:			

Sample Information

Client Sample ID: SO_COMP02_072419 **York Sample ID:** 19G1029-10

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:45 pm	07/24/2019

Semivolatiles, TCLP RCRA

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3510C/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
106-46-7	1,4-Dichlorobenzene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 13:30	SR
								Certifications: NELAC-NY10854,PADEP			
95-95-4	2,4,5-Trichlorophenol	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 13:30	SR
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
88-06-2	2,4,6-Trichlorophenol	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 13:30	SR
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
121-14-2	2,4-Dinitrotoluene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 13:30	SR
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			

Sample Information

Client Sample ID: SO_COMP02_072419 **York Sample ID:** 19G1029-10

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:45 pm	07/24/2019

Semivolatiles, TCLP RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-48-7	2-Methylphenol	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 16:09	07/31/2019 13:30	SR
65794-96-9	3- & 4-Methylphenols	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 16:09	07/31/2019 13:30	SR
1319-77-3	Cresols, total	ND		mg/L	0.0200	0.0300	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854	07/30/2019 16:09	07/31/2019 13:30	SR
118-74-1	Hexachlorobenzene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 16:09	07/31/2019 13:30	SR
87-68-3	Hexachlorobutadiene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 16:09	07/31/2019 13:30	SR
67-72-1	Hexachloroethane	ND		mg/L	0.00250	0.00500	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 16:09	07/31/2019 13:30	SR
98-95-3	Nitrobenzene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 16:09	07/31/2019 13:30	SR
87-86-5	Pentachlorophenol	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 16:09	07/31/2019 13:30	SR
110-86-1	Pyridine	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 16:09	07/31/2019 13:30	SR

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*43.2 %*	*10-90.9*
4165-62-2	*Surrogate: SURR: Phenol-d5*	*32.6 %*	*10-69.2*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*58.6 %*	*19.2-141*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*55.3 %*	*24.8-127*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*66.1 %*	*23-163*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*63.1 %*	*25.8-110*

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0173	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/25/2019 14:22	07/26/2019 19:54	SR
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0173	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/25/2019 14:22	07/26/2019 19:54	SR
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0173	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/25/2019 14:22	07/26/2019 19:54	SR
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0173	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/25/2019 14:22	07/26/2019 19:54	SR
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0173	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/25/2019 14:22	07/26/2019 19:54	SR
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0173	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/25/2019 14:22	07/26/2019 19:54	SR
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0173	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/25/2019 14:22	07/26/2019 19:54	SR

Sample Information

Client Sample ID: SO_COMP02_072419 **York Sample ID:** 19G1029-10

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:45 pm	07/24/2019

Polychlorinated Biphenyls (PCB)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
1336-36-3	* Total PCBs	ND		mg/kg dry	0.0173	1	EPA 8082A Certifications:	07/25/2019 14:22	07/26/2019 19:54	SR

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*84.5 %*	*30-140*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*72.0 %*	*30-140*

Metals, TCLP RCRA

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-38-2	Arsenic	ND		mg/L	0.375	1	EPA 6010D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 12:29	07/30/2019 16:23	KML
7440-39-3	Barium	ND		mg/L	0.625	1	EPA 6010D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 12:29	07/30/2019 16:23	KML
7440-43-9	Cadmium	ND		mg/L	0.075	1	EPA 6010D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 12:29	07/30/2019 16:23	KML
7440-47-3	Chromium	ND		mg/L	0.125	1	EPA 6010D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 12:29	07/30/2019 16:23	KML
7439-92-1	Lead	ND		mg/L	0.125	1	EPA 6010D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 12:29	07/30/2019 16:23	KML
7782-49-2	Selenium	ND		mg/L	0.625	1	EPA 6010D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 12:29	07/30/2019 16:23	KML
7440-22-4	Silver	ND		mg/L	0.125	1	EPA 6010D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 12:29	07/30/2019 16:23	KML

Mercury TCLP by 7473

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 7473 water

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	**Mercury**	**0.00026200**		mg/L	0.0002000	1	EPA 7473/1311 Certifications: CTDOH,NJDEP,PADEP,NELAC-NY10854	07/30/2019 12:05	07/30/2019 16:47	SY

Ignitability

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	* Ignitability	Non-Ignit.		-	1	1	EPA 1030P Certifications:	07/29/2019 19:25	07/30/2019 16:35	AA

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: SO_COMP02_072419 **York Sample ID:** 19G1029-10

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 2:45 pm	07/24/2019

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**95.5**		%	0.100	1	SM 2540G	07/25/2019 20:21	07/25/2019 22:53	MJA
							Certifications: CTDOH			

Corrosivity by SM 4500/EPA 9045D

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	pH	**9.22**		pH units	0.500	1	EPA 9045D	07/26/2019 09:34	07/29/2019 11:00	TJM
							Certifications: NELAC-NY10854,CTDOH,PADEP			

TCLP Extraction for METALS EPA 1311

Log-in Notes: **Sample Notes:** EXT-Temp

Sample Prepared by Method: EPA SW 846-1311 TCLP ext. for metals

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/29/2019 16:02	07/30/2019 09:45	TAJ
							Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP			

TCLP Extraction for SVOCS/PEST/HERB

Log-in Notes: **Sample Notes:** EXT-Temp

Sample Prepared by Method: EPA SW 846-1311 TCLP extr. for SVOA/PEST/HERBS

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/29/2019 15:58	07/30/2019 14:27	TAJ
							Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP			

Temperature

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	*** Temperature**	**23.8**		°C	1.00	1	EPA 170.1	07/26/2019 09:34	07/29/2019 11:00	TJM
							Certifications:			

Sample Information

Client Sample ID: GW_DRO9_072419 **York Sample ID:** 19G1029-11

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 1:00 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: GW_DRO9_072419 **York Sample ID:** 19G1029-11

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 1:00 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-00-5	1,1,2-Trichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-34-3	**1,1-Dichloroethane**	**0.66**		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
87-61-6	1,2,3-Trichlorobenzene	ND		ug/L	0.20	2.0	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
96-18-4	1,2,3-Trichloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
106-93-4	1,2-Dibromoethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
107-06-2	1,2-Dichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
78-87-5	1,2-Dichloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
123-91-1	1,4-Dioxane	ND		ug/L	40	40	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
78-93-3	2-Butanone	ND		ug/L	0.20	2.0	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
591-78-6	2-Hexanone	ND		ug/L	0.20	2.0	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-10-1	**4-Methyl-2-pentanone**	**1.1**		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: GW_DRO9_072419 **York Sample ID:** 19G1029-11

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 1:00 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
67-64-1	**Acetone**	**3.8**		ug/L	1.0	2.0	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
107-02-8	Acrolein	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
107-13-1	Acrylonitrile	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-43-2	Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-97-5	Bromochloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-27-4	Bromodichloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-25-2	Bromoform	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-83-9	Bromomethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-15-0	**Carbon disulfide**	**0.28**	J	ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
56-23-5	Carbon tetrachloride	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-90-7	Chlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-00-3	Chloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
67-66-3	**Chloroform**	**0.68**		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-87-3	Chloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
156-59-2	**cis-1,2-Dichloroethylene**	**12**		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
110-82-7	Cyclohexane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
124-48-1	Dibromochloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-95-3	Dibromomethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-71-8	Dichlorodifluoromethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
100-41-4	Ethyl Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
87-68-3	Hexachlorobutadiene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-82-8	Isopropylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 19:35	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: GW_DRO9_072419 **York Sample ID:** 19G1029-11

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 1:00 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
79-20-9	Methyl acetate	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
1634-04-4	**Methyl tert-butyl ether (MTBE)**	**0.25**	J	ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
108-87-2	Methylcyclohexane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
75-09-2	Methylene chloride	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
103-65-1	n-Propylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
95-47-6	o-Xylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/25/2019 19:35	RDS
179601-23-1	p- & m- Xylenes	ND		ug/L	0.50	1.0	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/25/2019 19:35	RDS
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
100-42-5	Styrene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
75-65-0	tert-Butyl alcohol (TBA)	ND		ug/L	0.50	2.5	1	EPA 8260C Certifications:	07/25/2019 12:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
127-18-4	**Tetrachloroethylene**	**140**		ug/L	2.0	5.0	10	EPA 8260C Certifications:	07/25/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 12:00	SS
108-88-3	**Toluene**	**0.47**	J	ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/25/2019 19:35	RDS
79-01-6	**Trichloroethylene**	**12**		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
75-69-4	Trichlorofluoromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
75-01-4	Vinyl Chloride	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 19:35	RDS
1330-20-7	Xylenes, Total	ND		ug/L	0.60	1.5	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/25/2019 19:35	RDS

Surrogate Recoveries	Result	Acceptance Range

Sample Information

Client Sample ID: GW_DRO9_072419 **York Sample ID:** 19G1029-11

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 1:00 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*97.1 %*			*69-130*						
2037-26-5	*Surrogate: SURR: Toluene-d8*	*98.4 %*			*81-117*						
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*110 %*			*79-122*						

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes: EXT-EM

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
92-52-4	1,1-Biphenyl	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
122-66-7	1,2-Diphenylhydrazine (as Azobenzene)	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
58-90-2	2,3,4,6-Tetrachlorophenol	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
95-95-4	2,4,5-Trichlorophenol	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
88-06-2	2,4,6-Trichlorophenol	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
120-83-2	2,4-Dichlorophenol	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
105-67-9	2,4-Dimethylphenol	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
51-28-5	2,4-Dinitrophenol	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
121-14-2	2,4-Dinitrotoluene	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
606-20-2	2,6-Dinitrotoluene	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
91-58-7	2-Chloronaphthalene	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
95-57-8	2-Chlorophenol	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
91-57-6	2-Methylnaphthalene	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
95-48-7	2-Methylphenol	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
88-74-4	2-Nitroaniline	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
88-75-5	2-Nitrophenol	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR
65794-96-9	3- & 4-Methylphenols	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/29/2019 14:54	SR

Sample Information

Client Sample ID: GW_DRO9_072419 **York Sample ID:** 19G1029-11

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 1:00 pm	07/24/2019

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes: EXT-EM

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
91-94-1	3,3-Dichlorobenzidine	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
99-09-2	3-Nitroaniline	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
534-52-1	4,6-Dinitro-2-methylphenol	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
101-55-3	4-Bromophenyl phenyl ether	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
59-50-7	4-Chloro-3-methylphenol	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
106-47-8	4-Chloroaniline	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
7005-72-3	4-Chlorophenyl phenyl ether	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
100-01-6	4-Nitroaniline	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
100-02-7	4-Nitrophenol	ND		ug/L	5.56	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
98-86-2	Acetophenone	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR NELAC-NY10854,NJDEP,PADEP
62-53-3	Aniline	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR NELAC-NY10854,NJDEP,PADEP
100-52-7	Benzaldehyde	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR NELAC-NY10854,NJDEP,PADEP
92-87-5	Benzidine	ND		ug/L	5.56	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
65-85-0	Benzoic acid	ND		ug/L	27.8	55.6	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR NELAC-NY10854,NJDEP,PADEP
100-51-6	Benzyl alcohol	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR NELAC-NY10854,NJDEP,PADEP
85-68-7	Benzyl butyl phthalate	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
111-91-1	Bis(2-chloroethoxy)methane	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
111-44-4	Bis(2-chloroethyl)ether	ND		ug/L	1.11	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
108-60-1	Bis(2-chloroisopropyl)ether	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
105-60-2	Caprolactam	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR NELAC-NY10854,NJDEP,PADEP
86-74-8	Carbazole	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
132-64-9	Dibenzofuran	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP
84-66-2	Diethyl phthalate	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54	SR CTDOH,NELAC-NY10854,NJDEP,PADEP

Sample Information

Client Sample ID: GW_DRO9_072419 **York Sample ID:** 19G1029-11

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 1:00 pm	07/24/2019

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes: EXT-EM

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
131-11-3	Dimethyl phthalate	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54 CTDOH,NELAC-NY10854,NJDEP,PADEP	SR
84-74-2	Di-n-butyl phthalate	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54 CTDOH,NELAC-NY10854,NJDEP,PADEP	SR
117-84-0	Di-n-octyl phthalate	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54 CTDOH,NELAC-NY10854,NJDEP,PADEP	SR
122-39-4	Diphenylamine	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54 NELAC-NY10854,PADEP	SR
77-47-4	Hexachlorocyclopentadiene	ND		ug/L	5.56	11.1	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54 CTDOH,NELAC-NY10854,NJDEP,PADEP	SR
78-59-1	Isophorone	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54 CTDOH,NELAC-NY10854,NJDEP,PADEP	SR
621-64-7	N-nitroso-di-n-propylamine	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54 CTDOH,NELAC-NY10854,NJDEP,PADEP	SR
86-30-6	N-Nitrosodiphenylamine	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54 CTDOH,NELAC-NY10854,NJDEP,PADEP	SR
108-95-2	Phenol	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54 CTDOH,NELAC-NY10854,NJDEP,PADEP	SR
110-86-1	Pyridine	ND		ug/L	2.78	5.56	1	EPA 8270D Certifications:	07/26/2019 09:04	07/29/2019 14:54 CTDOH,NELAC-NY10854,NJDEP,PADEP	SR

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*34.5 %*	*19.7-63.1*
4165-62-2	*Surrogate: SURR: Phenol-d5*	*22.3 %*	*10.1-41.7*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*70.8 %*	*50.2-113*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*69.0 %*	*39.9-105*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*90.3 %*	*39.3-151*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*82.1 %*	*30.7-106*

Semi-Volatiles, 8270 Comprehensive

Log-in Notes:

Sample Notes: EXT-EM

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications:	07/26/2019 09:04	07/26/2019 16:18 CTDOH,NELAC-NY10854,NJDEP,PADEP	OW
208-96-8	Acenaphthylene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications:	07/26/2019 09:04	07/26/2019 16:18 CTDOH,NELAC-NY10854,NJDEP,PADEP	OW
120-12-7	Anthracene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications:	07/26/2019 09:04	07/26/2019 16:18 CTDOH,NELAC-NY10854,NJDEP,PADEP	OW
1912-24-9	Atrazine	ND		ug/L	0.556	1	EPA 8270D SIM Certifications:	07/26/2019 09:04	07/26/2019 16:18 CTDOH,NELAC-NY10854,NJDEP	OW
56-55-3	Benzo(a)anthracene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications:	07/26/2019 09:04	07/26/2019 16:18 CTDOH,NELAC-NY10854,NJDEP,PADEP	OW
50-32-8	Benzo(a)pyrene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications:	07/26/2019 09:04	07/26/2019 16:18 CTDOH,NELAC-NY10854,NJDEP,PADEP	OW

Sample Information

Client Sample ID: GW_DRO9_072419 **York Sample ID:** 19G1029-11

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 1:00 pm	07/24/2019

Semi-Volatiles, 8270 Comprehensive

Log-in Notes: **Sample Notes:** EXT-EM

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
205-99-2	Benzo(b)fluoranthene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/26/2019 16:18	OW
191-24-2	Benzo(g,h,i)perylene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/26/2019 16:18	OW
207-08-9	Benzo(k)fluoranthene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/26/2019 16:18	OW
117-81-7	**Bis(2-ethylhexyl)phthalate**	**1.46**		ug/L	0.556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP	07/26/2019 09:04	07/26/2019 16:18	OW
218-01-9	Chrysene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/26/2019 16:18	OW
53-70-3	Dibenzo(a,h)anthracene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/26/2019 16:18	OW
206-44-0	Fluoranthene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/26/2019 16:18	OW
86-73-7	Fluorene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/26/2019 16:18	OW
118-74-1	Hexachlorobenzene	ND		ug/L	0.0222	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP	07/26/2019 09:04	07/26/2019 16:18	OW
87-68-3	Hexachlorobutadiene	ND		ug/L	0.556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP	07/26/2019 09:04	07/26/2019 16:18	OW
67-72-1	Hexachloroethane	ND		ug/L	0.556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP	07/26/2019 09:04	07/26/2019 16:18	OW
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/26/2019 16:18	OW
91-20-3	Naphthalene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/26/2019 16:18	OW
98-95-3	Nitrobenzene	ND		ug/L	0.278	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP	07/26/2019 09:04	07/26/2019 16:18	OW
62-75-9	N-Nitrosodimethylamine	ND		ug/L	0.556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP	07/26/2019 09:04	07/26/2019 16:18	OW
87-86-5	Pentachlorophenol	ND		ug/L	0.278	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP	07/26/2019 09:04	07/26/2019 16:18	OW
85-01-8	Phenanthrene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/26/2019 16:18	OW
129-00-0	Pyrene	ND		ug/L	0.0556	1	EPA 8270D SIM Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/26/2019 09:04	07/26/2019 16:18	OW

Polychlorinated Biphenyls (PCB)

Log-in Notes: **Sample Notes:** EXT-EM

Sample Prepared by Method: EPA SW846-3510C Low Level

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		ug/L	0.0556	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/26/2019 09:16	07/29/2019 16:31	SR
11104-28-2	Aroclor 1221	ND		ug/L	0.0556	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/26/2019 09:16	07/29/2019 16:31	SR

Sample Information

Client Sample ID: GW_DRO9_072419 **York Sample ID:** 19G1029-11

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 1:00 pm	07/24/2019

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes: EXT-EM

Sample Prepared by Method: EPA SW846-3510C Low Level

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
11141-16-5	Aroclor 1232	ND		ug/L	0.0556	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/26/2019 09:16	07/29/2019 16:31	SR
53469-21-9	Aroclor 1242	ND		ug/L	0.0556	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/26/2019 09:16	07/29/2019 16:31	SR
12672-29-6	Aroclor 1248	ND		ug/L	0.0556	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/26/2019 09:16	07/29/2019 16:31	SR
11097-69-1	Aroclor 1254	ND		ug/L	0.0556	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/26/2019 09:16	07/29/2019 16:31	SR
11096-82-5	Aroclor 1260	ND		ug/L	0.0556	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/26/2019 09:16	07/29/2019 16:31	SR
1336-36-3	* Total PCBs	ND		ug/L	0.0556	1	EPA 8082A Certifications:	07/26/2019 09:16	07/29/2019 16:31	SR

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*86.5 %*	*30-120*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*98.0 %*	*30-120*

Metals, Target Analyte, ICP

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7429-90-5	Aluminum	ND		ug/L	55.6	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML
7440-39-3	**Barium**	**178**		ug/L	27.8	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML
7440-70-2	**Calcium**	**92200**		ug/L	55.6	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML
7440-47-3	Chromium	ND		ug/L	5.56	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML
7440-48-4	Cobalt	ND		ug/L	4.44	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML
7440-50-8	Copper	ND		ug/L	22.2	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML
7439-89-6	**Iron**	**1020**		ug/L	278	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML
7439-92-1	Lead	ND		ug/L	5.56	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML
7439-95-4	**Magnesium**	**29200**		ug/L	55.6	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML
7439-96-5	**Manganese**	**1160**		ug/L	5.56	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML
7440-02-0	Nickel	ND		ug/L	11.1	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML
7440-09-7	**Potassium**	**7120**		ug/L	55.6	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML

Sample Information

Client Sample ID: GW_DRO9_072419 **York Sample ID:** 19G1029-11

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 1:00 pm	07/24/2019

Metals, Target Analyte, ICP

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-22-4	Silver	ND		ug/L	5.56	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML
7440-23-5	**Sodium**	**78000**		ug/L	556	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML
7440-62-2	Vanadium	ND		ug/L	11.1	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML
7440-66-6	Zinc	ND		ug/L	27.8	1	EPA 6010D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:31	07/29/2019 15:45	KML

Metals, Target Analyte, ICPMS

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-36-0	Antimony	ND		ug/L	1.11	1	EPA 6020B Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:33	07/30/2019 14:17	BML
7440-38-2	Arsenic	ND		ug/L	1.11	1	EPA 6020B Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:33	07/30/2019 14:17	BML
7440-41-7	Beryllium	ND		ug/L	0.333	1	EPA 6020B Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:33	07/30/2019 14:17	BML
7440-43-9	Cadmium	ND		ug/L	0.556	1	EPA 6020B Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:33	07/30/2019 14:17	BML
7782-49-2	**Selenium**	**14.1**		ug/L	1.11	1	EPA 6020B Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:33	07/30/2019 14:17	BML
7440-28-0	Thallium	ND		ug/L	1.11	1	EPA 6020B Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:33	07/30/2019 14:17	BML

Mercury by 7473

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 7473 water

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	Mercury	ND		ug/L	0.20	1	EPA 7473 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/29/2019 10:21	07/29/2019 11:58	SY

Flashpoint

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	* Flashpoint	> 200		°F	50.0	1	EPA 1010A Certifications:	07/31/2019 15:12	07/31/2019 19:04	TAJ

Corrosivity by SM 4500/EPA 9045D

Log-in Notes: **Sample Notes:**

Sample Information

Client Sample ID: GW_DRO9_072419 **York Sample ID:** 19G1029-11

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 1:00 pm	07/24/2019

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	* pH	7.57	HT-pH	pH units	0.500	1	SM 4500 H+B	07/26/2019 09:33	07/26/2019 11:47	TJM
							Certifications:			

Temperature **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	* Temperature	9.40	HT-pH	°C	1.00	1	EPA 170.1	07/26/2019 09:33	07/26/2019 11:47	TJM
							Certifications:			

Sample Information

Client Sample ID: CU_DR10_072419 **York Sample ID:** 19G1029-12

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:20 pm	07/24/2019

Volatiles, TCLP RCRA **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:19	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:19	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:19	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:19	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:19	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:19	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:19	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:19	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	Tetrachloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:19	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	Trichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:19	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:19	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Surrogate Recoveries	Result	Acceptance Range

Sample Information

Client Sample ID: CU_DR10_072419 **York Sample ID:** 19G1029-12

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:20 pm	07/24/2019

Volatiles, TCLP RCRA

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*95.3 %*			*65-135*						
2037-26-5	*Surrogate: SURR: Toluene-d8*	*97.0 %*			*86-118*						
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*98.5 %*			*81-114*						

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/29/2019 12:45	RDS
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP	07/29/2019 12:45	RDS
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS

Sample Information

Client Sample ID: CU_DR10_072419 **York Sample ID:** 19G1029-12

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:20 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
123-91-1	1,4-Dioxane	ND		mg/kg dry	45	89	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-93-3	2-Butanone	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
591-78-6	2-Hexanone	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-64-1	Acetone	ND		mg/kg dry	4.5	8.9	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-02-8	Acrolein	ND		mg/kg dry	4.5	8.9	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-13-1	Acrylonitrile	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
71-43-2	Benzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-97-5	Bromochloromethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-27-4	Bromodichloromethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-25-2	Bromoform	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-83-9	Bromomethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-15-0	Carbon disulfide	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
56-23-5	Carbon tetrachloride	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-90-7	Chlorobenzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-00-3	Chloroethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-66-3	Chloroform	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-87-3	Chloromethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
156-59-2	cis-1,2-Dichloroethylene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
110-82-7	Cyclohexane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
124-48-1	Dibromochloromethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 12:45 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: CU_DR10_072419 **York Sample ID:** 19G1029-12

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:20 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-95-3	Dibromomethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
100-41-4	Ethyl Benzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
98-82-8	Isopropylbenzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
79-20-9	Methyl acetate	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
108-87-2	Methylcyclohexane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
75-09-2	Methylene chloride	ND		mg/kg dry	4.5	8.9	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
104-51-8	n-Butylbenzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
103-65-1	n-Propylbenzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
95-47-6	o-Xylene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/29/2019 12:45	RDS
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	4.5	8.9	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/29/2019 12:45	RDS
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
135-98-8	sec-Butylbenzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
100-42-5	Styrene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	2.2	22	100	EPA 8260C Certifications:	07/29/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
98-06-6	tert-Butylbenzene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
127-18-4	Tetrachloroethylene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
108-88-3	Toluene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH	07/29/2019 12:45	RDS

Sample Information

Client Sample ID: CU_DR10_072419 **York Sample ID:** 19G1029-12

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:20 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
79-01-6	Trichloroethylene	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
75-01-4	Vinyl Chloride	ND		mg/kg dry	2.2	4.5	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 12:45	RDS
1330-20-7	Xylenes, Total	ND		mg/kg dry	6.7	13	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/29/2019 12:45	RDS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*98.7 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*99.1 %*	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*99.8 %*	*76-130*

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**98.3**		%	0.100	1	SM 2540G Certifications: CTDOH	07/25/2019 20:21	07/25/2019 22:53	MJA

TCLP Extraction for VOA by EPA 1311 ZHE

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW 846-1311 TCLP ZHE for VOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311 Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/30/2019 16:20	07/31/2019 10:29	TAJ

Sample Information

Client Sample ID: CU_DR11_072419 **York Sample ID:** 19G1029-13

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:25 pm	07/24/2019

Volatiles, TCLP RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: CU_DR11_072419 **York Sample ID:** 19G1029-13

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:25 pm	07/24/2019

Volatiles, TCLP RCRA

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:47	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:47	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:47	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:47	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:47	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:47	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:47	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:47	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	Tetrachloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:47	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	Trichloroethylene	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:47	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		mg/L	0.025	0.050	10	EPA 8260C/1311	07/31/2019 07:30	07/31/2019 13:47	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*95.6 %*	*65-135*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.9 %*	*86-118*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*97.2 %*	*81-114*

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C	07/29/2019 07:30	07/29/2019 13:13	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-55-6	1,1,1-Trichloroethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C	07/29/2019 07:30	07/29/2019 13:13	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-34-5	1,1,2,2-Tetrachloroethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C	07/29/2019 07:30	07/29/2019 13:13	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		mg/kg dry	1.8	3.6	100	EPA 8260C	07/29/2019 07:30	07/29/2019 13:13	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			
79-00-5	1,1,2-Trichloroethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C	07/29/2019 07:30	07/29/2019 13:13	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C	07/29/2019 07:30	07/29/2019 13:13	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: CU_DR11_072419 **York Sample ID:** 19G1029-13

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:25 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
87-61-6	1,2,3-Trichlorobenzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
96-18-4	1,2,3-Trichloropropane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 NELAC-NY10854,NELAC-NY12058,NJDEP	RDS
120-82-1	1,2,4-Trichlorobenzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-63-6	1,2,4-Trimethylbenzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
96-12-8	1,2-Dibromo-3-chloropropane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-93-4	1,2-Dibromoethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-50-1	1,2-Dichlorobenzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-06-2	1,2-Dichloroethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-87-5	1,2-Dichloropropane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
541-73-1	1,3-Dichlorobenzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-46-7	1,4-Dichlorobenzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
123-91-1	1,4-Dioxane	ND		mg/kg dry	36	72	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-93-3	**2-Butanone**	**3.5**	J	mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
591-78-6	2-Hexanone	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-10-1	4-Methyl-2-pentanone	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-64-1	Acetone	ND		mg/kg dry	3.6	7.2	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-02-8	Acrolein	ND		mg/kg dry	3.6	7.2	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-13-1	Acrylonitrile	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
71-43-2	Benzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-97-5	Bromochloromethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-27-4	Bromodichloromethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: CU_DR11_072419 **York Sample ID:** 19G1029-13

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:25 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-25-2	Bromoform	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-83-9	Bromomethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-15-0	Carbon disulfide	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
56-23-5	Carbon tetrachloride	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-90-7	Chlorobenzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-00-3	Chloroethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-66-3	Chloroform	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-87-3	Chloromethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-59-2	cis-1,2-Dichloroethylene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-01-5	cis-1,3-Dichloropropylene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-82-7	Cyclohexane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
124-48-1	Dibromochloromethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-95-3	Dibromomethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-71-8	Dichlorodifluoromethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-41-4	Ethyl Benzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-68-3	Hexachlorobutadiene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-82-8	Isopropylbenzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-20-9	Methyl acetate	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-87-2	Methylcyclohexane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-09-2	Methylene chloride	ND		mg/kg dry	3.6	7.2	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
104-51-8	n-Butylbenzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
103-65-1	n-Propylbenzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30	07/29/2019 13:13	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: CU_DR11_072419 **York Sample ID:** 19G1029-13

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:25 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-47-6	o-Xylene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/29/2019 13:13	RDS
179601-23-1	p- & m- Xylenes	ND		mg/kg dry	3.6	7.2	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/29/2019 13:13	RDS
99-87-6	p-Isopropyltoluene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 13:13	RDS
135-98-8	sec-Butylbenzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 13:13	RDS
100-42-5	Styrene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 13:13	RDS
75-65-0	tert-Butyl alcohol (TBA)	ND		mg/kg dry	1.8	18	100	EPA 8260C Certifications:	07/29/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 13:13	RDS
98-06-6	tert-Butylbenzene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 13:13	RDS
127-18-4	**Tetrachloroethylene**	**2.8**	J	mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 13:13	RDS
108-88-3	Toluene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 13:13	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 13:13	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 13:13	RDS
110-57-6	* trans-1,4-dichloro-2-butene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH	07/29/2019 13:13	RDS
79-01-6	Trichloroethylene	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 13:13	RDS
75-69-4	Trichlorofluoromethane	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 13:13	RDS
75-01-4	Vinyl Chloride	ND		mg/kg dry	1.8	3.6	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/29/2019 13:13	RDS
1330-20-7	Xylenes, Total	ND		mg/kg dry	5.4	11	100	EPA 8260C Certifications:	07/29/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/29/2019 13:13	RDS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*99.0 %*	*77-125*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*100 %*	*85-120*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*101 %*	*76-130*

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**99.0**		%	0.100	1	SM 2540G Certifications: CTDOH	07/25/2019 20:21	07/25/2019 22:53	MJA

Sample Information

Client Sample ID: CU_DR11_072419 **York Sample ID:** 19G1029-13

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:25 pm	07/24/2019

TCLP Extraction for VOA by EPA 1311 ZHE **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA SW 846-1311 TCLP ZHE for VOA

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/30/2019 16:20	07/31/2019 10:29	TAJ
							Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: CU_COMP01_072419 **York Sample ID:** 19G1029-14

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:30 pm	07/24/2019

Semivolatiles, TCLP RCRA **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 3510C/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
106-46-7	1,4-Dichlorobenzene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 14:01	SR
								Certifications: NELAC-NY10854,PADEP			
95-95-4	2,4,5-Trichlorophenol	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 14:01	SR
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
88-06-2	2,4,6-Trichlorophenol	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 14:01	SR
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
121-14-2	2,4-Dinitrotoluene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 14:01	SR
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
95-48-7	2-Methylphenol	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 14:01	SR
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
65794-96-9	3- & 4-Methylphenols	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 14:01	SR
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
1319-77-3	Cresols, total	ND		mg/L	0.0200	0.0300	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 14:01	SR
								Certifications: CTDOH,NELAC-NY10854			
118-74-1	Hexachlorobenzene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 14:01	SR
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
87-68-3	Hexachlorobutadiene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 14:01	SR
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
67-72-1	Hexachloroethane	ND		mg/L	0.00250	0.00500	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 14:01	SR
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
98-95-3	Nitrobenzene	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 14:01	SR
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
87-86-5	Pentachlorophenol	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 14:01	SR
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
110-86-1	Pyridine	ND		mg/L	0.00500	0.0100	1	EPA 8270D/1311	07/30/2019 16:09	07/31/2019 14:01	SR
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*53.4 %*	*10-90.9*

Sample Information

Client Sample ID: CU_COMP01_072419 **York Sample ID:** 19G1029-14

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:30 pm	07/24/2019

Semivolatiles, TCLP RCRA

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3510C/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
4165-62-2	*Surrogate: SURR: Phenol-d5*	*39.7 %*			*10-69.2*						
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*74.5 %*			*19.2-141*						
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*72.8 %*			*24.8-127*						
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*84.5 %*			*23-163*						
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*79.2 %*			*25.8-110*						

Polychlorinated Biphenyls (PCB)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0918	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/29/2019 09:10	07/30/2019 20:18	SR
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0918	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/29/2019 09:10	07/30/2019 20:18	SR
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0918	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/29/2019 09:10	07/30/2019 20:18	SR
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0918	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/29/2019 09:10	07/30/2019 20:18	SR
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0918	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/29/2019 09:10	07/30/2019 20:18	SR
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0918	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/29/2019 09:10	07/30/2019 20:18	SR
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0918	1	EPA 8082A Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP	07/29/2019 09:10	07/30/2019 20:18	SR
1336-36-3	* Total PCBs	ND		mg/kg dry	0.0918	1	EPA 8082A Certifications:	07/29/2019 09:10	07/30/2019 20:18	SR

	Surrogate Recoveries	Result	Acceptance Range
877-09-8	*Surrogate: Tetrachloro-m-xylene*	*25.0 %*	*30-140*
2051-24-3	*Surrogate: Decachlorobiphenyl*	*67.0 %*	*30-140*

Metals, TCLP RCRA

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-38-2	Arsenic	ND		mg/L	0.375	1	EPA 6010D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 12:29	07/30/2019 16:26	KML
7440-39-3	Barium	ND		mg/L	0.625	1	EPA 6010D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 12:29	07/30/2019 16:26	KML
7440-43-9	Cadmium	ND		mg/L	0.075	1	EPA 6010D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 12:29	07/30/2019 16:26	KML
7440-47-3	Chromium	ND		mg/L	0.125	1	EPA 6010D/1311 Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	07/30/2019 12:29	07/30/2019 16:26	KML

Sample Information

Client Sample ID: CU_COMP01_072419 **York Sample ID:** 19G1029-14

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:30 pm	07/24/2019

Metals, TCLP RCRA

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A/1311

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	Lead	ND		mg/L	0.125	1	EPA 6010D/1311	07/30/2019 12:29	07/30/2019 16:26	KML
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7782-49-2	Selenium	ND		mg/L	0.625	1	EPA 6010D/1311	07/30/2019 12:29	07/30/2019 16:26	KML
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			
7440-22-4	Silver	ND		mg/L	0.125	1	EPA 6010D/1311	07/30/2019 12:29	07/30/2019 16:26	KML
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			

Mercury TCLP by 7473

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 7473 water

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	Mercury	ND		mg/L	0.0002000	1	EPA 7473/1311	07/30/2019 12:05	07/30/2019 15:37	SY
							Certifications: CTDOH,NJDEP,PADEP,NELAC-NY10854			

Ignitability

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	* Ignitability	Non-Ignit.		-	1	1	EPA 1030P	07/29/2019 19:25	07/30/2019 16:35	AA
							Certifications:			

Total Solids

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	*** % Solids**	**99.0**		%	0.100	1	SM 2540G	07/25/2019 20:21	07/25/2019 22:53	MJA
							Certifications: CTDOH			

Corrosivity by SM 4500/EPA 9045D

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	pH	**9.38**		pH units	0.500	1	EPA 9045D	07/26/2019 09:34	07/29/2019 11:00	TJM
							Certifications: NELAC-NY10854,CTDOH,PADEP			

TCLP Extraction for METALS EPA 1311

Log-in Notes: **Sample Notes:** **EXT-Temp**

Sample Prepared by Method: EPA SW 846-1311 TCLP ext. for metals

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/29/2019 16:02	07/30/2019 09:45	TAJ
							Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP			

TCLP Extraction for SVOCS/PEST/HERB

Log-in Notes: **Sample Notes:** **EXT-Temp**

Sample Information

Client Sample ID: CU_COMP01_072419 **York Sample ID:** 19G1029-14

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Soil	July 24, 2019 1:30 pm	07/24/2019

Sample Prepared by Method: EPA SW 846-1311 TCLP extr. for SVOA/PEST/HERBS

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	TCLP Extraction	Completed		N/A	1.00	1	EPA 1311	07/29/2019 15:58	07/30/2019 14:27	TAJ
							Certifications: NELAC-NY10854,CTDOH,NJDEP,PADEP			

Temperature **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	*** Temperature**	**23.8**		°C	1.00	1	EPA 170.1	07/26/2019 09:34	07/29/2019 11:00	TJM
							Certifications:			

Sample Information

Client Sample ID: ACME-MW-15_072419 **York Sample ID:** 19G1029-15

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:10 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-55-6	**1,1,1-Trichloroethane**	**0.64**		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-00-5	1,1,2-Trichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	**1,1-Dichloroethane**	**2.3**		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	**1,1-Dichloroethylene**	**0.65**		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
87-61-6	1,2,3-Trichlorobenzene	ND		ug/L	0.20	2.0	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
96-18-4	1,2,3-Trichloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
120-82-1	1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications: NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications: CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: ACME-MW-15_072419 **York Sample ID:** 19G1029-15

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:10 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
106-93-4	1,2-Dibromoethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-06-2	1,2-Dichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-87-5	1,2-Dichloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
123-91-1	1,4-Dioxane	ND		ug/L	40	40	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-93-3	2-Butanone	ND		ug/L	0.20	2.0	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
591-78-6	2-Hexanone	ND		ug/L	0.20	2.0	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-10-1	4-Methyl-2-pentanone	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-64-1	Acetone	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-02-8	Acrolein	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-13-1	Acrylonitrile	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
71-43-2	Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-97-5	Bromochloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-27-4	Bromodichloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-25-2	Bromoform	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-83-9	Bromomethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-15-0	Carbon disulfide	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
56-23-5	Carbon tetrachloride	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-90-7	Chlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-00-3	Chloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:04 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: ACME-MW-15_072419 **York Sample ID:** 19G1029-15

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:10 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
67-66-3	**Chloroform**	**0.91**		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-87-3	Chloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
156-59-2	**cis-1,2-Dichloroethylene**	**36**		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
110-82-7	Cyclohexane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
124-48-1	Dibromochloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
74-95-3	Dibromomethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-71-8	Dichlorodifluoromethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
100-41-4	Ethyl Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
87-68-3	Hexachlorobutadiene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-82-8	Isopropylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
79-20-9	Methyl acetate	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1634-04-4	**Methyl tert-butyl ether (MTBE)**	**0.48**	J	ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-87-2	Methylcyclohexane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-09-2	Methylene chloride	ND		ug/L	1.0	2.0	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
103-65-1	n-Propylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-47-6	o-Xylene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
179601-23-1	p- & m- Xylenes	ND		ug/L	0.50	1.0	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
100-42-5	Styrene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-65-0	tert-Butyl alcohol (TBA)	ND		ug/L	0.50	2.5	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: ACME-MW-15_072419 **York Sample ID:** 19G1029-15

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:10 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
127-18-4	**Tetrachloroethylene**	**890**		ug/L	5.0	12	25	EPA 8260C	07/25/2019 07:30	07/26/2019 12:30	SS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-88-3	Toluene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
156-60-5	**trans-1,2-Dichloroethylene**	**0.74**		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		
79-01-6	**Trichloroethylene**	**64**		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-69-4	Trichlorofluoromethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
75-01-4	Vinyl Chloride	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1330-20-7	Xylenes, Total	ND		ug/L	0.60	1.5	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*92.6 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.6 %*	*81-117*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*104 %*	*79-122*

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.0		ug/L		1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:04	RDS
							Certifications:			

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	**1,4-Dioxane**	**2.94**		ug/L	0.200	1	EPA 8270D SIM	07/25/2019 10:32	07/26/2019 14:43	KH
							Certifications:	NJDEP,NELAC-NY10854		

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*68.0 %*	*50-130*

Sample Information

Client Sample ID: ACME-MW-15_072419 **York Sample ID:** 19G1029-15

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:10 pm	07/24/2019

PFAS, NYSDEC Target List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	*** Perfluorobutanesulfonic acid (PFBS)**	**8.68**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
307-24-4	*** Perfluorohexanoic acid (PFHxA)**	**54.0**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
375-85-9	*** Perfluoroheptanoic acid (PFHpA)**	**38.9**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
3871-99-6	*** Perfluorohexanesulfonic acid (PFHxS)**	**51.5**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
335-67-1	*** Perfluorooctanoic acid (PFOA)**	**117**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**26.3**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
375-95-1	*** Perfluorononanoic acid (PFNA)**	**2.53**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
2355-31-9	* N-MeFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
2991-50-6	* N-EtFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
2706-90-3	*** Perfluoropentanoic acid (PFPeA)**	**59.5**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
375-92-8	*** Perfluoro-1-heptanesulfonic acid (PFHpS)**	**3.02**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
27619-97-2	*** 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)**	**16.6**		ng/L	5.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT
375-22-4	*** Perfluoro-n-butanoic acid (PFBA)**	**26.1**	PF-CCV	ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 21:31	KT

Surrogate Recoveries	Result	Acceptance Range

Sample Information

Client Sample ID: ACME-MW-15_072419 **York Sample ID:** 19G1029-15

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:10 pm	07/24/2019

PFAS, NYSDEC Target List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: M3PFBS	*75.2 %*			*25-150*					
	Surrogate: M5PFHxA	*75.2 %*			*25-150*					
	Surrogate: M4PFHpA	*73.5 %*			*25-150*					
	Surrogate: M3PFHxS	*75.1 %*			*25-150*					
	Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*64.9 %*			*25-150*					
	Surrogate: M6PFDA	*64.1 %*			*25-150*					
	Surrogate: M7PFUdA	*62.5 %*			*25-150*					
	Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*48.6 %*			*25-150*					
	Surrogate: M2PFTeDA	*53.6 %*			*10-150*					
	Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*78.5 %*			*25-150*					
	Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*68.7 %*			*25-150*					
	Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*75.2 %*			*25-150*					
	Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*50.0 %*			*10-150*					
	Surrogate: d3-N-MeFOSAA	*62.6 %*			*25-150*					
	Surrogate: d5-N-EtFOSAA	*65.2 %*			*25-150*					
	Surrogate: M2-6:2 FTS	*71.4 %*			*25-150*					
	Surrogate: M2-8:2 FTS	*68.5 %*			*25-150*					
	Surrogate: M9PFNA	*66.9 %*			*25-150*					

Sample Information

Client Sample ID: GWDUP01_072419 **York Sample ID:** 19G1029-16

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:20 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:32	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-55-6	**1,1,1-Trichloroethane**	**0.65**		ug/L	0.20	0.50	1	EPA 8260C	07/25/2019 12:30	07/25/2019 20:32	RDS
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

Sample Information

Client Sample ID: GWDUP01_072419 **York Sample ID:** 19G1029-16

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:20 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
79-00-5	1,1,2-Trichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-34-3	**1,1-Dichloroethane**	**2.3**		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-35-4	**1,1-Dichloroethylene**	**0.59**		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
87-61-6	1,2,3-Trichlorobenzene	ND		ug/L	0.20	2.0	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
96-18-4	1,2,3-Trichloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-93-4	1,2-Dibromoethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-06-2	1,2-Dichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-87-5	1,2-Dichloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
123-91-1	1,4-Dioxane	ND		ug/L	40	40	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-93-3	2-Butanone	ND		ug/L	0.20	2.0	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
591-78-6	2-Hexanone	ND		ug/L	0.20	2.0	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-10-1	4-Methyl-2-pentanone	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-64-1	Acetone	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-02-8	Acrolein	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: GWDUP01_072419 **York Sample ID:** 19G1029-16

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:20 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
107-13-1	Acrylonitrile	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
71-43-2	Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-97-5	Bromochloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-27-4	Bromodichloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-25-2	Bromoform	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-83-9	Bromomethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-15-0	Carbon disulfide	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
56-23-5	Carbon tetrachloride	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-90-7	Chlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-00-3	Chloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-66-3	**Chloroform**	**0.92**		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-87-3	Chloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
156-59-2	**cis-1,2-Dichloroethylene**	**35**		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
110-82-7	Cyclohexane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
124-48-1	Dibromochloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-95-3	Dibromomethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-71-8	Dichlorodifluoromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
100-41-4	Ethyl Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
87-68-3	Hexachlorobutadiene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
98-82-8	Isopropylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
79-20-9	Methyl acetate	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
1634-04-4	**Methyl tert-butyl ether (MTBE)**	**0.44**	J	ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: GWDUP01_072419 **York Sample ID:** 19G1029-16

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:20 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
108-87-2	Methylcyclohexane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
75-09-2	Methylene chloride	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
103-65-1	n-Propylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
95-47-6	o-Xylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/25/2019 20:32	RDS
179601-23-1	p- & m- Xylenes	ND		ug/L	0.50	1.0	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/25/2019 20:32	RDS
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
100-42-5	Styrene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
75-65-0	tert-Butyl alcohol (TBA)	ND		ug/L	0.50	2.5	1	EPA 8260C Certifications:	07/25/2019 12:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
127-18-4	**Tetrachloroethylene**	**950**		ug/L	5.0	12	25	EPA 8260C Certifications:	07/25/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 12:59	SS
108-88-3	Toluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
156-60-5	**trans-1,2-Dichloroethylene**	**0.67**		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/25/2019 20:32	RDS
79-01-6	**Trichloroethylene**	**63**		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
75-69-4	Trichlorofluoromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
75-01-4	Vinyl Chloride	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 20:32	RDS
1330-20-7	Xylenes, Total	ND		ug/L	0.60	1.5	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/25/2019 20:32	RDS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*93.1 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.3 %*	*81-117*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*105 %*	*79-122*

Sample Information

Client Sample ID: GWDUP01_072419 **York Sample ID:** 19G1029-16

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:20 pm	07/24/2019

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.0		ug/L		1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 20:32	RDS

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	**1,4-Dioxane**	**2.26**		ug/L	0.200	1	EPA 8270D SIM Certifications: NJDEP,NELAC-NY10854	07/25/2019 10:32	07/26/2019 15:01	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*80.0 %*	*50-130*

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	*** Perfluorobutanesulfonic acid (PFBS)**	**8.45**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
307-24-4	*** Perfluorohexanoic acid (PFHxA)**	**56.1**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
375-85-9	*** Perfluoroheptanoic acid (PFHpA)**	**39.0**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
3871-99-6	*** Perfluorohexanesulfonic acid (PFHxS)**	**51.7**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
335-67-1	*** Perfluorooctanoic acid (PFOA)**	**111**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**24.9**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
375-95-1	*** Perfluorononanoic acid (PFNA)**	**2.07**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
2355-31-9	* N-MeFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
2991-50-6	* N-EtFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT

Sample Information

Client Sample ID: GWDUP01_072419 **York Sample ID:** 19G1029-16

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:20 pm	07/24/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
2706-90-3	*** Perfluoropentanoic acid (PFPeA)**	**60.9**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
375-92-8	*** Perfluoro-1-heptanesulfonic acid (PFHpS)**	**2.81**		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
27619-97-2	*** 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)**	**16.4**		ng/L	5.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT
375-22-4	*** Perfluoro-n-butanoic acid (PFBA)**	**25.7**	PF-CCV	ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:25	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*73.9 %*	*25-150*
Surrogate: M5PFHxA	*69.7 %*	*25-150*
Surrogate: M4PFHpA	*68.2 %*	*25-150*
Surrogate: M3PFHxS	*73.6 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*68.7 %*	*25-150*
Surrogate: M6PFDA	*58.1 %*	*25-150*
Surrogate: M7PFUdA	*57.3 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*44.1 %*	*25-150*
Surrogate: M2PFTeDA	*41.8 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*75.6 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*70.7 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*72.7 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*32.4 %*	*10-150*
Surrogate: d3-N-MeFOSAA	*62.4 %*	*25-150*
Surrogate: d5-N-EtFOSAA	*62.3 %*	*25-150*
Surrogate: M2-6:2 FTS	*73.4 %*	*25-150*
Surrogate: M2-8:2 FTS	*66.7 %*	*25-150*
Surrogate: M9PFNA	*56.7 %*	*25-150*

Sample Information

Client Sample ID: GWFB01_072419 **York Sample ID:** 19G1029-17

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:40 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
79-00-5	1,1,2-Trichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
75-34-3	1,1-Dichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
87-61-6	1,2,3-Trichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
96-18-4	1,2,3-Trichloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
106-93-4	1,2-Dibromoethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
107-06-2	1,2-Dichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
78-87-5	1,2-Dichloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
123-91-1	1,4-Dioxane	ND		ug/L	40	40	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
78-93-3	2-Butanone	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
591-78-6	2-Hexanone	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
108-10-1	4-Methyl-2-pentanone	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS

Sample Information

Client Sample ID: GWFB01_072419 **York Sample ID:** 19G1029-17

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:40 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
67-64-1	Acetone	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-02-8	Acrolein	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
107-13-1	Acrylonitrile	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
71-43-2	Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-97-5	Bromochloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-27-4	Bromodichloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-25-2	Bromoform	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-83-9	Bromomethane	ND		ug/L	0.20	2.0	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-15-0	Carbon disulfide	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
56-23-5	Carbon tetrachloride	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-90-7	Chlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-00-3	Chloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
67-66-3	Chloroform	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-87-3	Chloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-59-2	cis-1,2-Dichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-82-7	Cyclohexane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
124-48-1	Dibromochloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-95-3	Dibromomethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-71-8	Dichlorodifluoromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-41-4	Ethyl Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-68-3	Hexachlorobutadiene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-82-8	Isopropylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: GWFB01_072419 **York Sample ID:** 19G1029-17

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:40 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
79-20-9	Methyl acetate	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
108-87-2	Methylcyclohexane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
75-09-2	Methylene chloride	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
103-65-1	n-Propylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
95-47-6	o-Xylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/26/2019 13:29	SS
179601-23-1	p- & m- Xylenes	ND		ug/L	0.50	1.0	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP	07/26/2019 13:29	SS
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
100-42-5	Styrene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
75-65-0	tert-Butyl alcohol (TBA)	ND		ug/L	0.50	2.5	1	EPA 8260C Certifications:	07/26/2019 07:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
127-18-4	Tetrachloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
108-88-3	Toluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/26/2019 13:29	SS
79-01-6	Trichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
75-69-4	Trichlorofluoromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
75-01-4	Vinyl Chloride	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/26/2019 13:29	SS
1330-20-7	Xylenes, Total	ND		ug/L	0.60	1.5	1	EPA 8260C Certifications:	07/26/2019 07:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/26/2019 13:29	SS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*92.5 %*	*69-130*

Sample Information

Client Sample ID: GWFB01_072419 **York Sample ID:** 19G1029-17

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:40 pm	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
2037-26-5	*Surrogate: SURR: Toluene-d8*	*103 %*			*81-117*						
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*104 %*			*79-122*						

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.0		ug/L		1	EPA 8260C Certifications:	07/26/2019 07:30	07/26/2019 13:29	SS

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3535A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/L	0.200	1	EPA 8270D SIM Certifications: NJDEP,NELAC-NY10854	07/25/2019 10:32	07/26/2019 15:19	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*84.0 %*	*50-130*

PFAS, NYSDEC Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
3871-99-6	* Perfluorohexanesulfonic acid (PFHxS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
1763-23-1	* Perfluorooctanesulfonic acid (PFOS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT

Sample Information

Client Sample ID: GWFB01_072419 **York Sample ID:** 19G1029-17

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:40 pm	07/24/2019

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
2355-31-9	* N-MeFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
2991-50-6	* N-EtFOSAA	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ng/L	5.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND	PF-CCV	ng/L	2.00	1	EPA 537m Certifications:	07/26/2019 11:20	07/29/2019 22:52	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*69.1 %*	*25-150*
Surrogate: M5PFHxA	*62.2 %*	*25-150*
Surrogate: M4PFHpA	*64.6 %*	*25-150*
Surrogate: M3PFHxS	*69.1 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*61.6 %*	*25-150*
Surrogate: M6PFDA	*56.8 %*	*25-150*
Surrogate: M7PFUdA	*51.0 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*45.5 %*	*25-150*
Surrogate: M2PFTeDA	*49.5 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*68.7 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*66.8 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*68.5 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*60.2 %*	*10-150*
Surrogate: d3-N-MeFOSAA	*59.7 %*	*25-150*

Sample Information

Client Sample ID: GWFB01_072419 **York Sample ID:** 19G1029-17

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:40 pm	07/24/2019

PFAS, NYSDEC Target List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: SPE Ext-PFAS-EPA 537.1M

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Surrogate: d5-N-EtFOSAA	*61.9 %*			*25-150*					
	Surrogate: M2-6:2 FTS	*58.5 %*			*25-150*					
	Surrogate: M2-8:2 FTS	*60.6 %*			*25-150*					
	Surrogate: M9PFNA	*61.8 %*			*25-150*					

Sample Information

Client Sample ID: GWTB01_072419 **York Sample ID:** 19G1029-18

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:00 am	07/24/2019

Volatile Organics, 8260 - Comprehensive **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
79-00-5	1,1,2-Trichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
75-34-3	1,1-Dichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
87-61-6	1,2,3-Trichlorobenzene	ND		ug/L	0.20	2.0	1	EPA 8260C Certifications:	07/25/2019 12:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
96-18-4	1,2,3-Trichloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
106-93-4	1,2-Dibromoethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS

Sample Information

Client Sample ID: GWTB01_072419 **York Sample ID:** 19G1029-18

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:00 am	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-06-2	1,2-Dichloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-87-5	1,2-Dichloropropane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
123-91-1	1,4-Dioxane	ND		ug/L	40	40	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
78-93-3	2-Butanone	ND		ug/L	0.20	2.0	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
591-78-6	2-Hexanone	ND		ug/L	0.20	2.0	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-10-1	4-Methyl-2-pentanone	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-64-1	Acetone	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-02-8	Acrolein	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
107-13-1	Acrylonitrile	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
71-43-2	Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-97-5	Bromochloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-27-4	Bromodichloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-25-2	Bromoform	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
74-83-9	Bromomethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-15-0	Carbon disulfide	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
56-23-5	Carbon tetrachloride	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
108-90-7	Chlorobenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
75-00-3	Chloroethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS
67-66-3	Chloroform	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	RDS

Sample Information

Client Sample ID: GWTB01_072419 **York Sample ID:** 19G1029-18

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:00 am	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-87-3	Chloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
156-59-2	cis-1,2-Dichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
110-82-7	Cyclohexane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
124-48-1	Dibromochloromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
74-95-3	Dibromomethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-71-8	Dichlorodifluoromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-41-4	Ethyl Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
87-68-3	Hexachlorobutadiene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-82-8	Isopropylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
79-20-9	Methyl acetate	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
108-87-2	Methylcyclohexane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-09-2	Methylene chloride	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
103-65-1	n-Propylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
95-47-6	o-Xylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP
179601-23-1	p- & m- Xylenes	ND		ug/L	0.50	1.0	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
100-42-5	Styrene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
75-65-0	tert-Butyl alcohol (TBA)	ND		ug/L	0.50	2.5	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP

Sample Information

Client Sample ID: GWTB01_072419 **York Sample ID:** 19G1029-18

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19G1029	170157201	Water	July 24, 2019 12:00 am	07/24/2019

Volatile Organics, 8260 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
127-18-4	Tetrachloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
108-88-3	Toluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
110-57-6	trans-1,4-dichloro-2-butene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/25/2019 21:29	RDS
79-01-6	Trichloroethylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
75-69-4	Trichlorofluoromethane	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
75-01-4	Vinyl Chloride	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP	07/25/2019 21:29	RDS
1330-20-7	Xylenes, Total	ND		ug/L	0.60	1.5	1	EPA 8260C Certifications:	07/25/2019 12:30 CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP	07/25/2019 21:29	RDS

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*82.7 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*100 %*	*81-117*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*106 %*	*79-122*

Volatile Organics, Tentatively Identified Cmpds.

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.0		ug/L		1	EPA 8260C Certifications:	07/25/2019 12:30	07/25/2019 21:29	RDS

Analytical Batch Summary

Batch ID: BG91371 **Preparation Method:** EPA 3535A **Prepared By:** CTD

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-15	ACME-MW-15_072419	07/25/19
19G1029-16	GWDUP01_072419	07/25/19
19G1029-17	GWFB01_072419	07/25/19
BG91371-BLK1	Blank	07/25/19
BG91371-BS1	LCS	07/25/19
BG91371-MS1	Matrix Spike	07/25/19
BG91371-MSD1	Matrix Spike Dup	07/25/19

Batch ID: BG91381 **Preparation Method:** EPA 5030B **Prepared By:** AB

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-11	GW_DRO9_072419	07/25/19
19G1029-15	ACME-MW-15_072419	07/25/19
19G1029-16	GWDUP01_072419	07/25/19
19G1029-18	GWTB01_072419	07/25/19
BG91381-BLK1	Blank	07/25/19
BG91381-BS1	LCS	07/25/19
BG91381-BSD1	LCS Dup	07/25/19

Batch ID: BG91389 **Preparation Method:** EPA 3550C **Prepared By:** MAT

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-09	SO_COMP01_072419	07/25/19
19G1029-10	SO_COMP02_072419	07/25/19
BG91389-BLK2	Blank	07/25/19
BG91389-BS2	LCS	07/25/19

Batch ID: BG91406 **Preparation Method:** % Solids Prep **Prepared By:** MJA

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-01	SO_DRO1_072419	07/25/19
19G1029-02	SO_DRO2_072419	07/25/19
19G1029-03	SO_DRO3_072419	07/25/19
19G1029-04	SO_DRO4_072419	07/25/19
19G1029-05	SO_DRO5_072419	07/25/19
19G1029-06	SO_DRO6_072419	07/25/19
19G1029-07	SO_DRO7_072419	07/25/19
19G1029-08	SO_DRO8_072419	07/25/19
19G1029-09	SO_COMP01_072419	07/25/19
19G1029-10	SO_COMP02_072419	07/25/19
19G1029-12	CU_DR10_072419	07/25/19
19G1029-13	CU_DR11_072419	07/25/19
19G1029-14	CU_COMP01_072419	07/25/19

Batch ID: BG91413 **Preparation Method:** EPA 5035A **Prepared By:** AB

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-01	SO_DRO1_072419	07/26/19
19G1029-02	SO_DRO2_072419	07/26/19
19G1029-03	SO_DRO3_072419	07/26/19
19G1029-04	SO_DRO4_072419	07/26/19
19G1029-06	SO_DRO6_072419	07/26/19
19G1029-07	SO_DRO7_072419	07/26/19
BG91413-BLK1	Blank	07/26/19
BG91413-BLK2	Blank	07/26/19
BG91413-BS1	LCS	07/26/19
BG91413-BSD1	LCS Dup	07/26/19

Batch ID: BG91416 **Preparation Method:** EPA 5030B **Prepared By:** AB

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-11RE1	GW_DRO9_072419	07/25/19
19G1029-15RE1	ACME-MW-15_072419	07/25/19
19G1029-16RE1	GWDUP01_072419	07/25/19
19G1029-17	GWFB01_072419	07/26/19
BG91416-BLK1	Blank	07/26/19
BG91416-BS1	LCS	07/26/19
BG91416-BSD1	LCS Dup	07/26/19

Batch ID: BG91431 **Preparation Method:** EPA 3510C **Prepared By:** CTD

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-11	GW_DRO9_072419	07/26/19
BG91431-BLK1	Blank	07/26/19
BG91431-BLK2	Blank	07/26/19
BG91431-BS1	LCS	07/26/19
BG91431-BS2	LCS	07/26/19
BG91431-BSD1	LCS Dup	07/26/19

Batch ID: BG91435 **Preparation Method:** EPA SW846-3510C Low Level **Prepared By:** BCJ

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-11	GW_DRO9_072419	07/26/19
BG91435-BLK2	Blank	07/26/19
BG91435-BS2	LCS	07/26/19
BG91435-BSD2	LCS Dup	07/26/19

Batch ID: BG91439 **Preparation Method:** Analysis Preparation **Prepared By:** TJM

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-11	GW_DRO9_072419	07/26/19

Batch ID: BG91440 **Preparation Method:** Analysis Preparation **Prepared By:** TJM

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-09	SO_COMP01_072419	07/26/19
19G1029-10	SO_COMP02_072419	07/26/19
19G1029-14	CU_COMP01_072419	07/26/19

Batch ID: BG91463 **Preparation Method:** SPE Ext-PFAS-EPA 537.1M **Prepared By:** KT

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-15	ACME-MW-15_072419	07/26/19
19G1029-16	GWDUP01_072419	07/26/19
19G1029-17	GWFB01_072419	07/26/19
BG91463-BLK1	Blank	07/26/19
BG91463-BS1	LCS	07/26/19
BG91463-DUP1	Duplicate	07/26/19

Batch ID: BG91499 **Preparation Method:** EPA 3550C **Prepared By:** LMJ

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-14	CU_COMP01_072419	07/29/19
BG91499-BLK1	Blank	07/29/19
BG91499-BS2	LCS	07/29/19

Batch ID: BG91514 **Preparation Method:** EPA 5035A **Prepared By:** AB

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-02RE1	SO_DRO2_072419	07/26/19
19G1029-03RE1	SO_DRO3_072419	07/26/19
19G1029-05	SO_DRO5_072419	07/29/19
19G1029-07RE1	SO_DRO7_072419	07/26/19
19G1029-08	SO_DRO8_072419	07/29/19
19G1029-12	CU_DR10_072419	07/29/19
19G1029-13	CU_DR11_072419	07/29/19
BG91514-BLK1	Blank	07/29/19
BG91514-BLK2	Blank	07/29/19
BG91514-BS1	LCS	07/29/19
BG91514-BSD1	LCS Dup	07/29/19

Batch ID: BG91522 **Preparation Method:** EPA 7473 water **Prepared By:** SY

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-11	GW_DRO9_072419	07/29/19
BG91522-BLK1	Blank	07/29/19
BG91522-SRM1	Reference	07/29/19

Batch ID: BG91528 **Preparation Method:** EPA 3015A **Prepared By:** SY

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-11	GW_DRO9_072419	07/29/19
BG91528-BLK1	Blank	07/29/19
BG91528-BS1	LCS	07/29/19

Batch ID: BG91529 **Preparation Method:** EPA 3015A **Prepared By:** SY

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-11	GW_DRO9_072419	07/29/19
BG91529-BLK1	Blank	07/29/19
BG91529-BS1	LCS	07/29/19

Batch ID: BG91561 **Preparation Method:** EPA SW 846-1311 TCLP extr. for SV(**Prepared By:** TAJ

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-09	SO_COMP01_072419	07/29/19
19G1029-10	SO_COMP02_072419	07/29/19
19G1029-14	CU_COMP01_072419	07/29/19
BG91561-BLK1	Blank	07/29/19

Batch ID: BG91562 **Preparation Method:** EPA SW 846-1311 TCLP ext. for meta **Prepared By:** TAJ

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-09	SO_COMP01_072419	07/29/19
19G1029-10	SO_COMP02_072419	07/29/19
19G1029-14	CU_COMP01_072419	07/29/19
BG91562-BLK1	Blank	07/29/19

Batch ID: BG91569 **Preparation Method:** Analysis Preparation **Prepared By:** AA

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-09	SO_COMP01_072419	07/29/19
19G1029-10	SO_COMP02_072419	07/29/19
19G1029-14	CU_COMP01_072419	07/29/19

Batch ID: BG91605 **Preparation Method:** EPA 7473 water **Prepared By:** SY

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-09	SO_COMP01_072419	07/30/19
19G1029-10	SO_COMP02_072419	07/30/19
19G1029-14	CU_COMP01_072419	07/30/19
BG91605-BLK1	Blank	07/30/19
BG91605-DUP1	Duplicate	07/30/19
BG91605-LBK1	Leach Fluid Blank	07/30/19
BG91605-MS1	Matrix Spike	07/30/19
BG91605-SRM1	Reference	07/30/19

Batch ID: BG91609 **Preparation Method:** EPA 3015A/1311 **Prepared By:** SY

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-09	SO_COMP01_072419	07/30/19
19G1029-10	SO_COMP02_072419	07/30/19
19G1029-14	CU_COMP01_072419	07/30/19
BG91609-BLK1	Blank	07/30/19
BG91609-BS1	LCS	07/30/19
BG91609-LBK1	Leach Fluid Blank	07/30/19

Batch ID: BG91620 **Preparation Method:** EPA 3510C/1311 **Prepared By:** MAM

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-09	SO_COMP01_072419	07/30/19
19G1029-10	SO_COMP02_072419	07/30/19
19G1029-14	CU_COMP01_072419	07/30/19
BG91620-BLK1	Blank	07/30/19
BG91620-BS1	LCS	07/30/19
BG91620-BSD1	LCS Dup	07/30/19
BG91620-LBK1	Leach Fluid Blank	07/30/19

Batch ID: BG91624 **Preparation Method:** EPA SW 846-1311 TCLP ZHE for VO **Prepared By:** TAJ

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-01	SO_DRO1_072419	07/30/19
19G1029-02	SO_DRO2_072419	07/30/19
19G1029-03	SO_DRO3_072419	07/30/19
19G1029-04	SO_DRO4_072419	07/30/19
19G1029-05	SO_DRO5_072419	07/30/19
19G1029-06	SO_DRO6_072419	07/30/19
19G1029-07	SO_DRO7_072419	07/30/19
19G1029-08	SO_DRO8_072419	07/30/19
19G1029-12	CU_DR10_072419	07/30/19
19G1029-13	CU_DR11_072419	07/30/19
BG91624-BLK1	Blank	07/30/19

Batch ID: BG91645 **Preparation Method:** EPA 5030B/1311 **Prepared By:** AB

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-01	SO_DRO1_072419	07/31/19
19G1029-02	SO_DRO2_072419	07/31/19
19G1029-03	SO_DRO3_072419	07/31/19
19G1029-04	SO_DRO4_072419	07/31/19
19G1029-05	SO_DRO5_072419	07/31/19
19G1029-06	SO_DRO6_072419	07/31/19
19G1029-07	SO_DRO7_072419	07/31/19
19G1029-08	SO_DRO8_072419	07/31/19
19G1029-12	CU_DR10_072419	07/31/19

19G1029-13	CU_DR11_072419	07/31/19
BG91645-BLK1	Blank	07/31/19
BG91645-BS1	LCS	07/31/19
BG91645-BSD1	LCS Dup	07/31/19
BG91645-DUP1	Duplicate	07/31/19
BG91645-LBK1	Leach Fluid Blank	07/31/19

Batch ID: BG91693 **Preparation Method:** Analysis Preparation **Prepared By:** TAJ

YORK Sample ID	Client Sample ID	Preparation Date
19G1029-11	GW_DRO9_072419	07/31/19
BG91693-SRM1	Reference	07/31/19

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91381 - EPA 5030B											
Blank (BG91381-BLK1)									Prepared & Analyzed: 07/25/2019		
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L								
Tentatively Identified Compounds	0.0		"								
1,1,1-Trichloroethane	ND	0.50	"								
1,1,2,2-Tetrachloroethane	ND	0.50	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	"								
1,1,2-Trichloroethane	ND	0.50	"								
1,1-Dichloroethane	ND	0.50	"								
1,1-Dichloroethylene	ND	0.50	"								
1,2,3-Trichlorobenzene	ND	2.0	"								
1,2,3-Trichloropropane	ND	0.50	"								
1,2,4-Trichlorobenzene	ND	0.50	"								
1,2,4-Trimethylbenzene	ND	0.50	"								
1,2-Dibromo-3-chloropropane	ND	0.50	"								
1,2-Dibromoethane	ND	0.50	"								
1,2-Dichlorobenzene	ND	0.50	"								
1,2-Dichloroethane	ND	0.50	"								
1,2-Dichloropropane	ND	0.50	"								
1,3,5-Trimethylbenzene	ND	0.50	"								
1,3-Dichlorobenzene	ND	0.50	"								
1,4-Dichlorobenzene	ND	0.50	"								
1,4-Dioxane	ND	40	"								
2-Butanone	ND	2.0	"								
2-Hexanone	ND	2.0	"								
4-Methyl-2-pentanone	ND	0.50	"								
Acetone	ND	2.0	"								
Acrolein	ND	0.50	"								
Acrylonitrile	ND	0.50	"								
Benzene	ND	0.50	"								
Bromochloromethane	ND	0.50	"								
Bromodichloromethane	ND	0.50	"								
Bromoform	ND	0.50	"								
Bromomethane	ND	0.50	"								
Carbon disulfide	ND	0.50	"								
Carbon tetrachloride	ND	0.50	"								
Chlorobenzene	ND	0.50	"								
Chloroethane	ND	0.50	"								
Chloroform	ND	0.50	"								
Chloromethane	ND	0.50	"								
cis-1,2-Dichloroethylene	ND	0.50	"								
cis-1,3-Dichloropropylene	ND	0.50	"								
Cyclohexane	ND	0.50	"								
Dibromochloromethane	ND	0.50	"								
Dibromomethane	ND	0.50	"								
Dichlorodifluoromethane	ND	0.50	"								
Ethyl Benzene	ND	0.50	"								
Hexachlorobutadiene	ND	0.50	"								
Isopropylbenzene	ND	0.50	"								
Methyl acetate	ND	0.50	"								
Methyl tert-butyl ether (MTBE)	ND	0.50	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

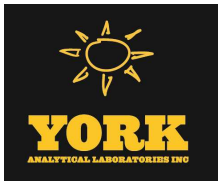
York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91381 - EPA 5030B											
Blank (BG91381-BLK1)									Prepared & Analyzed: 07/25/2019		
Methylcyclohexane	ND	0.50	ug/L								
Methylene chloride	ND	2.0	"								
n-Butylbenzene	ND	0.50	"								
n-Propylbenzene	ND	0.50	"								
o-Xylene	ND	0.50	"								
p- & m- Xylenes	ND	1.0	"								
p-Isopropyltoluene	ND	0.50	"								
sec-Butylbenzene	ND	0.50	"								
Styrene	ND	0.50	"								
tert-Butyl alcohol (TBA)	ND	2.5	"								
tert-Butylbenzene	ND	0.50	"								
Tetrachloroethylene	ND	0.50	"								
Toluene	ND	0.50	"								
trans-1,2-Dichloroethylene	ND	0.50	"								
trans-1,3-Dichloropropylene	ND	0.50	"								
trans-1,4-dichloro-2-butene	ND	0.50	"								
Trichloroethylene	ND	0.50	"								
Trichlorofluoromethane	ND	0.50	"								
Vinyl Chloride	ND	0.50	"								
Xylenes, Total	ND	1.5	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*8.51*		*"*	*10.0*		*85.1*	*69-130*				
Surrogate: SURR: Toluene-d8	*10.1*		*"*	*10.0*		*101*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*10.2*		*"*	*10.0*		*102*	*79-122*				
LCS (BG91381-BS1)									Prepared & Analyzed: 07/25/2019		
1,1,1,2-Tetrachloroethane	10		ug/L	10.0		102	82-126				
1,1,1-Trichloroethane	11		"	10.0		109	78-136				
1,1,2,2-Tetrachloroethane	10		"	10.0		99.6	76-129				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11		"	10.0		106	54-165				
1,1,2-Trichloroethane	9.5		"	10.0		95.4	82-123				
1,1-Dichloroethane	10		"	10.0		101	82-129				
1,1-Dichloroethylene	9.8		"	10.0		97.5	68-138				
1,2,3-Trichlorobenzene	9.8		"	10.0		98.0	76-136				
1,2,3-Trichloropropane	10		"	10.0		104	77-128				
1,2,4-Trichlorobenzene	9.9		"	10.0		99.2	76-137				
1,2,4-Trimethylbenzene	10		"	10.0		102	82-132				
1,2-Dibromo-3-chloropropane	10		"	10.0		105	45-147				
1,2-Dibromoethane	10		"	10.0		105	83-124				
1,2-Dichlorobenzene	10		"	10.0		100	79-123				
1,2-Dichloroethane	9.8		"	10.0		98.0	73-132				
1,2-Dichloropropane	9.8		"	10.0		97.6	78-126				
1,3,5-Trimethylbenzene	10		"	10.0		103	80-131				
1,3-Dichlorobenzene	10		"	10.0		100	86-122				
1,4-Dichlorobenzene	10		"	10.0		101	85-124				
1,4-Dioxane	190		"	210		90.5	10-349				
2-Butanone	11		"	10.0		111	49-152				
2-Hexanone	9.6		"	10.0		96.1	51-146				
4-Methyl-2-pentanone	10		"	10.0		99.9	57-145				
Acetone	8.9		"	10.0		89.2	14-150				
Acrolein	8.6		"	10.0		85.5	10-153				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91381 - EPA 5030B											
LCS (BG91381-BS1)								Prepared & Analyzed: 07/25/2019			
Acrylonitrile	9.5		ug/L	10.0		95.0	51-150				
Benzene	11		"	10.0		106	85-126				
Bromochloromethane	9.9		"	10.0		99.3	77-128				
Bromodichloromethane	10		"	10.0		101	79-128				
Bromoform	9.6		"	10.0		96.3	78-133				
Bromomethane	8.7		"	10.0		86.9	43-168				
Carbon disulfide	10		"	10.0		102	68-146				
Carbon tetrachloride	10		"	10.0		103	77-141				
Chlorobenzene	10		"	10.0		102	88-120				
Chloroethane	9.2		"	10.0		91.6	65-136				
Chloroform	10		"	10.0		104	82-128				
Chloromethane	9.4		"	10.0		94.2	43-155				
cis-1,2-Dichloroethylene	9.9		"	10.0		99.0	83-129				
cis-1,3-Dichloropropylene	9.9		"	10.0		98.6	80-131				
Cyclohexane	10		"	10.0		100	63-149				
Dibromochloromethane	10		"	10.0		102	80-130				
Dibromomethane	9.6		"	10.0		96.2	72-134				
Dichlorodifluoromethane	9.2		"	10.0		92.2	44-144				
Ethyl Benzene	11		"	10.0		105	80-131				
Hexachlorobutadiene	10		"	10.0		100	67-146				
Isopropylbenzene	11		"	10.0		106	76-140				
Methyl acetate	9.1		"	10.0		91.0	51-139				
Methyl tert-butyl ether (MTBE)	9.7		"	10.0		97.0	76-135				
Methylcyclohexane	10		"	10.0		101	72-143				
Methylene chloride	9.9		"	10.0		98.9	55-137				
n-Butylbenzene	10		"	10.0		99.8	79-132				
n-Propylbenzene	11		"	10.0		106	78-133				
o-Xylene	11		"	10.0		106	78-130				
p- & m- Xylenes	21		"	20.0		106	77-133				
p-Isopropyltoluene	11		"	10.0		106	81-136				
sec-Butylbenzene	11		"	10.0		110	79-137				
Styrene	10		"	10.0		104	67-132				
tert-Butyl alcohol (TBA)	51		"	50.0		102	25-162				
tert-Butylbenzene	11		"	10.0		106	77-138				
Tetrachloroethylene	9.3		"	10.0		93.3	82-131				
Toluene	10		"	10.0		104	80-127				
trans-1,2-Dichloroethylene	9.6		"	10.0		95.9	80-132				
trans-1,3-Dichloropropylene	9.7		"	10.0		97.3	78-131				
trans-1,4-dichloro-2-butene	11		"	10.0		106	63-141				
Trichloroethylene	10		"	10.0		104	82-128				
Trichlorofluoromethane	9.9		"	10.0		99.0	67-139				
Vinyl Chloride	9.4		"	10.0		94.1	58-145				
Surrogate: SURR: 1,2-Dichloroethane-d4	*9.75*		*"*	*10.0*		*97.5*	*69-130*				
Surrogate: SURR: Toluene-d8	*9.89*		*"*	*10.0*		*98.9*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*10.4*		*"*	*10.0*		*104*	*79-122*				



Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91381 - EPA 5030B											
LCS Dup (BG91381-BSD1)							Prepared & Analyzed: 07/25/2019				
1,1,1,2-Tetrachloroethane	9.6		ug/L	10.0		96.3	82-126		5.45	30	
1,1,1-Trichloroethane	9.1		"	10.0		90.9	78-136		17.9	30	
1,1,2,2-Tetrachloroethane	10		"	10.0		101	76-129		0.999	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	9.1		"	10.0		90.8	54-165		15.4	30	
1,1,2-Trichloroethane	9.6		"	10.0		95.8	82-123		0.418	30	
1,1-Dichloroethane	9.4		"	10.0		93.5	82-129		8.01	30	
1,1-Dichloroethylene	8.4		"	10.0		84.0	68-138		14.9	30	
1,2,3-Trichlorobenzene	9.7		"	10.0		96.6	76-136		1.44	30	
1,2,3-Trichloropropane	10		"	10.0		102	77-128		2.03	30	
1,2,4-Trichlorobenzene	9.6		"	10.0		95.7	76-137		3.59	30	
1,2,4-Trimethylbenzene	9.8		"	10.0		97.5	82-132		4.32	30	
1,2-Dibromo-3-chloropropane	10		"	10.0		102	45-147		2.70	30	
1,2-Dibromoethane	10		"	10.0		99.8	83-124		4.98	30	
1,2-Dichlorobenzene	9.7		"	10.0		97.1	79-123		3.34	30	
1,2-Dichloroethane	8.4		"	10.0		84.1	73-132		15.3	30	
1,2-Dichloropropane	9.9		"	10.0		98.9	78-126		1.32	30	
1,3,5-Trimethylbenzene	9.9		"	10.0		98.6	80-131		4.75	30	
1,3-Dichlorobenzene	9.7		"	10.0		97.2	86-122		3.24	30	
1,4-Dichlorobenzene	9.6		"	10.0		96.3	85-124		4.86	30	
1,4-Dioxane	300		"	210		144	10-349		45.5	30	Non-dir.
2-Butanone	9.6		"	10.0		96.3	49-152		14.2	30	
2-Hexanone	10		"	10.0		100	51-146		3.98	30	
4-Methyl-2-pentanone	11		"	10.0		106	57-145		5.93	30	
Acetone	7.8		"	10.0		78.2	14-150		13.1	30	
Acrolein	9.0		"	10.0		89.5	10-153		4.57	30	
Acrylonitrile	11		"	10.0		107	51-150		11.6	30	
Benzene	10		"	10.0		99.5	85-126		6.14	30	
Bromochloromethane	9.6		"	10.0		96.3	77-128		3.07	30	
Bromodichloromethane	9.2		"	10.0		92.5	79-128		8.49	30	
Bromoform	9.2		"	10.0		92.1	78-133		4.46	30	
Bromomethane	8.2		"	10.0		82.0	43-168		5.80	30	
Carbon disulfide	9.3		"	10.0		93.3	68-146		8.42	30	
Carbon tetrachloride	8.5		"	10.0		85.2	77-141		18.9	30	
Chlorobenzene	9.7		"	10.0		97.1	88-120		4.53	30	
Chloroethane	8.5		"	10.0		84.9	65-136		7.59	30	
Chloroform	9.1		"	10.0		91.3	82-128		12.5	30	
Chloromethane	7.8		"	10.0		77.8	43-155		19.1	30	
cis-1,2-Dichloroethylene	9.1		"	10.0		91.1	83-129		8.31	30	
cis-1,3-Dichloropropylene	9.9		"	10.0		98.7	80-131		0.101	30	
Cyclohexane	9.5		"	10.0		95.3	63-149		5.01	30	
Dibromochloromethane	9.7		"	10.0		96.8	80-130		4.84	30	
Dibromomethane	9.0		"	10.0		89.6	72-134		7.10	30	
Dichlorodifluoromethane	7.6		"	10.0		75.7	44-144		19.7	30	
Ethyl Benzene	9.9		"	10.0		99.4	80-131		5.67	30	
Hexachlorobutadiene	9.6		"	10.0		96.2	67-146		4.07	30	
Isopropylbenzene	10		"	10.0		105	76-140		0.664	30	
Methyl acetate	9.6		"	10.0		95.6	51-139		4.93	30	
Methyl tert-butyl ether (MTBE)	9.4		"	10.0		93.5	76-135		3.67	30	
Methylcyclohexane	9.7		"	10.0		97.4	72-143		3.93	30	
Methylene chloride	9.4		"	10.0		94.4	55-137		4.66	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91381 - EPA 5030B											
LCS Dup (BG91381-BSD1)								Prepared & Analyzed: 07/25/2019			
n-Butylbenzene	9.5		ug/L	10.0		95.0	79-132		4.93	30	
n-Propylbenzene	9.9		"	10.0		99.4	78-133		5.95	30	
o-Xylene	10		"	10.0		102	78-130		4.51	30	
p- & m- Xylenes	20		"	20.0		101	77-133		5.11	30	
p-Isopropyltoluene	10		"	10.0		100	81-136		5.44	30	
sec-Butylbenzene	10		"	10.0		103	79-137		6.40	30	
Styrene	10		"	10.0		101	67-132		2.73	30	
tert-Butyl alcohol (TBA)	56		"	50.0		112	25-162		9.41	30	
tert-Butylbenzene	10		"	10.0		100	77-138		5.35	30	
Tetrachloroethylene	8.7		"	10.0		86.8	82-131		7.22	30	
Toluene	10		"	10.0		100	80-127		3.44	30	
trans-1,2-Dichloroethylene	8.8		"	10.0		88.1	80-132		8.48	30	
trans-1,3-Dichloropropylene	9.5		"	10.0		94.8	78-131		2.60	30	
trans-1,4-dichloro-2-butene	10		"	10.0		99.5	63-141		6.70	30	
Trichloroethylene	9.3		"	10.0		92.8	82-128		11.2	30	
Trichlorofluoromethane	7.7		"	10.0		77.2	67-139		24.7	30	
Vinyl Chloride	7.7		"	10.0		76.6	58-145		20.5	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*8.57*		*"*	*10.0*		*85.7*	*69-130*				
Surrogate: SURR: Toluene-d8	*10.1*		*"*	*10.0*		*101*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*10.3*		*"*	*10.0*		*103*	*79-122*				
Batch BG91413 - EPA 5035A											
Blank (BG91413-BLK1)								Prepared & Analyzed: 07/26/2019			
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet								
1,1,1-Trichloroethane	ND	0.0050	"								
1,1,2,2-Tetrachloroethane	ND	0.0050	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0050	"								
1,1,2-Trichloroethane	ND	0.0050	"								
1,1-Dichloroethane	ND	0.0050	"								
1,1-Dichloroethylene	ND	0.0050	"								
1,2,3-Trichlorobenzene	ND	0.0050	"								
1,2,3-Trichloropropane	ND	0.0050	"								
1,2,4-Trichlorobenzene	ND	0.0050	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,2-Dibromo-3-chloropropane	ND	0.0050	"								
1,2-Dibromoethane	ND	0.0050	"								
1,2-Dichlorobenzene	ND	0.0050	"								
1,2-Dichloroethane	ND	0.0050	"								
1,2-Dichloropropane	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
1,3-Dichlorobenzene	ND	0.0050	"								
1,4-Dichlorobenzene	ND	0.0050	"								
1,4-Dioxane	ND	0.10	"								
2-Butanone	ND	0.0050	"								
2-Hexanone	ND	0.0050	"								
4-Methyl-2-pentanone	ND	0.0050	"								
Acetone	ND	0.010	"								
Acrolein	ND	0.010	"								
Acrylonitrile	ND	0.0050	"								
Benzene	ND	0.0050	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91413 - EPA 5035A											
Blank (BG91413-BLK1)											
Prepared & Analyzed: 07/26/2019											
Bromochloromethane	ND	0.0050	mg/kg wet								
Bromodichloromethane	ND	0.0050	"								
Bromoform	ND	0.0050	"								
Bromomethane	ND	0.0050	"								
Carbon disulfide	ND	0.0050	"								
Carbon tetrachloride	ND	0.0050	"								
Chlorobenzene	ND	0.0050	"								
Chloroethane	ND	0.0050	"								
Chloroform	ND	0.0050	"								
Chloromethane	ND	0.0050	"								
cis-1,2-Dichloroethylene	ND	0.0050	"								
cis-1,3-Dichloropropylene	ND	0.0050	"								
Cyclohexane	ND	0.0050	"								
Dibromochloromethane	ND	0.0050	"								
Dibromomethane	ND	0.0050	"								
Dichlorodifluoromethane	ND	0.0050	"								
Ethyl Benzene	ND	0.0050	"								
Hexachlorobutadiene	ND	0.0050	"								
Isopropylbenzene	ND	0.0050	"								
Methyl acetate	ND	0.0050	"								
Methyl tert-butyl ether (MTBE)	ND	0.0050	"								
Methylcyclohexane	ND	0.0050	"								
Methylene chloride	ND	0.010	"								
n-Butylbenzene	ND	0.0050	"								
n-Propylbenzene	ND	0.0050	"								
o-Xylene	ND	0.0050	"								
p- & m- Xylenes	ND	0.010	"								
p-Isopropyltoluene	ND	0.0050	"								
sec-Butylbenzene	ND	0.0050	"								
Styrene	ND	0.0050	"								
tert-Butyl alcohol (TBA)	ND	0.025	"								
tert-Butylbenzene	ND	0.0050	"								
Tetrachloroethylene	ND	0.0050	"								
Toluene	ND	0.0050	"								
trans-1,2-Dichloroethylene	ND	0.0050	"								
trans-1,3-Dichloropropylene	ND	0.0050	"								
trans-1,4-dichloro-2-butene	ND	0.0050	"								
Trichloroethylene	ND	0.0050	"								
Trichlorofluoromethane	ND	0.0050	"								
Vinyl Chloride	ND	0.0050	"								
Xylenes, Total	ND	0.015	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.8*		*ug/L*	*50.0*		*99.6*	*77-125*				
Surrogate: SURR: Toluene-d8	*49.9*		*"*	*50.0*		*99.8*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*50.6*		*"*	*50.0*		*101*	*76-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91413 - EPA 5035A											
Blank (BG91413-BLK2)											Prepared & Analyzed: 07/26/2019
1,1,1,2-Tetrachloroethane	ND	0.50	mg/kg wet								
1,1,1-Trichloroethane	ND	0.50	"								
1,1,2,2-Tetrachloroethane	ND	0.50	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	"								
1,1,2-Trichloroethane	ND	0.50	"								
1,1-Dichloroethane	ND	0.50	"								
1,1-Dichloroethylene	ND	0.50	"								
1,2,3-Trichlorobenzene	ND	0.50	"								
1,2,3-Trichloropropane	ND	0.50	"								
1,2,4-Trichlorobenzene	ND	0.50	"								
1,2,4-Trimethylbenzene	ND	0.50	"								
1,2-Dibromo-3-chloropropane	ND	0.50	"								
1,2-Dibromoethane	ND	0.50	"								
1,2-Dichlorobenzene	ND	0.50	"								
1,2-Dichloroethane	ND	0.50	"								
1,2-Dichloropropane	ND	0.50	"								
1,3,5-Trimethylbenzene	ND	0.50	"								
1,3-Dichlorobenzene	ND	0.50	"								
1,4-Dichlorobenzene	ND	0.50	"								
1,4-Dioxane	ND	10	"								
2-Butanone	ND	0.50	"								
2-Hexanone	ND	0.50	"								
4-Methyl-2-pentanone	ND	0.50	"								
Acetone	ND	1.0	"								
Acrolein	ND	1.0	"								
Acrylonitrile	ND	0.50	"								
Benzene	ND	0.50	"								
Bromochloromethane	ND	0.50	"								
Bromodichloromethane	ND	0.50	"								
Bromoform	ND	0.50	"								
Bromomethane	ND	0.50	"								
Carbon disulfide	ND	0.50	"								
Carbon tetrachloride	ND	0.50	"								
Chlorobenzene	ND	0.50	"								
Chloroethane	ND	0.50	"								
Chloroform	ND	0.50	"								
Chloromethane	ND	0.50	"								
cis-1,2-Dichloroethylene	ND	0.50	"								
cis-1,3-Dichloropropylene	ND	0.50	"								
Cyclohexane	ND	0.50	"								
Dibromochloromethane	ND	0.50	"								
Dibromomethane	ND	0.50	"								
Dichlorodifluoromethane	ND	0.50	"								
Ethyl Benzene	ND	0.50	"								
Hexachlorobutadiene	ND	0.50	"								
Isopropylbenzene	ND	0.50	"								
Methyl acetate	ND	0.50	"								
Methyl tert-butyl ether (MTBE)	ND	0.50	"								
Methylcyclohexane	ND	0.50	"								
Methylene chloride	ND	1.0	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

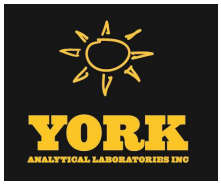
York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91413 - EPA 5035A											
Blank (BG91413-BLK2)									Prepared & Analyzed: 07/26/2019		
n-Butylbenzene	ND	0.50	mg/kg wet								
n-Propylbenzene	ND	0.50	"								
o-Xylene	ND	0.50	"								
p- & m- Xylenes	ND	1.0	"								
p-Isopropyltoluene	ND	0.50	"								
sec-Butylbenzene	ND	0.50	"								
Styrene	ND	0.50	"								
tert-Butyl alcohol (TBA)	ND	2.5	"								
tert-Butylbenzene	ND	0.50	"								
Tetrachloroethylene	ND	0.50	"								
Toluene	ND	0.50	"								
trans-1,2-Dichloroethylene	ND	0.50	"								
trans-1,3-Dichloropropylene	ND	0.50	"								
trans-1,4-dichloro-2-butene	ND	0.50	"								
Trichloroethylene	ND	0.50	"								
Trichlorofluoromethane	ND	0.50	"								
Vinyl Chloride	ND	0.50	"								
Xylenes, Total	ND	1.5	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.5*		*ug/L*	*50.0*		*98.9*	*77-125*				
Surrogate: SURR: Toluene-d8	*49.8*		*"*	*50.0*		*99.7*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*50.9*		*"*	*50.0*		*102*	*76-130*				
LCS (BG91413-BS1)									Prepared & Analyzed: 07/26/2019		
1,1,1,2-Tetrachloroethane	54		ug/L	50.0		108	75-129				
1,1,1-Trichloroethane	57		"	50.0		113	71-137				
1,1,2,2-Tetrachloroethane	56		"	50.0		111	79-129				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	56		"	50.0		112	58-146				
1,1,2-Trichloroethane	52		"	50.0		104	83-123				
1,1-Dichloroethane	54		"	50.0		108	75-130				
1,1-Dichloroethylene	53		"	50.0		106	64-137				
1,2,3-Trichlorobenzene	51		"	50.0		103	81-140				
1,2,3-Trichloropropane	54		"	50.0		108	81-126				
1,2,4-Trichlorobenzene	52		"	50.0		104	80-141				
1,2,4-Trimethylbenzene	52		"	50.0		105	84-125				
1,2-Dibromo-3-chloropropane	55		"	50.0		111	74-142				
1,2-Dibromoethane	57		"	50.0		113	86-123				
1,2-Dichlorobenzene	53		"	50.0		106	85-122				
1,2-Dichloroethane	53		"	50.0		106	71-133				
1,2-Dichloropropane	52		"	50.0		105	81-122				
1,3,5-Trimethylbenzene	53		"	50.0		106	82-126				
1,3-Dichlorobenzene	52		"	50.0		105	84-124				
1,4-Dichlorobenzene	52		"	50.0		105	84-124				
1,4-Dioxane	1100		"	1050		109	10-228				
2-Butanone	60		"	50.0		121	58-147				
2-Hexanone	58		"	50.0		116	70-139				
4-Methyl-2-pentanone	56		"	50.0		111	72-132				
Acetone	60		"	50.0		120	36-155				
Acrolein	56		"	50.0		113	10-238				
Acrylonitrile	58		"	50.0		116	66-141				
Benzene	55		"	50.0		109	77-127				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91413 - EPA 5035A											
LCS (BG91413-BS1)								Prepared & Analyzed: 07/26/2019			
Bromochloromethane	53		ug/L	50.0		106	74-129				
Bromodichloromethane	54		"	50.0		109	81-124				
Bromoform	55		"	50.0		110	80-136				
Bromomethane	47		"	50.0		94.6	32-177				
Carbon disulfide	56		"	50.0		112	10-136				
Carbon tetrachloride	55		"	50.0		110	66-143				
Chlorobenzene	53		"	50.0		105	86-120				
Chloroethane	49		"	50.0		98.4	51-142				
Chloroform	54		"	50.0		108	76-131				
Chloromethane	47		"	50.0		94.4	49-132				
cis-1,2-Dichloroethylene	53		"	50.0		106	74-132				
cis-1,3-Dichloropropylene	54		"	50.0		108	81-129				
Cyclohexane	54		"	50.0		107	70-130				
Dibromochloromethane	56		"	50.0		111	10-200				
Dibromomethane	52		"	50.0		104	83-124				
Dichlorodifluoromethane	45		"	50.0		90.2	28-158				
Ethyl Benzene	54		"	50.0		108	84-125				
Hexachlorobutadiene	52		"	50.0		105	83-133				
Isopropylbenzene	52		"	50.0		104	81-127				
Methyl acetate	50		"	50.0		99.4	41-143				
Methyl tert-butyl ether (MTBE)	52		"	50.0		104	74-131				
Methylcyclohexane	53		"	50.0		106	70-130				
Methylene chloride	54		"	50.0		108	57-141				
n-Butylbenzene	53		"	50.0		105	80-130				
n-Propylbenzene	53		"	50.0		106	74-136				
o-Xylene	54		"	50.0		108	83-123				
p- & m- Xylenes	110		"	100		108	82-128				
p-Isopropyltoluene	54		"	50.0		107	85-125				
sec-Butylbenzene	56		"	50.0		111	83-125				
Styrene	54		"	50.0		108	86-126				
tert-Butyl alcohol (TBA)	280		"	250		113	70-130				
tert-Butylbenzene	53		"	50.0		106	80-127				
Tetrachloroethylene	51		"	50.0		101	80-129				
Toluene	54		"	50.0		108	85-121				
trans-1,2-Dichloroethylene	53		"	50.0		105	72-132				
trans-1,3-Dichloropropylene	53		"	50.0		107	78-132				
trans-1,4-dichloro-2-butene	56		"	50.0		112	75-135				
Trichloroethylene	53		"	50.0		107	84-123				
Trichlorofluoromethane	48		"	50.0		96.6	62-140				
Vinyl Chloride	48		"	50.0		95.6	52-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.0*		*"*	*50.0*		*97.9*	*77-125*				
Surrogate: SURR: Toluene-d8	*49.7*		*"*	*50.0*		*99.4*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*49.7*		*"*	*50.0*		*99.5*	*76-130*				



Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91413 - EPA 5035A											
LCS Dup (BG91413-BSD1)							Prepared & Analyzed: 07/26/2019				
1,1,1,2-Tetrachloroethane	54		ug/L	50.0		109	75-129		1.31	30	
1,1,1-Trichloroethane	57		"	50.0		115	71-137		1.09	30	
1,1,2,2-Tetrachloroethane	57		"	50.0		113	79-129		1.89	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	56		"	50.0		113	58-146		0.178	30	
1,1,2-Trichloroethane	53		"	50.0		106	83-123		1.96	30	
1,1-Dichloroethane	54		"	50.0		108	75-130		0.204	30	
1,1-Dichloroethylene	52		"	50.0		105	64-137		0.704	30	
1,2,3-Trichlorobenzene	52		"	50.0		104	81-140		1.39	30	
1,2,3-Trichloropropane	55		"	50.0		111	81-126		2.37	30	
1,2,4-Trichlorobenzene	52		"	50.0		105	80-141		0.496	30	
1,2,4-Trimethylbenzene	52		"	50.0		104	84-125		0.804	30	
1,2-Dibromo-3-chloropropane	58		"	50.0		117	74-142		5.35	30	
1,2-Dibromoethane	58		"	50.0		115	86-123		1.57	30	
1,2-Dichlorobenzene	53		"	50.0		107	85-122		0.940	30	
1,2-Dichloroethane	54		"	50.0		108	71-133		1.34	30	
1,2-Dichloropropane	53		"	50.0		106	81-122		1.07	30	
1,3,5-Trimethylbenzene	52		"	50.0		104	82-126		1.78	30	
1,3-Dichlorobenzene	52		"	50.0		104	84-124		0.517	30	
1,4-Dichlorobenzene	52		"	50.0		105	84-124		0.0381	30	
1,4-Dioxane	1200		"	1050		111	10-228		1.58	30	
2-Butanone	59		"	50.0		118	58-147		2.01	30	
2-Hexanone	58		"	50.0		116	70-139		0.206	30	
4-Methyl-2-pentanone	57		"	50.0		113	72-132		1.76	30	
Acetone	54		"	50.0		109	36-155		9.64	30	
Acrolein	58		"	50.0		116	10-238		2.76	30	
Acrylonitrile	58		"	50.0		116	66-141		0.121	30	
Benzene	55		"	50.0		110	77-127		0.456	30	
Bromochloromethane	54		"	50.0		109	74-129		2.40	30	
Bromodichloromethane	54		"	50.0		109	81-124		0.423	30	
Bromoform	58		"	50.0		115	80-136		4.36	30	
Bromomethane	48		"	50.0		95.3	32-177		0.674	30	
Carbon disulfide	56		"	50.0		112	10-136		0.251	30	
Carbon tetrachloride	56		"	50.0		112	66-143		2.13	30	
Chlorobenzene	53		"	50.0		105	86-120		0.0380	30	
Chloroethane	51		"	50.0		102	51-142		3.71	30	
Chloroform	55		"	50.0		109	76-131		1.38	30	
Chloromethane	46		"	50.0		91.8	49-132		2.77	30	
cis-1,2-Dichloroethylene	53		"	50.0		106	74-132		0.584	30	
cis-1,3-Dichloropropylene	55		"	50.0		109	81-129		1.36	30	
Cyclohexane	54		"	50.0		107	70-130		0.149	30	
Dibromochloromethane	57		"	50.0		114	10-200		2.38	30	
Dibromomethane	53		"	50.0		107	83-124		3.06	30	
Dichlorodifluoromethane	45		"	50.0		89.3	28-158		1.05	30	
Ethyl Benzene	54		"	50.0		107	84-125		0.705	30	
Hexachlorobutadiene	53		"	50.0		106	83-133		1.59	30	
Isopropylbenzene	52		"	50.0		104	81-127		0.0386	30	
Methyl acetate	52		"	50.0		103	41-143		3.96	30	
Methyl tert-butyl ether (MTBE)	54		"	50.0		107	74-131		3.02	30	
Methylcyclohexane	53		"	50.0		106	70-130		0.132	30	
Methylene chloride	54		"	50.0		108	57-141		0.408	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91413 - EPA 5035A											
LCS Dup (BG91413-BSD1)									Prepared & Analyzed: 07/26/2019		
n-Butylbenzene	49		ug/L	50.0		97.6	80-130		7.61	30	
n-Propylbenzene	53		"	50.0		105	74-136		0.777	30	
o-Xylene	54		"	50.0		107	83-123		0.372	30	
p- & m- Xylenes	110		"	100		107	82-128		0.698	30	
p-Isopropyltoluene	53		"	50.0		107	85-125		0.468	30	
sec-Butylbenzene	55		"	50.0		110	83-125		0.905	30	
Styrene	54		"	50.0		109	86-126		0.608	30	
tert-Butyl alcohol (TBA)	300		"	250		119	70-130		5.55	30	
tert-Butylbenzene	53		"	50.0		105	80-127		0.815	30	
Tetrachloroethylene	51		"	50.0		102	80-129		1.02	30	
Toluene	54		"	50.0		108	85-121		0.445	30	
trans-1,2-Dichloroethylene	53		"	50.0		105	72-132		0.0190	30	
trans-1,3-Dichloropropylene	55		"	50.0		110	78-132		2.68	30	
trans-1,4-dichloro-2-butene	57		"	50.0		114	75-135		1.94	30	
Trichloroethylene	53		"	50.0		106	84-123		0.263	30	
Trichlorofluoromethane	48		"	50.0		96.9	62-140		0.372	30	
Vinyl Chloride	48		"	50.0		96.3	52-130		0.750	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.9*		*"*	*50.0*		*99.8*	*77-125*				
Surrogate: SURR: Toluene-d8	*49.8*		*"*	*50.0*		*99.6*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*49.7*		*"*	*50.0*		*99.3*	*76-130*				
Batch BG91416 - EPA 5030B											
Blank (BG91416-BLK1)									Prepared & Analyzed: 07/26/2019		
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L								
Tentatively Identified Compounds	0.0		"								
1,1,1-Trichloroethane	ND	0.50	"								
1,1,2,2-Tetrachloroethane	ND	0.50	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	"								
1,1,2-Trichloroethane	ND	0.50	"								
1,1-Dichloroethane	ND	0.50	"								
1,1-Dichloroethylene	ND	0.50	"								
1,2,3-Trichlorobenzene	ND	0.50	"								
1,2,3-Trichloropropane	ND	0.50	"								
1,2,4-Trichlorobenzene	ND	0.50	"								
1,2,4-Trimethylbenzene	ND	0.50	"								
1,2-Dibromo-3-chloropropane	ND	0.50	"								
1,2-Dibromoethane	ND	0.50	"								
1,2-Dichlorobenzene	ND	0.50	"								
1,2-Dichloroethane	ND	0.50	"								
1,2-Dichloropropane	ND	0.50	"								
1,3,5-Trimethylbenzene	ND	0.50	"								
1,3-Dichlorobenzene	ND	0.50	"								
1,4-Dichlorobenzene	ND	0.50	"								
1,4-Dioxane	ND	40	"								
2-Butanone	ND	0.50	"								
2-Hexanone	ND	0.50	"								
4-Methyl-2-pentanone	ND	0.50	"								
Acetone	ND	2.0	"								
Acrolein	ND	0.50	"								
Acrylonitrile	ND	0.50	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91416 - EPA 5030B											
Blank (BG91416-BLK1)											
Prepared & Analyzed: 07/26/2019											
Benzene	ND	0.50	ug/L								
Bromochloromethane	ND	0.50	"								
Bromodichloromethane	ND	0.50	"								
Bromoform	ND	0.50	"								
Bromomethane	ND	2.0	"								
Carbon disulfide	ND	0.50	"								
Carbon tetrachloride	ND	0.50	"								
Chlorobenzene	ND	0.50	"								
Chloroethane	ND	0.50	"								
Chloroform	ND	0.50	"								
Chloromethane	ND	0.50	"								
cis-1,2-Dichloroethylene	ND	0.50	"								
cis-1,3-Dichloropropylene	ND	0.50	"								
Cyclohexane	ND	0.50	"								
Dibromochloromethane	ND	0.50	"								
Dibromomethane	ND	0.50	"								
Dichlorodifluoromethane	ND	0.50	"								
Ethyl Benzene	ND	0.50	"								
Hexachlorobutadiene	ND	0.50	"								
Isopropylbenzene	ND	0.50	"								
Methyl acetate	ND	0.50	"								
Methyl tert-butyl ether (MTBE)	ND	0.50	"								
Methylcyclohexane	ND	0.50	"								
Methylene chloride	ND	2.0	"								
n-Butylbenzene	ND	0.50	"								
n-Propylbenzene	ND	0.50	"								
o-Xylene	ND	0.50	"								
p- & m- Xylenes	ND	1.0	"								
p-Isopropyltoluene	ND	0.50	"								
sec-Butylbenzene	ND	0.50	"								
Styrene	ND	0.50	"								
tert-Butyl alcohol (TBA)	ND	2.5	"								
tert-Butylbenzene	ND	0.50	"								
Tetrachloroethylene	ND	0.50	"								
Toluene	ND	0.50	"								
trans-1,2-Dichloroethylene	ND	0.50	"								
trans-1,3-Dichloropropylene	ND	0.50	"								
trans-1,4-dichloro-2-butene	ND	0.50	"								
Trichloroethylene	ND	0.50	"								
Trichlorofluoromethane	ND	0.50	"								
Vinyl Chloride	ND	0.50	"								
Xylenes, Total	ND	1.5	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*9.18*		*"*	*10.0*		*91.8*	*69-130*				
Surrogate: SURR: Toluene-d8	*10.2*		*"*	*10.0*		*102*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*10.4*		*"*	*10.0*		*104*	*79-122*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91416 - EPA 5030B											
LCS (BG91416-BS1)							Prepared & Analyzed: 07/26/2019				
1,1,1,2-Tetrachloroethane	9.5		ug/L	10.0		94.9	82-126				
1,1,1-Trichloroethane	10		"	10.0		102	78-136				
1,1,2,2-Tetrachloroethane	9.1		"	10.0		90.6	76-129				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11		"	10.0		109	54-165				
1,1,2-Trichloroethane	9.2		"	10.0		92.1	82-123				
1,1-Dichloroethane	9.7		"	10.0		96.7	82-129				
1,1-Dichloroethylene	9.8		"	10.0		98.2	68-138				
1,2,3-Trichlorobenzene	10		"	10.0		103	76-136				
1,2,3-Trichloropropane	9.1		"	10.0		91.0	77-128				
1,2,4-Trichlorobenzene	10		"	10.0		101	76-137				
1,2,4-Trimethylbenzene	9.2		"	10.0		92.5	82-132				
1,2-Dibromo-3-chloropropane	8.4		"	10.0		84.5	45-147				
1,2-Dibromoethane	9.7		"	10.0		97.1	83-124				
1,2-Dichlorobenzene	9.9		"	10.0		98.9	79-123				
1,2-Dichloroethane	8.8		"	10.0		88.4	73-132				
1,2-Dichloropropane	9.7		"	10.0		96.8	78-126				
1,3,5-Trimethylbenzene	9.6		"	10.0		96.2	80-131				
1,3-Dichlorobenzene	9.6		"	10.0		96.1	86-122				
1,4-Dichlorobenzene	9.9		"	10.0		98.6	85-124				
1,4-Dioxane	170		"	210		79.7	10-349				
2-Butanone	8.3		"	10.0		82.6	49-152				
2-Hexanone	8.1		"	10.0		80.7	51-146				
4-Methyl-2-pentanone	7.9		"	10.0		79.1	57-145				
Acetone	6.5		"	10.0		64.6	14-150				
Acrolein	8.4		"	10.0		84.3	10-153				
Acrylonitrile	9.0		"	10.0		90.5	51-150				
Benzene	9.9		"	10.0		99.3	85-126				
Bromochloromethane	9.0		"	10.0		89.5	77-128				
Bromodichloromethane	9.4		"	10.0		93.8	79-128				
Bromoform	9.4		"	10.0		93.6	78-133				
Bromomethane	6.3		"	10.0		62.7	43-168				
Carbon disulfide	10		"	10.0		104	68-146				
Carbon tetrachloride	10		"	10.0		100	77-141				
Chlorobenzene	9.9		"	10.0		99.2	88-120				
Chloroethane	8.2		"	10.0		82.5	65-136				
Chloroform	9.8		"	10.0		97.8	82-128				
Chloromethane	9.0		"	10.0		89.6	43-155				
cis-1,2-Dichloroethylene	9.4		"	10.0		94.4	83-129				
cis-1,3-Dichloropropylene	9.6		"	10.0		96.5	80-131				
Cyclohexane	10		"	10.0		100	63-149				
Dibromochloromethane	9.6		"	10.0		96.0	80-130				
Dibromomethane	9.0		"	10.0		90.2	72-134				
Dichlorodifluoromethane	8.6		"	10.0		85.7	44-144				
Ethyl Benzene	9.6		"	10.0		95.9	80-131				
Hexachlorobutadiene	11		"	10.0		108	67-146				
Isopropylbenzene	9.7		"	10.0		96.6	76-140				
Methyl acetate	8.0		"	10.0		80.3	51-139				
Methyl tert-butyl ether (MTBE)	9.0		"	10.0		89.5	76-135				
Methylcyclohexane	10		"	10.0		102	72-143				
Methylene chloride	9.3		"	10.0		92.7	55-137				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91416 - EPA 5030B											
LCS (BG91416-BS1)							Prepared & Analyzed: 07/26/2019				
n-Butylbenzene	9.6		ug/L	10.0		96.3	79-132				
n-Propylbenzene	9.6		"	10.0		96.0	78-133				
o-Xylene	9.4		"	10.0		93.6	78-130				
p- & m- Xylenes	19		"	20.0		96.4	77-133				
p-Isopropyltoluene	9.7		"	10.0		96.8	81-136				
sec-Butylbenzene	10		"	10.0		103	79-137				
Styrene	9.2		"	10.0		92.0	67-132				
tert-Butyl alcohol (TBA)	39		"	50.0		78.3	25-162				
tert-Butylbenzene	9.7		"	10.0		97.4	77-138				
Tetrachloroethylene	8.9		"	10.0		88.8	82-131				
Toluene	9.8		"	10.0		98.2	80-127				
trans-1,2-Dichloroethylene	9.6		"	10.0		96.1	80-132				
trans-1,3-Dichloropropylene	9.0		"	10.0		90.5	78-131				
trans-1,4-dichloro-2-butene	8.7		"	10.0		86.8	63-141				
Trichloroethylene	9.8		"	10.0		97.9	82-128				
Trichlorofluoromethane	7.4		"	10.0		73.6	67-139				
Vinyl Chloride	9.1		"	10.0		90.8	58-145				
Surrogate: SURR: 1,2-Dichloroethane-d4	*9.04*		*"*	*10.0*		*90.4*	*69-130*				
Surrogate: SURR: Toluene-d8	*10.1*		*"*	*10.0*		*101*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*10.1*		*"*	*10.0*		*101*	*79-122*				
LCS Dup (BG91416-BSD1)							Prepared & Analyzed: 07/26/2019				
1,1,1,2-Tetrachloroethane	9.2		ug/L	10.0		92.5	82-126		2.56	30	
1,1,1-Trichloroethane	10		"	10.0		100	78-136		1.97	30	
1,1,2,2-Tetrachloroethane	9.5		"	10.0		95.0	76-129		4.74	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11		"	10.0		105	54-165		3.63	30	
1,1,2-Trichloroethane	9.2		"	10.0		91.8	82-123		0.326	30	
1,1-Dichloroethane	9.6		"	10.0		95.6	82-129		1.14	30	
1,1-Dichloroethylene	9.4		"	10.0		94.2	68-138		4.16	30	
1,2,3-Trichlorobenzene	11		"	10.0		106	76-136		2.20	30	
1,2,3-Trichloropropane	9.4		"	10.0		94.1	77-128		3.35	30	
1,2,4-Trichlorobenzene	10		"	10.0		103	76-137		2.06	30	
1,2,4-Trimethylbenzene	9.0		"	10.0		90.1	82-132		2.63	30	
1,2-Dibromo-3-chloropropane	9.2		"	10.0		92.3	45-147		8.82	30	
1,2-Dibromoethane	9.9		"	10.0		98.6	83-124		1.53	30	
1,2-Dichlorobenzene	10		"	10.0		99.5	79-123		0.605	30	
1,2-Dichloroethane	9.0		"	10.0		89.5	73-132		1.24	30	
1,2-Dichloropropane	9.6		"	10.0		95.9	78-126		0.934	30	
1,3,5-Trimethylbenzene	9.3		"	10.0		93.4	80-131		2.95	30	
1,3-Dichlorobenzene	9.5		"	10.0		95.2	86-122		0.941	30	
1,4-Dichlorobenzene	9.7		"	10.0		96.9	85-124		1.74	30	
1,4-Dioxane	160		"	210		76.7	10-349		3.81	30	
2-Butanone	8.7		"	10.0		87.0	49-152		5.19	30	
2-Hexanone	8.2		"	10.0		82.4	51-146		2.08	30	
4-Methyl-2-pentanone	8.1		"	10.0		81.0	57-145		2.37	30	
Acetone	6.7		"	10.0		66.8	14-150		3.35	30	
Acrolein	8.9		"	10.0		89.2	10-153		5.65	30	
Acrylonitrile	9.7		"	10.0		97.0	51-150		6.93	30	
Benzene	9.8		"	10.0		98.1	85-126		1.22	30	
Bromochloromethane	9.1		"	10.0		90.9	77-128		1.55	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91416 - EPA 5030B											
LCS Dup (BG91416-BSD1)							Prepared & Analyzed: 07/26/2019				
Bromodichloromethane	9.4		ug/L	10.0		94.0	79-128		0.213	30	
Bromoform	9.5		"	10.0		94.9	78-133		1.38	30	
Bromomethane	7.6		"	10.0		75.9	43-168		19.0	30	
Carbon disulfide	10		"	10.0		101	68-146		3.41	30	
Carbon tetrachloride	9.6		"	10.0		95.5	77-141		4.80	30	
Chlorobenzene	9.6		"	10.0		96.5	88-120		2.76	30	
Chloroethane	8.1		"	10.0		81.1	65-136		1.71	30	
Chloroform	9.7		"	10.0		97.3	82-128		0.513	30	
Chloromethane	8.8		"	10.0		87.8	43-155		2.03	30	
cis-1,2-Dichloroethylene	9.4		"	10.0		93.7	83-129		0.744	30	
cis-1,3-Dichloropropylene	9.4		"	10.0		94.4	80-131		2.20	30	
Cyclohexane	9.6		"	10.0		96.5	63-149		3.96	30	
Dibromochloromethane	9.5		"	10.0		95.0	80-130		1.05	30	
Dibromomethane	9.1		"	10.0		91.0	72-134		0.883	30	
Dichlorodifluoromethane	8.3		"	10.0		83.3	44-144		2.84	30	
Ethyl Benzene	9.3		"	10.0		93.1	80-131		2.96	30	
Hexachlorobutadiene	11		"	10.0		109	67-146		0.552	30	
Isopropylbenzene	9.4		"	10.0		94.5	76-140		2.20	30	
Methyl acetate	8.6		"	10.0		86.5	51-139		7.43	30	
Methyl tert-butyl ether (MTBE)	9.2		"	10.0		92.5	76-135		3.30	30	
Methylcyclohexane	9.6		"	10.0		96.1	72-143		5.96	30	
Methylene chloride	9.3		"	10.0		92.7	55-137		0.00	30	
n-Butylbenzene	9.6		"	10.0		96.4	79-132		0.104	30	
n-Propylbenzene	9.4		"	10.0		94.1	78-133		2.00	30	
o-Xylene	9.1		"	10.0		91.4	78-130		2.38	30	
p- & m- Xylenes	19		"	20.0		92.6	77-133		3.92	30	
p-Isopropyltoluene	9.3		"	10.0		93.4	81-136		3.58	30	
sec-Butylbenzene	10		"	10.0		99.8	79-137		2.86	30	
Styrene	9.0		"	10.0		90.3	67-132		1.87	30	
tert-Butyl alcohol (TBA)	41		"	50.0		82.6	25-162		5.42	30	
tert-Butylbenzene	9.5		"	10.0		95.2	77-138		2.28	30	
Tetrachloroethylene	8.4		"	10.0		84.4	82-131		5.08	30	
Toluene	9.5		"	10.0		94.8	80-127		3.52	30	
trans-1,2-Dichloroethylene	9.4		"	10.0		93.6	80-132		2.64	30	
trans-1,3-Dichloropropylene	9.0		"	10.0		90.1	78-131		0.443	30	
trans-1,4-dichloro-2-butene	9.1		"	10.0		91.0	63-141		4.72	30	
Trichloroethylene	9.4		"	10.0		94.2	82-128		3.85	30	
Trichlorofluoromethane	7.0		"	10.0		69.9	67-139		5.16	30	
Vinyl Chloride	8.8		"	10.0		88.3	58-145		2.79	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*9.15*		*"*	*10.0*		*91.5*	*69-130*				
Surrogate: SURR: Toluene-d8	*10.1*		*"*	*10.0*		*101*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*10.0*		*"*	*10.0*		*100*	*79-122*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91514 - EPA 5035A											
Blank (BG91514-BLK1)											
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet								
1,1,1-Trichloroethane	ND	0.0050	"								
1,1,2,2-Tetrachloroethane	ND	0.0050	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0050	"								
1,1,2-Trichloroethane	ND	0.0050	"								
1,1-Dichloroethane	ND	0.0050	"								
1,1-Dichloroethylene	ND	0.0050	"								
1,2,3-Trichlorobenzene	ND	0.0050	"								
1,2,3-Trichloropropane	ND	0.0050	"								
1,2,4-Trichlorobenzene	ND	0.0050	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,2-Dibromo-3-chloropropane	ND	0.0050	"								
1,2-Dibromoethane	ND	0.0050	"								
1,2-Dichlorobenzene	ND	0.0050	"								
1,2-Dichloroethane	ND	0.0050	"								
1,2-Dichloropropane	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
1,3-Dichlorobenzene	ND	0.0050	"								
1,4-Dichlorobenzene	ND	0.0050	"								
1,4-Dioxane	ND	0.10	"								
2-Butanone	ND	0.0050	"								
2-Hexanone	ND	0.0050	"								
4-Methyl-2-pentanone	ND	0.0050	"								
Acetone	ND	0.010	"								
Acrolein	ND	0.010	"								
Acrylonitrile	ND	0.0050	"								
Benzene	ND	0.0050	"								
Bromochloromethane	ND	0.0050	"								
Bromodichloromethane	ND	0.0050	"								
Bromoform	ND	0.0050	"								
Bromomethane	ND	0.0050	"								
Carbon disulfide	ND	0.0050	"								
Carbon tetrachloride	ND	0.0050	"								
Chlorobenzene	ND	0.0050	"								
Chloroethane	ND	0.0050	"								
Chloroform	ND	0.0050	"								
Chloromethane	ND	0.0050	"								
cis-1,2-Dichloroethylene	ND	0.0050	"								
cis-1,3-Dichloropropylene	ND	0.0050	"								
Cyclohexane	ND	0.0050	"								
Dibromochloromethane	ND	0.0050	"								
Dibromomethane	ND	0.0050	"								
Dichlorodifluoromethane	ND	0.0050	"								
Ethyl Benzene	ND	0.0050	"								
Hexachlorobutadiene	ND	0.0050	"								
Isopropylbenzene	ND	0.0050	"								
Methyl acetate	ND	0.0050	"								
Methyl tert-butyl ether (MTBE)	ND	0.0050	"								
Methylcyclohexane	ND	0.0050	"								
Methylene chloride	ND	0.010	"								

Prepared & Analyzed: 07/29/2019

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91514 - EPA 5035A											
Blank (BG91514-BLK1)									Prepared & Analyzed: 07/29/2019		
n-Butylbenzene	ND	0.0050	mg/kg wet								
n-Propylbenzene	ND	0.0050	"								
o-Xylene	ND	0.0050	"								
p- & m- Xylenes	ND	0.010	"								
p-Isopropyltoluene	ND	0.0050	"								
sec-Butylbenzene	ND	0.0050	"								
Styrene	ND	0.0050	"								
tert-Butyl alcohol (TBA)	ND	0.025	"								
tert-Butylbenzene	ND	0.0050	"								
Tetrachloroethylene	ND	0.0050	"								
Toluene	ND	0.0050	"								
trans-1,2-Dichloroethylene	ND	0.0050	"								
trans-1,3-Dichloropropylene	ND	0.0050	"								
trans-1,4-dichloro-2-butene	ND	0.0050	"								
Trichloroethylene	ND	0.0050	"								
Trichlorofluoromethane	ND	0.0050	"								
Vinyl Chloride	ND	0.0050	"								
Xylenes, Total	ND	0.015	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.0*		*ug/L*	*50.0*		*98.0*	*77-125*				
Surrogate: SURR: Toluene-d8	*49.4*		*"*	*50.0*		*98.7*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*49.9*		*"*	*50.0*		*99.8*	*76-130*				
Blank (BG91514-BLK2)									Prepared & Analyzed: 07/29/2019		
1,1,1,2-Tetrachloroethane	ND	0.50	mg/kg wet								
1,1,1-Trichloroethane	ND	0.50	"								
1,1,2,2-Tetrachloroethane	ND	0.50	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	"								
1,1,2-Trichloroethane	ND	0.50	"								
1,1-Dichloroethane	ND	0.50	"								
1,1-Dichloroethylene	ND	0.50	"								
1,2,3-Trichlorobenzene	ND	0.50	"								
1,2,3-Trichloropropane	ND	0.50	"								
1,2,4-Trichlorobenzene	ND	0.50	"								
1,2,4-Trimethylbenzene	ND	0.50	"								
1,2-Dibromo-3-chloropropane	ND	0.50	"								
1,2-Dibromoethane	ND	0.50	"								
1,2-Dichlorobenzene	ND	0.50	"								
1,2-Dichloroethane	ND	0.50	"								
1,2-Dichloropropane	ND	0.50	"								
1,3,5-Trimethylbenzene	ND	0.50	"								
1,3-Dichlorobenzene	ND	0.50	"								
1,4-Dichlorobenzene	ND	0.50	"								
1,4-Dioxane	ND	10	"								
2-Butanone	ND	0.50	"								
2-Hexanone	ND	0.50	"								
4-Methyl-2-pentanone	ND	0.50	"								
Acetone	ND	1.0	"								
Acrolein	ND	1.0	"								
Acrylonitrile	ND	0.50	"								
Benzene	ND	0.50	"								

Volatile Organic Compounds by GC/MS - Quality Control Data

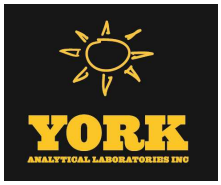
York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91514 - EPA 5035A											
Blank (BG91514-BLK2)									Prepared & Analyzed: 07/29/2019		
Bromochloromethane	ND	0.50	mg/kg wet								
Bromodichloromethane	ND	0.50	"								
Bromoform	ND	0.50	"								
Bromomethane	ND	0.50	"								
Carbon disulfide	ND	0.50	"								
Carbon tetrachloride	ND	0.50	"								
Chlorobenzene	ND	0.50	"								
Chloroethane	ND	0.50	"								
Chloroform	ND	0.50	"								
Chloromethane	ND	0.50	"								
cis-1,2-Dichloroethylene	ND	0.50	"								
cis-1,3-Dichloropropylene	ND	0.50	"								
Cyclohexane	ND	0.50	"								
Dibromochloromethane	ND	0.50	"								
Dibromomethane	ND	0.50	"								
Dichlorodifluoromethane	ND	0.50	"								
Ethyl Benzene	ND	0.50	"								
Hexachlorobutadiene	ND	0.50	"								
Isopropylbenzene	ND	0.50	"								
Methyl acetate	ND	0.50	"								
Methyl tert-butyl ether (MTBE)	ND	0.50	"								
Methylcyclohexane	ND	0.50	"								
Methylene chloride	ND	1.0	"								
n-Butylbenzene	ND	0.50	"								
n-Propylbenzene	ND	0.50	"								
o-Xylene	ND	0.50	"								
p- & m- Xylenes	ND	1.0	"								
p-Isopropyltoluene	ND	0.50	"								
sec-Butylbenzene	ND	0.50	"								
Styrene	ND	0.50	"								
tert-Butyl alcohol (TBA)	ND	2.5	"								
tert-Butylbenzene	ND	0.50	"								
Tetrachloroethylene	ND	0.50	"								
Toluene	ND	0.50	"								
trans-1,2-Dichloroethylene	ND	0.50	"								
trans-1,3-Dichloropropylene	ND	0.50	"								
trans-1,4-dichloro-2-butene	ND	0.50	"								
Trichloroethylene	ND	0.50	"								
Trichlorofluoromethane	ND	0.50	"								
Vinyl Chloride	ND	0.50	"								
Xylenes, Total	ND	1.5	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*49.0*		*ug/L*	*50.0*		*98.0*	*77-125*				
Surrogate: SURR: Toluene-d8	*49.8*		*"*	*50.0*		*99.7*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*50.2*		*"*	*50.0*		*100*	*76-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91514 - EPA 5035A											
LCS (BG91514-BS1)							Prepared & Analyzed: 07/29/2019				
1,1,1,2-Tetrachloroethane	52		ug/L	50.0		104	75-129				
1,1,1-Trichloroethane	54		"	50.0		109	71-137				
1,1,2,2-Tetrachloroethane	53		"	50.0		106	79-129				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	55		"	50.0		109	58-146				
1,1,2-Trichloroethane	51		"	50.0		102	83-123				
1,1-Dichloroethane	53		"	50.0		105	75-130				
1,1-Dichloroethylene	51		"	50.0		101	64-137				
1,2,3-Trichlorobenzene	51		"	50.0		102	81-140				
1,2,3-Trichloropropane	51		"	50.0		102	81-126				
1,2,4-Trichlorobenzene	51		"	50.0		102	80-141				
1,2,4-Trimethylbenzene	49		"	50.0		98.3	84-125				
1,2-Dibromo-3-chloropropane	54		"	50.0		108	74-142				
1,2-Dibromoethane	55		"	50.0		110	86-123				
1,2-Dichlorobenzene	51		"	50.0		101	85-122				
1,2-Dichloroethane	51		"	50.0		102	71-133				
1,2-Dichloropropane	51		"	50.0		101	81-122				
1,3,5-Trimethylbenzene	50		"	50.0		99.7	82-126				
1,3-Dichlorobenzene	50		"	50.0		99.4	84-124				
1,4-Dichlorobenzene	50		"	50.0		99.6	84-124				
1,4-Dioxane	1100		"	1050		105	10-228				
2-Butanone	54		"	50.0		107	58-147				
2-Hexanone	52		"	50.0		104	70-139				
4-Methyl-2-pentanone	52		"	50.0		104	72-132				
Acetone	49		"	50.0		98.5	36-155				
Acrolein	54		"	50.0		108	10-238				
Acrylonitrile	57		"	50.0		114	66-141				
Benzene	53		"	50.0		107	77-127				
Bromochloromethane	52		"	50.0		104	74-129				
Bromodichloromethane	52		"	50.0		105	81-124				
Bromoform	54		"	50.0		108	80-136				
Bromomethane	31		"	50.0		61.6	32-177				
Carbon disulfide	54		"	50.0		108	10-136				
Carbon tetrachloride	52		"	50.0		104	66-143				
Chlorobenzene	51		"	50.0		102	86-120				
Chloroethane	51		"	50.0		102	51-142				
Chloroform	53		"	50.0		105	76-131				
Chloromethane	49		"	50.0		97.7	49-132				
cis-1,2-Dichloroethylene	51		"	50.0		102	74-132				
cis-1,3-Dichloropropylene	52		"	50.0		105	81-129				
Cyclohexane	51		"	50.0		103	70-130				
Dibromochloromethane	54		"	50.0		108	10-200				
Dibromomethane	50		"	50.0		101	83-124				
Dichlorodifluoromethane	47		"	50.0		93.2	28-158				
Ethyl Benzene	52		"	50.0		103	84-125				
Hexachlorobutadiene	51		"	50.0		102	83-133				
Isopropylbenzene	49		"	50.0		97.9	81-127				
Methyl acetate	49		"	50.0		97.7	41-143				
Methyl tert-butyl ether (MTBE)	52		"	50.0		103	74-131				
Methylcyclohexane	51		"	50.0		102	70-130				
Methylene chloride	52		"	50.0		105	57-141				



Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91514 - EPA 5035A											
LCS (BG91514-BS1)								Prepared & Analyzed: 07/29/2019			
n-Butylbenzene	47		ug/L	50.0		93.8	80-130				
n-Propylbenzene	50		"	50.0		99.2	74-136				
o-Xylene	52		"	50.0		103	83-123				
p- & m- Xylenes	100		"	100		103	82-128				
p-Isopropyltoluene	50		"	50.0		101	85-125				
sec-Butylbenzene	52		"	50.0		104	83-125				
Styrene	52		"	50.0		104	86-126				
tert-Butyl alcohol (TBA)	260		"	250		105	70-130				
tert-Butylbenzene	50		"	50.0		99.3	80-127				
Tetrachloroethylene	49		"	50.0		97.7	80-129				
Toluene	52		"	50.0		104	85-121				
trans-1,2-Dichloroethylene	51		"	50.0		101	72-132				
trans-1,3-Dichloropropylene	52		"	50.0		104	78-132				
trans-1,4-dichloro-2-butene	53		"	50.0		105	75-135				
Trichloroethylene	51		"	50.0		101	84-123				
Trichlorofluoromethane	50		"	50.0		99.1	62-140				
Vinyl Chloride	49		"	50.0		98.1	52-130				
Surrogate: SURR: 1,2-Dichloroethane-d4	*48.6*		*"*	*50.0*		*97.2*	*77-125*				
Surrogate: SURR: Toluene-d8	*49.4*		*"*	*50.0*		*98.7*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*48.9*		*"*	*50.0*		*97.9*	*76-130*				
LCS Dup (BG91514-BSD1)								Prepared & Analyzed: 07/29/2019			
1,1,1,2-Tetrachloroethane	52		ug/L	50.0		104	75-129		0.115	30	
1,1,1-Trichloroethane	54		"	50.0		109	71-137		0.202	30	
1,1,2,2-Tetrachloroethane	53		"	50.0		106	79-129		0.208	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	54		"	50.0		109	58-146		0.477	30	
1,1,2-Trichloroethane	51		"	50.0		102	83-123		0.608	30	
1,1-Dichloroethane	52		"	50.0		104	75-130		1.09	30	
1,1-Dichloroethylene	50		"	50.0		100	64-137		1.11	30	
1,2,3-Trichlorobenzene	50		"	50.0		101	81-140		0.514	30	
1,2,3-Trichloropropane	51		"	50.0		102	81-126		0.117	30	
1,2,4-Trichlorobenzene	50		"	50.0		99.3	80-141		2.96	30	
1,2,4-Trimethylbenzene	49		"	50.0		97.1	84-125		1.27	30	
1,2-Dibromo-3-chloropropane	54		"	50.0		109	74-142		0.590	30	
1,2-Dibromoethane	56		"	50.0		112	86-123		2.11	30	
1,2-Dichlorobenzene	50		"	50.0		99.9	85-122		1.17	30	
1,2-Dichloroethane	52		"	50.0		103	71-133		0.721	30	
1,2-Dichloropropane	51		"	50.0		102	81-122		0.256	30	
1,3,5-Trimethylbenzene	49		"	50.0		97.7	82-126		2.05	30	
1,3-Dichlorobenzene	48		"	50.0		97.0	84-124		2.44	30	
1,4-Dichlorobenzene	49		"	50.0		97.0	84-124		2.58	30	
1,4-Dioxane	1100		"	1050		109	10-228		4.20	30	
2-Butanone	55		"	50.0		111	58-147		3.20	30	
2-Hexanone	54		"	50.0		108	70-139		3.78	30	
4-Methyl-2-pentanone	54		"	50.0		108	72-132		3.11	30	
Acetone	53		"	50.0		106	36-155		7.29	30	
Acrolein	54		"	50.0		108	10-238		0.648	30	
Acrylonitrile	57		"	50.0		115	66-141		0.892	30	
Benzene	53		"	50.0		106	77-127		0.394	30	
Bromochloromethane	52		"	50.0		104	74-129		0.827	30	

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91514 - EPA 5035A											
LCS Dup (BG91514-BSD1)							Prepared & Analyzed: 07/29/2019				
Bromodichloromethane	52		ug/L	50.0		105	81-124		0.287	30	
Bromoform	56		"	50.0		111	80-136		2.51	30	
Bromomethane	48		"	50.0		96.1	32-177		43.7	30	Non-dir.
Carbon disulfide	54		"	50.0		108	10-136		0.240	30	
Carbon tetrachloride	52		"	50.0		105	66-143		0.478	30	
Chlorobenzene	51		"	50.0		101	86-120		0.552	30	
Chloroethane	51		"	50.0		102	51-142		0.0394	30	
Chloroform	52		"	50.0		104	76-131		0.937	30	
Chloromethane	47		"	50.0		94.6	49-132		3.24	30	
cis-1,2-Dichloroethylene	51		"	50.0		102	74-132		0.137	30	
cis-1,3-Dichloropropylene	52		"	50.0		104	81-129		0.537	30	
Cyclohexane	51		"	50.0		103	70-130		0.156	30	
Dibromochloromethane	54		"	50.0		109	10-200		0.203	30	
Dibromomethane	50		"	50.0		101	83-124		0.0398	30	
Dichlorodifluoromethane	47		"	50.0		93.4	28-158		0.193	30	
Ethyl Benzene	51		"	50.0		103	84-125		0.252	30	
Hexachlorobutadiene	51		"	50.0		101	83-133		1.02	30	
Isopropylbenzene	49		"	50.0		97.1	81-127		0.738	30	
Methyl acetate	49		"	50.0		97.6	41-143		0.123	30	
Methyl tert-butyl ether (MTBE)	51		"	50.0		103	74-131		0.368	30	
Methylcyclohexane	51		"	50.0		102	70-130		0.765	30	
Methylene chloride	51		"	50.0		103	57-141		2.10	30	
n-Butylbenzene	47		"	50.0		93.9	80-130		0.0852	30	
n-Propylbenzene	49		"	50.0		97.6	74-136		1.65	30	
o-Xylene	51		"	50.0		103	83-123		0.622	30	
p- & m- Xylenes	100		"	100		102	82-128		0.724	30	
p-Isopropyltoluene	50		"	50.0		99.4	85-125		1.56	30	
sec-Butylbenzene	51		"	50.0		103	83-125		0.813	30	
Styrene	51		"	50.0		103	86-126		1.66	30	
tert-Butyl alcohol (TBA)	280		"	250		112	70-130		6.55	30	
tert-Butylbenzene	49		"	50.0		97.6	80-127		1.67	30	
Tetrachloroethylene	49		"	50.0		97.7	80-129		0.00	30	
Toluene	52		"	50.0		103	85-121		0.560	30	
trans-1,2-Dichloroethylene	51		"	50.0		101	72-132		0.0789	30	
trans-1,3-Dichloropropylene	51		"	50.0		103	78-132		1.09	30	
trans-1,4-dichloro-2-butene	53		"	50.0		106	75-135		0.699	30	
Trichloroethylene	50		"	50.0		101	84-123		0.534	30	
Trichlorofluoromethane	49		"	50.0		98.7	62-140		0.384	30	
Vinyl Chloride	48		"	50.0		96.7	52-130		1.42	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*48.9*		*"*	*50.0*		*97.8*	*77-125*				
Surrogate: SURR: Toluene-d8	*49.4*		*"*	*50.0*		*98.8*	*85-120*				
Surrogate: SURR: p-Bromofluorobenzene	*48.4*		*"*	*50.0*		*96.9*	*76-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91645 - EPA 5030B/1311											
Blank (BG91645-BLK1)								Prepared & Analyzed: 07/31/2019			
1,1-Dichloroethylene	ND	0.0050	mg/L								
1,2-Dichloroethane	ND	0.0050	"								
1,4-Dichlorobenzene	ND	0.0050	"								
2-Butanone	ND	0.0050	"								
Benzene	ND	0.0050	"								
Carbon tetrachloride	ND	0.0050	"								
Chlorobenzene	ND	0.0050	"								
Chloroform	ND	0.0050	"								
Tetrachloroethylene	ND	0.0050	"								
Trichloroethylene	ND	0.0050	"								
Vinyl Chloride	ND	0.0050	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*47.7*		*ug/L*	*50.0*		*95.4*	*65-135*				
Surrogate: SURR: Toluene-d8	*48.5*		*"*	*50.0*		*97.0*	*86-118*				
Surrogate: SURR: p-Bromofluorobenzene	*49.1*		*"*	*50.0*		*98.2*	*81-114*				
LCS (BG91645-BS1)								Prepared & Analyzed: 07/31/2019			
1,1-Dichloroethylene	52.0		ug/L	50.0		104	68-134				
1,2-Dichloroethane	51.7		"	50.0		103	69-133				
1,4-Dichlorobenzene	49.6		"	50.0		99.1	82-124				
2-Butanone	60.1		"	50.0		120	44-169				
Benzene	56.2		"	50.0		112	72-134				
Carbon tetrachloride	55.5		"	50.0		111	62-145				
Chlorobenzene	50.4		"	50.0		101	85-119				
Chloroform	54.5		"	50.0		109	74-131				
Tetrachloroethylene	49.5		"	50.0		99.0	78-133				
Trichloroethylene	50.2		"	50.0		100	81-125				
Vinyl Chloride	48.7		"	50.0		97.5	42-136				
Surrogate: SURR: 1,2-Dichloroethane-d4	*47.9*		*"*	*50.0*		*95.7*	*65-135*				
Surrogate: SURR: Toluene-d8	*48.3*		*"*	*50.0*		*96.6*	*86-118*				
Surrogate: SURR: p-Bromofluorobenzene	*48.7*		*"*	*50.0*		*97.3*	*81-114*				

Volatile Organic Compounds by GC/MS - Quality Control Data

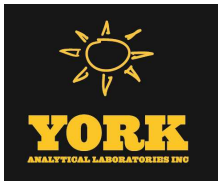
York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91645 - EPA 5030B/1311											
LCS Dup (BG91645-BSD1)								Prepared & Analyzed: 07/31/2019			
1,1-Dichloroethylene	52.1		ug/L	50.0		104	68-134		0.0384	30	
1,2-Dichloroethane	51.1		"	50.0		102	69-133		1.09	30	
1,4-Dichlorobenzene	50.9		"	50.0		102	82-124		2.69	30	
2-Butanone	58.0		"	50.0		116	44-169		3.58	30	
Benzene	56.5		"	50.0		113	72-134		0.550	30	
Carbon tetrachloride	56.2		"	50.0		112	62-145		1.18	30	
Chlorobenzene	51.3		"	50.0		103	85-119		1.77	30	
Chloroform	54.0		"	50.0		108	74-131		0.848	30	
Tetrachloroethylene	50.0		"	50.0		100	78-133		1.01	30	
Trichloroethylene	51.9		"	50.0		104	81-125		3.35	30	
Vinyl Chloride	48.5		"	50.0		97.0	42-136		0.494	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*46.9*		*"*	*50.0*		*93.7*	*65-135*				
Surrogate: SURR: Toluene-d8	*48.5*		*"*	*50.0*		*97.0*	*86-118*				
Surrogate: SURR: p-Bromofluorobenzene	*49.2*		*"*	*50.0*		*98.4*	*81-114*				
Duplicate (BG91645-DUP1)	*Source sample: 19G1029-13 (CU_DR11_072419)							Prepared & Analyzed: 07/31/2019			
1,1-Dichloroethylene	ND	0.050	mg/L		ND					200	
1,2-Dichloroethane	ND	0.050	"		ND					200	
1,4-Dichlorobenzene	ND	0.050	"		ND					200	
2-Butanone	ND	0.050	"		ND					200	
Benzene	ND	0.050	"		ND					200	
Carbon tetrachloride	ND	0.050	"		ND					200	
Chlorobenzene	ND	0.050	"		ND					200	
Chloroform	ND	0.050	"		ND					200	
Tetrachloroethylene	ND	0.050	"		ND					200	
Trichloroethylene	ND	0.050	"		ND					200	
Vinyl Chloride	ND	0.050	"		ND					200	
Surrogate: SURR: 1,2-Dichloroethane-d4	*48.8*		*ug/L*	*50.0*		*97.5*	*65-135*				
Surrogate: SURR: Toluene-d8	*48.4*		*"*	*50.0*		*96.8*	*86-118*				
Surrogate: SURR: p-Bromofluorobenzene	*49.2*		*"*	*50.0*		*98.5*	*81-114*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91645 - EPA 5030B/1311											
Leach Fluid Blank (BG91645-LBK1)									Prepared & Analyzed: 07/31/2019		
1,1-Dichloroethylene	ND	0.050	mg/L								
1,2-Dichloroethane	ND	0.050	"								
1,4-Dichlorobenzene	ND	0.050	"								
2-Butanone	ND	0.050	"								
Benzene	ND	0.050	"								
Carbon tetrachloride	ND	0.050	"								
Chlorobenzene	ND	0.050	"								
Chloroform	ND	0.050	"								
Tetrachloroethylene	ND	0.050	"								
Trichloroethylene	ND	0.050	"								
Vinyl Chloride	ND	0.050	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*48.5*		*ug/L*	*50.0*		*97.0*	*65-135*				
Surrogate: SURR: Toluene-d8	*48.2*		*"*	*50.0*		*96.5*	*86-118*				
Surrogate: SURR: p-Bromofluorobenzene	*49.2*		*"*	*50.0*		*98.5*	*81-114*				



Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91431 - EPA 3510C											
Blank (BG91431-BLK1)								Prepared & Analyzed: 07/26/2019			
1,1-Biphenyl	ND	5.00	ug/L								
1,2,4,5-Tetrachlorobenzene	ND	5.00	"								
1,2-Diphenylhydrazine (as Azobenzene)	ND	5.00	"								
2,3,4,6-Tetrachlorophenol	ND	5.00	"								
2,4,5-Trichlorophenol	ND	5.00	"								
2,4,6-Trichlorophenol	ND	5.00	"								
2,4-Dichlorophenol	ND	5.00	"								
2,4-Dimethylphenol	ND	5.00	"								
2,4-Dinitrophenol	ND	5.00	"								
2,4-Dinitrotoluene	ND	5.00	"								
2,6-Dinitrotoluene	ND	5.00	"								
2-Chloronaphthalene	ND	5.00	"								
2-Chlorophenol	ND	5.00	"								
2-Methylnaphthalene	ND	5.00	"								
2-Methylphenol	ND	5.00	"								
2-Nitroaniline	ND	5.00	"								
2-Nitrophenol	ND	5.00	"								
3- & 4-Methylphenols	ND	5.00	"								
3,3-Dichlorobenzidine	ND	5.00	"								
3-Nitroaniline	ND	5.00	"								
4,6-Dinitro-2-methylphenol	ND	5.00	"								
4-Bromophenyl phenyl ether	ND	5.00	"								
4-Chloro-3-methylphenol	ND	5.00	"								
4-Chloroaniline	ND	5.00	"								
4-Chlorophenyl phenyl ether	ND	5.00	"								
4-Nitroaniline	ND	5.00	"								
4-Nitrophenol	ND	5.00	"								
Acetophenone	ND	5.00	"								
Aniline	ND	5.00	"								
Benzaldehyde	ND	5.00	"								
Benzidine	ND	5.00	"								
Benzoic acid	ND	50.0	"								
Benzyl alcohol	ND	5.00	"								
Benzyl butyl phthalate	ND	5.00	"								
Bis(2-chloroethoxy)methane	ND	5.00	"								
Bis(2-chloroethyl)ether	ND	5.00	"								
Bis(2-chloroisopropyl)ether	ND	5.00	"								
Caprolactam	ND	5.00	"								
Carbazole	ND	5.00	"								
Dibenzofuran	ND	5.00	"								
Diethyl phthalate	ND	5.00	"								
Dimethyl phthalate	ND	5.00	"								
Di-n-butyl phthalate	ND	5.00	"								
Di-n-octyl phthalate	ND	5.00	"								
Diphenylamine	ND	5.00	"								
Hexachlorocyclopentadiene	ND	10.0	"								
Isophorone	ND	5.00	"								
N-nitroso-di-n-propylamine	ND	5.00	"								
N-Nitrosodiphenylamine	ND	5.00	"								
Phenol	ND	5.00	"								
Pyridine	ND	5.00	"								

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91431 - EPA 3510C											
Blank (BG91431-BLK1)										Prepared & Analyzed: 07/26/2019	
Surrogate: SURR: 2-Fluorophenol	*22.3*		*ug/L*	*50.0*		*44.5*	*19.7-63.1*				
Surrogate: SURR: Phenol-d5	*13.9*		*"*	*50.0*		*27.8*	*10.1-41.7*				
Surrogate: SURR: Nitrobenzene-d5	*22.9*		*"*	*25.0*		*91.7*	*50.2-113*				
Surrogate: SURR: 2-Fluorobiphenyl	*22.9*		*"*	*25.0*		*91.7*	*39.9-105*				
Surrogate: SURR: 2,4,6-Tribromophenol	*50.7*		*"*	*50.0*		*101*	*39.3-151*				
Surrogate: SURR: Terphenyl-d14	*27.4*		*"*	*25.0*		*110*	*30.7-106*				
Blank (BG91431-BLK2)										Prepared & Analyzed: 07/26/2019	
Acenaphthene	ND	0.0500	ug/L								
Acenaphthylene	ND	0.0500	"								
Anthracene	ND	0.0500	"								
Atrazine	ND	0.500	"								
Benzo(a)anthracene	ND	0.0500	"								
Benzo(a)pyrene	ND	0.0500	"								
Benzo(b)fluoranthene	ND	0.0500	"								
Benzo(g,h,i)perylene	ND	0.0500	"								
Benzo(k)fluoranthene	ND	0.0500	"								
Bis(2-ethylhexyl)phthalate	ND	0.500	"								
Chrysene	ND	0.0500	"								
Dibenzo(a,h)anthracene	ND	0.0500	"								
Fluoranthene	ND	0.0500	"								
Fluorene	ND	0.0500	"								
Hexachlorobenzene	ND	0.0200	"								
Hexachlorobutadiene	ND	0.500	"								
Hexachloroethane	ND	0.500	"								
Indeno(1,2,3-cd)pyrene	ND	0.0500	"								
Naphthalene	ND	0.0500	"								
Nitrobenzene	ND	0.250	"								
N-Nitrosodimethylamine	ND	0.500	"								
Pentachlorophenol	ND	0.250	"								
Phenanthrene	ND	0.0500	"								
Pyrene	ND	0.0500	"								

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91431 - EPA 3510C											
LCS (BG91431-BS1)								Prepared: 07/26/2019 Analyzed: 07/30/2019			
1,1-Biphenyl	21.8	5.00	ug/L	25.0		87.2	33-95				
1,2,4,5-Tetrachlorobenzene	26.0	5.00	"	25.0		104	26-120				
1,2-Diphenylhydrazine (as Azobenzene)	22.2	5.00	"	25.0		88.6	16-141				
2,3,4,6-Tetrachlorophenol	45.0	5.00	"	25.0		180	30-130	High Bias			
2,4,5-Trichlorophenol	19.0	5.00	"	25.0		76.1	32-114				
2,4,6-Trichlorophenol	20.5	5.00	"	25.0		82.1	35-118				
2,4-Dichlorophenol	22.8	5.00	"	25.0		91.1	25-116				
2,4-Dimethylphenol	21.9	5.00	"	25.0		87.6	15-116				
2,4-Dinitrophenol	20.4	5.00	"	25.0		81.4	10-170				
2,4-Dinitrotoluene	21.5	5.00	"	25.0		85.8	41-128				
2,6-Dinitrotoluene	23.1	5.00	"	25.0		92.4	45-116				
2-Chloronaphthalene	19.7	5.00	"	25.0		79.0	33-112				
2-Chlorophenol	18.6	5.00	"	25.0		74.5	15-120				
2-Methylnaphthalene	23.8	5.00	"	25.0		95.0	24-118				
2-Methylphenol	14.5	5.00	"	25.0		57.9	10-110				
2-Nitroaniline	22.6	5.00	"	25.0		90.2	34-129				
2-Nitrophenol	22.8	5.00	"	25.0		91.0	28-118				
3- & 4-Methylphenols	11.7	5.00	"	25.0		46.8	10-107				
3,3-Dichlorobenzidine	20.4	5.00	"	25.0		81.6	15-187				
3-Nitroaniline	19.4	5.00	"	25.0		77.5	24-134				
4,6-Dinitro-2-methylphenol	26.7	5.00	"	25.0		107	10-153				
4-Bromophenyl phenyl ether	22.4	5.00	"	25.0		89.8	34-120				
4-Chloro-3-methylphenol	22.2	5.00	"	25.0		88.8	20-120				
4-Chloroaniline	17.8	5.00	"	25.0		71.4	10-147				
4-Chlorophenyl phenyl ether	20.8	5.00	"	25.0		83.2	27-121				
4-Nitroaniline	19.4	5.00	"	25.0		77.8	13-134				
4-Nitrophenol	7.69	5.00	"	25.0		30.8	10-131				
Acetophenone	21.8	5.00	"	25.0		87.1	25-110				
Aniline	13.4	5.00	"	25.0		53.4	10-117				
Benzaldehyde	27.8	5.00	"	25.0		111	29-117				
Benzoic acid	ND	50.0	"	27.6			30-130	Low Bias			
Benzyl alcohol	14.6	5.00	"	25.0		58.5	10-117				
Benzyl butyl phthalate	22.9	5.00	"	25.0		91.5	29-133				
Bis(2-chloroethoxy)methane	22.8	5.00	"	25.0		91.2	10-154				
Bis(2-chloroethyl)ether	20.6	5.00	"	25.0		82.2	17-125				
Bis(2-chloroisopropyl)ether	26.8	5.00	"	25.0		107	10-139				
Caprolactam	3.40	5.00	"	25.0		13.6	10-137				
Carbazole	21.5	5.00	"	25.0		86.1	42-126				
Dibenzofuran	21.4	5.00	"	25.0		85.7	36-113				
Diethyl phthalate	21.4	5.00	"	25.0		85.7	38-115				
Dimethyl phthalate	21.5	5.00	"	25.0		85.8	38-129				
Di-n-butyl phthalate	22.3	5.00	"	25.0		89.1	31-120				
Di-n-octyl phthalate	24.1	5.00	"	25.0		96.2	21-149				
Diphenylamine	28.0	5.00	"	25.0		112	40-140				
Hexachlorocyclopentadiene	20.6	10.0	"	25.0		82.4	10-130				
Isophorone	22.1	5.00	"	25.0		88.3	25-127				
N-nitroso-di-n-propylamine	20.8	5.00	"	25.0		83.0	26-122				
N-Nitrosodiphenylamine	28.1	5.00	"	25.0		112	23-149				
Phenol	7.90	5.00	"	25.0		31.6	10-110				
Pyridine	8.89	5.00	"	25.2		35.2	10-90				
Surrogate: SURR: 2-Fluorophenol	*21.2*		*"*	*50.0*		*42.4*	*19.7-63.1*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91431 - EPA 3510C											
LCS (BG91431-BS1)								Prepared: 07/26/2019 Analyzed: 07/30/2019			
Surrogate: SURR: Phenol-d5	*13.3*		*ug/L*	*50.0*		*26.6*	*10.1-41.7*				
Surrogate: SURR: Nitrobenzene-d5	*22.2*		*"*	*25.0*		*88.9*	*50.2-113*				
Surrogate: SURR: 2-Fluorobiphenyl	*22.1*		*"*	*25.0*		*88.6*	*39.9-105*				
Surrogate: SURR: 2,4,6-Tribromophenol	*51.9*		*"*	*50.0*		*104*	*39.3-151*				
Surrogate: SURR: Terphenyl-d14	*24.9*		*"*	*25.0*		*99.5*	*30.7-106*				
LCS (BG91431-BS2)								Prepared & Analyzed: 07/26/2019			
Acenaphthene	0.710	0.0500	ug/L	1.00		71.0	25-116				
Acenaphthylene	0.700	0.0500	"	1.00		70.0	26-116				
Anthracene	0.790	0.0500	"	1.00		79.0	25-123				
Benzo(a)anthracene	0.820	0.0500	"	1.00		82.0	33-125				
Benzo(a)pyrene	0.860	0.0500	"	1.00		86.0	32-132				
Benzo(b)fluoranthene	0.860	0.0500	"	1.00		86.0	22-137				
Benzo(g,h,i)perylene	0.930	0.0500	"	1.00		93.0	10-138				
Benzo(k)fluoranthene	0.850	0.0500	"	1.00		85.0	20-137				
Bis(2-ethylhexyl)phthalate	1.05	0.500	"	1.00		105	10-189				
Chrysene	0.810	0.0500	"	1.00		81.0	32-124				
Dibenzo(a,h)anthracene	0.930	0.0500	"	1.00		93.0	16-133				
Fluoranthene	0.830	0.0500	"	1.00		83.0	32-121				
Fluorene	0.750	0.0500	"	1.00		75.0	28-118				
Hexachlorobenzene	0.610	0.0200	"	1.00		61.0	23-124				
Hexachlorobutadiene	0.520	0.500	"	1.00		52.0	15-123				
Hexachloroethane	0.520	0.500	"	1.00		52.0	18-115				
Indeno(1,2,3-cd)pyrene	0.890	0.0500	"	1.00		89.0	15-135				
Naphthalene	0.680	0.0500	"	1.00		68.0	18-120				
Nitrobenzene	0.460	0.250	"	1.00		46.0	21-121				
N-Nitrosodimethylamine	ND	0.500	"	1.00			10-124	Low Bias			
Pentachlorophenol	0.690	0.250	"	1.00		69.0	10-156				
Phenanthrene	0.790	0.0500	"	1.00		79.0	24-127				
Pyrene	0.870	0.0500	"	1.00		87.0	31-132				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91431 - EPA 3510C											
LCS Dup (BG91431-BSD1)								Prepared: 07/26/2019 Analyzed: 07/30/2019			
1,1-Biphenyl	20.5	5.00	ug/L	25.0		82.1	33-95		5.95	20	
1,2,4,5-Tetrachlorobenzene	24.9	5.00	"	25.0		99.5	26-120		4.36	20	
1,2-Diphenylhydrazine (as Azobenzene)	21.4	5.00	"	25.0		85.4	16-141		3.68	20	
2,3,4,6-Tetrachlorophenol	43.3	5.00	"	25.0		173	30-130	High Bias	4.01	20	
2,4,5-Trichlorophenol	18.5	5.00	"	25.0		74.0	32-114		2.77	20	
2,4,6-Trichlorophenol	20.1	5.00	"	25.0		80.4	35-118		2.02	20	
2,4-Dichlorophenol	21.8	5.00	"	25.0		87.3	25-116		4.30	20	
2,4-Dimethylphenol	21.4	5.00	"	25.0		85.6	15-116		2.31	20	
2,4-Dinitrophenol	19.8	5.00	"	25.0		79.0	10-170		2.94	20	
2,4-Dinitrotoluene	21.0	5.00	"	25.0		83.9	41-128		2.26	20	
2,6-Dinitrotoluene	22.0	5.00	"	25.0		88.2	45-116		4.70	20	
2-Chloronaphthalene	18.9	5.00	"	25.0		75.8	33-112		4.14	20	
2-Chlorophenol	18.0	5.00	"	25.0		71.8	15-120		3.66	20	
2-Methylnaphthalene	22.4	5.00	"	25.0		89.7	24-118		5.76	20	
2-Methylphenol	13.9	5.00	"	25.0		55.7	10-110		3.94	20	
2-Nitroaniline	22.0	5.00	"	25.0		88.1	34-129		2.33	20	
2-Nitrophenol	22.0	5.00	"	25.0		87.8	28-118		3.58	20	
3- & 4-Methylphenols	11.4	5.00	"	25.0		45.7	10-107		2.34	20	
3,3-Dichlorobenzidine	19.4	5.00	"	25.0		77.4	15-187		5.23	20	
3-Nitroaniline	19.0	5.00	"	25.0		76.1	24-134		1.82	20	
4,6-Dinitro-2-methylphenol	25.8	5.00	"	25.0		103	10-153		3.43	20	
4-Bromophenyl phenyl ether	21.6	5.00	"	25.0		86.5	34-120		3.68	20	
4-Chloro-3-methylphenol	21.5	5.00	"	25.0		86.0	20-120		3.20	20	
4-Chloroaniline	17.6	5.00	"	25.0		70.3	10-147		1.52	20	
4-Chlorophenyl phenyl ether	20.3	5.00	"	25.0		81.1	27-121		2.58	20	
4-Nitroaniline	19.8	5.00	"	25.0		79.4	13-134		1.99	20	
4-Nitrophenol	7.89	5.00	"	25.0		31.6	10-131		2.57	20	
Acetophenone	20.1	5.00	"	25.0		80.6	25-110		7.82	20	
Aniline	13.1	5.00	"	25.0		52.3	10-117		2.12	20	
Benzaldehyde	25.8	5.00	"	25.0		103	29-117		7.41	20	
Benzoic acid	ND	50.0	"	27.6			30-130	Low Bias		20	
Benzyl alcohol	14.5	5.00	"	25.0		58.2	10-117		0.617	20	
Benzyl butyl phthalate	22.4	5.00	"	25.0		89.5	29-133		2.25	20	
Bis(2-chloroethoxy)methane	21.9	5.00	"	25.0		87.6	10-154		3.94	20	
Bis(2-chloroethyl)ether	19.3	5.00	"	25.0		77.1	17-125		6.43	20	
Bis(2-chloroisopropyl)ether	25.0	5.00	"	25.0		99.9	10-139		6.92	20	
Caprolactam	3.42	5.00	"	25.0		13.7	10-137		0.587	20	
Carbazole	20.9	5.00	"	25.0		83.5	42-126		3.07	20	
Dibenzofuran	20.5	5.00	"	25.0		81.9	36-113		4.49	20	
Diethyl phthalate	20.6	5.00	"	25.0		82.2	38-115		4.15	20	
Dimethyl phthalate	20.5	5.00	"	25.0		81.9	38-129		4.72	20	
Di-n-butyl phthalate	21.6	5.00	"	25.0		86.4	31-120		3.15	20	
Di-n-octyl phthalate	23.6	5.00	"	25.0		94.6	21-149		1.72	20	
Diphenylamine	27.0	5.00	"	25.0		108	40-140		3.27	20	
Hexachlorocyclopentadiene	19.5	10.0	"	25.0		78.1	10-130		5.34	20	
Isophorone	21.0	5.00	"	25.0		84.1	25-127		4.83	20	
N-nitroso-di-n-propylamine	19.4	5.00	"	25.0		77.8	26-122		6.52	20	
N-Nitrosodiphenylamine	26.8	5.00	"	25.0		107	23-149		4.70	20	
Phenol	7.81	5.00	"	25.0		31.2	10-110		1.15	20	
Pyridine	8.80	5.00	"	25.2		34.9	10-90		1.02	20	
Surrogate: SURR: 2-Fluorophenol	*20.1*		*"*	*50.0*		*40.2*	*19.7-63.1*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91431 - EPA 3510C											
LCS Dup (BG91431-BSD1)							Prepared: 07/26/2019 Analyzed: 07/30/2019				
Surrogate: SURR: Phenol-d5	*12.7*		*ug/L*	*50.0*		*25.4*	*10.1-41.7*				
Surrogate: SURR: Nitrobenzene-d5	*20.7*		*"*	*25.0*		*82.9*	*50.2-113*				
Surrogate: SURR: 2-Fluorobiphenyl	*20.8*		*"*	*25.0*		*83.2*	*39.9-105*				
Surrogate: SURR: 2,4,6-Tribromophenol	*49.5*		*"*	*50.0*		*99.1*	*39.3-151*				
Surrogate: SURR: Terphenyl-d14	*23.3*		*"*	*25.0*		*93.3*	*30.7-106*				
Batch BG91620 - EPA 3510C/1311											
Blank (BG91620-BLK1)							Prepared: 07/30/2019 Analyzed: 07/31/2019				
1,4-Dichlorobenzene	ND	0.0100	mg/L								
2,4,5-Trichlorophenol	ND	0.0100	"								
2,4,6-Trichlorophenol	ND	0.0100	"								
2,4-Dinitrotoluene	ND	0.0100	"								
2-Methylphenol	ND	0.0100	"								
3- & 4-Methylphenols	ND	0.0100	"								
Cresols, total	ND	0.0300	"								
Hexachlorobenzene	ND	0.0100	"								
Hexachlorobutadiene	ND	0.0100	"								
Hexachloroethane	ND	0.00500	"								
Nitrobenzene	ND	0.0100	"								
Pentachlorophenol	ND	0.0100	"								
Pyridine	ND	0.0100	"								
Surrogate: SURR: 2-Fluorophenol	*0.0402*		*"*	*0.100*		*40.2*	*10-90.9*				
Surrogate: SURR: Phenol-d5	*0.0286*		*"*	*0.100*		*28.6*	*10-69.2*				
Surrogate: SURR: Nitrobenzene-d5	*0.0287*		*"*	*0.0500*		*57.5*	*19.2-141*				
Surrogate: SURR: 2-Fluorobiphenyl	*0.0286*		*"*	*0.0500*		*57.2*	*24.8-127*				
Surrogate: SURR: 2,4,6-Tribromophenol	*0.0655*		*"*	*0.100*		*65.5*	*23-163*				
Surrogate: SURR: Terphenyl-d14	*0.0340*		*"*	*0.0500*		*68.1*	*25.8-110*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91620 - EPA 3510C/1311											
LCS (BG91620-BS1)								Prepared: 07/30/2019 Analyzed: 07/31/2019			
1,4-Dichlorobenzene	0.0270	0.0100	mg/L	0.0500		54.0	30-105				
2,4,5-Trichlorophenol	0.0266	0.0100	"	0.0500		53.1	32-114				
2,4,6-Trichlorophenol	0.0284	0.0100	"	0.0500		56.8	35-118				
2,4-Dinitrotoluene	0.0310	0.0100	"	0.0500		62.0	41-128				
2-Methylphenol	0.0268	0.0100	"	0.0500		53.5	10-110				
3- & 4-Methylphenols	0.0236	0.0100	"	0.0500		47.1	10-107				
Cresols, total	0.0503	0.0300	"	0.100		50.3	30-130				
Hexachlorobenzene	0.0299	0.0100	"	0.0500		59.8	23-124				
Hexachlorobutadiene	0.0274	0.0100	"	0.0500		54.7	15-123				
Hexachloroethane	0.0260	0.00500	"	0.0500		52.1	18-115				
Nitrobenzene	0.0290	0.0100	"	0.0500		58.0	21-121				
Pentachlorophenol	0.0308	0.0100	"	0.0500		61.6	10-156				
Pyridine	0.0177	0.0100	"	0.0505		35.0	10-90				
Surrogate: SURR: 2-Fluorophenol	*0.0457*		*"*	*0.100*		*45.7*	*10-90.9*				
Surrogate: SURR: Phenol-d5	*0.0353*		*"*	*0.100*		*35.3*	*10-69.2*				
Surrogate: SURR: Nitrobenzene-d5	*0.0299*		*"*	*0.0500*		*59.8*	*19.2-141*				
Surrogate: SURR: 2-Fluorobiphenyl	*0.0293*		*"*	*0.0500*		*58.6*	*24.8-127*				
Surrogate: SURR: 2,4,6-Tribromophenol	*0.0726*		*"*	*0.100*		*72.6*	*23-163*				
Surrogate: SURR: Terphenyl-d14	*0.0351*		*"*	*0.0500*		*70.2*	*25.8-110*				
LCS Dup (BG91620-BSD1)								Prepared: 07/30/2019 Analyzed: 07/31/2019			
1,4-Dichlorobenzene	0.0335	0.0100	mg/L	0.0500		67.0	30-105		21.4	20	Non-dir.
2,4,5-Trichlorophenol	0.0338	0.0100	"	0.0500		67.5	32-114		23.9	20	Non-dir.
2,4,6-Trichlorophenol	0.0366	0.0100	"	0.0500		73.3	35-118		25.4	20	Non-dir.
2,4-Dinitrotoluene	0.0405	0.0100	"	0.0500		81.0	41-128		26.5	20	Non-dir.
2-Methylphenol	0.0328	0.0100	"	0.0500		65.6	10-110		20.2	20	Non-dir.
3- & 4-Methylphenols	0.0287	0.0100	"	0.0500		57.4	10-107		19.6	20	
Cresols, total	0.0615	0.0300	"	0.100		61.5	30-130		19.9	20	
Hexachlorobenzene	0.0388	0.0100	"	0.0500		77.6	23-124		25.8	20	Non-dir.
Hexachlorobutadiene	0.0340	0.0100	"	0.0500		68.1	15-123		21.8	20	Non-dir.
Hexachloroethane	0.0331	0.00500	"	0.0500		66.2	18-115		23.9	20	Non-dir.
Nitrobenzene	0.0359	0.0100	"	0.0500		71.7	21-121		21.1	20	Non-dir.
Pentachlorophenol	0.0413	0.0100	"	0.0500		82.6	10-156		29.2	20	Non-dir.
Pyridine	0.0206	0.0100	"	0.0505		40.8	10-90		15.1	20	
Surrogate: SURR: 2-Fluorophenol	*0.0594*		*"*	*0.100*		*59.4*	*10-90.9*				
Surrogate: SURR: Phenol-d5	*0.0455*		*"*	*0.100*		*45.5*	*10-69.2*				
Surrogate: SURR: Nitrobenzene-d5	*0.0389*		*"*	*0.0500*		*77.8*	*19.2-141*				
Surrogate: SURR: 2-Fluorobiphenyl	*0.0383*		*"*	*0.0500*		*76.6*	*24.8-127*				
Surrogate: SURR: 2,4,6-Tribromophenol	*0.100*		*"*	*0.100*		*100*	*23-163*				
Surrogate: SURR: Terphenyl-d14	*0.0480*		*"*	*0.0500*		*96.0*	*25.8-110*				

Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91620 - EPA 3510C/1311											
Leach Fluid Blank (BG91620-LBK1)											
Prepared: 07/30/2019 Analyzed: 07/31/2019											
1,4-Dichlorobenzene	ND	0.0100	mg/L								
2,4,5-Trichlorophenol	ND	0.0100	"								
2,4,6-Trichlorophenol	ND	0.0100	"								
2,4-Dinitrotoluene	ND	0.0100	"								
2-Methylphenol	ND	0.0100	"								
3- & 4-Methylphenols	ND	0.0100	"								
Cresols, total	ND	0.0300	"								
Hexachlorobenzene	ND	0.0100	"								
Hexachlorobutadiene	ND	0.0100	"								
Hexachloroethane	ND	0.00500	"								
Nitrobenzene	ND	0.0100	"								
Pentachlorophenol	ND	0.0100	"								
Pyridine	ND	0.0100	"								
Surrogate: SURR: 2-Fluorophenol	*0.0548*		*"*	*0.100*		*54.8*	*10-90.9*				
Surrogate: SURR: Phenol-d5	*0.0416*		*"*	*0.100*		*41.6*	*10-69.2*				
Surrogate: SURR: Nitrobenzene-d5	*0.0357*		*"*	*0.0500*		*71.4*	*19.2-141*				
Surrogate: SURR: 2-Fluorobiphenyl	*0.0342*		*"*	*0.0500*		*68.3*	*24.8-127*				
Surrogate: SURR: 2,4,6-Tribromophenol	*0.0823*		*"*	*0.100*		*82.3*	*23-163*				
Surrogate: SURR: Terphenyl-d14	*0.0408*		*"*	*0.0500*		*81.7*	*25.8-110*				

Semivolatile Organic Compounds by GC/MS/SIM - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91371 - EPA 3535A											
Blank (BG91371-BLK1)									Prepared: 07/25/2019 Analyzed: 07/26/2019		
1,4-Dioxane	ND	0.200	ug/L								
Surrogate: 1,4-Dioxane-d8	*4.40*		*"*	*5.00*		*88.0*	*50-130*				
LCS (BG91371-BS1)									Prepared: 07/25/2019 Analyzed: 07/26/2019		
1,4-Dioxane	5.00	0.200	ug/L	5.00		100	70-130				
Surrogate: 1,4-Dioxane-d8	*3.80*		*"*	*5.00*		*76.0*	*50-130*				
Matrix Spike (BG91371-MS1)	*Source sample: 19G1029-15 (ACME-MW-15_072419)								Prepared: 07/25/2019 Analyzed: 07/26/2019		
1,4-Dioxane	6.58	0.200	ug/L	5.00	2.94	72.8	70-130				
Surrogate: 1,4-Dioxane-d8	*3.80*		*"*	*5.00*		*76.0*	*50-130*				
Matrix Spike Dup (BG91371-MSD1)	*Source sample: 19G1029-15 (ACME-MW-15_072419)								Prepared: 07/25/2019 Analyzed: 07/26/2019		
1,4-Dioxane	7.06	0.200	ug/L	5.00	2.94	82.4	70-130		7.04	30	
Surrogate: 1,4-Dioxane-d8	*3.40*		*"*	*5.00*		*68.0*	*50-130*				

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91463 - SPE Ext-PFAS-EPA 537.1M											
Blank (BG91463-BLK1)											
Prepared: 07/26/2019 Analyzed: 07/29/2019											
Perfluorobutanesulfonic acid (PFBS)	ND	2.00	ng/L								
Perfluorohexanoic acid (PFHxA)	ND	2.00	"								
Perfluoroheptanoic acid (PFHpA)	ND	2.00	"								
Perfluorohexanesulfonic acid (PFHxS)	ND	2.00	"								
Perfluorooctanoic acid (PFOA)	ND	2.00	"								
Perfluorooctanesulfonic acid (PFOS)	ND	2.00	"								
Perfluorononanoic acid (PFNA)	ND	2.00	"								
Perfluorodecanoic acid (PFDA)	ND	2.00	"								
Perfluoroundecanoic acid (PFUnA)	ND	2.00	"								
Perfluorododecanoic acid (PFDoA)	ND	2.00	"								
Perfluorotridecanoic acid (PFTrDA)	ND	2.00	"								
Perfluorotetradecanoic acid (PFTA)	ND	2.00	"								
N-MeFOSAA	ND	2.00	"								
N-EtFOSAA	ND	2.00	"								
Perfluoropentanoic acid (PFPeA)	ND	2.00	"								
Perfluoro-1-octanesulfonamide (FOSA)	ND	2.00	"								
Perfluoro-1-heptanesulfonic acid (PFHpS)	ND	2.00	"								
Perfluoro-1-decanesulfonic acid (PFDS)	ND	2.00	"								
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND	5.00	"								
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	2.00	"								
Perfluoro-n-butanoic acid (PFBA)	ND	2.00	"								
Surrogate: M3PFBS	*51.0*		"	*74.3*		*68.6*	*25-150*				
Surrogate: M5PFHxA	*51.3*		"	*80.0*		*64.1*	*25-150*				
Surrogate: M4PFHpA	*51.5*		"	*80.0*		*64.3*	*25-150*				
Surrogate: M3PFHxS	*51.3*		"	*75.7*		*67.7*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*44.6*		"	*80.0*		*55.7*	*25-150*				
Surrogate: M6PFDA	*47.9*		"	*80.0*		*59.9*	*25-150*				
Surrogate: M7PFUdA	*48.4*		"	*80.0*		*60.5*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*42.5*		"	*80.0*		*53.1*	*25-150*				
Surrogate: M2PFTeDA	*33.2*		"	*80.0*		*41.5*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*54.7*		"	*80.0*		*68.4*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*48.0*		"	*76.6*		*62.7*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*54.3*		"	*80.0*		*67.8*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*45.9*		"	*80.0*		*57.3*	*10-150*				
Surrogate: d3-N-MeFOSAA	*47.8*		"	*80.0*		*59.8*	*25-150*				
Surrogate: d5-N-EtFOSAA	*48.0*		"	*80.0*		*60.1*	*25-150*				
Surrogate: M2-6:2 FTS	*47.2*		"	*75.9*		*62.1*	*25-150*				
Surrogate: M2-8:2 FTS	*48.3*		"	*76.6*		*63.1*	*25-150*				
Surrogate: M9PFNA	*44.9*		"	*80.0*		*56.1*	*25-150*				

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91463 - SPE Ext-PFAS-EPA 537.1M											
LCS (BG91463-BS1)								Prepared: 07/26/2019 Analyzed: 07/29/2019			
Perfluorobutanesulfonic acid (PFBS)	69.3	2.00	ng/L	70.8		97.9	50-130				
Perfluorohexanoic acid (PFHxA)	72.9	2.00	"	80.0		91.2	50-130				
Perfluoroheptanoic acid (PFHpA)	79.0	2.00	"	80.0		98.7	50-130				
Perfluorohexanesulfonic acid (PFHxS)	57.7	2.00	"	59.2		97.4	50-130				
Perfluorooctanoic acid (PFOA)	73.6	2.00	"	80.0		92.0	50-130				
Perfluorooctanesulfonic acid (PFOS)	58.2	2.00	"	58.4		99.7	50-130				
Perfluorononanoic acid (PFNA)	79.4	2.00	"	76.8		103	50-130				
Perfluorodecanoic acid (PFDA)	66.9	2.00	"	80.0		83.6	50-130				
Perfluoroundecanoic acid (PFUnA)	62.6	2.00	"	80.0		78.3	50-130				
Perfluorododecanoic acid (PFDoA)	62.8	2.00	"	80.0		78.5	50-130				
Perfluorotridecanoic acid (PFTrDA)	66.9	2.00	"	80.0		83.6	50-130				
Perfluorotetradecanoic acid (PFTA)	76.9	2.00	"	80.0		96.1	50-130				
N-MeFOSAA	71.9	2.00	"	80.0		89.9	50-130				
N-EtFOSAA	72.2	2.00	"	80.0		90.2	50-130				
Perfluoropentanoic acid (PFPeA)	72.6	2.00	"	80.0		90.8	50-130				
Perfluoro-1-octanesulfonamide (FOSA)	75.5	2.00	"	80.0		94.4	50-130				
Perfluoro-1-heptanesulfonic acid (PFHpS)	82.0	2.00	"	79.6		103	50-130				
Perfluoro-1-decanesulfonic acid (PFDS)	73.5	2.00	"	77.2		95.2	50-130				
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	71.1	5.00	"	76.0		93.5	50-130				
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	72.9	2.00	"	76.8		95.0	50-130				
Perfluoro-n-butanoic acid (PFBA)	74.0	2.00	"	80.0		92.5	50-130				
Surrogate: M3PFBS	*63.8*		"	*74.3*		*85.8*	*25-150*				
Surrogate: M5PFHxA	*62.7*		"	*80.0*		*78.4*	*25-150*				
Surrogate: M4PFHpA	*56.7*		"	*80.0*		*70.9*	*25-150*				
Surrogate: M3PFHxS	*63.4*		"	*75.7*		*83.8*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*55.0*		"	*80.0*		*68.7*	*25-150*				
Surrogate: M6PFDA	*53.1*		"	*80.0*		*66.3*	*25-150*				
Surrogate: M7PFUdA	*49.8*		"	*80.0*		*62.2*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*52.7*		"	*80.0*		*65.9*	*25-150*				
Surrogate: M2PFTeDA	*46.6*		"	*80.0*		*58.2*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*69.6*		"	*80.0*		*87.0*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*59.6*		"	*76.6*		*77.9*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*68.9*		"	*80.0*		*86.1*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*55.2*		"	*80.0*		*69.0*	*10-150*				
Surrogate: d3-N-MeFOSAA	*61.6*		"	*80.0*		*77.0*	*25-150*				
Surrogate: d5-N-EtFOSAA	*58.9*		"	*80.0*		*73.6*	*25-150*				
Surrogate: M2-6:2 FTS	*59.6*		"	*75.9*		*78.5*	*25-150*				
Surrogate: M2-8:2 FTS	*57.1*		"	*76.6*		*74.5*	*25-150*				
Surrogate: M9PFNA	*53.2*		"	*80.0*		*66.5*	*25-150*				

PFAS Target compounds by LC/MS-MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91463 - SPE Ext-PFAS-EPA 537.1M											
Duplicate (BG91463-DUP1)	*Source sample: 19G1029-15 (ACME-MW-15_072419)								Prepared: 07/26/2019 Analyzed: 07/29/2019		
Perfluorobutanesulfonic acid (PFBS)	8.21	2.00	ng/L		8.68				5.57	30	
Perfluorohexanoic acid (PFHxA)	55.0	2.00	"		54.0				1.92	30	
Perfluoroheptanoic acid (PFHpA)	38.5	2.00	"		38.9				1.24	30	
Perfluorohexanesulfonic acid (PFHxS)	50.9	2.00	"		51.5				1.17	30	
Perfluorooctanoic acid (PFOA)	106	2.00	"		117				9.99	30	
Perfluorooctanesulfonic acid (PFOS)	24.0	2.00	"		26.3				8.98	30	
Perfluorononanoic acid (PFNA)	ND	2.00	"		2.53					30	
Perfluorodecanoic acid (PFDA)	ND	2.00	"		ND					30	
Perfluoroundecanoic acid (PFUnA)	ND	2.00	"		ND					30	
Perfluorododecanoic acid (PFDoA)	ND	2.00	"		ND					30	
Perfluorotridecanoic acid (PFTrDA)	ND	2.00	"		ND					30	
Perfluorotetradecanoic acid (PFTA)	ND	2.00	"		ND					30	
N-MeFOSAA	ND	2.00	"		ND					30	
N-EtFOSAA	ND	2.00	"		ND					30	
Perfluoropentanoic acid (PFPeA)	57.6	2.00	"		59.5				3.19	30	
Perfluoro-1-octanesulfonamide (FOSA)	ND	2.00	"		ND					30	
Perfluoro-1-heptanesulfonic acid (PFHpS)	3.06	2.00	"		3.02				1.46	30	
Perfluoro-1-decanesulfonic acid (PFDS)	ND	2.00	"		ND					30	
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	16.3	5.00	"		16.6				1.82	30	
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND	2.00	"		ND					30	
Perfluoro-n-butanoic acid (PFBA)	25.3	2.00	"		26.1				3.00	30	
Surrogate: M3PFBS	*51.1*		"	*74.3*		*68.7*	*25-150*				
Surrogate: M5PFHxA	*53.0*		"	*80.0*		*66.3*	*25-150*				
Surrogate: M4PFHpA	*53.2*		"	*80.0*		*66.5*	*25-150*				
Surrogate: M3PFHxS	*51.7*		"	*75.7*		*68.3*	*25-150*				
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*51.5*		"	*80.0*		*64.4*	*25-150*				
Surrogate: M6PFDA	*47.4*		"	*80.0*		*59.2*	*25-150*				
Surrogate: M7PFUdA	*47.7*		"	*80.0*		*59.6*	*25-150*				
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*40.0*		"	*80.0*		*50.1*	*25-150*				
Surrogate: M2PFTeDA	*36.7*		"	*80.0*		*45.9*	*10-150*				
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*56.7*		"	*80.0*		*70.9*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*50.1*		"	*76.6*		*65.5*	*25-150*				
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*55.2*		"	*80.0*		*69.0*	*25-150*				
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*35.5*		"	*80.0*		*44.4*	*10-150*				
Surrogate: d3-N-MeFOSAA	*46.1*		"	*80.0*		*57.6*	*25-150*				
Surrogate: d5-N-EtFOSAA	*49.3*		"	*80.0*		*61.7*	*25-150*				
Surrogate: M2-6:2 FTS	*50.4*		"	*75.9*		*66.3*	*25-150*				
Surrogate: M2-8:2 FTS	*47.8*		"	*76.6*		*62.3*	*25-150*				
Surrogate: M9PFNA	*51.1*		"	*80.0*		*63.9*	*25-150*				

Polychlorinated Biphenyls by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91389 - EPA 3550C											
Blank (BG91389-BLK2)											Prepared: 07/25/2019 Analyzed: 07/27/2019
Aroclor 1016	ND	0.0167	mg/kg wet								
Aroclor 1221	ND	0.0167	"								
Aroclor 1232	ND	0.0167	"								
Aroclor 1242	ND	0.0167	"								
Aroclor 1248	ND	0.0167	"								
Aroclor 1254	ND	0.0167	"								
Aroclor 1260	ND	0.0167	"								
Total PCBs	ND	0.0167	"								
Surrogate: Tetrachloro-m-xylene	*0.0823*		*"*	*0.0667*		*124*	*30-140*				
Surrogate: Decachlorobiphenyl	*0.0673*		*"*	*0.0667*		*101*	*30-140*				
LCS (BG91389-BS2)											Prepared: 07/25/2019 Analyzed: 07/27/2019
Aroclor 1016	0.385	0.0167	mg/kg wet	0.333		116	40-130				
Aroclor 1260	0.332	0.0167	"	0.333		99.6	40-130				
Surrogate: Tetrachloro-m-xylene	*0.0830*		*"*	*0.0667*		*124*	*30-140*				
Surrogate: Decachlorobiphenyl	*0.0767*		*"*	*0.0667*		*115*	*30-140*				
Batch BG91435 - EPA SW846-3510C Low Level											
Blank (BG91435-BLK2)											Prepared: 07/26/2019 Analyzed: 07/29/2019
Aroclor 1016	ND	0.0500	ug/L								
Aroclor 1221	ND	0.0500	"								
Aroclor 1232	ND	0.0500	"								
Aroclor 1242	ND	0.0500	"								
Aroclor 1248	ND	0.0500	"								
Aroclor 1254	ND	0.0500	"								
Aroclor 1260	ND	0.0500	"								
Total PCBs	ND	0.0500	"								
Surrogate: Tetrachloro-m-xylene	*0.171*		*"*	*0.200*		*85.5*	*30-120*				
Surrogate: Decachlorobiphenyl	*0.181*		*"*	*0.200*		*90.5*	*30-120*				

Polychlorinated Biphenyls by GC/ECD - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91435 - EPA SW846-3510C Low Level											
LCS (BG91435-BS2)								Prepared: 07/26/2019 Analyzed: 07/29/2019			
Aroclor 1016	0.924	0.0500	ug/L	1.00		92.4	40-120				
Aroclor 1260	0.825	0.0500	"	1.00		82.5	40-120				
Surrogate: Tetrachloro-m-xylene	*0.174*		"	*0.200*		*87.0*	*30-120*				
Surrogate: Decachlorobiphenyl	*0.150*		"	*0.200*		*75.0*	*30-120*				
LCS Dup (BG91435-BSD2)								Prepared: 07/26/2019 Analyzed: 07/29/2019			
Aroclor 1016	1.00	0.0500	ug/L	1.00		100	40-120		8.20	30	
Aroclor 1260	0.978	0.0500	"	1.00		97.8	40-120		17.0	30	
Surrogate: Tetrachloro-m-xylene	*0.179*		"	*0.200*		*89.5*	*30-120*				
Surrogate: Decachlorobiphenyl	*0.188*		"	*0.200*		*94.0*	*30-120*				
Batch BG91499 - EPA 3550C											
Blank (BG91499-BLK1)								Prepared & Analyzed: 07/29/2019			
Aroclor 1016	ND	0.0166	mg/kg wet								
Aroclor 1221	ND	0.0166	"								
Aroclor 1232	ND	0.0166	"								
Aroclor 1242	ND	0.0166	"								
Aroclor 1248	ND	0.0166	"								
Aroclor 1254	ND	0.0166	"								
Aroclor 1260	ND	0.0166	"								
Total PCBs	ND	0.0166	"								
Surrogate: Tetrachloro-m-xylene	*0.0914*		"	*0.0664*		*138*	*30-140*				
Surrogate: Decachlorobiphenyl	*0.0804*		"	*0.0664*		*121*	*30-140*				
LCS (BG91499-BS2)								Prepared & Analyzed: 07/29/2019			
Aroclor 1016	0.530	0.0166	mg/kg wet	0.332		160	40-130	High Bias			
Aroclor 1260	0.452	0.0166	"	0.332		136	40-130	High Bias			
Surrogate: Tetrachloro-m-xylene	*0.0847*		"	*0.0664*		*128*	*30-140*				
Surrogate: Decachlorobiphenyl	*0.0827*		"	*0.0664*		*124*	*30-140*				

Metals by ICP - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91528 - EPA 3015A											
Blank (BG91528-BLK1)											Prepared & Analyzed: 07/29/2019
Aluminum	ND	55.6	ug/L								
Barium	ND	27.8	"								
Calcium	ND	55.6	"								
Chromium	ND	5.56	"								
Cobalt	ND	4.44	"								
Copper	ND	22.2	"								
Iron	ND	278	"								
Lead	ND	5.56	"								
Magnesium	ND	55.6	"								
Manganese	ND	5.56	"								
Nickel	ND	11.1	"								
Potassium	ND	55.6	"								
Silver	ND	5.56	"								
Sodium	ND	556	"								
Vanadium	ND	11.1	"								
Zinc	ND	27.8	"								
LCS (BG91528-BS1)											Prepared & Analyzed: 07/29/2019
Aluminum	2.00		ug/mL	2.00		99.9	80-120				
Barium	2.06		"	2.00		103	80-120				
Calcium	1.06		"	1.00		106	80-120				
Chromium	0.197		"	0.200		98.3	80-120				
Cobalt	0.517		"	0.500		103	80-120				
Copper	0.249		"	0.250		99.7	80-120				
Iron	1.02		"	1.00		102	80-120				
Lead	0.493		"	0.500		98.6	80-120				
Magnesium	1.03		"	1.00		103	80-120				
Manganese	0.509		"	0.500		102	80-120				
Nickel	0.501		"	0.500		100	80-120				
Potassium	0.993		"	1.00		99.3	80-120				
Silver	0.0541		"	0.0500		108	80-120				
Sodium	0.974		"	1.00		97.4	80-120				
Vanadium	0.498		"	0.500		99.7	80-120				
Zinc	0.491		"	0.500		98.2	80-120				

Metals by ICP - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91609 - EPA 3015A/1311											
Blank (BG91609-BLK1)										Prepared & Analyzed: 07/30/2019	
Arsenic	ND	0.017	mg/L								
Barium	ND	0.028	"								
Cadmium	ND	0.003	"								
Chromium	ND	0.006	"								
Lead	ND	0.006	"								
Selenium	ND	0.028	"								
Silver	ND	0.006	"								
LCS (BG91609-BS1)										Prepared & Analyzed: 07/30/2019	
Arsenic	1.79		ug/mL	2.00		89.4	80-120				
Barium	2.01		"	2.00		101	80-120				
Cadmium	0.048		"	0.0500		96.1	80-120				
Chromium	0.193		"	0.200		96.6	80-120				
Lead	0.477		"	0.500		95.5	80-120				
Selenium	1.66		"	2.00		83.2	80-120				
Silver	0.053		"	0.0500		106	80-120				
Leach Fluid Blank (BG91609-LBK1)										Prepared & Analyzed: 07/30/2019	
Arsenic	ND	0.375	mg/L								
Barium	ND	0.625	"								
Cadmium	ND	0.075	"								
Chromium	ND	0.125	"								
Lead	ND	0.125	"								
Selenium	ND	0.625	"								
Silver	ND	0.125	"								

Metals by ICP/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91529 - EPA 3015A											
Blank (BG91529-BLK1)											Prepared: 07/29/2019 Analyzed: 07/30/2019
Antimony	ND	1.11	ug/L								
Arsenic	ND	1.11	"								
Beryllium	ND	0.333	"								
Cadmium	ND	0.556	"								
Selenium	ND	1.11	"								
Thallium	ND	1.11	"								
LCS (BG91529-BS1)											Prepared: 07/29/2019 Analyzed: 07/30/2019
Antimony	34.5		ug/L	50.0		68.9	80-120	Low Bias			
Arsenic	48.7		"	50.0		97.4	80-120				
Beryllium	42.2		"	50.0		84.5	80-120				
Cadmium	47.2		"	50.0		94.3	80-120				
Selenium	54.0		"	50.0		108	80-120				
Thallium	57.5		"	50.0		115	80-120				

Mercury by EPA 7000/200 Series Methods - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91522 - EPA 7473 water											
Blank (BG91522-BLK1)								Prepared & Analyzed: 07/29/2019			
Mercury	ND	0.20	ug/L								
Reference (BG91522-SRM1)								Prepared & Analyzed: 07/29/2019			
Mercury	0.0121		mg/L	0.0100		121	70-130				
Batch BG91605 - EPA 7473 water											
Blank (BG91605-BLK1)								Prepared & Analyzed: 07/30/2019			
Mercury	ND	0.00020000	mg/L								
Duplicate (BG91605-DUP1)	*Source sample: 19G1029-14 (CU_COMP01_072419)							Prepared & Analyzed: 07/30/2019			
Mercury	ND	0.00020000	mg/L		0.00010800					20	
Leach Fluid Blank (BG91605-LBK1)								Prepared & Analyzed: 07/30/2019			
Mercury	ND	0.00020000	mg/L								
Matrix Spike (BG91605-MS1)	*Source sample: 19G1029-14 (CU_COMP01_072419)							Prepared & Analyzed: 07/30/2019			
Mercury	0.0086690		mg/L	0.0100	0.00010800	85.6	75-125				
Reference (BG91605-SRM1)								Prepared & Analyzed: 07/30/2019			
Mercury	0.0083040		mg/L	0.0100		83.0	70-130				

Miscellaneous Physical Parameters - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91693 - Analysis Preparation											
Reference (BG91693-SRM1)											
Prepared & Analyzed: 07/31/2019											
Flashpoint	115		°F	115		99.9	96.5-103.5				

Wet Chemistry Parameters - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG91561 - EPA SW 846-1311 TCLP extr. for SVOA/PEST/HERBS											
Blank (BG91561-BLK1)									Prepared: 07/29/2019 Analyzed: 07/30/2019		
TCLP Extraction	Completed	1.00	N/A								
Batch BG91562 - EPA SW 846-1311 TCLP ext. for metals											
Blank (BG91562-BLK1)									Prepared: 07/29/2019 Analyzed: 07/30/2019		
TCLP Extraction	Completed	1.00	N/A								
Batch BG91624 - EPA SW 846-1311 TCLP ZHE for VOA											
Blank (BG91624-BLK1)									Prepared: 07/30/2019 Analyzed: 07/31/2019		
TCLP Extraction	Completed	1.00	N/A								

Volatile Analysis Sample Containers

Lab ID	Client Sample ID	Volatile Sample Container
19G1029-01	SO_DRO1_072419	40mL Vial with Stir Bar-Cool 4° C
19G1029-01	SO_DRO1_072419	40mL 01_Clear Vial Cool to 4° C
19G1029-02	SO_DRO2_072419	40mL Vial with Stir Bar-Cool 4° C
19G1029-02	SO_DRO2_072419	40mL 01_Clear Vial Cool to 4° C
19G1029-03	SO_DRO3_072419	40mL Vial with Stir Bar-Cool 4° C
19G1029-03	SO_DRO3_072419	40mL 01_Clear Vial Cool to 4° C
19G1029-04	SO_DRO4_072419	40mL Vial with Stir Bar-Cool 4° C
19G1029-04	SO_DRO4_072419	40mL 01_Clear Vial Cool to 4° C
19G1029-05	SO_DRO5_072419	40mL Vial with Stir Bar-Cool 4° C
19G1029-05	SO_DRO5_072419	40mL 01_Clear Vial Cool to 4° C
19G1029-06	SO_DRO6_072419	40mL Vial with Stir Bar-Cool 4° C
19G1029-06	SO_DRO6_072419	40mL 01_Clear Vial Cool to 4° C
19G1029-07	SO_DRO7_072419	40mL Vial with Stir Bar-Cool 4° C
19G1029-07	SO_DRO7_072419	40mL 01_Clear Vial Cool to 4° C
19G1029-08	SO_DRO8_072419	40mL Pre-Tared Vial + 10mL MeOH; Cool to 4° C
19G1029-08	SO_DRO8_072419	40mL 01_Clear Vial Cool to 4° C
19G1029-11	GW_DRO9_072419	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
19G1029-12	CU_DR10_072419	40mL Pre-Tared Vial + 10mL MeOH; Cool to 4° C
19G1029-12	CU_DR10_072419	40mL 01_Clear Vial Cool to 4° C
19G1029-13	CU_DR11_072419	40mL Pre-Tared Vial + 10mL MeOH; Cool to 4° C
19G1029-13	CU_DR11_072419	40mL 01_Clear Vial Cool to 4° C
19G1029-15	ACME-MW-15_072419	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
19G1029-16	GWDUP01_072419	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
19G1029-17	GWFB01_072419	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
19G1029-18	GWTB01_072419	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C

Sample and Data Qualifiers Relating to This Work Order

M-BS	The recovery for this element in the batch blank spike recovered slightly outside of control limits
EXT-COMP	Completed
EXT-EM	The sample exhibited emulsion formation during the extraction process. This may affect surrogate recoveries.
EXT-Temp	Extraction temperture slightly exceeded acceptance range.
F-01	> 200
HT-pH	HOLDING TIME EXCEEDED. Samples for pH must be measured in the field or within 15 minutes of sample collection.
CCV-E	The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).
J	Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.
S-08	The recovery of this surrogate was outside of QC limits.
M-CRL	The RL check for this element recovered outside of control limits.
M-ICV2	The recovery for this element in the ICV was outside the 90-110% recovery criteria.
PF-CCV	The CCV associated with this sequence was biased slightly high (>130<140%) for this particular compound. Data are qualified.
QC-LCS	LCS/LCS Dup recovery was above laboratory control limits. Sample does not contain any target compounds; therefore sample results are acceptable.
QL-02	This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
IGN-01	Non-Ignit.

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis

Low Bias — Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.

High Bias — High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.

Non-Dir. — Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

York Analytical Laboratories, Inc.
120 Research Drive, Stratford, CT 06615 | 132-02 89th Ave, Queens, NY 11418
clientservices@yorklab.com
www.yorklab.com

Field Chain-of-Custody Record

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document.
This document serves as your written authorization for YORK to proceed with the analyses requested below.
Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 19G1029

YOUR Information	Report To:	Invoice To:	YOUR Project Number	Turn-Around Time
Company: LANGAN Engineering	Company:	Company:	170157201	RUSH - Next Day
Address: 360 W 31st St New York, NY	Address:	Address:	YOUR Project Name: Acme Site No. 2 72 Anthony St	RUSH - Two Day
Phone.: 2124795400	Phone.:	Phone.:		RUSH - Three Day
Contact: Patrick Farnham	Contact:	Contact:		RUSH - Four Day
E-mail: pfarnham@langan.com	E-mail:	E-mail:	YOUR PO#:	Standard (5-7 Day) X

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Samples Collected by: (print your name above and sign below) Katherine Racanelli

Matrix Codes
S - soil / solid
GW - groundwater
DW - drinking water
WW - wastewater
O - Oil | Other

Samples From
New York X
New Jersey
Connecticut
Pennsylvania
Other

Report / EDD Type (circle selections)
Summary Report; QA Report; NY ASP A Package; NY ASP B Package; CT RCP; CT RCP DQA/DUE; NJDEP Reduced Deliverables; NJDKQP; Standard Excel EDD; EQuIS (Standard); NYSDEC EQuIS; NJDEP SRP HazSite; Other:

YORK Reg. Comp.
Compared to the following Regulation(s): (please fill in)

Sample Identification	Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
SO_DR01_072419	S	7/24/19 1400	TCL & TCLP VOCs (HOLD TCLP VOCs TCLP RCRA 8)	
SO-DR02_072419	↓	1405	↓	
SO-DR03_072419		1410		
SO-DR04-072419		1415		
SO-DR05_072419		1425		
SO-DR06_072419		1430		
SO-DR07_072419		1435		
SO-DR08_072419		1440		
SO-COMP01-072419		1420	PCBs, TCLP SVOCs, TCLP RCRA 8 Metals, Ignitability, Corrosivity	
SO-COMP02_072419	↓	1445	↓	

Comments:

Preservation: (check all that apply)
HCl ___ MeOH ___ HNO_3 ___ H_2SO_4 ___ NaOH ___ ZnAc ___
Ascorbic Acid ___ Other: ___

Special Instruction
Field Filtered ___
Lab to Filter ___

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
KR LANGAN	7/24/19 1507	Allie Ventura YORK	7/24/19 15:07	Allie Ventura YORK	7/24/19 1540
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
Tom M / York	7/24/19 1540	Tom M / York	7/24/19 1906		
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by / Date/Time	Temp. Received at Lab
				7-24-19 1906	3.1 Degrees C

York Analytical Laboratories, Inc.
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www.yorklab.com

Field Chain-of-Custody Record

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document.
This document serves as your written authorization for YORK to proceed with the analyses requested below.
Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 19G1029

YOUR Information	Report To:	Invoice To:
Company: LANGAN Engineering	Company:	Company:
Address: 360 W 31st St New York, NY	Address:	Address:
Phone.: 2124795400	Phone.:	Phone.:
Contact: Patrick Famham	Contact:	Contact:
E-mail: Pfarnham@langan.com	E-mail:	E-mail:

YOUR Project Number: 170157201

YOUR Project Name: Acme Site No. 2 72 Anthony St

YOUR PO#:

Turn-Around Time

RUSH - Next Day	
RUSH - Two Day	
RUSH - Three Day	
RUSH - Four Day	
Standard (5-7 Day)	X

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Samples Collected by: (print your name above and sign below)

Katherine Racanelli

KR

Matrix Codes

S - soil / solid
GW - groundwater
DW - drinking water
WW - wastewater
O - Oil | Other

Samples From

New York X
New Jersey
Connecticut
Pennsylvania
Other

Report / EDD Type (circle selections)

Summary Report (circled) | CT RCP | Standard Excel EDD (circled)
QA Report | CT RCP DQA/DUE | EQuIS (Standard)
NY ASP A Package | NJDEP Reduced Deliverables | NYSDEC EQuIS
NY ASP B Package (circled) | NJDEP SRP HazSite
NJDKQP | Other:

YORK Reg. Comp.

Compared to the following Regulation(s): (please fill in)

Sample Identification	Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
GW-DR09-072419	GW	7/24/19 13:00	Total VOCs, PCBs, TCL SVOCs, TAL Metals, Ignitability, Corrosivity	
CU-DR10-072419	S	1320	TCL & TCLP VOCs / HOLD TCLP SVOCs, TCLP RCRA 8 Metals	
CU-DR11-072419	S	1325	↓	
CU-COMP01-072419	S	1330	PCBs, TCLP SVOCs, TCLP RCRA 8 Metals, Ignitability/Corrosivity	
ACME-MW-15-072419	GW	1210	TCL VOCs + TICs, PFAS, 1,4-Dioxane	
GWDUP01-072419	GW	1220	↓	
GWFB01-072419	aq	1240	↓	
GWTB01-072419	↓	—	TCL VOCs	

Comments:

Preservation: (check all that apply)
HCl ___ MeOH ___ HNO3 ___ H2SO4 ___ NaOH ___ ZnAc ___
Ascorbic Acid ___ Other: ___

Special Instruction
Field Filtered ___
Lab to Filter ___

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
KR LANGAN	7/24/19 1507	Allie Ventura YORK	7/24/19 15:07	Allie Ventura YORK	7/24/19 1540
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
Tom A / York	7/24/19 1540	Tom A / York	7/24/19 1906		
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by / Date/Time	Temp. Received at Lab
				7gaQ 7-24-19 1906	3.1 Degrees C

ATTACHMENT E

PNEUMATIC MODELING RESULTS

Attachment D
Pneumatic Modeling Results
Former Acme Steel/Brass Foundry
NYSDEC Site No. 224132
Anthony St. / 498 Porter Ave.
Brooklyn, New York
Langan Project No.: 170157201

Approach

- The July 2019 soil vapor extraction (SVE) pilot test data was used as input to a subsurface two-dimensional (2D) pneumatic computer model (MDFIT™) to determine design parameters for the proposed SVE system to address chlorinated volatile organic compound contaminated soil in the central and northern portions of the site.

Objectives

- Predict air flow rate and pore volume exchanges in the subsurface
- Predict the system's performance under proposed future site conditions
- Determine system design and operational parameters

Output Results

- Air intrinsic permeability, K_i
- Design air flow rates, vacuums, pore volume exchanges
- SVE radius of influence (ROI)
- Process equipment sizing

MDFIT Modeling Simulation Procedures

Step 1 – K_i Estimation in x, y, z directions for existing subsurface material
Step 2 – K_i Calibration for existing subsurface material
Step 3 – Single well vacuum simulation for future site conditions **(Design Basis)**

MDFIT Modeling Simulation Results

Step 1: Air Intrinsic Permeability Estimation
Model Runs

(Select model simulation results are provided herein. A complete set of model runs can be provided upon request)

(Refer to the July 2019 SVE pilot testing results summary – Attachment C)

MDFIT Modeling Results
Step 1: Air Intrinsic Permeability Estimation
Former Acme Steel/Brass Foundry
NYSDEC Site No. 224132
Anthony St. / 498 Porter Ave.
Brooklyn, New York
Langan Project No.: 170157201

Vacuum Condition (IWC)	Flow Condition (SCFM)	K_R (cm^2)	K_Z (cm^2)	K_C/B_C (cm)	K_C (cm^2)
SVE-01_S					
2.50	4	3.13E-07	3.13E-07	9.06E-15	9.06E-14
4.00	6.5	3.18E-07	3.18E-07	6.04E-15	6.04E-14
6.40	10	3.12E-07	3.12E-07	1.86E-15	1.86E-14
10.34	13	--	--	--	--
24.00	30	2.01E-07	2.01E-07	7.12E-09	7.12E-08
52.00	52	--	--	--	--
AVERAGE		**2.86E-07**	**2.86E-07**	**1.78E-09**	**1.78E-08**
SVE-01_D					
1.50	25	2.37E-06	2.37E-06	9.61E-07	9.61E-06
5.00	65	1.77E-06	1.77E-06	1.90E-06	1.90E-05
8.10	95	1.60E-06	1.60E-06	1.75E-06	1.75E-05
11.00	115	1.46E-06	1.46E-06	1.16E-06	1.16E-05
13.00	130	1.51E-06	1.51E-06	2.20E-07	2.20E-06
AVERAGE		**1.74E-06**	**1.74E-06**	**1.20E-06**	**1.20E-05**
SVE-02_S					
1.50	25	2.15E-06	2.15E-06	1.70E-06	1.70E-05
4.10	36	1.21E-06	1.21E-06	7.88E-07	7.88E-06
7.25	60	1.24E-06	1.24E-06	1.71E-07	1.71E-06
12.75	101	1.03E-06	1.03E-06	4.09E-06	4.09E-05
15.60	118	9.93E-07	9.93E-07	3.50E-06	3.50E-05
AVERAGE		**1.32E-06**	**1.32E-06**	**2.05E-06**	**2.05E-05**
SVE-02_D					
2.00	25	1.78E-06	1.78E-06	7.15E-07	7.15E-06
4.25	55	1.77E-06	1.77E-06	1.51E-06	1.51E-05
6.71	75	1.62E-06	1.62E-06	5.04E-07	5.04E-06
10.60	110	1.45E-06	1.45E-06	9.87E-07	9.87E-06
12.68	126	--	--	--	--
AVERAGE		**1.66E-06**	**1.66E-06**	**9.28E-07**	**9.28E-06**

TOTAL AVERAGE [Shallow]	**8.05E-07**	**8.05E-07**	**1.02E-06**	**1.02E-05**
TOTAL AVERAGE [Deep]	**1.70E-06**	**1.70E-06**	**1.06E-06**	**1.06E-05**

CALIBRATED [Shallow]	**6.00E-07**	**6.00E-07**	**6.50E-10**	**6.50E-09**
CALIBRATED [Deep]	**7.50E-07**	**7.50E-07**	**4.50E-10**	**4.50E-09**

Notes:
K_R = Horizontal Air Intrinsic Permeability of Native Soils
K_Z = Vertical Air Intrinsic Permeability of Native Soils
K_C = Air Intrinsic Permeability of Surface Layer [Semi-Confining Layer]
B_C = Model assumed thickness of Surface Layer [Semi-Confining Layer] = 10 cm
feet bgs = feet below ground surface
cm^2 = square centimeters

SCENARIO ------ 1

KR=KZ= .5846E-06 Kc/Bc= .3484E-32
KR=KZ= .5108E-04 Kc/Bc=
KR=KZ= .3833E-06 Kc/Bc= .3543E-19
KR=KZ= .2170E-04 Kc/Bc=
KR=KZ= .3128E-06 Kc/Bc= .9064E-14
KR=KZ= .7822E-05 Kc/Bc=

SCENARIO ------ 2

KR=KZ= .5846E-06 Kc/Bc= .1641E-33
KR=KZ= .1254E-03 Kc/Bc=
KR=KZ= .3950E-06 Kc/Bc= .7880E-20
KR=KZ= .5192E-04 Kc/Bc=
KR=KZ= .3176E-06 Kc/Bc= .6036E-14
KR=KZ= .1617E-04 Kc/Bc=

SCENARIO ------ 3

KR=KZ= .5846E-06 Kc/Bc= .3697E-35
KR=KZ= .3329E-03 Kc/Bc=
KR=KZ= .3910E-06 Kc/Bc= .1538E-20

KR=KZ= .1409E-03 Kc/Bc=
KR=KZ= .3116E-06 Kc/Bc= .1860E-14
KR=KZ= .4649E-04 Kc/Bc=

SCENARIO ------ 4

KR=KZ= .5846E-06 Kc/Bc= .5605E-44
KR=KZ= .1031E-02 Kc/Bc=
KR=KZ= .6787E-06 Kc/Bc= .5605E-44
KR=KZ= .1029E-02 Kc/Bc=
KR=KZ= .6726E-06 Kc/Bc= .5605E-44
KR=KZ= .1029E-02 Kc/Bc=

SCENARIO ------ 5

KR=KZ= .1919E-06 Kc/Bc= .7662E-07
KR=KZ= .1211E-03 Kc/Bc=
KR=KZ= .1958E-06 Kc/Bc= .1749E-07
KR=KZ= .8955E-04 Kc/Bc=
KR=KZ= .2012E-06 Kc/Bc= .7120E-08
KR=KZ= .7111E-04 Kc/Bc=

SCENARIO ------ 6

SCENARIO ------ 1

KR=KZ= .2358E-05 Kc/Bc= .7547E-05
KR=KZ= .2726E-05 Kc/Bc=
KR=KZ= .2334E-05 Kc/Bc= .9615E-06
KR=KZ= .2717E-05 Kc/Bc=
KR=KZ= .2369E-05 Kc/Bc= .9605E-06
KR=KZ= .2716E-05 Kc/Bc=

SCENARIO ------ 2

KR=KZ= .1772E-05 Kc/Bc= .7547E-05
KR=KZ= .2819E-04 Kc/Bc=
KR=KZ= .1754E-05 Kc/Bc= .1811E-05
KR=KZ= .2710E-04 Kc/Bc=
KR=KZ= .1770E-05 Kc/Bc= .1902E-05
KR=KZ= .2710E-04 Kc/Bc=

SCENARIO ------ 3

KR=KZ= .1611E-05 Kc/Bc= .7547E-05
KR=KZ= .5353E-04 Kc/Bc=
KR=KZ= .1594E-05 Kc/Bc= .1511E-05

KR=KZ= .5135E-04 Kc/Bc=
KR=KZ= .1602E-05 Kc/Bc= .1749E-05
KR=KZ= .5135E-04 Kc/Bc=

SCENARIO ------ 4

KR=KZ= .1464E-05 Kc/Bc= .7547E-05
KR=KZ= .7469E-04 Kc/Bc=
KR=KZ= .1449E-05 Kc/Bc= .9712E-06
KR=KZ= .7351E-04 Kc/Bc=
KR=KZ= .1455E-05 Kc/Bc= .1158E-05
KR=KZ= .7354E-04 Kc/Bc=

SCENARIO ------ 5

KR=KZ= .1464E-05 Kc/Bc= .7547E-05
KR=KZ= .1039E-03 Kc/Bc=
KR=KZ= .1494E-05 Kc/Bc= .3776E-06
KR=KZ= .1011E-03 Kc/Bc=
KR=KZ= .1513E-05 Kc/Bc= .2195E-06
KR=KZ= .9933E-04 Kc/Bc=

SCENARIO ------ 1

KR=KZ= .2144E-05 Kc/Bc= .7547E-05
KR=KZ= .4588E-05 Kc/Bc=
KR=KZ= .2122E-05 Kc/Bc= .1671E-05
KR=KZ= .4520E-05 Kc/Bc=
KR=KZ= .2145E-05 Kc/Bc= .1696E-05
KR=KZ= .4520E-05 Kc/Bc=

SCENARIO ------ 2

KR=KZ= .1210E-05 Kc/Bc= .7547E-05
KR=KZ= .1220E-04 Kc/Bc=
KR=KZ= .1198E-05 Kc/Bc= .7404E-06
KR=KZ= .1210E-04 Kc/Bc=
KR=KZ= .1209E-05 Kc/Bc= .7877E-06
KR=KZ= .1210E-04 Kc/Bc=

SCENARIO ------ 3

KR=KZ= .1210E-05 Kc/Bc= .7547E-05
KR=KZ= .3330E-04 Kc/Bc=
KR=KZ= .1234E-05 Kc/Bc= .2656E-06

KR=KZ= .3187E-04 Kc/Bc=
KR=KZ= .1243E-05 Kc/Bc= .1707E-06
KR=KZ= .3151E-04 Kc/Bc=

SCENARIO ------ 4

KR=KZ= .8910E-06 Kc/Bc= .7547E-05
KR=KZ= .8604E-04 Kc/Bc=
KR=KZ= .1034E-05 Kc/Bc= .6049E-05
KR=KZ= .8052E-04 Kc/Bc=
KR=KZ= .1033E-05 Kc/Bc= .4087E-05
KR=KZ= .8046E-04 Kc/Bc=

SCENARIO ------ 5

KR=KZ= .8910E-06 Kc/Bc= .3201E-05
KR=KZ= .1087E-03 Kc/Bc=
KR=KZ= .9941E-06 Kc/Bc= .6172E-05
KR=KZ= .1084E-03 Kc/Bc=
KR=KZ= .9931E-06 Kc/Bc= .3497E-05
KR=KZ= .1084E-03 Kc/Bc=

SCENARIO ------ 1

KR=KZ= .1772E-05 Kc/Bc= .7547E-05
KR=KZ= .5482E-05 Kc/Bc=
KR=KZ= .1754E-05 Kc/Bc= .7112E-06
KR=KZ= .5471E-05 Kc/Bc=
KR=KZ= .1778E-05 Kc/Bc= .7148E-06
KR=KZ= .5470E-05 Kc/Bc=

SCENARIO ------ 2

KR=KZ= .1772E-05 Kc/Bc= .7547E-05
KR=KZ= .1597E-04 Kc/Bc=
KR=KZ= .1754E-05 Kc/Bc= .1381E-05
KR=KZ= .1557E-04 Kc/Bc=
KR=KZ= .1768E-05 Kc/Bc= .1505E-05
KR=KZ= .1557E-04 Kc/Bc=

SCENARIO ------ 3

KR=KZ= .1611E-05 Kc/Bc= .7547E-05
KR=KZ= .3530E-04 Kc/Bc=
KR=KZ= .1610E-05 Kc/Bc= .5003E-06

KR=KZ= .3495E-04 Kc/Bc=
KR=KZ= .1620E-05 Kc/Bc= .5038E-06
KR=KZ= .3493E-04 Kc/Bc=

SCENARIO ------ 4

KR=KZ= .1464E-05 Kc/Bc= .7547E-05
KR=KZ= .7463E-04 Kc/Bc=
KR=KZ= .1449E-05 Kc/Bc= .8269E-06
KR=KZ= .7418E-04 Kc/Bc=
KR=KZ= .1454E-05 Kc/Bc= .9870E-06
KR=KZ= .7421E-04 Kc/Bc=

SCENARIO ------ 5

MDFIT Modeling Simulation Results

Step 2: Air Intrinsic Permeability Calibration Model Runs

(Select model simulation results are provided herein. A complete set of model runs can be provided upon request)

MDFIT Modeling Results
Step 2: Air Intrinsic Permeability Calibration [Shallow Interval]
Former Acme Steel/Brass Foundry
NYSDEC Site No. 224132
Anthony St. / 498 Porter Ave.
Brooklyn, New York
Langan Project No.: 170157201

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESSURE (atm)	PRESSURE (inH2O)	VELOCITY (ft/s)	PORE VOLUME EXCHANGE (per year)
5 SCFM						
5.08E+00	1.67E-01	1.00E+01	0.9985	0.5999	3.09E-02	0
1.57E+02	5.17E+00	1.00E+01	0.9997	0.1341	7.29E-04	96381.98
3.10E+02	1.02E+01	1.00E+01	0.9998	0.0747	2.49E-04	1516.18
4.62E+02	1.52E+01	1.00E+01	0.9999	0.0506	1.28E-04	391.12
6.15E+02	2.02E+01	1.00E+01	0.9999	0.0372	7.86E-05	161.28
7.67E+02	2.52E+01	1.00E+01	0.9999	0.0285	5.31E-05	82.5
9.19E+02	3.02E+01	1.00E+01	0.9999	0.0218	3.78E-05	47.47
1.07E+03	3.52E+01	1.00E+01	1	0.0172	2.78E-05	29.41
1.22E+03	4.02E+01	1.00E+01	1	0.014	2.11E-05	19.21
1.38E+03	4.52E+01	1.00E+01	1	0.0116	1.63E-05	13.05
1.53E+03	5.02E+01	1.00E+01	1	0.0097	1.28E-05	9.15
1.68E+03	5.52E+01	1.00E+01	1	0.0082	1.02E-05	6.58
1.83E+03	6.02E+01	1.00E+01	1	0.007	8.24E-06	4.84
1.99E+03	6.52E+01	1.00E+01	1	0.0059	6.71E-06	3.62
2.14E+03	7.02E+01	1.00E+01	1	0.005	5.52E-06	2.75
2.29E+03	7.52E+01	1.00E+01	1	0.0041	4.57E-06	2.12
2.44E+03	8.02E+01	1.00E+01	1	0.0033	3.81E-06	1.65
2.60E+03	8.52E+01	1.00E+01	1	0.0028	3.19E-06	1.3
2.75E+03	9.02E+01	1.00E+01	1	0.0024	2.69E-06	1.03
2.90E+03	9.52E+01	1.00E+01	1	0.002	2.27E-06	0.82
10 SCFM						
5.08E+00	1.67E-01	1.00E+01	0.9971	1.2006	6.18E-02	0.82
1.57E+02	5.17E+00	1.00E+01	0.9993	0.2683	1.46E-03	193044.2
3.10E+02	1.02E+01	1.00E+01	0.9996	0.1495	4.97E-04	3033.24
4.62E+02	1.52E+01	1.00E+01	0.9998	0.1013	2.55E-04	782.36
6.15E+02	2.02E+01	1.00E+01	0.9998	0.0743	1.57E-04	322.6
7.67E+02	2.52E+01	1.00E+01	0.9999	0.057	1.06E-04	165.02
9.19E+02	3.02E+01	1.00E+01	0.9999	0.0437	7.55E-05	94.94
1.07E+03	3.52E+01	1.00E+01	0.9999	0.0345	5.57E-05	58.83
1.22E+03	4.02E+01	1.00E+01	0.9999	0.028	4.22E-05	38.41
1.38E+03	4.52E+01	1.00E+01	0.9999	0.0231	3.26E-05	26.1
1.53E+03	5.02E+01	1.00E+01	1	0.0193	2.56E-05	18.3
1.68E+03	5.52E+01	1.00E+01	1	0.0164	2.04E-05	13.16
1.83E+03	6.02E+01	1.00E+01	1	0.0139	1.65E-05	9.67
1.99E+03	6.52E+01	1.00E+01	1	0.0118	1.34E-05	7.24
2.14E+03	7.02E+01	1.00E+01	1	0.01	1.10E-05	5.5
2.29E+03	7.52E+01	1.00E+01	1	0.0083	9.14E-06	4.23
2.44E+03	8.02E+01	1.00E+01	1	0.0065	7.62E-06	3.3
2.60E+03	8.52E+01	1.00E+01	1	0.0056	6.39E-06	2.59
2.75E+03	9.02E+01	1.00E+01	1	0.0048	5.38E-06	2.06
2.90E+03	9.52E+01	1.00E+01	1	0.0041	4.55E-06	1.64
25 SCFM						
5.08E+00	1.67E-01	1.00E+01	0.9926	3.0083	1.55E-01	1.64
1.57E+02	5.17E+00	1.00E+01	0.9984	0.6712	3.65E-03	484730.5
3.10E+02	1.02E+01	1.00E+01	0.9991	0.3738	1.24E-03	7589.78
4.62E+02	1.52E+01	1.00E+01	0.9994	0.2533	6.39E-04	1956.87
6.15E+02	2.02E+01	1.00E+01	0.9995	0.1859	3.93E-04	806.77
7.67E+02	2.52E+01	1.00E+01	0.9997	0.1424	2.65E-04	412.66
9.19E+02	3.02E+01	1.00E+01	0.9997	0.1092	1.89E-04	237.4
1.07E+03	3.52E+01	1.00E+01	0.9998	0.0862	1.39E-04	147.1
1.22E+03	4.02E+01	1.00E+01	0.9998	0.07	1.05E-04	96.05
1.38E+03	4.52E+01	1.00E+01	0.9999	0.0578	8.15E-05	65.25
1.53E+03	5.02E+01	1.00E+01	0.9999	0.0483	6.41E-05	45.74
1.68E+03	5.52E+01	1.00E+01	0.9999	0.0408	5.11E-05	32.9
1.83E+03	6.02E+01	1.00E+01	0.9999	0.0348	4.12E-05	24.18
1.99E+03	6.52E+01	1.00E+01	0.9999	0.0296	3.36E-05	18.09
2.14E+03	7.02E+01	1.00E+01	0.9999	0.025	2.76E-05	13.75
2.29E+03	7.52E+01	1.00E+01	0.9999	0.0207	2.29E-05	10.59
2.44E+03	8.02E+01	1.00E+01	1	0.0163	1.91E-05	8.24
2.60E+03	8.52E+01	1.00E+01	1	0.0139	1.60E-05	6.48
2.75E+03	9.02E+01	1.00E+01	1	0.0119	1.35E-05	5.14
2.90E+03	9.52E+01	1.00E+01	1	0.0102	1.14E-05	4.11

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESSURE (atm)	PRESSURE (inH2O)	VELOCITY (ft/s)	PORE VOLUME EXCHANGE (per year)
60 SCFM						
5.08E+00	1.67E-01	1.00E+01	0.9822	7.2579	3.76E-01	4.11
1.57E+02	5.17E+00	1.00E+01	0.996	1.6127	8.78E-03	1175496
3.10E+02	1.02E+01	1.00E+01	0.9978	0.8977	2.99E-03	18252.98
4.62E+02	1.52E+01	1.00E+01	0.9985	0.6081	1.53E-03	4701.87
6.15E+02	2.02E+01	1.00E+01	0.9989	0.4463	9.44E-04	1937.77
7.67E+02	2.52E+01	1.00E+01	0.9992	0.3417	6.37E-04	990.95
9.19E+02	3.02E+01	1.00E+01	0.9994	0.262	4.53E-04	570.02
1.07E+03	3.52E+01	1.00E+01	0.9995	0.2068	3.34E-04	353.17
1.22E+03	4.02E+01	1.00E+01	0.9996	0.168	2.53E-04	230.57
1.38E+03	4.52E+01	1.00E+01	0.9997	0.1387	1.96E-04	156.63
1.53E+03	5.02E+01	1.00E+01	0.9997	0.116	1.54E-04	109.8
1.68E+03	5.52E+01	1.00E+01	0.9998	0.098	1.23E-04	78.98
1.83E+03	6.02E+01	1.00E+01	0.9998	0.0834	9.89E-05	58.04
1.99E+03	6.52E+01	1.00E+01	0.9998	0.0711	8.06E-05	43.43
2.14E+03	7.02E+01	1.00E+01	0.9999	0.0601	6.63E-05	33
2.29E+03	7.52E+01	1.00E+01	0.9999	0.0496	5.49E-05	25.41
2.44E+03	8.02E+01	1.00E+01	0.9999	0.039	4.57E-05	19.79
2.60E+03	8.52E+01	1.00E+01	0.9999	0.0333	3.83E-05	15.56
2.75E+03	9.02E+01	1.00E+01	0.9999	0.0285	3.23E-05	12.35
2.90E+03	9.52E+01	1.00E+01	0.9999	0.0244	2.73E-05	9.87
100 SCFM						
5.08E+00	1.67E-01	1.00E+01	0.9701	12.1706	6.35E-01	9.87
1.57E+02	5.17E+00	1.00E+01	0.9934	2.6914	1.47E-02	1983094
3.10E+02	1.02E+01	1.00E+01	0.9963	1.4973	4.99E-03	30493.59
4.62E+02	1.52E+01	1.00E+01	0.9975	1.014	2.56E-03	7846.77
6.15E+02	2.02E+01	1.00E+01	0.9982	0.7441	1.58E-03	3232.51
7.67E+02	2.52E+01	1.00E+01	0.9986	0.5697	1.06E-03	1652.67
9.19E+02	3.02E+01	1.00E+01	0.9989	0.4368	7.56E-04	950.51
1.07E+03	3.52E+01	1.00E+01	0.9992	0.3448	5.57E-04	588.84
1.22E+03	4.02E+01	1.00E+01	0.9993	0.2801	4.22E-04	384.41
1.38E+03	4.52E+01	1.00E+01	0.9994	0.2311	3.26E-04	261.11
1.53E+03	5.02E+01	1.00E+01	0.9995	0.1933	2.56E-04	183.04
1.68E+03	5.52E+01	1.00E+01	0.9996	0.1634	2.04E-04	131.65
1.83E+03	6.02E+01	1.00E+01	0.9997	0.1391	1.65E-04	96.74
1.99E+03	6.52E+01	1.00E+01	0.9997	0.1185	1.34E-04	72.38
2.14E+03	7.02E+01	1.00E+01	0.9998	0.1001	1.10E-04	55
2.29E+03	7.52E+01	1.00E+01	0.9998	0.0826	9.15E-05	42.35
2.44E+03	8.02E+01	1.00E+01	0.9998	0.0651	7.62E-05	32.98
2.60E+03	8.52E+01	1.00E+01	0.9999	0.0555	6.39E-05	25.94
2.75E+03	9.02E+01	1.00E+01	0.9999	0.0475	5.38E-05	20.58
2.90E+03	9.52E+01	1.00E+01	0.9999	0.0407	4.55E-05	16.45
120 SCFM						
5.08E+00	1.67E-01	1.00E+01	0.964	14.65	7.67E-01	16.45
1.57E+02	5.17E+00	1.00E+01	0.9921	3.2318	1.76E-02	2394479
3.10E+02	1.02E+01	1.00E+01	0.9956	1.7974	5.99E-03	36635.73
4.62E+02	1.52E+01	1.00E+01	0.997	1.2171	3.07E-03	9422.32
6.15E+02	2.02E+01	1.00E+01	0.9978	0.893	1.89E-03	3880.76
7.67E+02	2.52E+01	1.00E+01	0.9983	0.6838	1.28E-03	1983.87
9.19E+02	3.02E+01	1.00E+01	0.9987	0.5242	9.07E-04	1140.9
1.07E+03	3.52E+01	1.00E+01	0.999	0.4138	6.69E-04	706.75
1.22E+03	4.02E+01	1.00E+01	0.9992	0.3361	5.06E-04	461.36
1.38E+03	4.52E+01	1.00E+01	0.9993	0.2773	3.91E-04	313.38
1.53E+03	5.02E+01	1.00E+01	0.9994	0.2319	3.08E-04	219.67
1.68E+03	5.52E+01	1.00E+01	0.9995	0.1961	2.45E-04	157.99
1.83E+03	6.02E+01	1.00E+01	0.9996	0.1669	1.98E-04	116.1
1.99E+03	6.52E+01	1.00E+01	0.9997	0.1422	1.61E-04	86.87
2.14E+03	7.02E+01	1.00E+01	0.9997	0.1201	1.33E-04	66
2.29E+03	7.52E+01	1.00E+01	0.9998	0.0992	1.10E-04	50.82
2.44E+03	8.02E+01	1.00E+01	0.9998	0.0781	9.15E-05	39.58
2.60E+03	8.52E+01	1.00E+01	0.9998	0.0666	7.67E-05	31.13
2.75E+03	9.02E+01	1.00E+01	0.9999	0.057	6.46E-05	24.7
2.90E+03	9.52E+01	1.00E+01	0.9999	0.0488	5.46E-05	19.74

INPUT PARAMETERS

Depth to the top of screen (ft) = .5000E+01

Depth to the bottom of screen (ft) = .1500E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation (ft) = .1000E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (°C) = .2000E+02

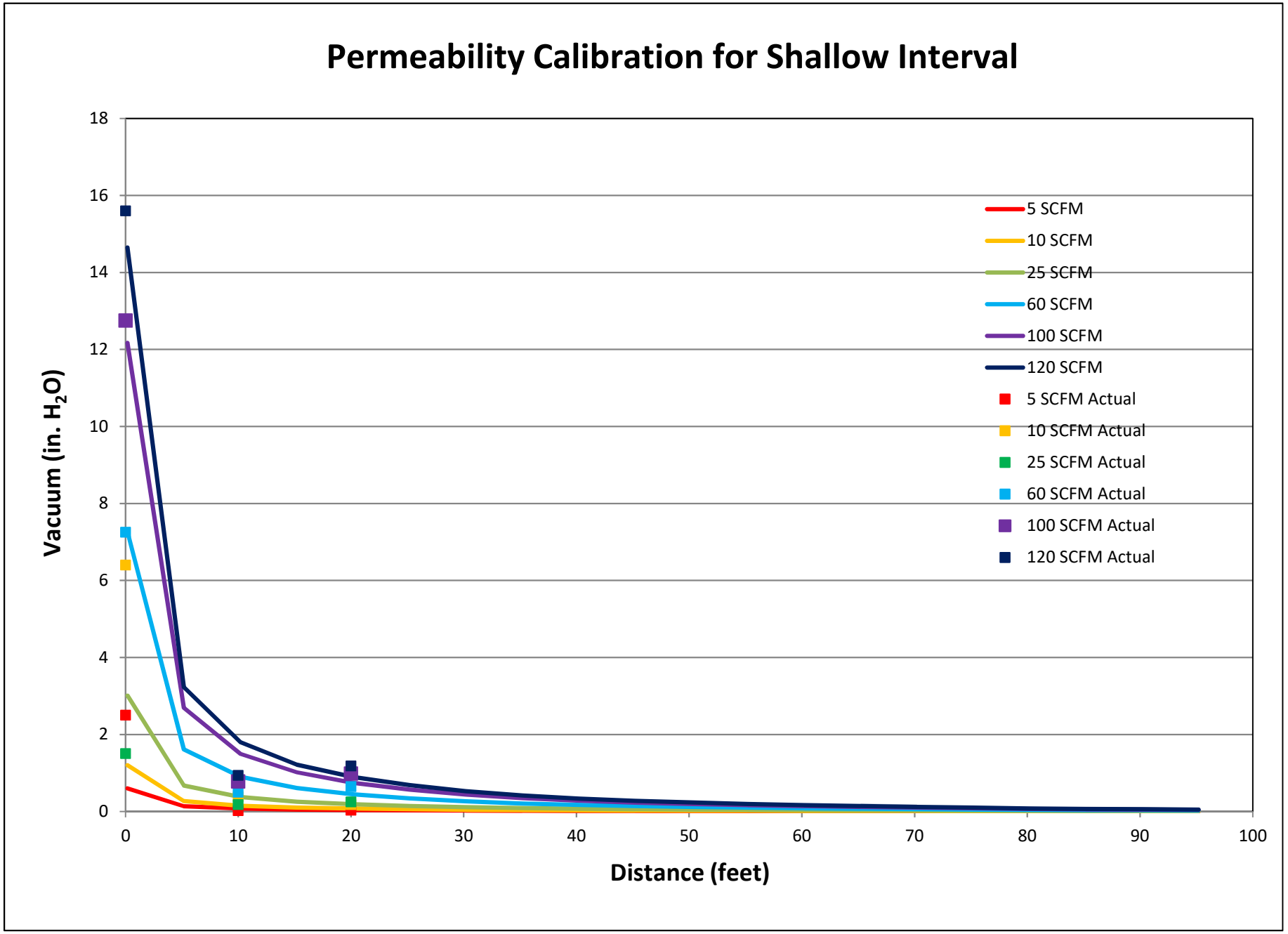
Flow rate of pumping/injection well (cfm) = **VARIABLE**

Soil porosity (Dimensionless) = .2500E+00

Permeability for R direction (cm^2) = .6000E-06

Permeability for Z direction (cm^2) = .6000E-06

Permeability Kc/Bc = .6500E-09


Permeability Calibration for Shallow Interval
Vacuum (in. H_2O)
Distance (feet)
0
2
4
6
8
10
12
14
16
18
0
10
20
30
40
50
60
70
80
90
100
5 SCFM
10 SCFM
25 SCFM
60 SCFM
100 SCFM
120 SCFM
5 SCFM Actual
10 SCFM Actual
25 SCFM Actual
60 SCFM Actual
100 SCFM Actual
120 SCFM Actual

Welcom to FSS program

VAPEX

----- Simulated Scenario ----- 1

Simulating information:

Depth to the top of screen (ft)	=	.5000E+01
Depth to the bottom of screen (ft)	=	.1500E+02
Depth to the groundwater table (ft)	=	.5300E+02
Depth to the simulated elevation(ft)	=	.1000E+02
Radius of the simulating well (in.)	=	.2000E+01
Temperature of the soil (C)	=	.2000E+02
Flow rate of pumping/injection well(cfm)	=	.5000E+01
Soil porosity(Dimensionless)	=	.2500E+00
Peameability for R direction (cm**2)	=	.6000E-06
Peameability for Z direction (cm**2)	=	.6000E-06
Peameability Kc/Bc	=	.6500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.100E+02	.9985	.5999	.3085E-01
.157E+03	.517E+01	.100E+02	.9997	.1341	.7290E-03
.310E+03	.102E+02	.100E+02	.9998	.0747	.2486E-03
.462E+03	.152E+02	.100E+02	.9999	.0506	.1276E-03
.615E+03	.202E+02	.100E+02	.9999	.0372	.7862E-04
.767E+03	.252E+02	.100E+02	.9999	.0285	.5306E-04
.919E+03	.302E+02	.100E+02	.9999	.0218	.3776E-04
.107E+04	.352E+02	.100E+02	1.0000	.0172	.2784E-04
.122E+04	.402E+02	.100E+02	1.0000	.0140	.2108E-04
.138E+04	.452E+02	.100E+02	1.0000	.0116	.1629E-04
.153E+04	.502E+02	.100E+02	1.0000	.0097	.1281E-04
.168E+04	.552E+02	.100E+02	1.0000	.0082	.1021E-04
.183E+04	.602E+02	.100E+02	1.0000	.0070	.8239E-05
.199E+04	.652E+02	.100E+02	1.0000	.0059	.6714E-05
.214E+04	.702E+02	.100E+02	1.0000	.0050	.5520E-05
.229E+04	.752E+02	.100E+02	1.0000	.0041	.4572E-05
.244E+04	.802E+02	.100E+02	1.0000	.0033	.3811E-05
.260E+04	.852E+02	.100E+02	1.0000	.0028	.3194E-05
.275E+04	.902E+02	.100E+02	1.0000	.0024	.2689E-05
.290E+04	.952E+02	.100E+02	1.0000	.0020	.2274E-05

----- Simulated Scenario ----- 2

Simulating information:

Depth to the top of screen (ft)	=	.5000E+01
Depth to the bottom of screen (ft)	=	.1500E+02
Depth to the groundwater table (ft)	=	.5300E+02
Depth to the simulated elevation(ft)	=	.1000E+02
Radius of the simulating well (in.)	=	.2000E+01
Temperature of the soil (C)	=	.2000E+02
Flow rate of pumping/injection well(cfm)	=	.1000E+02
Soil porosity(Dimensionless)	=	.2500E+00
Peameability for R direction (cm**2)	=	.6000E-06
Peameability for Z direction (cm**2)	=	.6000E-06
Peameability Kc/Bc	=	.6500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)

.508E+01	.167E+00	.100E+02	.9971	1.2006	.6180E-01
.157E+03	.517E+01	.100E+02	.9993	.2683	.1459E-02
.310E+03	.102E+02	.100E+02	.9996	.1495	.4972E-03
.462E+03	.152E+02	.100E+02	.9998	.1013	.2553E-03
.615E+03	.202E+02	.100E+02	.9998	.0743	.1573E-03
.767E+03	.252E+02	.100E+02	.9999	.0570	.1061E-03
.919E+03	.302E+02	.100E+02	.9999	.0437	.7552E-04
.107E+04	.352E+02	.100E+02	.9999	.0345	.5569E-04
.122E+04	.402E+02	.100E+02	.9999	.0280	.4216E-04
.138E+04	.452E+02	.100E+02	.9999	.0231	.3259E-04
.153E+04	.502E+02	.100E+02	1.0000	.0193	.2562E-04
.168E+04	.552E+02	.100E+02	1.0000	.0164	.2042E-04
.183E+04	.602E+02	.100E+02	1.0000	.0139	.1648E-04
.199E+04	.652E+02	.100E+02	1.0000	.0118	.1343E-04
.214E+04	.702E+02	.100E+02	1.0000	.0100	.1104E-04
.229E+04	.752E+02	.100E+02	1.0000	.0083	.9143E-05
.244E+04	.802E+02	.100E+02	1.0000	.0065	.7621E-05
.260E+04	.852E+02	.100E+02	1.0000	.0056	.6388E-05
.275E+04	.902E+02	.100E+02	1.0000	.0048	.5379E-05
.290E+04	.952E+02	.100E+02	1.0000	.0041	.4548E-05

----- Simulated Scenario ----- 3

Simulating information:

Depth to the top of screen (ft) = .5000E+01

Depth to the bottom of screen (ft) = .1500E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .1000E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .2500E+02

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .6000E-06

Peameability for Z direction (cm**2) = .6000E-06

Peameability Kc/Bc = .6500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.100E+02	.9926	3.0083	.1552E+00
.157E+03	.517E+01	.100E+02	.9984	.6712	.3650E-02
.310E+03	.102E+02	.100E+02	.9991	.3738	.1244E-02
.462E+03	.152E+02	.100E+02	.9994	.2533	.6386E-03
.615E+03	.202E+02	.100E+02	.9995	.1859	.3933E-03
.767E+03	.252E+02	.100E+02	.9997	.1424	.2654E-03
.919E+03	.302E+02	.100E+02	.9997	.1092	.1888E-03
.107E+04	.352E+02	.100E+02	.9998	.0862	.1392E-03
.122E+04	.402E+02	.100E+02	.9998	.0700	.1054E-03
.138E+04	.452E+02	.100E+02	.9999	.0578	.8148E-04
.153E+04	.502E+02	.100E+02	.9999	.0483	.6405E-04
.168E+04	.552E+02	.100E+02	.9999	.0408	.5106E-04
.183E+04	.602E+02	.100E+02	.9999	.0348	.4120E-04
.199E+04	.652E+02	.100E+02	.9999	.0296	.3357E-04
.214E+04	.702E+02	.100E+02	.9999	.0250	.2760E-04

.229E+04	.752E+02	.100E+02	.9999	.0207	.2286E-04
.244E+04	.802E+02	.100E+02	1.0000	.0163	.1905E-04
.260E+04	.852E+02	.100E+02	1.0000	.0139	.1597E-04
.275E+04	.902E+02	.100E+02	1.0000	.0119	.1345E-04
.290E+04	.952E+02	.100E+02	1.0000	.0102	.1137E-04

----- Simulated Scenario ----- 4

Simulating information:

Depth to the top of screen (ft)	=	.5000E+01
Depth to the bottom of screen (ft)	=	.1500E+02
Depth to the groundwater table (ft)	=	.5300E+02
Depth to the simulated elevation(ft)	=	.1000E+02
Radius of the simulating well (in.)	=	.2000E+01
Temperature of the soil (C)	=	.2000E+02
Flow rate of pumping/injection well(cfm)	=	.6000E+02
Soil porosity(Dimensionless)	=	.2500E+00
Peameability for R direction (cm**2)	=	.6000E-06
Peameability for Z direction (cm**2)	=	.6000E-06
Peameability Kc/Bc	=	.6500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.

2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.100E+02	.9822	7.2579	.3764E+00
.157E+03	.517E+01	.100E+02	.9960	1.6127	.8780E-02
.310E+03	.102E+02	.100E+02	.9978	.8977	.2989E-02
.462E+03	.152E+02	.100E+02	.9985	.6081	.1534E-02
.615E+03	.202E+02	.100E+02	.9989	.4463	.9444E-03
.767E+03	.252E+02	.100E+02	.9992	.3417	.6372E-03
.919E+03	.302E+02	.100E+02	.9994	.2620	.4534E-03
.107E+04	.352E+02	.100E+02	.9995	.2068	.3343E-03
.122E+04	.402E+02	.100E+02	.9996	.1680	.2531E-03
.138E+04	.452E+02	.100E+02	.9997	.1387	.1956E-03
.153E+04	.502E+02	.100E+02	.9997	.1160	.1537E-03
.168E+04	.552E+02	.100E+02	.9998	.0980	.1226E-03
.183E+04	.602E+02	.100E+02	.9998	.0834	.9888E-04
.199E+04	.652E+02	.100E+02	.9998	.0711	.8059E-04
.214E+04	.702E+02	.100E+02	.9999	.0601	.6625E-04
.229E+04	.752E+02	.100E+02	.9999	.0496	.5487E-04
.244E+04	.802E+02	.100E+02	.9999	.0390	.4573E-04
.260E+04	.852E+02	.100E+02	.9999	.0333	.3833E-04
.275E+04	.902E+02	.100E+02	.9999	.0285	.3228E-04
.290E+04	.952E+02	.100E+02	.9999	.0244	.2729E-04

----- Simulated Scenario ----- 5

Simulating information:

Depth to the top of screen (ft) = .5000E+01

Depth to the bottom of screen (ft) = .1500E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .1000E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .1000E+03

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .6000E-06

Peameability for Z direction (cm**2) = .6000E-06

Peameability Kc/Bc = .6500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.100E+02	.9701	12.1706	.6351E+00

.157E+03	.517E+01	.100E+02	.9934	2.6914	.1467E-01
.310E+03	.102E+02	.100E+02	.9963	1.4973	.4988E-02
.462E+03	.152E+02	.100E+02	.9975	1.0140	.2559E-02
.615E+03	.202E+02	.100E+02	.9982	.7441	.1575E-02
.767E+03	.252E+02	.100E+02	.9986	.5697	.1063E-02
.919E+03	.302E+02	.100E+02	.9989	.4368	.7559E-03
.107E+04	.352E+02	.100E+02	.9992	.3448	.5573E-03
.122E+04	.402E+02	.100E+02	.9993	.2801	.4219E-03
.138E+04	.452E+02	.100E+02	.9994	.2311	.3261E-03
.153E+04	.502E+02	.100E+02	.9995	.1933	.2563E-03
.168E+04	.552E+02	.100E+02	.9996	.1634	.2043E-03
.183E+04	.602E+02	.100E+02	.9997	.1391	.1648E-03
.199E+04	.652E+02	.100E+02	.9997	.1185	.1343E-03
.214E+04	.702E+02	.100E+02	.9998	.1001	.1104E-03
.229E+04	.752E+02	.100E+02	.9998	.0826	.9145E-04
.244E+04	.802E+02	.100E+02	.9998	.0651	.7622E-04
.260E+04	.852E+02	.100E+02	.9999	.0555	.6388E-04
.275E+04	.902E+02	.100E+02	.9999	.0475	.5380E-04
.290E+04	.952E+02	.100E+02	.9999	.0407	.4549E-04

----- Simulated Scenario ----- 6

Simulating information:

Depth to the top of screen (ft) = .5000E+01

Depth to the bottom of screen (ft) = .1500E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .1000E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .1200E+03

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .6000E-06

Peameability for Z direction (cm**2) = .6000E-06

Peameability Kc/Bc = .6500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.100E+02	.9640	14.6500	.7670E+00
.157E+03	.517E+01	.100E+02	.9921	3.2318	.1763E-01
.310E+03	.102E+02	.100E+02	.9956	1.7974	.5991E-02
.462E+03	.152E+02	.100E+02	.9970	1.2171	.3072E-02
.615E+03	.202E+02	.100E+02	.9978	.8930	.1891E-02
.767E+03	.252E+02	.100E+02	.9983	.6838	.1275E-02
.919E+03	.302E+02	.100E+02	.9987	.5242	.9073E-03
.107E+04	.352E+02	.100E+02	.9990	.4138	.6689E-03
.122E+04	.402E+02	.100E+02	.9992	.3361	.5063E-03
.138E+04	.452E+02	.100E+02	.9993	.2773	.3913E-03
.153E+04	.502E+02	.100E+02	.9994	.2319	.3076E-03
.168E+04	.552E+02	.100E+02	.9995	.1961	.2452E-03
.183E+04	.602E+02	.100E+02	.9996	.1669	.1978E-03
.199E+04	.652E+02	.100E+02	.9997	.1422	.1612E-03
.214E+04	.702E+02	.100E+02	.9997	.1201	.1325E-03
.229E+04	.752E+02	.100E+02	.9998	.0992	.1097E-03
.244E+04	.802E+02	.100E+02	.9998	.0781	.9147E-04
.260E+04	.852E+02	.100E+02	.9998	.0666	.7666E-04

.275E+04	.902E+02	.100E+02	.9999	.0570	.6456E-04
.290E+04	.952E+02	.100E+02	.9999	.0488	.5459E-04

----- Simulated Scenario ----- 7

Simulating information:

Depth to the top of screen (ft)	=	.5000E+01
Depth to the bottom of screen (ft)	=	.1500E+02
Depth to the groundwater table (ft)	=	.5300E+02
Depth to the simulated elevation(ft)	=	.2500E+02
Radius of the simulating well (in.)	=	.2000E+01
Temperature of the soil (C)	=	.2000E+02
Flow rate of pumping/injection well(cfm)	=	.5000E+01
Soil porosity(Dimensionless)	=	.2500E+00
Peameability for R direction (cm**2)	=	.6000E-06
Peameability for Z direction (cm**2)	=	.6000E-06
Peameability Kc/Bc	=	.6500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.250E+02	.9999	.0484	.2106E-03
.157E+03	.517E+01	.250E+02	.9999	.0436	.4174E-04
.310E+03	.102E+02	.250E+02	.9999	.0371	.5133E-04
.462E+03	.152E+02	.250E+02	.9999	.0305	.4554E-04
.615E+03	.202E+02	.250E+02	.9999	.0252	.3701E-04
.767E+03	.252E+02	.250E+02	.9999	.0207	.2949E-04
.919E+03	.302E+02	.250E+02	1.0000	.0171	.2351E-04
.107E+04	.352E+02	.250E+02	1.0000	.0142	.1888E-04
.122E+04	.402E+02	.250E+02	1.0000	.0120	.1529E-04
.138E+04	.452E+02	.250E+02	1.0000	.0102	.1248E-04
.153E+04	.502E+02	.250E+02	1.0000	.0087	.1026E-04
.168E+04	.552E+02	.250E+02	1.0000	.0075	.8487E-05
.183E+04	.602E+02	.250E+02	1.0000	.0065	.7063E-05
.199E+04	.652E+02	.250E+02	1.0000	.0056	.5907E-05
.214E+04	.702E+02	.250E+02	1.0000	.0048	.4962E-05
.229E+04	.752E+02	.250E+02	1.0000	.0040	.4185E-05
.244E+04	.802E+02	.250E+02	1.0000	.0032	.3541E-05
.260E+04	.852E+02	.250E+02	1.0000	.0027	.3005E-05
.275E+04	.902E+02	.250E+02	1.0000	.0023	.2557E-05
.290E+04	.952E+02	.250E+02	1.0000	.0020	.2181E-05

----- Simulated Scenario ----- 8

Simulating information:

Depth to the top of screen (ft) = .5000E+01

Depth to the bottom of screen (ft) = .1500E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .2500E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .1000E+02

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .6000E-06

Peameability for Z direction (cm**2) = .6000E-06

Peameability Kc/Bc = .6500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.250E+02	.9998	.0968	.4212E-03
.157E+03	.517E+01	.250E+02	.9998	.0871	.8350E-04
.310E+03	.102E+02	.250E+02	.9998	.0743	.1027E-03
.462E+03	.152E+02	.250E+02	.9999	.0610	.9109E-04

.615E+03	.202E+02	.250E+02	.9999	.0503	.7402E-04
.767E+03	.252E+02	.250E+02	.9999	.0414	.5897E-04
.919E+03	.302E+02	.250E+02	.9999	.0342	.4703E-04
.107E+04	.352E+02	.250E+02	.9999	.0285	.3777E-04
.122E+04	.402E+02	.250E+02	.9999	.0240	.3058E-04
.138E+04	.452E+02	.250E+02	.9999	.0204	.2496E-04
.153E+04	.502E+02	.250E+02	1.0000	.0175	.2052E-04
.168E+04	.552E+02	.250E+02	1.0000	.0151	.1697E-04
.183E+04	.602E+02	.250E+02	1.0000	.0130	.1413E-04
.199E+04	.652E+02	.250E+02	1.0000	.0112	.1181E-04
.214E+04	.702E+02	.250E+02	1.0000	.0096	.9924E-05
.229E+04	.752E+02	.250E+02	1.0000	.0080	.8369E-05
.244E+04	.802E+02	.250E+02	1.0000	.0063	.7082E-05
.260E+04	.852E+02	.250E+02	1.0000	.0054	.6010E-05
.275E+04	.902E+02	.250E+02	1.0000	.0047	.5115E-05
.290E+04	.952E+02	.250E+02	1.0000	.0040	.4363E-05

----- Simulated Scenario ----- 9

Simulating information:

Depth to the top of screen (ft) = .5000E+01

Depth to the bottom of screen (ft) = .1500E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .2500E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .2500E+02

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .6000E-06

Peameability for Z direction (cm**2) = .6000E-06

Peameability Kc/Bc = .6500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.250E+02	.9994	.2419	.1053E-02
.157E+03	.517E+01	.250E+02	.9995	.2178	.2088E-03
.310E+03	.102E+02	.250E+02	.9995	.1858	.2567E-03
.462E+03	.152E+02	.250E+02	.9996	.1525	.2278E-03
.615E+03	.202E+02	.250E+02	.9997	.1259	.1851E-03
.767E+03	.252E+02	.250E+02	.9997	.1035	.1475E-03
.919E+03	.302E+02	.250E+02	.9998	.0854	.1176E-03
.107E+04	.352E+02	.250E+02	.9998	.0712	.9443E-04
.122E+04	.402E+02	.250E+02	.9999	.0600	.7645E-04
.138E+04	.452E+02	.250E+02	.9999	.0510	.6239E-04
.153E+04	.502E+02	.250E+02	.9999	.0437	.5129E-04
.168E+04	.552E+02	.250E+02	.9999	.0377	.4244E-04
.183E+04	.602E+02	.250E+02	.9999	.0326	.3532E-04
.199E+04	.652E+02	.250E+02	.9999	.0281	.2954E-04
.214E+04	.702E+02	.250E+02	.9999	.0239	.2481E-04
.229E+04	.752E+02	.250E+02	1.0000	.0199	.2092E-04
.244E+04	.802E+02	.250E+02	1.0000	.0157	.1770E-04
.260E+04	.852E+02	.250E+02	1.0000	.0135	.1503E-04
.275E+04	.902E+02	.250E+02	1.0000	.0116	.1279E-04
.290E+04	.952E+02	.250E+02	1.0000	.0100	.1091E-04

----- Simulated Scenario ----- 10

Simulating information:

Depth to the top of screen (ft)	=	.5000E+01
Depth to the bottom of screen (ft)	=	.1500E+02
Depth to the groundwater table (ft)	=	.5300E+02
Depth to the simulated elevation(ft)	=	.2500E+02
Radius of the simulating well (in.)	=	.2000E+01
Temperature of the soil (C)	=	.2000E+02
Flow rate of pumping/injection well(cfm)	=	.6000E+02
Soil porosity(Dimensionless)	=	.2500E+00
Peameability for R direction (cm**2)	=	.6000E-06
Peameability for Z direction (cm**2)	=	.6000E-06
Peameability Kc/Bc	=	.6500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.250E+02	.9986	.5809	.2530E-02
.157E+03	.517E+01	.250E+02	.9987	.5229	.5015E-03
.310E+03	.102E+02	.250E+02	.9989	.4460	.6166E-03
.462E+03	.152E+02	.250E+02	.9991	.3662	.5469E-03
.615E+03	.202E+02	.250E+02	.9993	.3022	.4444E-03
.767E+03	.252E+02	.250E+02	.9994	.2484	.3540E-03
.919E+03	.302E+02	.250E+02	.9995	.2050	.2823E-03
.107E+04	.352E+02	.250E+02	.9996	.1709	.2267E-03
.122E+04	.402E+02	.250E+02	.9996	.1440	.1835E-03
.138E+04	.452E+02	.250E+02	.9997	.1224	.1498E-03
.153E+04	.502E+02	.250E+02	.9997	.1049	.1231E-03
.168E+04	.552E+02	.250E+02	.9998	.0904	.1019E-03
.183E+04	.602E+02	.250E+02	.9998	.0782	.8477E-04
.199E+04	.652E+02	.250E+02	.9998	.0674	.7089E-04
.214E+04	.702E+02	.250E+02	.9999	.0575	.5955E-04
.229E+04	.752E+02	.250E+02	.9999	.0478	.5022E-04
.244E+04	.802E+02	.250E+02	.9999	.0378	.4249E-04
.260E+04	.852E+02	.250E+02	.9999	.0324	.3607E-04
.275E+04	.902E+02	.250E+02	.9999	.0279	.3069E-04
.290E+04	.952E+02	.250E+02	.9999	.0240	.2618E-04

----- Simulated Scenario ----- 11

Simulating information:

Depth to the top of screen (ft) = .5000E+01

Depth to the bottom of screen (ft) = .1500E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .2500E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .1000E+03

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .6000E-06

Peameability for Z direction (cm**2) = .6000E-06

Peameability Kc/Bc = .6500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.250E+02	.9976	.9687	.4221E-02
.157E+03	.517E+01	.250E+02	.9979	.8718	.8366E-03
.310E+03	.102E+02	.250E+02	.9982	.7437	.1028E-02
.462E+03	.152E+02	.250E+02	.9985	.6105	.9121E-03
.615E+03	.202E+02	.250E+02	.9988	.5038	.7410E-03
.767E+03	.252E+02	.250E+02	.9990	.4141	.5903E-03
.919E+03	.302E+02	.250E+02	.9992	.3417	.4707E-03

.107E+04	.352E+02	.250E+02	.9993	.2849	.3779E-03
.122E+04	.402E+02	.250E+02	.9994	.2400	.3060E-03
.138E+04	.452E+02	.250E+02	.9995	.2040	.2497E-03
.153E+04	.502E+02	.250E+02	.9996	.1748	.2052E-03
.168E+04	.552E+02	.250E+02	.9996	.1507	.1698E-03
.183E+04	.602E+02	.250E+02	.9997	.1303	.1413E-03
.199E+04	.652E+02	.250E+02	.9997	.1124	.1182E-03
.214E+04	.702E+02	.250E+02	.9998	.0958	.9926E-04
.229E+04	.752E+02	.250E+02	.9998	.0797	.8371E-04
.244E+04	.802E+02	.250E+02	.9998	.0629	.7083E-04
.260E+04	.852E+02	.250E+02	.9999	.0540	.6011E-04
.275E+04	.902E+02	.250E+02	.9999	.0464	.5115E-04
.290E+04	.952E+02	.250E+02	.9999	.0400	.4363E-04

----- Simulated Scenario ----- 12

Simulating information:

Depth to the top of screen (ft) = .5000E+01

Depth to the bottom of screen (ft) = .1500E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .2500E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .1200E+03

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .6000E-06

Peameability for Z direction (cm**2) = .6000E-06

Peameability Kc/Bc = .6500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.250E+02	.9971	1.1627	.5068E-02
.157E+03	.517E+01	.250E+02	.9974	1.0464	.1004E-02
.310E+03	.102E+02	.250E+02	.9978	.8925	.1235E-02
.462E+03	.152E+02	.250E+02	.9982	.7327	.1095E-02
.615E+03	.202E+02	.250E+02	.9985	.6046	.8895E-03
.767E+03	.252E+02	.250E+02	.9988	.4969	.7085E-03
.919E+03	.302E+02	.250E+02	.9990	.4101	.5649E-03
.107E+04	.352E+02	.250E+02	.9992	.3419	.4536E-03
.122E+04	.402E+02	.250E+02	.9993	.2881	.3672E-03
.138E+04	.452E+02	.250E+02	.9994	.2448	.2996E-03
.153E+04	.502E+02	.250E+02	.9995	.2098	.2463E-03
.168E+04	.552E+02	.250E+02	.9996	.1808	.2038E-03
.183E+04	.602E+02	.250E+02	.9996	.1564	.1696E-03
.199E+04	.652E+02	.250E+02	.9997	.1348	.1418E-03
.214E+04	.702E+02	.250E+02	.9997	.1150	.1191E-03
.229E+04	.752E+02	.250E+02	.9998	.0956	.1005E-03
.244E+04	.802E+02	.250E+02	.9998	.0755	.8500E-04
.260E+04	.852E+02	.250E+02	.9998	.0648	.7214E-04
.275E+04	.902E+02	.250E+02	.9999	.0557	.6138E-04
.290E+04	.952E+02	.250E+02	.9999	.0479	.5236E-04

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---------- Simulation finished ----------
```

----- Simulated Scenario ----- 1

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.000000E+00	.00
.157E+03	.517E+01	.366485E-02	96381.98
.310E+03	.102E+02	.122060E+00	1516.18
.462E+03	.152E+02	.429716E+00	391.12
.615E+03	.202E+02	.990820E+00	161.28
.767E+03	.252E+02	.186977E+01	82.50
.919E+03	.302E+02	.314424E+01	47.47
.107E+04	.352E+02	.490852E+01	29.41
.122E+04	.402E+02	.727419E+01	19.21
.138E+04	.452E+02	.103709E+02	13.05
.153E+04	.502E+02	.143479E+02	9.15
.168E+04	.552E+02	.193757E+02	6.58
.183E+04	.602E+02	.256488E+02	4.84
.199E+04	.652E+02	.333890E+02	3.62
.214E+04	.702E+02	.428493E+02	2.75
.229E+04	.752E+02	.543184E+02	2.12
.244E+04	.802E+02	.681262E+02	1.65
.260E+04	.852E+02	.846503E+02	1.30
.275E+04	.902E+02	.104323E+03	1.03
.290E+04	.952E+02	.127641E+03	.82

----- Simulated Scenario ----- 2

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.127641E+03	.82
.157E+03	.517E+01	.182977E-02	193044.20
.310E+03	.102E+02	.610100E-01	3033.24
.462E+03	.152E+02	.214813E+00	782.36
.615E+03	.202E+02	.495334E+00	322.60
.767E+03	.252E+02	.934771E+00	165.02
.919E+03	.302E+02	.157197E+01	94.94
.107E+04	.352E+02	.245406E+01	58.83
.122E+04	.402E+02	.363685E+01	38.41
.138E+04	.452E+02	.518518E+01	26.10
.153E+04	.502E+02	.717361E+01	18.30
.168E+04	.552E+02	.968744E+01	13.16
.183E+04	.602E+02	.128239E+02	9.67
.199E+04	.652E+02	.166940E+02	7.24
.214E+04	.702E+02	.214241E+02	5.50
.229E+04	.752E+02	.271585E+02	4.23
.244E+04	.802E+02	.340624E+02	3.30
.260E+04	.852E+02	.423244E+02	2.59
.275E+04	.902E+02	.521609E+02	2.06
.290E+04	.952E+02	.638197E+02	1.64

----- Simulated Scenario ----- 3

********** OUTPUT **********

RADIUS	RADIUS	TIME	PORE VOL/ YEAR

CM	FT	DAYS	
.508E+01	.167E+00	.638197E+02	1.64
.157E+03	.517E+01	.728706E-03	484730.50
.310E+03	.102E+02	.243800E-01	7589.78
.462E+03	.152E+02	.858710E-01	1956.87
.615E+03	.202E+02	.198042E+00	806.77
.767E+03	.252E+02	.373773E+00	412.66
.919E+03	.302E+02	.628604E+00	237.40
.107E+04	.352E+02	.981390E+00	147.10
.122E+04	.402E+02	.145445E+01	96.05
.138E+04	.452E+02	.207372E+01	65.25
.153E+04	.502E+02	.286903E+01	45.74
.168E+04	.552E+02	.387450E+01	32.90
.183E+04	.602E+02	.512902E+01	24.18
.199E+04	.652E+02	.667697E+01	18.09
.214E+04	.702E+02	.856893E+01	13.75
.229E+04	.752E+02	.108626E+02	10.59
.244E+04	.802E+02	.136241E+02	8.24
.260E+04	.852E+02	.169288E+02	6.48
.275E+04	.902E+02	.208633E+02	5.14
.290E+04	.952E+02	.255268E+02	4.11

----- Simulated Scenario ----- 4

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.255268E+02	4.11
.157E+03	.517E+01	.300491E-03	1175496.00
.310E+03	.102E+02	.101349E-01	18252.98
.462E+03	.152E+02	.357268E-01	4701.87

.615E+03	.202E+02	.824279E-01	1937.77
.767E+03	.252E+02	.155607E+00	990.95
.919E+03	.302E+02	.261739E+00	570.02
.107E+04	.352E+02	.408683E+00	353.17
.122E+04	.402E+02	.605738E+00	230.57
.138E+04	.452E+02	.863710E+00	156.63
.153E+04	.502E+02	.119503E+01	109.80
.168E+04	.552E+02	.161391E+01	78.98
.183E+04	.602E+02	.213656E+01	58.04
.199E+04	.652E+02	.278147E+01	43.43
.214E+04	.702E+02	.356970E+01	33.00
.229E+04	.752E+02	.452534E+01	25.41
.244E+04	.802E+02	.567588E+01	19.79
.260E+04	.852E+02	.705278E+01	15.56
.275E+04	.902E+02	.869208E+01	12.35
.290E+04	.952E+02	.106351E+02	9.87

----- Simulated Scenario ----- 5

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.106351E+02	9.87
.157E+03	.517E+01	.178119E-03	1983094.00
.310E+03	.102E+02	.606487E-02	30493.59
.462E+03	.152E+02	.213998E-01	7846.77
.615E+03	.202E+02	.493953E-01	3232.51
.767E+03	.252E+02	.932736E-01	1652.67
.919E+03	.302E+02	.156921E+00	950.51
.107E+04	.352E+02	.245053E+00	588.84
.122E+04	.402E+02	.363249E+00	384.41
.138E+04	.452E+02	.517993E+00	261.11
.153E+04	.502E+02	.716742E+00	183.04
.168E+04	.552E+02	.968025E+00	131.65

.183E+04	.602E+02	.128157E+01	96.74
.199E+04	.652E+02	.166846E+01	72.38
.214E+04	.702E+02	.214136E+01	55.00
.229E+04	.752E+02	.271468E+01	42.35
.244E+04	.802E+02	.340496E+01	32.98
.260E+04	.852E+02	.423105E+01	25.94
.275E+04	.902E+02	.521458E+01	20.58
.290E+04	.952E+02	.638035E+01	16.45

----- Simulated Scenario ----- 6

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.638035E+01	16.45
.157E+03	.517E+01	.147517E-03	2394479.00
.310E+03	.102E+02	.504733E-02	36635.73
.462E+03	.152E+02	.178180E-01	9422.32
.615E+03	.202E+02	.411372E-01	3880.76
.767E+03	.252E+02	.776903E-01	1983.87
.919E+03	.302E+02	.130716E+00	1140.90
.107E+04	.352E+02	.204145E+00	706.75
.122E+04	.402E+02	.302626E+00	461.36
.138E+04	.452E+02	.431563E+00	313.38
.153E+04	.502E+02	.597170E+00	219.67
.168E+04	.552E+02	.806554E+00	157.99
.183E+04	.602E+02	.106782E+01	116.10
.199E+04	.652E+02	.139021E+01	86.87
.214E+04	.702E+02	.178427E+01	66.00
.229E+04	.752E+02	.226202E+01	50.82
.244E+04	.802E+02	.283723E+01	39.58
.260E+04	.852E+02	.352561E+01	31.13
.275E+04	.902E+02	.434520E+01	24.70
.290E+04	.952E+02	.531666E+01	19.74

----- Simulated Scenario ----- 7

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.531666E+01	19.74
.157E+03	.517E+01	.458684E+00	770.08
.310E+03	.102E+02	.170219E+01	144.36
.462E+03	.152E+02	.289698E+01	100.71
.615E+03	.202E+02	.429908E+01	64.54
.767E+03	.252E+02	.603970E+01	41.66
.919E+03	.302E+02	.822347E+01	27.70
.107E+04	.352E+02	.109533E+02	19.01
.122E+04	.402E+02	.143403E+02	13.41
.138E+04	.452E+02	.185087E+02	9.69
.153E+04	.502E+02	.235995E+02	7.15
.168E+04	.552E+02	.297742E+02	5.36
.183E+04	.602E+02	.372174E+02	4.08
.199E+04	.652E+02	.461416E+02	3.14
.214E+04	.702E+02	.567904E+02	2.44
.229E+04	.752E+02	.694445E+02	1.92
.244E+04	.802E+02	.844263E+02	1.52
.260E+04	.852E+02	.102107E+03	1.21
.275E+04	.902E+02	.122914E+03	.97
.290E+04	.952E+02	.147339E+03	.79

----- Simulated Scenario ----- 8

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.147339E+03	.79
.157E+03	.517E+01	.229315E+00	1540.35
.310E+03	.102E+02	.851008E+00	288.74
.462E+03	.152E+02	.144835E+01	201.44
.615E+03	.202E+02	.214936E+01	129.10
.767E+03	.252E+02	.301961E+01	83.33
.919E+03	.302E+02	.411145E+01	55.41
.107E+04	.352E+02	.547633E+01	38.02
.122E+04	.402E+02	.716977E+01	26.83
.138E+04	.452E+02	.925388E+01	19.39
.153E+04	.502E+02	.117992E+02	14.29
.168E+04	.552E+02	.148865E+02	10.72
.183E+04	.602E+02	.186081E+02	8.15
.199E+04	.652E+02	.230701E+02	6.28
.214E+04	.702E+02	.283944E+02	4.88
.229E+04	.752E+02	.347214E+02	3.84
.244E+04	.802E+02	.422122E+02	3.04
.260E+04	.852E+02	.510526E+02	2.42
.275E+04	.902E+02	.614561E+02	1.95
.290E+04	.952E+02	.736684E+02	1.57

----- Simulated Scenario ----- 9

********** OUTPUT **********

RADIUS	RADIUS	TIME	PORE VOL/ YEAR

CM	FT	DAYS	
.508E+01	.167E+00	.736684E+02	1.57
.157E+03	.517E+01	.916940E-01	3852.22
.310E+03	.102E+02	.340298E+00	722.07
.462E+03	.152E+02	.579176E+00	503.73
.615E+03	.202E+02	.859519E+00	322.80
.767E+03	.252E+02	.120756E+01	208.35
.919E+03	.302E+02	.164423E+01	138.54
.107E+04	.352E+02	.219012E+01	95.07
.122E+04	.402E+02	.286743E+01	67.08
.138E+04	.452E+02	.370101E+01	48.47
.153E+04	.502E+02	.471908E+01	35.73
.168E+04	.552E+02	.595391E+01	26.79
.183E+04	.602E+02	.744247E+01	20.38
.199E+04	.652E+02	.922719E+01	15.69
.214E+04	.702E+02	.113569E+02	12.21
.229E+04	.752E+02	.138875E+02	9.59
.244E+04	.802E+02	.168838E+02	7.60
.260E+04	.852E+02	.204199E+02	6.06
.275E+04	.902E+02	.245812E+02	4.86
.290E+04	.952E+02	.294660E+02	3.93

----- Simulated Scenario ----- 10

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.294660E+02	3.93
.157E+03	.517E+01	.381745E-01	9252.92
.310E+03	.102E+02	.141688E+00	1734.15
.462E+03	.152E+02	.241162E+00	1209.65

.615E+03	.202E+02	.357915E+00	775.11
.767E+03	.252E+02	.502876E+00	500.25
.919E+03	.302E+02	.684763E+00	332.61
.107E+04	.352E+02	.912155E+00	228.22
.122E+04	.402E+02	.119430E+01	161.04
.138E+04	.452E+02	.154156E+01	116.36
.153E+04	.502E+02	.196569E+01	85.77
.168E+04	.552E+02	.248013E+01	64.31
.183E+04	.602E+02	.310028E+01	48.91
.199E+04	.652E+02	.384384E+01	37.66
.214E+04	.702E+02	.473112E+01	29.31
.229E+04	.752E+02	.578549E+01	23.03
.244E+04	.802E+02	.703386E+01	18.24
.260E+04	.852E+02	.850715E+01	14.54
.275E+04	.902E+02	.102410E+02	11.67
.290E+04	.952E+02	.122762E+02	9.42

----- Simulated Scenario ----- 11

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.122762E+02	9.42
.157E+03	.517E+01	.228832E-01	15436.01
.310E+03	.102E+02	.849423E-01	2892.54
.462E+03	.152E+02	.144587E+00	2017.44
.615E+03	.202E+02	.214600E+00	1292.56
.767E+03	.252E+02	.301537E+00	834.13
.919E+03	.302E+02	.410628E+00	554.56
.107E+04	.352E+02	.547020E+00	380.49
.122E+04	.402E+02	.716265E+00	268.46
.138E+04	.452E+02	.924573E+00	193.97
.153E+04	.502E+02	.117900E+01	142.98
.168E+04	.552E+02	.148762E+01	107.19

.183E+04	.602E+02	.185966E+01	81.53
.199E+04	.652E+02	.230574E+01	62.78
.214E+04	.702E+02	.283805E+01	48.86
.229E+04	.752E+02	.347062E+01	38.38
.244E+04	.802E+02	.421959E+01	30.40
.260E+04	.852E+02	.510351E+01	24.24
.275E+04	.902E+02	.614374E+01	19.46
.290E+04	.952E+02	.736485E+01	15.70

----- Simulated Scenario ----- 12

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.736485E+01	15.70
.157E+03	.517E+01	.190604E-01	18531.92
.310E+03	.102E+02	.707559E-01	3472.42
.462E+03	.152E+02	.120443E+00	2421.74
.615E+03	.202E+02	.178771E+00	1551.50
.767E+03	.252E+02	.251202E+00	1001.19
.919E+03	.302E+02	.342094E+00	665.59
.107E+04	.352E+02	.455737E+00	456.66
.122E+04	.402E+02	.596756E+00	322.20
.138E+04	.452E+02	.770327E+00	232.79
.153E+04	.502E+02	.982331E+00	171.59
.168E+04	.552E+02	.123949E+01	128.64
.183E+04	.602E+02	.154950E+01	97.84
.199E+04	.652E+02	.192121E+01	75.34
.214E+04	.702E+02	.236478E+01	58.64
.229E+04	.752E+02	.289190E+01	46.06
.244E+04	.802E+02	.351602E+01	36.48
.260E+04	.852E+02	.425260E+01	29.09
.275E+04	.902E+02	.511944E+01	23.35
.290E+04	.952E+02	.613701E+01	18.85

MDFIT Modeling Results
Step 2: Air Intrinsic Permeability Calibration [Deep Interval]
Former Acme Steel/Brass Foundry
NYSDEC Site No. 224132
Anthony St. / 498 Porter Ave.
Brooklyn, New York
Langan Project No.: 170157201

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESSURE (atm)	PRESSURE (inH2O)	VELOCITY (ft/s)	PORE VOLUME EXCHANGE (per year)
25 SCFM						
5.08E+00	1.67E-01	2.50E+01	0.994	2.4257	1.67E-01	15.66
1.57E+02	5.17E+00	2.50E+01	0.9988	0.5077	3.59E-03	521547.1
3.10E+02	1.02E+01	2.50E+01	0.9993	0.2819	1.16E-03	7279.94
4.62E+02	1.52E+01	2.50E+01	0.9995	0.1939	5.53E-04	1719.97
6.15E+02	2.02E+01	2.50E+01	0.9996	0.1447	3.25E-04	645.2
7.67E+02	2.52E+01	2.50E+01	0.9997	0.1157	2.17E-04	307.48
9.19E+02	3.02E+01	2.50E+01	0.9998	0.0957	1.57E-04	169.62
1.07E+03	3.52E+01	2.50E+01	0.9998	0.0808	1.20E-04	103.14
1.22E+03	4.02E+01	2.50E+01	0.9998	0.0693	9.54E-05	67.13
1.38E+03	4.52E+01	2.50E+01	0.9999	0.06	7.80E-05	45.87
1.53E+03	5.02E+01	2.50E+01	0.9999	0.0525	6.50E-05	32.48
1.68E+03	5.52E+01	2.50E+01	0.9999	0.0462	5.49E-05	23.63
1.83E+03	6.02E+01	2.50E+01	0.9999	0.0409	4.68E-05	17.54
1.99E+03	6.52E+01	2.50E+01	0.9999	0.0364	4.03E-05	13.23
2.14E+03	7.02E+01	2.50E+01	0.9999	0.0326	3.48E-05	10.11
2.29E+03	7.52E+01	2.50E+01	0.9999	0.0292	3.03E-05	7.81
2.44E+03	8.02E+01	2.50E+01	0.9999	0.0263	2.64E-05	6.08
2.60E+03	8.52E+01	2.50E+01	0.9999	0.0236	2.31E-05	4.78
2.75E+03	9.02E+01	2.50E+01	0.9999	0.0211	2.03E-05	3.77
2.90E+03	9.52E+01	2.50E+01	1	0.0187	1.79E-05	3
60 SCFM						
5.08E+00	1.67E-01	2.50E+01	0.9856	5.8463	4.05E-01	3
1.57E+02	5.17E+00	2.50E+01	0.997	1.2196	8.64E-03	1261977
3.10E+02	1.02E+01	2.50E+01	0.9983	0.677	2.78E-03	17496.32
4.62E+02	1.52E+01	2.50E+01	0.9989	0.4655	1.33E-03	4130.91
6.15E+02	2.02E+01	2.50E+01	0.9991	0.3473	7.80E-04	1549.2
7.67E+02	2.52E+01	2.50E+01	0.9993	0.2779	5.20E-04	738.19
9.19E+02	3.02E+01	2.50E+01	0.9994	0.2297	3.76E-04	407.18
1.07E+03	3.52E+01	2.50E+01	0.9995	0.194	2.88E-04	247.59
1.22E+03	4.02E+01	2.50E+01	0.9996	0.1663	2.29E-04	161.13
1.38E+03	4.52E+01	2.50E+01	0.9996	0.1441	1.87E-04	110.1
1.53E+03	5.02E+01	2.50E+01	0.9997	0.126	1.56E-04	77.97
1.68E+03	5.52E+01	2.50E+01	0.9997	0.1109	1.32E-04	56.71
1.83E+03	6.02E+01	2.50E+01	0.9998	0.0982	1.12E-04	42.1
1.99E+03	6.52E+01	2.50E+01	0.9998	0.0875	9.66E-05	31.76
2.14E+03	7.02E+01	2.50E+01	0.9998	0.0782	8.36E-05	24.27
2.29E+03	7.52E+01	2.50E+01	0.9998	0.0702	7.26E-05	18.75
2.44E+03	8.02E+01	2.50E+01	0.9998	0.063	6.34E-05	14.6
2.60E+03	8.52E+01	2.50E+01	0.9999	0.0566	5.55E-05	11.46
2.75E+03	9.02E+01	2.50E+01	0.9999	0.0505	4.87E-05	9.05
2.90E+03	9.52E+01	2.50E+01	0.9999	0.0448	4.29E-05	7.19
75 SCFM						
5.08E+00	1.67E-01	2.50E+01	0.982	7.3212	5.08E-01	7.19
1.57E+02	5.17E+00	2.50E+01	0.9963	1.5251	1.08E-02	1583069
3.10E+02	1.02E+01	2.50E+01	0.9979	0.8464	3.47E-03	21883.54
4.62E+02	1.52E+01	2.50E+01	0.9986	0.582	1.66E-03	5165.23
6.15E+02	2.02E+01	2.50E+01	0.9989	0.4342	9.75E-04	1936.88
7.67E+02	2.52E+01	2.50E+01	0.9991	0.3474	6.50E-04	922.86
9.19E+02	3.02E+01	2.50E+01	0.9993	0.2871	4.70E-04	509.03
1.07E+03	3.52E+01	2.50E+01	0.9994	0.2425	3.60E-04	309.51
1.22E+03	4.02E+01	2.50E+01	0.9995	0.2079	2.86E-04	201.43
1.38E+03	4.52E+01	2.50E+01	0.9996	0.1801	2.34E-04	137.64
1.53E+03	5.02E+01	2.50E+01	0.9996	0.1575	1.95E-04	97.47
1.68E+03	5.52E+01	2.50E+01	0.9997	0.1387	1.65E-04	70.89
1.83E+03	6.02E+01	2.50E+01	0.9997	0.1228	1.41E-04	52.63
1.99E+03	6.52E+01	2.50E+01	0.9997	0.1094	1.21E-04	39.71
2.14E+03	7.02E+01	2.50E+01	0.9998	0.0978	1.05E-04	30.34
2.29E+03	7.52E+01	2.50E+01	0.9998	0.0877	9.08E-05	23.43
2.44E+03	8.02E+01	2.50E+01	0.9998	0.0788	7.92E-05	18.26
2.60E+03	8.52E+01	2.50E+01	0.9998	0.0707	6.94E-05	14.33
2.75E+03	9.02E+01	2.50E+01	0.9998	0.0632	6.09E-05	11.32
2.90E+03	9.52E+01	2.50E+01	0.9999	0.056	5.36E-05	8.99

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESSURE (atm)	PRESSURE (inH2O)	VELOCITY (ft/s)	PORE VOLUME EXCHANGE (per year)
95 SCFM						
5.08E+00	1.67E-01	2.50E+01	0.9772	9.2963	6.47E-01	8.99
1.57E+02	5.17E+00	2.50E+01	0.9953	1.9328	1.37E-02	2014794
3.10E+02	1.02E+01	2.50E+01	0.9974	1.0724	4.40E-03	27741.39
4.62E+02	1.52E+01	2.50E+01	0.9982	0.7374	2.10E-03	6545.33
6.15E+02	2.02E+01	2.50E+01	0.9986	0.55	1.24E-03	2454.03
7.67E+02	2.52E+01	2.50E+01	0.9989	0.44	8.23E-04	1169.18
9.19E+02	3.02E+01	2.50E+01	0.9991	0.3637	5.96E-04	644.87
1.07E+03	3.52E+01	2.50E+01	0.9992	0.3071	4.56E-04	392.1
1.22E+03	4.02E+01	2.50E+01	0.9994	0.2633	3.63E-04	255.17
1.38E+03	4.52E+01	2.50E+01	0.9994	0.2282	2.97E-04	174.35
1.53E+03	5.02E+01	2.50E+01	0.9995	0.1995	2.47E-04	123.46
1.68E+03	5.52E+01	2.50E+01	0.9996	0.1756	2.09E-04	89.8
1.83E+03	6.02E+01	2.50E+01	0.9996	0.1556	1.78E-04	66.67
1.99E+03	6.52E+01	2.50E+01	0.9997	0.1385	1.53E-04	50.3
2.14E+03	7.02E+01	2.50E+01	0.9997	0.1239	1.32E-04	38.43
2.29E+03	7.52E+01	2.50E+01	0.9997	0.1111	1.15E-04	29.68
2.44E+03	8.02E+01	2.50E+01	0.9998	0.0998	1.00E-04	23.12
2.60E+03	8.52E+01	2.50E+01	0.9998	0.0896	8.79E-05	18.15
2.75E+03	9.02E+01	2.50E+01	0.9998	0.08	7.71E-05	14.34
2.90E+03	9.52E+01	2.50E+01	0.9998	0.0709	6.79E-05	11.39
115 SCFM						
5.08E+00	1.67E-01	2.50E+01	0.9723	11.2813	7.87E-01	11.39
1.57E+02	5.17E+00	2.50E+01	0.9942	2.3408	1.66E-02	2450720
3.10E+02	1.02E+01	2.50E+01	0.9968	1.2985	5.33E-03	33608.67
4.62E+02	1.52E+01	2.50E+01	0.9978	0.8928	2.55E-03	7926.56
6.15E+02	2.02E+01	2.50E+01	0.9984	0.6659	1.50E-03	2971.46
7.67E+02	2.52E+01	2.50E+01	0.9987	0.5327	9.97E-04	1415.59
9.19E+02	3.02E+01	2.50E+01	0.9989	0.4404	7.21E-04	780.74
1.07E+03	3.52E+01	2.50E+01	0.9991	0.3718	5.52E-04	474.69
1.22E+03	4.02E+01	2.50E+01	0.9992	0.3187	4.39E-04	308.91
1.38E+03	4.52E+01	2.50E+01	0.9993	0.2762	3.59E-04	211.07
1.53E+03	5.02E+01	2.50E+01	0.9994	0.2415	2.99E-04	149.47
1.68E+03	5.52E+01	2.50E+01	0.9995	0.2126	2.53E-04	108.71
1.83E+03	6.02E+01	2.50E+01	0.9995	0.1883	2.15E-04	80.71
1.99E+03	6.52E+01	2.50E+01	0.9996	0.1677	1.85E-04	60.89
2.14E+03	7.02E+01	2.50E+01	0.9996	0.15	1.60E-04	46.53
2.29E+03	7.52E+01	2.50E+01	0.9997	0.1345	1.39E-04	35.93
2.44E+03	8.02E+01	2.50E+01	0.9997	0.1208	1.22E-04	27.99
2.60E+03	8.52E+01	2.50E+01	0.9997	0.1084	1.06E-04	21.97
2.75E+03	9.02E+01	2.50E+01	0.9998	0.0969	9.34E-05	17.36
2.90E+03	9.52E+01	2.50E+01	0.9998	0.0858	8.22E-05	13.79
130 SCFM						
5.08E+00	1.67E-01	2.50E+01	0.9686	12.7765	8.93E-01	13.79
1.57E+02	5.17E+00	2.50E+01	0.9935	2.6471	1.88E-02	2780478
3.10E+02	1.02E+01	2.50E+01	0.9964	1.4682	6.03E-03	38015.35
4.62E+02	1.52E+01	2.50E+01	0.9975	1.0094	2.88E-03	8963.23
6.15E+02	2.02E+01	2.50E+01	0.9982	0.7529	1.69E-03	3359.7
7.67E+02	2.52E+01	2.50E+01	0.9985	0.6023	1.13E-03	1600.45
9.19E+02	3.02E+01	2.50E+01	0.9988	0.4978	8.16E-04	882.67
1.07E+03	3.52E+01	2.50E+01	0.999	0.4204	6.24E-04	536.66
1.22E+03	4.02E+01	2.50E+01	0.9991	0.3603	4.97E-04	349.23
1.38E+03	4.52E+01	2.50E+01	0.9992	0.3123	4.06E-04	238.62
1.53E+03	5.02E+01	2.50E+01	0.9993	0.273	3.38E-04	168.97
1.68E+03	5.52E+01	2.50E+01	0.9994	0.2403	2.86E-04	122.9
1.83E+03	6.02E+01	2.50E+01	0.9995	0.2129	2.44E-04	91.24
1.99E+03	6.52E+01	2.50E+01	0.9995	0.1896	2.09E-04	68.83
2.14E+03	7.02E+01	2.50E+01	0.9996	0.1695	1.81E-04	52.6
2.29E+03	7.52E+01	2.50E+01	0.9996	0.1521	1.57E-04	40.62
2.44E+03	8.02E+01	2.50E+01	0.9997	0.1366	1.37E-04	31.64
2.60E+03	8.52E+01	2.50E+01	0.9997	0.1226	1.20E-04	24.84
2.75E+03	9.02E+01	2.50E+01	0.9997	0.1095	1.06E-04	19.62
2.90E+03	9.52E+01	2.50E+01	0.9998	0.097	9.29E-05	15.59

INPUT PARAMETERS

Depth to the top of screen (ft) = .2000E+02

Depth to the bottom of screen (ft) = .3000E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation (ft) = .2500E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (°C) = .2000E+02

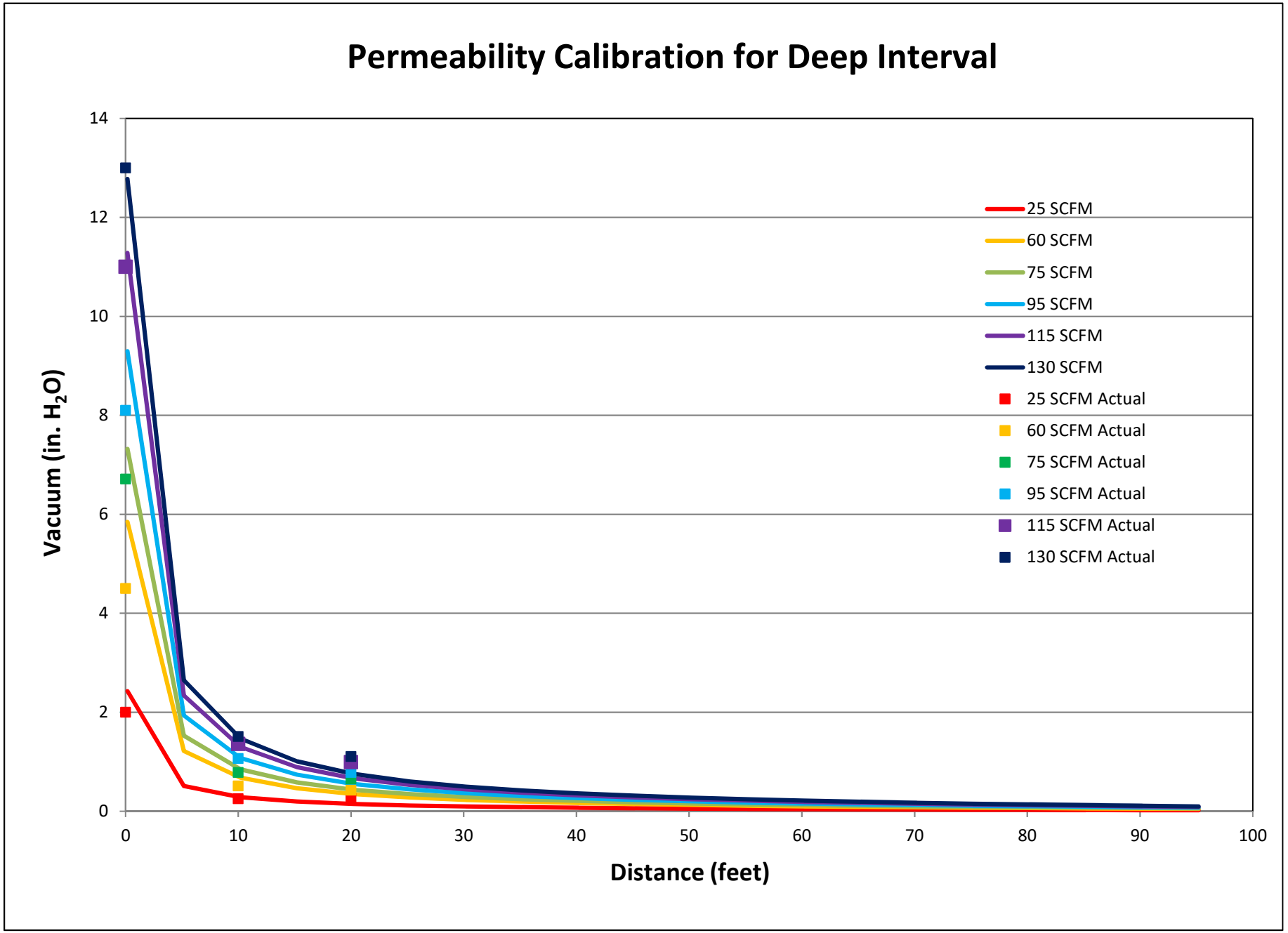
Flow rate of pumping/injection well (cfm) = **VARIABLE**

Soil porosity (Dimensionless) = .2500E+00

Permeability for R direction (cm^2) = .7500E-06

Permeability for Z direction (cm^2) = .7500E-06

Permeability Kc/Bc = .4500E-09


Permeability Calibration for Deep Interval
Vacuum (in. H_2O)
14
12
10
8
6
4
2
0
0
10
20
30
40
50
60
70
80
90
100
Distance (feet)
25 SCFM
60 SCFM
75 SCFM
95 SCFM
115 SCFM
130 SCFM
25 SCFM Actual
60 SCFM Actual
75 SCFM Actual
95 SCFM Actual
115 SCFM Actual
130 SCFM Actual

Welcom to FSS program

VAPEX

----- Simulated Scenario ----- 1

Simulating information:

Depth to the top of screen (ft)	=	.2000E+02
Depth to the bottom of screen (ft)	=	.3000E+02
Depth to the groundwater table (ft)	=	.5300E+02
Depth to the simulated elevation(ft)	=	.1000E+02
Radius of the simulating well (in.)	=	.2000E+01
Temperature of the soil (C)	=	.2000E+02
Flow rate of pumping/injection well(cfm)	=	.2500E+02
Soil porosity(Dimensionless)	=	.2500E+00
Peameability for R direction (cm**2)	=	.7500E-06
Peameability for Z direction (cm**2)	=	.7500E-06
Peameability Kc/Bc	=	.4500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.100E+02	.9994	.2257	.1053E-02
.157E+03	.517E+01	.100E+02	.9995	.2061	.2151E-03
.310E+03	.102E+02	.100E+02	.9996	.1795	.2673E-03
.462E+03	.152E+02	.100E+02	.9996	.1515	.2409E-03
.615E+03	.202E+02	.100E+02	.9997	.1287	.1995E-03
.767E+03	.252E+02	.100E+02	.9997	.1090	.1625E-03
.919E+03	.302E+02	.100E+02	.9998	.0929	.1327E-03
.107E+04	.352E+02	.100E+02	.9998	.0796	.1092E-03
.122E+04	.402E+02	.100E+02	.9998	.0689	.9080E-04
.138E+04	.452E+02	.100E+02	.9999	.0600	.7614E-04
.153E+04	.502E+02	.100E+02	.9999	.0526	.6437E-04
.168E+04	.552E+02	.100E+02	.9999	.0463	.5481E-04
.183E+04	.602E+02	.100E+02	.9999	.0411	.4695E-04
.199E+04	.652E+02	.100E+02	.9999	.0366	.4044E-04
.214E+04	.702E+02	.100E+02	.9999	.0327	.3500E-04
.229E+04	.752E+02	.100E+02	.9999	.0293	.3042E-04
.244E+04	.802E+02	.100E+02	.9999	.0263	.2653E-04
.260E+04	.852E+02	.100E+02	.9999	.0236	.2321E-04
.275E+04	.902E+02	.100E+02	.9999	.0211	.2036E-04
.290E+04	.952E+02	.100E+02	1.0000	.0187	.1791E-04

----- Simulated Scenario ----- 2

Simulating information:

Depth to the top of screen (ft)	=	.2000E+02
Depth to the bottom of screen (ft)	=	.3000E+02
Depth to the groundwater table (ft)	=	.5300E+02
Depth to the simulated elevation(ft)	=	.1000E+02
Radius of the simulating well (in.)	=	.2000E+01
Temperature of the soil (C)	=	.2000E+02
Flow rate of pumping/injection well(cfm)	=	.6000E+02
Soil porosity(Dimensionless)	=	.2500E+00
Peameability for R direction (cm**2)	=	.7500E-06
Peameability for Z direction (cm**2)	=	.7500E-06
Peameability Kc/Bc	=	.4500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)

.508E+01	.167E+00	.100E+02	.9987	.5420	.2530E-02
.157E+03	.517E+01	.100E+02	.9988	.4947	.5165E-03
.310E+03	.102E+02	.100E+02	.9989	.4310	.6419E-03
.462E+03	.152E+02	.100E+02	.9991	.3636	.5784E-03
.615E+03	.202E+02	.100E+02	.9992	.3088	.4791E-03
.767E+03	.252E+02	.100E+02	.9994	.2617	.3900E-03
.919E+03	.302E+02	.100E+02	.9995	.2230	.3185E-03
.107E+04	.352E+02	.100E+02	.9995	.1912	.2622E-03
.122E+04	.402E+02	.100E+02	.9996	.1654	.2180E-03
.138E+04	.452E+02	.100E+02	.9996	.1440	.1828E-03
.153E+04	.502E+02	.100E+02	.9997	.1262	.1545E-03
.168E+04	.552E+02	.100E+02	.9997	.1112	.1316E-03
.183E+04	.602E+02	.100E+02	.9998	.0985	.1127E-03
.199E+04	.652E+02	.100E+02	.9998	.0877	.9708E-04
.214E+04	.702E+02	.100E+02	.9998	.0784	.8402E-04
.229E+04	.752E+02	.100E+02	.9998	.0703	.7301E-04
.244E+04	.802E+02	.100E+02	.9998	.0631	.6368E-04
.260E+04	.852E+02	.100E+02	.9999	.0567	.5571E-04
.275E+04	.902E+02	.100E+02	.9999	.0506	.4888E-04
.290E+04	.952E+02	.100E+02	.9999	.0448	.4299E-04

----- Simulated Scenario ----- 3

Simulating information:

Depth to the top of screen (ft)	=	.2000E+02
Depth to the bottom of screen (ft)	=	.3000E+02
Depth to the groundwater table (ft)	=	.5300E+02
Depth to the simulated elevation(ft)	=	.1000E+02
Radius of the simulating well (in.)	=	.2000E+01
Temperature of the soil (C)	=	.2000E+02
Flow rate of pumping/injection well(cfm)	=	.7500E+02
Soil porosity(Dimensionless)	=	.2500E+00

Peameability for R direction (cm**2) = .7500E-06

Peameability for Z direction (cm**2) = .7500E-06

Peameability Kc/Bc = .4500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.100E+02	.9983	.6776	.3164E-02
.157E+03	.517E+01	.100E+02	.9985	.6185	.6458E-03
.310E+03	.102E+02	.100E+02	.9987	.5388	.8026E-03
.462E+03	.152E+02	.100E+02	.9989	.4546	.7231E-03
.615E+03	.202E+02	.100E+02	.9991	.3861	.5989E-03
.767E+03	.252E+02	.100E+02	.9992	.3272	.4876E-03
.919E+03	.302E+02	.100E+02	.9993	.2787	.3981E-03
.107E+04	.352E+02	.100E+02	.9994	.2390	.3278E-03
.122E+04	.402E+02	.100E+02	.9995	.2068	.2725E-03
.138E+04	.452E+02	.100E+02	.9996	.1800	.2285E-03
.153E+04	.502E+02	.100E+02	.9996	.1577	.1932E-03
.168E+04	.552E+02	.100E+02	.9997	.1390	.1645E-03
.183E+04	.602E+02	.100E+02	.9997	.1232	.1409E-03
.199E+04	.652E+02	.100E+02	.9997	.1097	.1214E-03
.214E+04	.702E+02	.100E+02	.9998	.0980	.1050E-03

.229E+04	.752E+02	.100E+02	.9998	.0879	.9127E-04
.244E+04	.802E+02	.100E+02	.9998	.0789	.7960E-04
.260E+04	.852E+02	.100E+02	.9998	.0708	.6964E-04
.275E+04	.902E+02	.100E+02	.9998	.0633	.6110E-04
.290E+04	.952E+02	.100E+02	.9999	.0560	.5374E-04

----- Simulated Scenario ----- 4

Simulating information:

Depth to the top of screen (ft) = .2000E+02

Depth to the bottom of screen (ft) = .3000E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .1000E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .9500E+02

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .7500E-06

Peameability for Z direction (cm**2) = .7500E-06

Peameability Kc/Bc = .4500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.

2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.100E+02	.9979	.8585	.4009E-02
.157E+03	.517E+01	.100E+02	.9981	.7836	.8184E-03
.310E+03	.102E+02	.100E+02	.9983	.6826	.1017E-02
.462E+03	.152E+02	.100E+02	.9986	.5759	.9162E-03
.615E+03	.202E+02	.100E+02	.9988	.4891	.7589E-03
.767E+03	.252E+02	.100E+02	.9990	.4145	.6178E-03
.919E+03	.302E+02	.100E+02	.9991	.3531	.5044E-03
.107E+04	.352E+02	.100E+02	.9993	.3027	.4153E-03
.122E+04	.402E+02	.100E+02	.9994	.2619	.3452E-03
.138E+04	.452E+02	.100E+02	.9994	.2281	.2895E-03
.153E+04	.502E+02	.100E+02	.9995	.1998	.2447E-03
.168E+04	.552E+02	.100E+02	.9996	.1761	.2083E-03
.183E+04	.602E+02	.100E+02	.9996	.1560	.1785E-03
.199E+04	.652E+02	.100E+02	.9997	.1389	.1537E-03
.214E+04	.702E+02	.100E+02	.9997	.1242	.1330E-03
.229E+04	.752E+02	.100E+02	.9997	.1114	.1156E-03
.244E+04	.802E+02	.100E+02	.9998	.1000	.1008E-03
.260E+04	.852E+02	.100E+02	.9998	.0897	.8822E-04
.275E+04	.902E+02	.100E+02	.9998	.0801	.7740E-04
.290E+04	.952E+02	.100E+02	.9998	.0710	.6807E-04

----- Simulated Scenario ----- 5

Simulating information:

Depth to the top of screen (ft) = .2000E+02

Depth to the bottom of screen (ft) = .3000E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .1000E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .1150E+03

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .7500E-06

Peameability for Z direction (cm**2) = .7500E-06

Peameability Kc/Bc = .4500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.100E+02	.9974	1.0394	.4855E-02

.157E+03	.517E+01	.100E+02	.9977	.9488	.9910E-03
.310E+03	.102E+02	.100E+02	.9980	.8265	.1232E-02
.462E+03	.152E+02	.100E+02	.9983	.6973	.1109E-02
.615E+03	.202E+02	.100E+02	.9985	.5922	.9188E-03
.767E+03	.252E+02	.100E+02	.9988	.5018	.7480E-03
.919E+03	.302E+02	.100E+02	.9990	.4274	.6107E-03
.107E+04	.352E+02	.100E+02	.9991	.3665	.5028E-03
.122E+04	.402E+02	.100E+02	.9992	.3171	.4179E-03
.138E+04	.452E+02	.100E+02	.9993	.2761	.3504E-03
.153E+04	.502E+02	.100E+02	.9994	.2419	.2962E-03
.168E+04	.552E+02	.100E+02	.9995	.2132	.2522E-03
.183E+04	.602E+02	.100E+02	.9995	.1889	.2161E-03
.199E+04	.652E+02	.100E+02	.9996	.1682	.1861E-03
.214E+04	.702E+02	.100E+02	.9996	.1503	.1611E-03
.229E+04	.752E+02	.100E+02	.9997	.1348	.1400E-03
.244E+04	.802E+02	.100E+02	.9997	.1210	.1221E-03
.260E+04	.852E+02	.100E+02	.9997	.1086	.1068E-03
.275E+04	.902E+02	.100E+02	.9998	.0970	.9369E-04
.290E+04	.952E+02	.100E+02	.9998	.0859	.8240E-04

----- Simulated Scenario ----- 6

Simulating information:

Depth to the top of screen (ft) = .2000E+02

Depth to the bottom of screen (ft) = .3000E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .1000E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .1300E+03

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .7500E-06

Peameability for Z direction (cm**2) = .7500E-06

Peameability Kc/Bc = .4500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.100E+02	.9971	1.1752	.5491E-02
.157E+03	.517E+01	.100E+02	.9974	1.0727	.1121E-02
.310E+03	.102E+02	.100E+02	.9977	.9344	.1393E-02
.462E+03	.152E+02	.100E+02	.9981	.7883	.1254E-02
.615E+03	.202E+02	.100E+02	.9984	.6695	.1039E-02
.767E+03	.252E+02	.100E+02	.9986	.5673	.8457E-03
.919E+03	.302E+02	.100E+02	.9988	.4832	.6904E-03
.107E+04	.352E+02	.100E+02	.9990	.4143	.5685E-03
.122E+04	.402E+02	.100E+02	.9991	.3584	.4725E-03
.138E+04	.452E+02	.100E+02	.9992	.3121	.3962E-03
.153E+04	.502E+02	.100E+02	.9993	.2735	.3349E-03
.168E+04	.552E+02	.100E+02	.9994	.2410	.2851E-03
.183E+04	.602E+02	.100E+02	.9995	.2135	.2443E-03
.199E+04	.652E+02	.100E+02	.9995	.1901	.2104E-03
.214E+04	.702E+02	.100E+02	.9996	.1700	.1821E-03
.229E+04	.752E+02	.100E+02	.9996	.1524	.1582E-03
.244E+04	.802E+02	.100E+02	.9997	.1368	.1380E-03
.260E+04	.852E+02	.100E+02	.9997	.1227	.1207E-03

.275E+04	.902E+02	.100E+02	.9997	.1097	.1059E-03
.290E+04	.952E+02	.100E+02	.9998	.0971	.9315E-04

----- Simulated Scenario ----- 7

Simulating information:

Depth to the top of screen (ft)	=	.2000E+02
Depth to the bottom of screen (ft)	=	.3000E+02
Depth to the groundwater table (ft)	=	.5300E+02
Depth to the simulated elevation(ft)	=	.2500E+02
Radius of the simulating well (in.)	=	.2000E+01
Temperature of the soil (C)	=	.2000E+02
Flow rate of pumping/injection well(cfm)	=	.2500E+02
Soil porosity(Dimensionless)	=	.2500E+00
Peameability for R direction (cm**2)	=	.7500E-06
Peameability for Z direction (cm**2)	=	.7500E-06
Peameability Kc/Bc	=	.4500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.250E+02	.9940	2.4257	.1673E+00
.157E+03	.517E+01	.250E+02	.9988	.5077	.3592E-02
.310E+03	.102E+02	.250E+02	.9993	.2819	.1155E-02
.462E+03	.152E+02	.250E+02	.9995	.1939	.5526E-03
.615E+03	.202E+02	.250E+02	.9996	.1447	.3249E-03
.767E+03	.252E+02	.250E+02	.9997	.1157	.2165E-03
.919E+03	.302E+02	.250E+02	.9998	.0957	.1567E-03
.107E+04	.352E+02	.250E+02	.9998	.0808	.1199E-03
.122E+04	.402E+02	.250E+02	.9998	.0693	.9542E-04
.138E+04	.452E+02	.250E+02	.9999	.0600	.7799E-04
.153E+04	.502E+02	.250E+02	.9999	.0525	.6497E-04
.168E+04	.552E+02	.250E+02	.9999	.0462	.5487E-04
.183E+04	.602E+02	.250E+02	.9999	.0409	.4682E-04
.199E+04	.652E+02	.250E+02	.9999	.0364	.4025E-04
.214E+04	.702E+02	.250E+02	.9999	.0326	.3482E-04
.229E+04	.752E+02	.250E+02	.9999	.0292	.3026E-04
.244E+04	.802E+02	.250E+02	.9999	.0263	.2640E-04
.260E+04	.852E+02	.250E+02	.9999	.0236	.2311E-04
.275E+04	.902E+02	.250E+02	.9999	.0211	.2029E-04
.290E+04	.952E+02	.250E+02	1.0000	.0187	.1786E-04

----- Simulated Scenario ----- 8

Simulating information:

Depth to the top of screen (ft) = .2000E+02

Depth to the bottom of screen (ft) = .3000E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .2500E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .6000E+02

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .7500E-06

Peameability for Z direction (cm**2) = .7500E-06

Peameability Kc/Bc = .4500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.250E+02	.9856	5.8463	.4051E+00
.157E+03	.517E+01	.250E+02	.9970	1.2196	.8635E-02
.310E+03	.102E+02	.250E+02	.9983	.6770	.2776E-02
.462E+03	.152E+02	.250E+02	.9989	.4655	.1327E-02

.615E+03	.202E+02	.250E+02	.9991	.3473	.7800E-03
.767E+03	.252E+02	.250E+02	.9993	.2779	.5198E-03
.919E+03	.302E+02	.250E+02	.9994	.2297	.3762E-03
.107E+04	.352E+02	.250E+02	.9995	.1940	.2879E-03
.122E+04	.402E+02	.250E+02	.9996	.1663	.2291E-03
.138E+04	.452E+02	.250E+02	.9996	.1441	.1872E-03
.153E+04	.502E+02	.250E+02	.9997	.1260	.1560E-03
.168E+04	.552E+02	.250E+02	.9997	.1109	.1317E-03
.183E+04	.602E+02	.250E+02	.9998	.0982	.1124E-03
.199E+04	.652E+02	.250E+02	.9998	.0875	.9662E-04
.214E+04	.702E+02	.250E+02	.9998	.0782	.8357E-04
.229E+04	.752E+02	.250E+02	.9998	.0702	.7263E-04
.244E+04	.802E+02	.250E+02	.9998	.0630	.6338E-04
.260E+04	.852E+02	.250E+02	.9999	.0566	.5548E-04
.275E+04	.902E+02	.250E+02	.9999	.0505	.4870E-04
.290E+04	.952E+02	.250E+02	.9999	.0448	.4286E-04

----- Simulated Scenario ----- 9

Simulating information:

Depth to the top of screen (ft) = .2000E+02

Depth to the bottom of screen (ft) = .3000E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .2500E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .7500E+02

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .7500E-06

Peameability for Z direction (cm**2) = .7500E-06

Peameability Kc/Bc = .4500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.250E+02	.9820	7.3212	.5082E+00
.157E+03	.517E+01	.250E+02	.9963	1.5251	.1080E-01
.310E+03	.102E+02	.250E+02	.9979	.8464	.3471E-02
.462E+03	.152E+02	.250E+02	.9986	.5820	.1659E-02
.615E+03	.202E+02	.250E+02	.9989	.4342	.9752E-03
.767E+03	.252E+02	.250E+02	.9991	.3474	.6499E-03
.919E+03	.302E+02	.250E+02	.9993	.2871	.4703E-03
.107E+04	.352E+02	.250E+02	.9994	.2425	.3600E-03
.122E+04	.402E+02	.250E+02	.9995	.2079	.2864E-03
.138E+04	.452E+02	.250E+02	.9996	.1801	.2340E-03
.153E+04	.502E+02	.250E+02	.9996	.1575	.1950E-03
.168E+04	.552E+02	.250E+02	.9997	.1387	.1647E-03
.183E+04	.602E+02	.250E+02	.9997	.1228	.1405E-03
.199E+04	.652E+02	.250E+02	.9997	.1094	.1208E-03
.214E+04	.702E+02	.250E+02	.9998	.0978	.1045E-03
.229E+04	.752E+02	.250E+02	.9998	.0877	.9080E-04
.244E+04	.802E+02	.250E+02	.9998	.0788	.7922E-04
.260E+04	.852E+02	.250E+02	.9998	.0707	.6935E-04
.275E+04	.902E+02	.250E+02	.9998	.0632	.6088E-04
.290E+04	.952E+02	.250E+02	.9999	.0560	.5358E-04

----- Simulated Scenario ----- 10

Simulating information:

Depth to the top of screen (ft)	=	.2000E+02
Depth to the bottom of screen (ft)	=	.3000E+02
Depth to the groundwater table (ft)	=	.5300E+02
Depth to the simulated elevation(ft)	=	.2500E+02
Radius of the simulating well (in.)	=	.2000E+01
Temperature of the soil (C)	=	.2000E+02
Flow rate of pumping/injection well(cfm)	=	.9500E+02
Soil porosity(Dimensionless)	=	.2500E+00
Peameability for R direction (cm**2)	=	.7500E-06
Peameability for Z direction (cm**2)	=	.7500E-06
Peameability Kc/Bc	=	.4500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.250E+02	.9772	9.2963	.6469E+00
.157E+03	.517E+01	.250E+02	.9953	1.9328	.1370E-01
.310E+03	.102E+02	.250E+02	.9974	1.0724	.4399E-02
.462E+03	.152E+02	.250E+02	.9982	.7374	.2103E-02
.615E+03	.202E+02	.250E+02	.9986	.5500	.1236E-02
.767E+03	.252E+02	.250E+02	.9989	.4400	.8234E-03
.919E+03	.302E+02	.250E+02	.9991	.3637	.5958E-03
.107E+04	.352E+02	.250E+02	.9992	.3071	.4560E-03
.122E+04	.402E+02	.250E+02	.9994	.2633	.3628E-03
.138E+04	.452E+02	.250E+02	.9994	.2282	.2965E-03
.153E+04	.502E+02	.250E+02	.9995	.1995	.2470E-03
.168E+04	.552E+02	.250E+02	.9996	.1756	.2086E-03
.183E+04	.602E+02	.250E+02	.9996	.1556	.1780E-03
.199E+04	.652E+02	.250E+02	.9997	.1385	.1530E-03
.214E+04	.702E+02	.250E+02	.9997	.1239	.1323E-03
.229E+04	.752E+02	.250E+02	.9997	.1111	.1150E-03
.244E+04	.802E+02	.250E+02	.9998	.0998	.1004E-03
.260E+04	.852E+02	.250E+02	.9998	.0896	.8785E-04
.275E+04	.902E+02	.250E+02	.9998	.0800	.7712E-04
.290E+04	.952E+02	.250E+02	.9998	.0709	.6786E-04

----- Simulated Scenario ----- 11

Simulating information:

Depth to the top of screen (ft) = .2000E+02

Depth to the bottom of screen (ft) = .3000E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .2500E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .1150E+03

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .7500E-06

Peameability for Z direction (cm**2) = .7500E-06

Peameability Kc/Bc = .4500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.250E+02	.9723	11.2813	.7870E+00
.157E+03	.517E+01	.250E+02	.9942	2.3408	.1660E-01
.310E+03	.102E+02	.250E+02	.9968	1.2985	.5328E-02
.462E+03	.152E+02	.250E+02	.9978	.8928	.2546E-02
.615E+03	.202E+02	.250E+02	.9984	.6659	.1496E-02
.767E+03	.252E+02	.250E+02	.9987	.5327	.9969E-03
.919E+03	.302E+02	.250E+02	.9989	.4404	.7214E-03

.107E+04	.352E+02	.250E+02	.9991	.3718	.5521E-03
.122E+04	.402E+02	.250E+02	.9992	.3187	.4392E-03
.138E+04	.452E+02	.250E+02	.9993	.2762	.3590E-03
.153E+04	.502E+02	.250E+02	.9994	.2415	.2990E-03
.168E+04	.552E+02	.250E+02	.9995	.2126	.2525E-03
.183E+04	.602E+02	.250E+02	.9995	.1883	.2154E-03
.199E+04	.652E+02	.250E+02	.9996	.1677	.1852E-03
.214E+04	.702E+02	.250E+02	.9996	.1500	.1602E-03
.229E+04	.752E+02	.250E+02	.9997	.1345	.1392E-03
.244E+04	.802E+02	.250E+02	.9997	.1208	.1215E-03
.260E+04	.852E+02	.250E+02	.9997	.1084	.1064E-03
.275E+04	.902E+02	.250E+02	.9998	.0969	.9336E-04
.290E+04	.952E+02	.250E+02	.9998	.0858	.8216E-04

----- Simulated Scenario ----- 12

Simulating information:

Depth to the top of screen (ft) = .2000E+02

Depth to the bottom of screen (ft) = .3000E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .2500E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .1300E+03

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .7500E-06

Peameability for Z direction (cm**2) = .7500E-06

Peameability Kc/Bc = .4500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.250E+02	.9686	12.7765	.8931E+00
.157E+03	.517E+01	.250E+02	.9935	2.6471	.1878E-01
.310E+03	.102E+02	.250E+02	.9964	1.4682	.6025E-02
.462E+03	.152E+02	.250E+02	.9975	1.0094	.2879E-02
.615E+03	.202E+02	.250E+02	.9982	.7529	.1692E-02
.767E+03	.252E+02	.250E+02	.9985	.6023	.1127E-02
.919E+03	.302E+02	.250E+02	.9988	.4978	.8156E-03
.107E+04	.352E+02	.250E+02	.9990	.4204	.6242E-03
.122E+04	.402E+02	.250E+02	.9991	.3603	.4966E-03
.138E+04	.452E+02	.250E+02	.9992	.3123	.4058E-03
.153E+04	.502E+02	.250E+02	.9993	.2730	.3380E-03
.168E+04	.552E+02	.250E+02	.9994	.2403	.2855E-03
.183E+04	.602E+02	.250E+02	.9995	.2129	.2436E-03
.199E+04	.652E+02	.250E+02	.9995	.1896	.2094E-03
.214E+04	.702E+02	.250E+02	.9996	.1695	.1811E-03
.229E+04	.752E+02	.250E+02	.9996	.1521	.1574E-03
.244E+04	.802E+02	.250E+02	.9997	.1366	.1373E-03
.260E+04	.852E+02	.250E+02	.9997	.1226	.1202E-03
.275E+04	.902E+02	.250E+02	.9997	.1095	.1055E-03
.290E+04	.952E+02	.250E+02	.9998	.0970	.9287E-04

---------- Simulation finished ----------

----- Simulated Scenario ----- 1

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.000000E+00	.00
.157E+03	.517E+01	.912455E-01	3871.16
.310E+03	.102E+02	.331199E+00	748.10
.462E+03	.152E+02	.558963E+00	528.31
.615E+03	.202E+02	.821780E+00	344.33
.767E+03	.252E+02	.114153E+01	226.79
.919E+03	.302E+02	.153373E+01	154.25
.107E+04	.352E+02	.201223E+01	108.46
.122E+04	.402E+02	.259086E+01	78.52
.138E+04	.452E+02	.328417E+01	58.28
.153E+04	.502E+02	.410785E+01	44.17
.168E+04	.552E+02	.507900E+01	34.06
.183E+04	.602E+02	.621638E+01	26.67
.199E+04	.652E+02	.754067E+01	21.15
.214E+04	.702E+02	.907473E+01	16.95
.229E+04	.752E+02	.108439E+02	13.72
.244E+04	.802E+02	.128763E+02	11.20
.260E+04	.852E+02	.152032E+02	9.21
.275E+04	.902E+02	.178593E+02	7.62
.290E+04	.952E+02	.208832E+02	6.34

----- Simulated Scenario ----- 2

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.208832E+02	6.34
.157E+03	.517E+01	.379898E-01	9297.91
.310E+03	.102E+02	.137905E+00	1796.61
.462E+03	.152E+02	.232752E+00	1268.66
.615E+03	.202E+02	.342206E+00	826.80
.767E+03	.252E+02	.475380E+00	544.53
.919E+03	.302E+02	.638740E+00	370.33
.107E+04	.352E+02	.838055E+00	260.37
.122E+04	.402E+02	.107909E+01	188.51
.138E+04	.452E+02	.136790E+01	139.90
.153E+04	.502E+02	.171104E+01	106.02
.168E+04	.552E+02	.211561E+01	81.77
.183E+04	.602E+02	.258945E+01	64.01
.199E+04	.652E+02	.314116E+01	50.76
.214E+04	.702E+02	.378028E+01	40.70
.229E+04	.752E+02	.451736E+01	32.94
.244E+04	.802E+02	.536411E+01	26.89
.260E+04	.852E+02	.633356E+01	22.10
.275E+04	.902E+02	.744019E+01	18.29
.290E+04	.952E+02	.870007E+01	15.22

----- Simulated Scenario ----- 3

********** OUTPUT **********

RADIUS	RADIUS	TIME	PORE VOL/ YEAR

CALD.PVL

CM	FT	DAYS	
.508E+01	.167E+00	.870007E+01	15.22
.157E+03	.517E+01	.303819E-01	11626.20
.310E+03	.102E+02	.110291E+00	2246.40
.462E+03	.152E+02	.186151E+00	1586.22
.615E+03	.202E+02	.273695E+00	1033.71
.767E+03	.252E+02	.380215E+00	680.78
.919E+03	.302E+02	.510884E+00	462.98
.107E+04	.352E+02	.670316E+00	325.51
.122E+04	.402E+02	.863120E+00	235.66
.138E+04	.452E+02	.109415E+01	174.89
.153E+04	.502E+02	.136863E+01	132.53
.168E+04	.552E+02	.169227E+01	102.22
.183E+04	.602E+02	.207132E+01	80.02
.199E+04	.652E+02	.251266E+01	63.45
.214E+04	.702E+02	.302393E+01	50.87
.229E+04	.752E+02	.361356E+01	41.18
.244E+04	.802E+02	.429094E+01	33.61
.260E+04	.852E+02	.506647E+01	27.63
.275E+04	.902E+02	.595174E+01	22.86
.290E+04	.952E+02	.695962E+01	19.03

----- Simulated Scenario ----- 4

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.695962E+01	19.03
.157E+03	.517E+01	.239752E-01	14732.98
.310E+03	.102E+02	.870376E-01	2846.52
.462E+03	.152E+02	.146907E+00	2009.87

.615E+03	.202E+02	.216002E+00	1309.73
.767E+03	.252E+02	.300077E+00	862.52
.919E+03	.302E+02	.403216E+00	586.56
.107E+04	.352E+02	.529061E+00	412.38
.122E+04	.402E+02	.681253E+00	298.54
.138E+04	.452E+02	.863621E+00	221.56
.153E+04	.502E+02	.108030E+01	167.90
.168E+04	.552E+02	.133577E+01	129.49
.183E+04	.602E+02	.163499E+01	101.37
.199E+04	.652E+02	.198340E+01	80.38
.214E+04	.702E+02	.238700E+01	64.44
.229E+04	.752E+02	.285247E+01	52.16
.244E+04	.802E+02	.338721E+01	42.57
.260E+04	.852E+02	.399945E+01	35.00
.275E+04	.902E+02	.469831E+01	28.96
.290E+04	.952E+02	.549398E+01	24.10

----- Simulated Scenario ----- 5

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.549398E+01	24.10
.157E+03	.517E+01	.197969E-01	17842.49
.310E+03	.102E+02	.718723E-01	3447.08
.462E+03	.152E+02	.121313E+00	2433.80
.615E+03	.202E+02	.178376E+00	1585.90
.767E+03	.252E+02	.247813E+00	1044.35
.919E+03	.302E+02	.332998E+00	710.19
.107E+04	.352E+02	.436939E+00	499.28
.122E+04	.402E+02	.562644E+00	361.45
.138E+04	.452E+02	.713277E+00	268.24
.153E+04	.502E+02	.892249E+00	203.27
.168E+04	.552E+02	.110328E+01	156.76

.183E+04	.602E+02	.135044E+01	122.72
.199E+04	.652E+02	.163823E+01	97.31
.214E+04	.702E+02	.197162E+01	78.02
.229E+04	.752E+02	.235611E+01	63.15
.244E+04	.802E+02	.279783E+01	51.54
.260E+04	.852E+02	.330356E+01	42.37
.275E+04	.902E+02	.388086E+01	35.06
.290E+04	.952E+02	.453812E+01	29.18

----- Simulated Scenario ----- 6

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.453812E+01	29.18
.157E+03	.517E+01	.175069E-01	20176.42
.310E+03	.102E+02	.635605E-01	3897.81
.462E+03	.152E+02	.107286E+00	2751.93
.615E+03	.202E+02	.157754E+00	1793.13
.767E+03	.252E+02	.219168E+00	1180.78
.919E+03	.302E+02	.294513E+00	802.94
.107E+04	.352E+02	.386449E+00	564.47
.122E+04	.402E+02	.497637E+00	408.64
.138E+04	.452E+02	.630877E+00	303.26
.153E+04	.502E+02	.789184E+00	229.80
.168E+04	.552E+02	.975849E+00	177.23
.183E+04	.602E+02	.119448E+01	138.74
.199E+04	.652E+02	.144905E+01	110.01
.214E+04	.702E+02	.174395E+01	88.20
.229E+04	.752E+02	.208407E+01	71.39
.244E+04	.802E+02	.247480E+01	58.26
.260E+04	.852E+02	.292216E+01	47.90
.275E+04	.902E+02	.343283E+01	39.63
.290E+04	.952E+02	.401424E+01	32.98

----- Simulated Scenario ----- 7

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.401424E+01	32.98
.157E+03	.517E+01	.677078E-03	521691.50
.310E+03	.102E+02	.250587E-01	7362.43
.462E+03	.152E+02	.928240E-01	1775.68
.615E+03	.202E+02	.224725E+00	686.09
.767E+03	.252E+02	.438524E+00	339.18
.919E+03	.302E+02	.748660E+00	195.07
.107E+04	.352E+02	.116705E+01	124.04
.122E+04	.402E+02	.170446E+01	84.54
.138E+04	.452E+02	.237188E+01	60.54
.153E+04	.502E+02	.318148E+01	44.93
.168E+04	.552E+02	.414725E+01	34.25
.183E+04	.602E+02	.528544E+01	26.65
.199E+04	.652E+02	.661472E+01	21.07
.214E+04	.702E+02	.815648E+01	16.87
.229E+04	.752E+02	.993495E+01	13.65
.244E+04	.802E+02	.119775E+02	11.15
.260E+04	.852E+02	.143148E+02	9.17
.275E+04	.902E+02	.169812E+02	7.59
.290E+04	.952E+02	.200151E+02	6.32

----- Simulated Scenario ----- 8

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.200151E+02	6.32
.157E+03	.517E+01	.279771E-03	1262555.00
.310E+03	.102E+02	.104229E-01	17697.45
.462E+03	.152E+02	.386338E-01	4265.37
.615E+03	.202E+02	.935594E-01	1647.61
.767E+03	.252E+02	.182602E+00	814.41
.919E+03	.302E+02	.311777E+00	468.33
.107E+04	.352E+02	.486052E+00	297.78
.122E+04	.402E+02	.709917E+00	202.96
.138E+04	.452E+02	.987946E+00	145.33
.153E+04	.502E+02	.132521E+01	107.86
.168E+04	.552E+02	.172755E+01	82.22
.183E+04	.602E+02	.220172E+01	63.97
.199E+04	.652E+02	.275551E+01	50.57
.214E+04	.702E+02	.339784E+01	40.49
.229E+04	.752E+02	.413879E+01	32.77
.244E+04	.802E+02	.498976E+01	26.75
.260E+04	.852E+02	.596355E+01	22.01
.275E+04	.902E+02	.707447E+01	18.22
.290E+04	.952E+02	.833852E+01	15.17

----- Simulated Scenario ----- 9

********** OUTPUT **********

RADIUS	RADIUS	TIME	PORE VOL/ YEAR

CALD.PVL

CM	FT	DAYS	
.508E+01	.167E+00	.833852E+01	15.17
.157E+03	.517E+01	.223007E-03	1583920.00
.310E+03	.102E+02	.833210E-02	22136.67
.462E+03	.152E+02	.308923E-01	5333.71
.615E+03	.202E+02	.748214E-01	2060.05
.767E+03	.252E+02	.146041E+00	1018.21
.919E+03	.302E+02	.249365E+00	585.51
.107E+04	.352E+02	.388767E+00	372.28
.122E+04	.402E+02	.567839E+00	253.73
.138E+04	.452E+02	.790241E+00	181.68
.153E+04	.502E+02	.106003E+01	134.84
.168E+04	.552E+02	.138188E+01	102.79
.183E+04	.602E+02	.176119E+01	79.97
.199E+04	.652E+02	.220420E+01	63.22
.214E+04	.702E+02	.271803E+01	50.62
.229E+04	.752E+02	.331076E+01	40.96
.244E+04	.802E+02	.399152E+01	33.44
.260E+04	.852E+02	.477052E+01	27.51
.275E+04	.902E+02	.565923E+01	22.77
.290E+04	.952E+02	.667044E+01	18.96

----- Simulated Scenario ----- 10

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.667044E+01	18.96
.157E+03	.517E+01	.175203E-03	2016094.00
.310E+03	.102E+02	.657138E-02	28064.93
.462E+03	.152E+02	.243732E-01	6759.41

.615E+03	.202E+02	.590420E-01	2610.29
.767E+03	.252E+02	.115253E+00	1290.07
.919E+03	.302E+02	.196808E+00	741.80
.107E+04	.352E+02	.306842E+00	471.63
.122E+04	.402E+02	.448194E+00	321.44
.138E+04	.452E+02	.623752E+00	230.16
.153E+04	.502E+02	.836720E+00	170.82
.168E+04	.552E+02	.109078E+01	130.21
.183E+04	.602E+02	.139022E+01	101.30
.199E+04	.652E+02	.173993E+01	80.08
.214E+04	.702E+02	.214556E+01	64.12
.229E+04	.752E+02	.261348E+01	51.89
.244E+04	.802E+02	.315089E+01	42.36
.260E+04	.852E+02	.376586E+01	34.84
.275E+04	.902E+02	.446744E+01	28.85
.290E+04	.952E+02	.526573E+01	24.02

----- Simulated Scenario ----- 11

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.526573E+01	24.02
.157E+03	.517E+01	.144023E-03	2452571.00
.310E+03	.102E+02	.542308E-02	34003.86
.462E+03	.152E+02	.201216E-01	8186.54
.615E+03	.202E+02	.487511E-01	3160.93
.767E+03	.252E+02	.951744E-01	1562.07
.919E+03	.302E+02	.162531E+00	898.16
.107E+04	.352E+02	.253413E+00	571.02
.122E+04	.402E+02	.370165E+00	389.17
.138E+04	.452E+02	.515172E+00	278.65
.153E+04	.502E+02	.691083E+00	206.80
.168E+04	.552E+02	.900942E+00	157.64

.183E+04	.602E+02	.114828E+01	122.64
.199E+04	.652E+02	.143715E+01	96.95
.214E+04	.702E+02	.177221E+01	77.63
.229E+04	.752E+02	.215873E+01	62.82
.244E+04	.802E+02	.260265E+01	51.28
.260E+04	.852E+02	.311065E+01	42.18
.275E+04	.902E+02	.369019E+01	34.92
.290E+04	.952E+02	.434962E+01	29.08

----- Simulated Scenario ----- 12

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.434962E+01	29.08
.157E+03	.517E+01	.126931E-03	2782811.00
.310E+03	.102E+02	.479371E-02	38465.09
.462E+03	.152E+02	.177913E-01	9257.83
.615E+03	.202E+02	.431109E-01	3574.15
.767E+03	.252E+02	.841696E-01	1766.17
.919E+03	.302E+02	.143745E+00	1015.47
.107E+04	.352E+02	.224130E+00	645.59
.122E+04	.402E+02	.327399E+00	439.98
.138E+04	.452E+02	.455662E+00	315.02
.153E+04	.502E+02	.611262E+00	233.80
.168E+04	.552E+02	.796893E+00	178.21
.183E+04	.602E+02	.101568E+01	138.64
.199E+04	.652E+02	.127120E+01	109.60
.214E+04	.702E+02	.156759E+01	87.76
.229E+04	.752E+02	.190949E+01	71.01
.244E+04	.802E+02	.230218E+01	57.97
.260E+04	.852E+02	.275154E+01	47.69
.275E+04	.902E+02	.326419E+01	39.48
.290E+04	.952E+02	.384752E+01	32.87

MDFIT Modeling Simulation Results

Step 3: Design Subsurface Pore Volume Exchanges and Vacuum Propagation Model Runs

(Select model simulation results are provided herein. A complete set of model runs can be provided upon request)

August 2019

LANGAN

MDFIT Modeling Results
Step 3: Design Subsurface PVEs and Vacuum Propagation
Former Acme Steel/Brass Foundry
NYSDEC Site No. 224132
Anthony St. / 498 Porter Ave.
Brooklyn, New York
Langan Project No.: 170157201

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESSURE (atm)	PRESSURE (inH2O)	VELOCITY (ft/s)	PORE VOLUME EXCHANGE (per year)
25 SCFM						
5.08E+00	1.67E-01	1.75E+01	0.9952	1.9631	1.10E-01	0
1.57E+02	5.17E+00	1.75E+01	0.9988	0.5058	2.84E-03	345642
3.10E+02	1.02E+01	1.75E+01	0.9993	0.2963	1.04E-03	6014.55
4.62E+02	1.52E+01	1.75E+01	0.9995	0.2034	5.32E-04	1637.78
6.15E+02	2.02E+01	1.75E+01	0.9996	0.1528	3.24E-04	669.25
7.67E+02	2.52E+01	1.75E+01	0.9997	0.1207	2.20E-04	340.75
9.19E+02	3.02E+01	1.75E+01	0.9998	0.0974	1.60E-04	198.52
1.07E+03	3.52E+01	1.75E+01	0.9998	0.0801	1.22E-04	126.25
1.22E+03	4.02E+01	1.75E+01	0.9998	0.0672	9.55E-05	85.25
1.38E+03	4.52E+01	1.75E+01	0.9999	0.0571	7.66E-05	60.08
1.53E+03	5.02E+01	1.75E+01	0.9999	0.0491	6.25E-05	43.72
1.68E+03	5.52E+01	1.75E+01	0.9999	0.0425	5.16E-05	32.61
1.83E+03	6.02E+01	1.75E+01	0.9999	0.0371	4.31E-05	24.81
1.99E+03	6.52E+01	1.75E+01	0.9999	0.0325	3.62E-05	19.18
2.14E+03	7.02E+01	1.75E+01	0.9999	0.0286	3.07E-05	15.03
2.29E+03	7.52E+01	1.75E+01	0.9999	0.0251	2.61E-05	11.91
2.44E+03	8.02E+01	1.75E+01	0.9999	0.0219	2.24E-05	9.53
2.60E+03	8.52E+01	1.75E+01	1	0.0187	1.92E-05	7.69
2.75E+03	9.02E+01	1.75E+01	1	0.0155	1.66E-05	6.25
2.90E+03	9.52E+01	1.75E+01	1	0.0131	1.43E-05	5.11
50 SCFM						
5.08E+00	1.67E-01	1.75E+01	0.9903	3.9358	2.22E-01	5.11
1.57E+02	5.17E+00	1.75E+01	0.9975	1.0122	5.68E-03	694603.4
3.10E+02	1.02E+01	1.75E+01	0.9985	0.5929	2.09E-03	12042.42
4.62E+02	1.52E+01	1.75E+01	0.999	0.407	1.06E-03	3277.69
6.15E+02	2.02E+01	1.75E+01	0.9992	0.3058	6.48E-04	1339.1
7.67E+02	2.52E+01	1.75E+01	0.9994	0.2415	4.40E-04	681.73
9.19E+02	3.02E+01	1.75E+01	0.9995	0.1948	3.20E-04	397.15
1.07E+03	3.52E+01	1.75E+01	0.9996	0.1601	2.43E-04	252.56
1.22E+03	4.02E+01	1.75E+01	0.9997	0.1345	1.91E-04	170.52
1.38E+03	4.52E+01	1.75E+01	0.9997	0.1143	1.53E-04	120.17
1.53E+03	5.02E+01	1.75E+01	0.9998	0.0982	1.25E-04	87.45
1.68E+03	5.52E+01	1.75E+01	0.9998	0.085	1.03E-04	65.23
1.83E+03	6.02E+01	1.75E+01	0.9998	0.0742	8.61E-05	49.63
1.99E+03	6.52E+01	1.75E+01	0.9998	0.0651	7.25E-05	38.37
2.14E+03	7.02E+01	1.75E+01	0.9999	0.0572	6.14E-05	30.07
2.29E+03	7.52E+01	1.75E+01	0.9999	0.0502	5.22E-05	23.83
2.44E+03	8.02E+01	1.75E+01	0.9999	0.0437	4.47E-05	19.07
2.60E+03	8.52E+01	1.75E+01	0.9999	0.0374	3.84E-05	15.38
2.75E+03	9.02E+01	1.75E+01	0.9999	0.031	3.31E-05	12.5
2.90E+03	9.52E+01	1.75E+01	0.9999	0.0261	2.86E-05	10.22
75 SCFM						
5.08E+00	1.67E-01	1.75E+01	0.9855	5.9182	3.35E-01	10.22
1.57E+02	5.17E+00	1.75E+01	0.9963	1.5193	8.53E-03	1046958
3.10E+02	1.02E+01	1.75E+01	0.9978	0.8898	3.14E-03	18083.7
4.62E+02	1.52E+01	1.75E+01	0.9985	0.6106	1.60E-03	4919.74
6.15E+02	2.02E+01	1.75E+01	0.9989	0.4587	9.73E-04	2009.57
7.67E+02	2.52E+01	1.75E+01	0.9991	0.3624	6.60E-04	1022.95
9.19E+02	3.02E+01	1.75E+01	0.9993	0.2922	4.80E-04	595.89
1.07E+03	3.52E+01	1.75E+01	0.9994	0.2402	3.65E-04	378.92
1.22E+03	4.02E+01	1.75E+01	0.9995	0.2017	2.87E-04	255.83
1.38E+03	4.52E+01	1.75E+01	0.9996	0.1715	2.30E-04	180.29
1.53E+03	5.02E+01	1.75E+01	0.9996	0.1472	1.88E-04	131.19
1.68E+03	5.52E+01	1.75E+01	0.9997	0.1276	1.55E-04	97.86
1.83E+03	6.02E+01	1.75E+01	0.9997	0.1113	1.29E-04	74.45
1.99E+03	6.52E+01	1.75E+01	0.9998	0.0976	1.09E-04	57.56
2.14E+03	7.02E+01	1.75E+01	0.9998	0.0858	9.20E-05	45.11
2.29E+03	7.52E+01	1.75E+01	0.9998	0.0753	7.84E-05	35.75
2.44E+03	8.02E+01	1.75E+01	0.9998	0.0656	6.71E-05	28.6
2.60E+03	8.52E+01	1.75E+01	0.9999	0.0561	5.76E-05	23.08
2.75E+03	9.02E+01	1.75E+01	0.9999	0.0466	4.96E-05	18.75
2.90E+03	9.52E+01	1.75E+01	0.9999	0.0391	4.29E-05	15.34

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESSURE (atm)	PRESSURE (inH2O)	VELOCITY (ft/s)	PORE VOLUME EXCHANGE (per year)
100 SCFM						
5.08E+00	1.67E-01	1.75E+01	0.9806	7.9104	4.48E-01	15.34
1.57E+02	5.17E+00	1.75E+01	0.995	2.027	1.14E-02	1402781
3.10E+02	1.02E+01	1.75E+01	0.9971	1.1868	4.18E-03	24138.43
4.62E+02	1.52E+01	1.75E+01	0.998	0.8144	2.13E-03	6563.95
6.15E+02	2.02E+01	1.75E+01	0.9985	0.6117	1.30E-03	2680.64
7.67E+02	2.52E+01	1.75E+01	0.9988	0.4832	8.80E-04	1364.41
9.19E+02	3.02E+01	1.75E+01	0.999	0.3896	6.40E-04	794.73
1.07E+03	3.52E+01	1.75E+01	0.9992	0.3203	4.87E-04	505.34
1.22E+03	4.02E+01	1.75E+01	0.9993	0.269	3.82E-04	341.17
1.38E+03	4.52E+01	1.75E+01	0.9994	0.2286	3.07E-04	240.42
1.53E+03	5.02E+01	1.75E+01	0.9995	0.1963	2.50E-04	174.94
1.68E+03	5.52E+01	1.75E+01	0.9996	0.1701	2.07E-04	130.49
1.83E+03	6.02E+01	1.75E+01	0.9996	0.1484	1.72E-04	99.28
1.99E+03	6.52E+01	1.75E+01	0.9997	0.1302	1.45E-04	76.76
2.14E+03	7.02E+01	1.75E+01	0.9997	0.1145	1.23E-04	60.15
2.29E+03	7.52E+01	1.75E+01	0.9998	0.1005	1.05E-04	47.66
2.44E+03	8.02E+01	1.75E+01	0.9998	0.0875	8.94E-05	38.14
2.60E+03	8.52E+01	1.75E+01	0.9998	0.0749	7.68E-05	30.77
2.75E+03	9.02E+01	1.75E+01	0.9998	0.0621	6.62E-05	25.01
2.90E+03	9.52E+01	1.75E+01	0.9999	0.0522	5.72E-05	20.45
125 SCFM						
5.08E+00	1.67E-01	1.75E+01	0.9757	9.9126	5.63E-01	20.45
1.57E+02	5.17E+00	1.75E+01	0.9938	2.5353	1.42E-02	1762151
3.10E+02	1.02E+01	1.75E+01	0.9964	1.484	5.23E-03	30206.71
4.62E+02	1.52E+01	1.75E+01	0.9975	1.0182	2.67E-03	8210.3
6.15E+02	2.02E+01	1.75E+01	0.9981	0.7648	1.62E-03	3352.32
7.67E+02	2.52E+01	1.75E+01	0.9985	0.6041	1.10E-03	1706.1
9.19E+02	3.02E+01	1.75E+01	0.9988	0.487	8.00E-04	993.69
1.07E+03	3.52E+01	1.75E+01	0.999	0.4005	6.09E-04	631.82
1.22E+03	4.02E+01	1.75E+01	0.9992	0.3362	4.78E-04	426.54
1.38E+03	4.52E+01	1.75E+01	0.9993	0.2858	3.83E-04	300.57
1.53E+03	5.02E+01	1.75E+01	0.9994	0.2454	3.13E-04	218.71
1.68E+03	5.52E+01	1.75E+01	0.9995	0.2126	2.58E-04	163.13
1.83E+03	6.02E+01	1.75E+01	0.9995	0.1856	2.15E-04	124.11
1.99E+03	6.52E+01	1.75E+01	0.9996	0.1627	1.81E-04	95.95
2.14E+03	7.02E+01	1.75E+01	0.9996	0.1431	1.53E-04	75.19
2.29E+03	7.52E+01	1.75E+01	0.9997	0.1255	1.31E-04	59.58
2.44E+03	8.02E+01	1.75E+01	0.9997	0.1093	1.12E-04	47.67
2.60E+03	8.52E+01	1.75E+01	0.9998	0.0936	9.60E-05	38.46
2.75E+03	9.02E+01	1.75E+01	0.9998	0.0776	8.28E-05	31.26
2.90E+03	9.52E+01	1.75E+01	0.9998	0.0652	7.15E-05	25.56
150 SCFM						
5.08E+00	1.67E-01	1.75E+01	0.9707	11.925	6.79E-01	25.56
1.57E+02	5.17E+00	1.75E+01	0.9925	3.0442	1.71E-02	2125149
3.10E+02	1.02E+01	1.75E+01	0.9956	1.7814	6.28E-03	36288.59
4.62E+02	1.52E+01	1.75E+01	0.997	1.2222	3.20E-03	9858.83
6.15E+02	2.02E+01	1.75E+01	0.9977	0.918	1.95E-03	4024.62
7.67E+02	2.52E+01	1.75E+01	0.9982	0.725	1.32E-03	2048.02
9.19E+02	3.02E+01	1.75E+01	0.9986	0.5845	9.61E-04	1192.75
1.07E+03	3.52E+01	1.75E+01	0.9988	0.4806	7.31E-04	758.35
1.22E+03	4.02E+01	1.75E+01	0.999	0.4035	5.73E-04	511.94
1.38E+03	4.52E+01	1.75E+01	0.9992	0.343	4.60E-04	360.75
1.53E+03	5.02E+01	1.75E+01	0.9993	0.2946	3.75E-04	262.48
1.68E+03	5.52E+01	1.75E+01	0.9994	0.2552	3.10E-04	195.78
1.83E+03	6.02E+01	1.75E+01	0.9995	0.2227	2.59E-04	148.94
1.99E+03	6.52E+01	1.75E+01	0.9995	0.1953	2.17E-04	115.15
2.14E+03	7.02E+01	1.75E+01	0.9996	0.1717	1.84E-04	90.23
2.29E+03	7.52E+01	1.75E+01	0.9996	0.1507	1.57E-04	71.5
2.44E+03	8.02E+01	1.75E+01	0.9997	0.1312	1.34E-04	57.21
2.60E+03	8.52E+01	1.75E+01	0.9997	0.1123	1.15E-04	46.16
2.75E+03	9.02E+01	1.75E+01	0.9998	0.0931	9.93E-05	37.51
2.90E+03	9.52E+01	1.75E+01	0.9998	0.0782	8.59E-05	30.68

INPUT PARAMETERS

Depth to the top of screen (ft) = .1000E+02

Depth to the bottom of screen (ft) = .2500E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation (ft) = .1750E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (°C) = .2000E+02

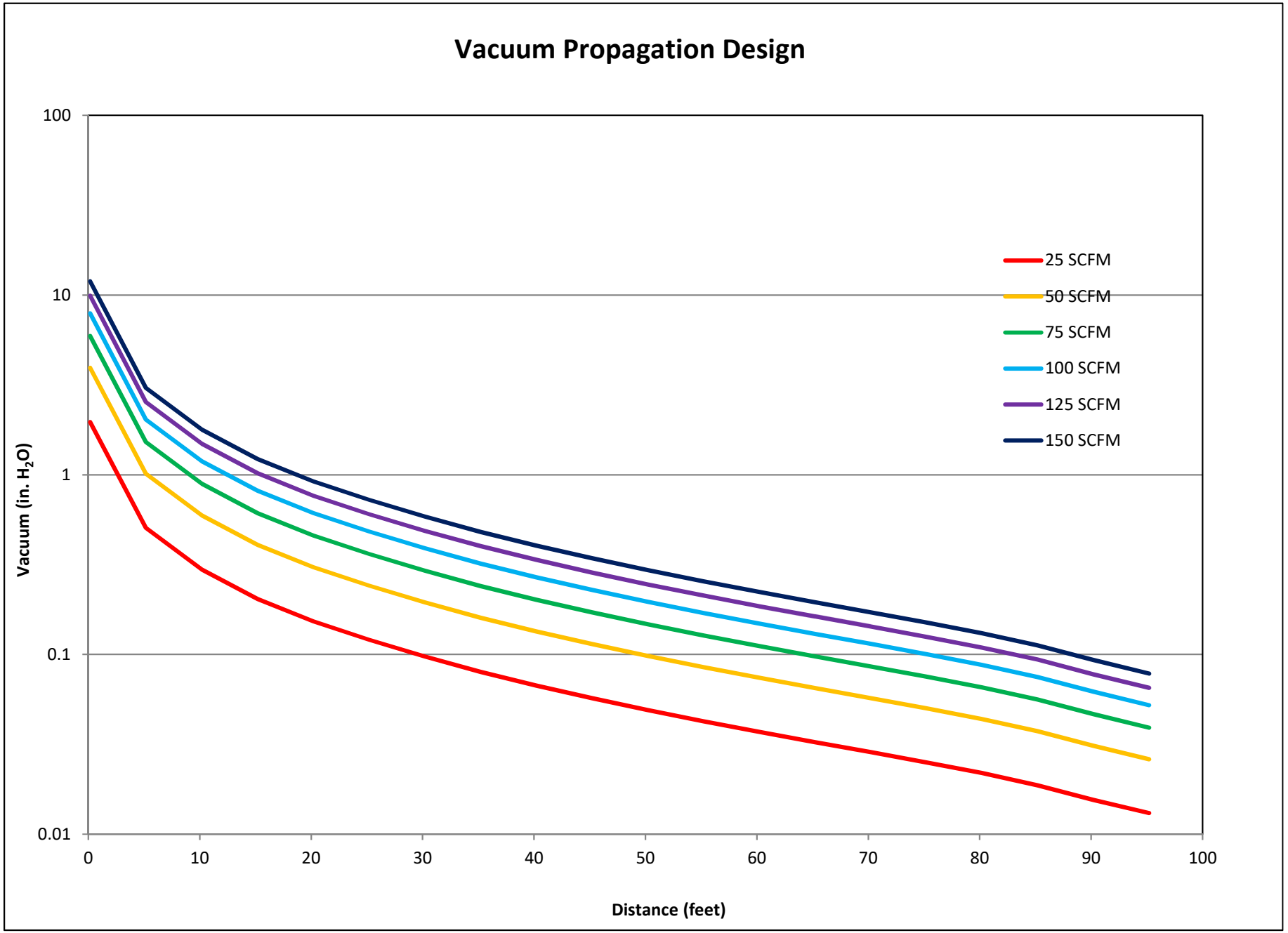
Flow rate of pumping/injection well (cfm) = **VARIABLE**

Soil porosity (Dimensionless) = .2500E+00

Permeability for R direction (cm^2) = .6750E-06

Permeability for Z direction (cm^2) = .6750E-06

Permeability Kc/Bc = .5500E-09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0.1
0.01
Vacuum (in. H2O)
0
10
20
30
40
50
60
70
80
90
100
Distance (feet)
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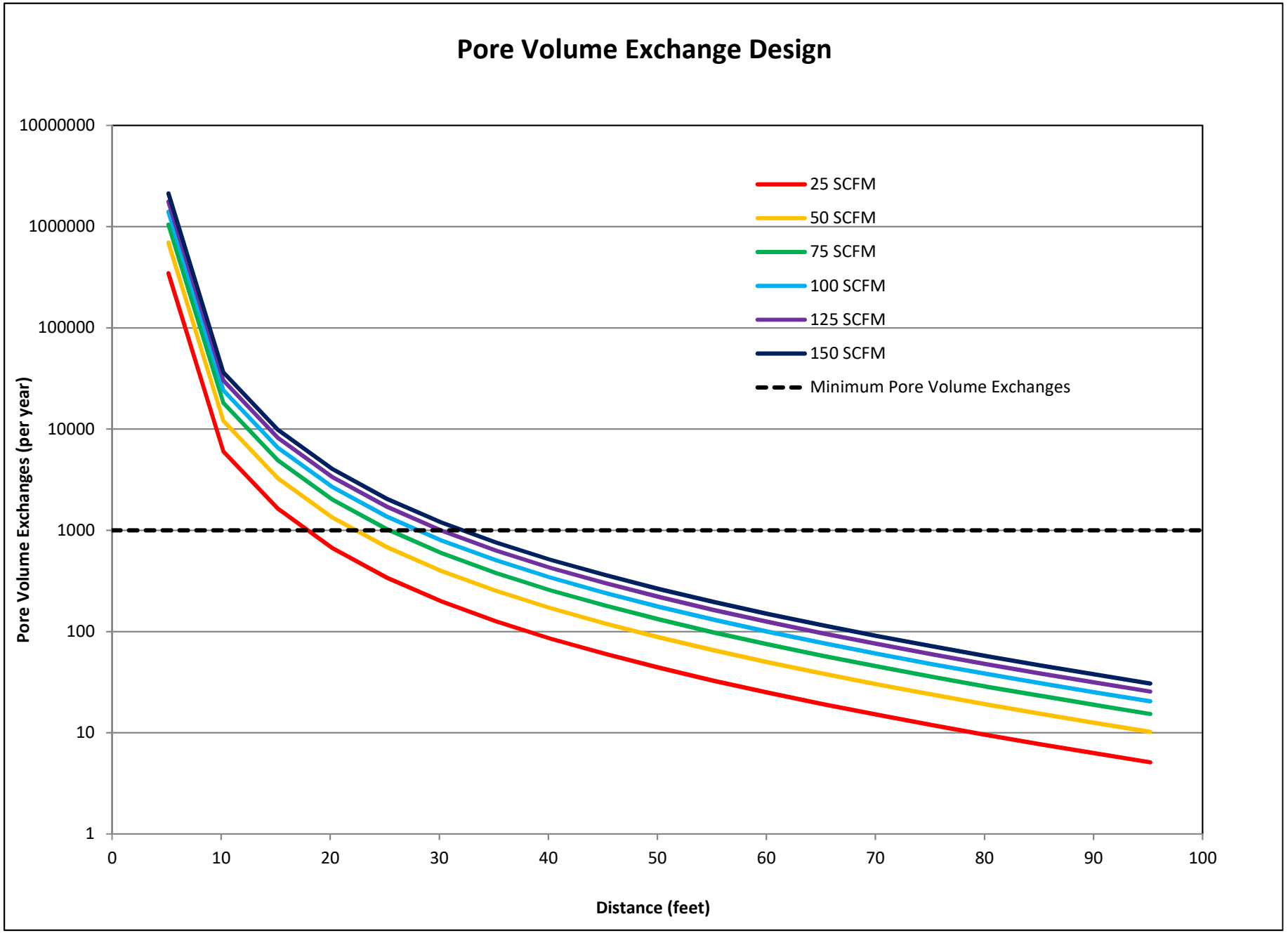
50 SCFM
75 SCFM
100 SCFM
125 SCFM
150 SCFM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1000000
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10000
1000
100
10
1
Pore Volume Exchanges (per year)
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10
20
30
40
50
60
70
80
90
100
Distance (feet)
25 SCFM
50 SCFM
75 SCFM
100 SCFM
125 SCFM
150 SCFM
Minimum Pore Volume Exchanges

Welcom to FSS program

VAPEX

----- Simulated Scenario ----- 1

Simulating information:

Depth to the top of screen (ft)	=	.1000E+02
Depth to the bottom of screen (ft)	=	.2500E+02
Depth to the groundwater table (ft)	=	.5300E+02
Depth to the simulated elevation(ft)	=	.1750E+02
Radius of the simulating well (in.)	=	.2000E+01
Temperature of the soil (C)	=	.2000E+02
Flow rate of pumping/injection well(cfm)	=	.2500E+02
Soil porosity(Dimensionless)	=	.2500E+00
Peameability for R direction (cm**2)	=	.6750E-06
Peameability for Z direction (cm**2)	=	.6750E-06
Peameability Kc/Bc	=	.5500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.175E+02	.9952	1.9631	.1104E+00
.157E+03	.517E+01	.175E+02	.9988	.5058	.2835E-02
.310E+03	.102E+02	.175E+02	.9993	.2963	.1043E-02
.462E+03	.152E+02	.175E+02	.9995	.2034	.5320E-03
.615E+03	.202E+02	.175E+02	.9996	.1528	.3240E-03
.767E+03	.252E+02	.175E+02	.9997	.1207	.2199E-03
.919E+03	.302E+02	.175E+02	.9998	.0974	.1599E-03
.107E+04	.352E+02	.175E+02	.9998	.0801	.1217E-03
.122E+04	.402E+02	.175E+02	.9998	.0672	.9548E-04
.138E+04	.452E+02	.175E+02	.9999	.0571	.7661E-04
.153E+04	.502E+02	.175E+02	.9999	.0491	.6248E-04
.168E+04	.552E+02	.175E+02	.9999	.0425	.5161E-04
.183E+04	.602E+02	.175E+02	.9999	.0371	.4306E-04
.199E+04	.652E+02	.175E+02	.9999	.0325	.3622E-04
.214E+04	.702E+02	.175E+02	.9999	.0286	.3067E-04
.229E+04	.752E+02	.175E+02	.9999	.0251	.2612E-04
.244E+04	.802E+02	.175E+02	.9999	.0219	.2235E-04
.260E+04	.852E+02	.175E+02	1.0000	.0187	.1920E-04
.275E+04	.902E+02	.175E+02	1.0000	.0155	.1655E-04
.290E+04	.952E+02	.175E+02	1.0000	.0131	.1431E-04

----- Simulated Scenario ----- 2

Simulating information:

Depth to the top of screen (ft)	=	.1000E+02
Depth to the bottom of screen (ft)	=	.2500E+02
Depth to the groundwater table (ft)	=	.5300E+02
Depth to the simulated elevation(ft)	=	.1750E+02
Radius of the simulating well (in.)	=	.2000E+01
Temperature of the soil (C)	=	.2000E+02
Flow rate of pumping/injection well(cfm)	=	.5000E+02
Soil porosity(Dimensionless)	=	.2500E+00
Peameability for R direction (cm**2)	=	.6750E-06
Peameability for Z direction (cm**2)	=	.6750E-06
Peameability Kc/Bc	=	.5500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)

.508E+01	.167E+00	.175E+02	.9903	3.9358	.2219E+00
.157E+03	.517E+01	.175E+02	.9975	1.0122	.5676E-02
.310E+03	.102E+02	.175E+02	.9985	.5929	.2088E-02
.462E+03	.152E+02	.175E+02	.9990	.4070	.1064E-02
.615E+03	.202E+02	.175E+02	.9992	.3058	.6482E-03
.767E+03	.252E+02	.175E+02	.9994	.2415	.4399E-03
.919E+03	.302E+02	.175E+02	.9995	.1948	.3199E-03
.107E+04	.352E+02	.175E+02	.9996	.1601	.2434E-03
.122E+04	.402E+02	.175E+02	.9997	.1345	.1910E-03
.138E+04	.452E+02	.175E+02	.9997	.1143	.1532E-03
.153E+04	.502E+02	.175E+02	.9998	.0982	.1250E-03
.168E+04	.552E+02	.175E+02	.9998	.0850	.1032E-03
.183E+04	.602E+02	.175E+02	.9998	.0742	.8613E-04
.199E+04	.652E+02	.175E+02	.9998	.0651	.7245E-04
.214E+04	.702E+02	.175E+02	.9999	.0572	.6135E-04
.229E+04	.752E+02	.175E+02	.9999	.0502	.5224E-04
.244E+04	.802E+02	.175E+02	.9999	.0437	.4470E-04
.260E+04	.852E+02	.175E+02	.9999	.0374	.3839E-04
.275E+04	.902E+02	.175E+02	.9999	.0310	.3309E-04
.290E+04	.952E+02	.175E+02	.9999	.0261	.2861E-04

----- Simulated Scenario ----- 3

Simulating information:

Depth to the top of screen (ft) = .1000E+02

Depth to the bottom of screen (ft) = .2500E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .1750E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .7500E+02

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .6750E-06

Peameability for Z direction (cm**2) = .6750E-06

Peameability Kc/Bc = .5500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.175E+02	.9855	5.9182	.3345E+00
.157E+03	.517E+01	.175E+02	.9963	1.5193	.8525E-02
.310E+03	.102E+02	.175E+02	.9978	.8898	.3135E-02
.462E+03	.152E+02	.175E+02	.9985	.6106	.1598E-02
.615E+03	.202E+02	.175E+02	.9989	.4587	.9726E-03
.767E+03	.252E+02	.175E+02	.9991	.3624	.6601E-03
.919E+03	.302E+02	.175E+02	.9993	.2922	.4800E-03
.107E+04	.352E+02	.175E+02	.9994	.2402	.3651E-03
.122E+04	.402E+02	.175E+02	.9995	.2017	.2865E-03
.138E+04	.452E+02	.175E+02	.9996	.1715	.2299E-03
.153E+04	.502E+02	.175E+02	.9996	.1472	.1875E-03
.168E+04	.552E+02	.175E+02	.9997	.1276	.1549E-03
.183E+04	.602E+02	.175E+02	.9997	.1113	.1292E-03
.199E+04	.652E+02	.175E+02	.9998	.0976	.1087E-03
.214E+04	.702E+02	.175E+02	.9998	.0858	.9203E-04

.229E+04	.752E+02	.175E+02	.9998	.0753	.7837E-04
.244E+04	.802E+02	.175E+02	.9998	.0656	.6705E-04
.260E+04	.852E+02	.175E+02	.9999	.0561	.5759E-04
.275E+04	.902E+02	.175E+02	.9999	.0466	.4964E-04
.290E+04	.952E+02	.175E+02	.9999	.0391	.4292E-04

----- Simulated Scenario ----- 4

Simulating information:

Depth to the top of screen (ft) = .1000E+02

Depth to the bottom of screen (ft) = .2500E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .1750E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .1000E+03

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .6750E-06

Peameability for Z direction (cm**2) = .6750E-06

Peameability Kc/Bc = .5500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.

2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.175E+02	.9806	7.9104	.4483E+00
.157E+03	.517E+01	.175E+02	.9950	2.0270	.1138E-01
.310E+03	.102E+02	.175E+02	.9971	1.1868	.4182E-02
.462E+03	.152E+02	.175E+02	.9980	.8144	.2131E-02
.615E+03	.202E+02	.175E+02	.9985	.6117	.1297E-02
.767E+03	.252E+02	.175E+02	.9988	.4832	.8804E-03
.919E+03	.302E+02	.175E+02	.9990	.3896	.6401E-03
.107E+04	.352E+02	.175E+02	.9992	.3203	.4870E-03
.122E+04	.402E+02	.175E+02	.9993	.2690	.3821E-03
.138E+04	.452E+02	.175E+02	.9994	.2286	.3066E-03
.153E+04	.502E+02	.175E+02	.9995	.1963	.2500E-03
.168E+04	.552E+02	.175E+02	.9996	.1701	.2065E-03
.183E+04	.602E+02	.175E+02	.9996	.1484	.1723E-03
.199E+04	.652E+02	.175E+02	.9997	.1302	.1449E-03
.214E+04	.702E+02	.175E+02	.9997	.1145	.1227E-03
.229E+04	.752E+02	.175E+02	.9998	.1005	.1045E-03
.244E+04	.802E+02	.175E+02	.9998	.0875	.8940E-04
.260E+04	.852E+02	.175E+02	.9998	.0749	.7679E-04
.275E+04	.902E+02	.175E+02	.9998	.0621	.6619E-04
.290E+04	.952E+02	.175E+02	.9999	.0522	.5723E-04

----- Simulated Scenario ----- 5

Simulating information:

Depth to the top of screen (ft) = .1000E+02

Depth to the bottom of screen (ft) = .2500E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .1750E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .1250E+03

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .6750E-06

Peameability for Z direction (cm**2) = .6750E-06

Peameability Kc/Bc = .5500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.175E+02	.9757	9.9126	.5632E+00

.157E+03	.517E+01	.175E+02	.9938	2.5353	.1424E-01
.310E+03	.102E+02	.175E+02	.9964	1.4840	.5232E-02
.462E+03	.152E+02	.175E+02	.9975	1.0182	.2665E-02
.615E+03	.202E+02	.175E+02	.9981	.7648	.1622E-02
.767E+03	.252E+02	.175E+02	.9985	.6041	.1101E-02
.919E+03	.302E+02	.175E+02	.9988	.4870	.8003E-03
.107E+04	.352E+02	.175E+02	.9990	.4005	.6088E-03
.122E+04	.402E+02	.175E+02	.9992	.3362	.4777E-03
.138E+04	.452E+02	.175E+02	.9993	.2858	.3833E-03
.153E+04	.502E+02	.175E+02	.9994	.2454	.3126E-03
.168E+04	.552E+02	.175E+02	.9995	.2126	.2582E-03
.183E+04	.602E+02	.175E+02	.9995	.1856	.2154E-03
.199E+04	.652E+02	.175E+02	.9996	.1627	.1812E-03
.214E+04	.702E+02	.175E+02	.9996	.1431	.1534E-03
.229E+04	.752E+02	.175E+02	.9997	.1255	.1306E-03
.244E+04	.802E+02	.175E+02	.9997	.1093	.1118E-03
.260E+04	.852E+02	.175E+02	.9998	.0936	.9600E-04
.275E+04	.902E+02	.175E+02	.9998	.0776	.8275E-04
.290E+04	.952E+02	.175E+02	.9998	.0652	.7154E-04

----- Simulated Scenario ----- 6

Simulating information:

Depth to the top of screen (ft) = .1000E+02

Depth to the bottom of screen (ft) = .2500E+02

Depth to the groundwater table (ft) = .5300E+02

Depth to the simulated elevation(ft) = .1750E+02

Radius of the simulating well (in.) = .2000E+01

Temperature of the soil (C) = .2000E+02

Flow rate of pumping/injection well(cfm)= .1500E+03

Soil porosity(Dimensionless) = .2500E+00

Peameability for R direction (cm**2) = .6750E-06

Peameability for Z direction (cm**2) = .6750E-06

Peameability Kc/Bc = .5500E-09

Aquifer geological structure properties

1: Aquifer is isotropic.
2: There is a upper confining unit.

********** OUTPUT **********

RADIUS (cm)	RADIUS (ft)	ELEVATION (ft)	PRESS (atm.)	PRESS (in H20)	VELOCITY (ft/s)
.508E+01	.167E+00	.175E+02	.9707	11.9250	.6792E+00
.157E+03	.517E+01	.175E+02	.9925	3.0442	.1711E-01
.310E+03	.102E+02	.175E+02	.9956	1.7814	.6283E-02
.462E+03	.152E+02	.175E+02	.9970	1.2222	.3200E-02
.615E+03	.202E+02	.175E+02	.9977	.9180	.1947E-02
.767E+03	.252E+02	.175E+02	.9982	.7250	.1321E-02
.919E+03	.302E+02	.175E+02	.9986	.5845	.9606E-03
.107E+04	.352E+02	.175E+02	.9988	.4806	.7307E-03
.122E+04	.402E+02	.175E+02	.9990	.4035	.5734E-03
.138E+04	.452E+02	.175E+02	.9992	.3430	.4600E-03
.153E+04	.502E+02	.175E+02	.9993	.2946	.3751E-03
.168E+04	.552E+02	.175E+02	.9994	.2552	.3098E-03
.183E+04	.602E+02	.175E+02	.9995	.2227	.2585E-03
.199E+04	.652E+02	.175E+02	.9995	.1953	.2174E-03
.214E+04	.702E+02	.175E+02	.9996	.1717	.1841E-03
.229E+04	.752E+02	.175E+02	.9996	.1507	.1568E-03
.244E+04	.802E+02	.175E+02	.9997	.1312	.1341E-03
.260E+04	.852E+02	.175E+02	.9997	.1123	.1152E-03

.275E+04	.902E+02	.175E+02	.9998	.0931	.9930E-04
.290E+04	.952E+02	.175E+02	.9998	.0782	.8585E-04

---------- Simulation finished ----------

----- Simulated Scenario ----- 1

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.000000E+00	.00
.157E+03	.517E+01	.102194E-02	345642.00
.310E+03	.102E+02	.308676E-01	6014.55
.462E+03	.152E+02	.104339E+00	1637.78
.615E+03	.202E+02	.239559E+00	669.25
.767E+03	.252E+02	.452374E+00	340.75
.919E+03	.302E+02	.757113E+00	198.52
.107E+04	.352E+02	.116816E+01	126.25
.122E+04	.402E+02	.170116E+01	85.25
.138E+04	.452E+02	.237372E+01	60.08
.153E+04	.502E+02	.320584E+01	43.72
.168E+04	.552E+02	.422026E+01	32.61
.183E+04	.602E+02	.544276E+01	24.81
.199E+04	.652E+02	.690256E+01	19.18
.214E+04	.702E+02	.863274E+01	15.03
.229E+04	.752E+02	.106707E+02	11.91
.244E+04	.802E+02	.130588E+02	9.53
.260E+04	.852E+02	.158448E+02	7.69
.275E+04	.902E+02	.190830E+02	6.25
.290E+04	.952E+02	.228345E+02	5.11

----- Simulated Scenario ----- 2

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.228345E+02	5.11
.157E+03	.517E+01	.508529E-03	694603.40
.310E+03	.102E+02	.154148E-01	12042.42
.462E+03	.152E+02	.521266E-01	3277.69
.615E+03	.202E+02	.119706E+00	1339.10
.767E+03	.252E+02	.226077E+00	681.73
.919E+03	.302E+02	.378405E+00	397.15
.107E+04	.352E+02	.583884E+00	252.56
.122E+04	.402E+02	.850336E+00	170.52
.138E+04	.452E+02	.118656E+01	120.17
.153E+04	.502E+02	.160257E+01	87.45
.168E+04	.552E+02	.210972E+01	65.23
.183E+04	.602E+02	.272091E+01	49.63
.199E+04	.652E+02	.345075E+01	38.37
.214E+04	.702E+02	.431577E+01	30.07
.229E+04	.752E+02	.533468E+01	23.83
.244E+04	.802E+02	.652866E+01	19.07
.260E+04	.852E+02	.792162E+01	15.38
.275E+04	.902E+02	.954064E+01	12.50
.290E+04	.952E+02	.114163E+02	10.22

----- Simulated Scenario ----- 3

********** OUTPUT **********

RADIUS	RADIUS	TIME	PORE VOL/ YEAR

CM	FT	DAYS	
.508E+01	.167E+00	.114163E+02	10.22
.157E+03	.517E+01	.337383E-03	1046958.00
.310E+03	.102E+02	.102639E-01	18083.70
.462E+03	.152E+02	.347224E-01	4919.74
.615E+03	.202E+02	.797550E-01	2009.57
.767E+03	.252E+02	.150644E+00	1022.95
.919E+03	.302E+02	.252169E+00	595.89
.107E+04	.352E+02	.389125E+00	378.92
.122E+04	.402E+02	.566727E+00	255.83
.138E+04	.452E+02	.790844E+00	180.29
.153E+04	.502E+02	.106814E+01	131.19
.168E+04	.552E+02	.140621E+01	97.86
.183E+04	.602E+02	.181363E+01	74.45
.199E+04	.652E+02	.230014E+01	57.56
.214E+04	.702E+02	.287678E+01	45.11
.229E+04	.752E+02	.355601E+01	35.75
.244E+04	.802E+02	.435195E+01	28.60
.260E+04	.852E+02	.528054E+01	23.08
.275E+04	.902E+02	.635984E+01	18.75
.290E+04	.952E+02	.761026E+01	15.34

----- Simulated Scenario ----- 4

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.761026E+01	15.34
.157E+03	.517E+01	.251804E-03	1402781.00
.310E+03	.102E+02	.768842E-02	24138.43
.462E+03	.152E+02	.260203E-01	6563.95

.615E+03	.202E+02	.597794E-01	2680.64
.767E+03	.252E+02	.112928E+00	1364.41
.919E+03	.302E+02	.189051E+00	794.73
.107E+04	.352E+02	.291745E+00	505.34
.122E+04	.402E+02	.424922E+00	341.17
.138E+04	.452E+02	.592984E+00	240.42
.153E+04	.502E+02	.800932E+00	174.94
.168E+04	.552E+02	.105445E+01	130.49
.183E+04	.602E+02	.135998E+01	99.28
.199E+04	.652E+02	.172484E+01	76.76
.214E+04	.702E+02	.215729E+01	60.15
.229E+04	.752E+02	.266668E+01	47.66
.244E+04	.802E+02	.326359E+01	38.14
.260E+04	.852E+02	.396000E+01	30.77
.275E+04	.902E+02	.476945E+01	25.01
.290E+04	.952E+02	.570722E+01	20.45

----- Simulated Scenario ----- 5

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.570722E+01	20.45
.157E+03	.517E+01	.200452E-03	1762151.00
.310E+03	.102E+02	.614311E-02	30206.71
.462E+03	.152E+02	.207990E-01	8210.30
.615E+03	.202E+02	.477940E-01	3352.32
.767E+03	.252E+02	.902983E-01	1706.10
.919E+03	.302E+02	.151180E+00	993.69
.107E+04	.352E+02	.233317E+00	631.82
.122E+04	.402E+02	.339839E+00	426.54
.138E+04	.452E+02	.474268E+00	300.57
.153E+04	.502E+02	.640604E+00	218.71
.168E+04	.552E+02	.843396E+00	163.13

.183E+04	.602E+02	.108780E+01	124.11
.199E+04	.652E+02	.137966E+01	95.95
.214E+04	.702E+02	.172559E+01	75.19
.229E+04	.752E+02	.213307E+01	59.58
.244E+04	.802E+02	.261058E+01	47.67
.260E+04	.852E+02	.316768E+01	38.46
.275E+04	.902E+02	.381521E+01	31.26
.290E+04	.952E+02	.456540E+01	25.56

----- Simulated Scenario ----- 6

********** OUTPUT **********

RADIUS CM	RADIUS FT	TIME DAYS	PORE VOL/ YEAR
.508E+01	.167E+00	.456540E+01	25.56
.157E+03	.517E+01	.166212E-03	2125149.00
.310E+03	.102E+02	.511290E-02	36288.59
.462E+03	.152E+02	.173182E-01	9858.83
.615E+03	.202E+02	.398037E-01	4024.62
.767E+03	.252E+02	.752118E-01	2048.02
.919E+03	.302E+02	.125932E+00	1192.75
.107E+04	.352E+02	.194365E+00	758.35
.122E+04	.402E+02	.283117E+00	511.94
.138E+04	.452E+02	.395124E+00	360.75
.153E+04	.502E+02	.533719E+00	262.48
.168E+04	.552E+02	.702693E+00	195.78
.183E+04	.602E+02	.906343E+00	148.94
.199E+04	.652E+02	.114954E+01	115.15
.214E+04	.702E+02	.143779E+01	90.23
.229E+04	.752E+02	.177734E+01	71.50
.244E+04	.802E+02	.217524E+01	57.21
.260E+04	.852E+02	.263947E+01	46.16
.275E+04	.902E+02	.317905E+01	37.51
.290E+04	.952E+02	.380419E+01	30.68

Appendix B
SVE Pilot Test Pneumatic Modeling Results for Shallow Subsurface

72 Anthony Street / 498 Porter Avenue
Brooklyn, New York
NYSDEC Site No. 224132
Langan Project No.: 170157201

RADIUS (feet)	PRESSURE (atm)	PRESSURE (IWC)	VELOCITY (feet/second)	RADIUS (feet)	PRESSURE (atm)	PRESSURE (IWC)	VELOCITY (feet/second)
5 SCFM				**60 SCFM**			
0.167	0.9985	0.5999	0.03085	0.167	0.9822	7.2579	0.3764
5.17	0.9997	0.1341	0.000729	5.17	0.996	1.6127	0.00878
10.2	0.9998	0.0747	0.0002486	10.2	0.9978	0.8977	0.002989
15.2	0.9999	0.0506	0.0001276	15.2	0.9985	0.6081	0.001534
20.2	0.9999	0.0372	0.00007862	20.2	0.9989	0.4463	0.0009444
25.2	0.9999	**0.0285**	0.00005306	25.2	0.9992	0.3417	0.0006372
30.2	0.9999	**0.0218**	0.00003776	30.2	0.9994	0.262	0.0004534
35.2	1	0.0172	0.00002784	35.2	0.9995	0.2068	0.0003343
40.2	1	0.014	0.00002108	40.2	0.9996	0.168	0.0002531
45.2	1	0.0116	0.00001629	45.2	0.9997	0.1387	0.0001956
50.2	1	0.0097	0.00001281	50.2	0.9997	0.116	0.0001537
55.2	1	0.0082	0.00001021	55.2	0.9998	0.098	0.0001226
60.2	1	0.007	0.000008239	60.2	0.9998	0.0834	0.00009888
65.2	1	0.0059	0.000006714	65.2	0.9998	0.0711	0.00008059
70.2	1	0.005	0.00000552	70.2	0.9999	0.0601	0.00006625
75.2	1	0.0041	0.000004572	75.2	0.9999	0.0496	0.00005487
80.2	1	0.0033	0.000003811	80.2	0.9999	0.039	0.00004573
85.2	1	0.0028	0.000003194	85.2	0.9999	0.0333	0.00003833
90.2	1	0.0024	0.000002689	90.2	0.9999	0.0285	0.00003228
95.2	1	0.002	0.000002274	95.2	0.9999	0.0244	0.00002729
10 SCFM				**100 SCFM**			
0.167	0.9971	1.2006	0.0618	0.167	0.9701	12.1706	0.6351
5.17	0.9993	0.2683	0.001459	5.17	0.9934	2.6914	0.01467
10.2	0.9996	0.1495	0.0004972	10.2	0.9963	1.4973	0.004988
15.2	0.9998	0.1013	0.0002553	15.2	0.9975	1.014	0.002559
20.2	0.9998	0.0743	0.0001573	20.2	0.9982	0.7441	0.001575
25.2	0.9999	0.057	0.0001061	25.2	0.9986	0.5697	0.001063
30.2	0.9999	0.0437	0.00007552	30.2	0.9989	0.4368	0.0007559
35.2	0.9999	0.0345	0.00005569	35.2	0.9992	0.3448	0.0005573
40.2	0.9999	**0.028**	0.00004216	40.2	0.9993	0.2801	0.0004219
45.2	0.9999	**0.0231**	0.00003259	45.2	0.9994	0.2311	0.0003261
50.2	1	0.0193	0.00002562	50.2	0.9995	0.1933	0.0002563
55.2	1	0.0164	0.00002042	55.2	0.9996	0.1634	0.0002043
60.2	1	0.0139	0.00001648	60.2	0.9997	0.1391	0.0001648
65.2	1	0.0118	0.00001343	65.2	0.9997	0.1185	0.0001343
70.2	1	0.01	0.00001104	70.2	0.9998	0.1001	0.0001104
75.2	1	0.0083	0.000009143	75.2	0.9998	0.0826	0.00009145
80.2	1	0.0065	0.000007621	80.2	0.9998	0.0651	0.00007622
85.2	1	0.0056	0.000006388	85.2	0.9999	0.0555	0.00006388
90.2	1	0.0048	0.000005379	90.2	0.9999	0.0475	0.0000538
95.2	1	0.0041	0.000004548	95.2	0.9999	0.0407	0.00004549
25 SCFM				**120 SCFM**			
0.167	0.9926	3.0083	0.1552	0.167	0.964	14.65	0.767
5.17	0.9984	0.6712	0.00365	5.17	0.9921	3.2318	0.01763
10.2	0.9991	0.3738	0.001244	10.2	0.9956	1.7974	0.005991
15.2	0.9994	0.2533	0.0006386	15.2	0.997	1.2171	0.003072
20.2	0.9995	0.1859	0.0003933	20.2	0.9978	0.893	0.001891
25.2	0.9997	0.1424	0.0002654	25.2	0.9983	0.6838	0.001275
30.2	0.9997	0.1092	0.0001888	30.2	0.9987	0.5242	0.0009073
35.2	0.9998	0.0862	0.0001392	35.2	0.999	0.4138	0.0006689
40.2	0.9998	0.07	0.0001054	40.2	0.9992	0.3361	0.0005063
45.2	0.9999	0.0578	0.00008148	45.2	0.9993	0.2773	0.0003913
50.2	0.9999	0.0483	0.00006405	50.2	0.9994	0.2319	0.0003076
55.2	0.9999	0.0408	0.00005106	55.2	0.9995	0.1961	0.0002452
60.2	0.9999	0.0348	0.0000412	60.2	0.9996	0.1669	0.0001978
65.2	0.9999	**0.0296**	0.00003357	65.2	0.9997	0.1422	0.0001612
70.2	0.9999	**0.025**	0.0000276	70.2	0.9997	0.1201	0.0001325
75.2	0.9999	**0.0207**	0.00002286	75.2	0.9998	0.0992	0.0001097
80.2	1	0.0163	0.00001905	80.2	0.9998	0.0781	0.00009147
85.2	1	0.0139	0.00001597	85.2	0.9998	0.0666	0.00007666
90.2	1	0.0119	0.00001345	90.2	0.9999	0.057	0.00006456
95.2	1	0.0102	0.00001137	95.2	0.9999	0.0488	0.00005459

Notes:

1. The above soil vapor extraction (SVE) pilot test data from the shallow subsurface (about 5 to 15 feet below grade surface [bgs]) indicates favorable airflow communication across the subsurface and was used to inform sub-slab depressurization (SSD) system parameters. Additionally, piping loss calcuations were performed based on the designed SSD system layout. Based on this information, the minimum radius of influence (ROI) required at each depressurization pit to mitigate soil vapor intrusion is interpreted to be 30 feet with an airflow rate of 5 standard cubic feet per minute (scfm) at 6 inches of water column (IWC). This method is considered to be a conservative approach as previous boring logs indicate that the media immediately beneath the building slab (where the depressurization pits will be installed) consists of an about 4- to 8-foot-thick layer of historic fill, which is typically more permeable than the underlying native soil.

2. The SSD system was designed in accordance with the New York State Department of Health (NYSDOH) guidance, including: Environmental Protection Agency (EPA)/625/R-93/011 - 2008 Indoor Air Vapor Intrusion Mitigation Approaches; October 1993 Technical Guidance for Active Soil Depressurization Systems; EPA/625/R-92/016 - June 1994 Radon Prevention in the Design and Construction of Schools and Other Large Buildings; and Guidance for Evaluating Soil Vapor Intrusion in the State of New York (2006), with updates.

3. The minimum required pressure (IWC) and corresponding ROIs at each vacuum (scfm) are shown in bold.

4. The minimum required pressure (IWC) and corresponding ROI that meets the SSD system design parameters and layout of the target mitigation area is shown in bold and shaded.

5. atm = atmosphere

LANGAN

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- Size: 15.5"W x 13.3"H x 8.2"D
- Warranty: 1 year (3-year option available)

MODEL	WATTS	SOUND RATING (dBA)			RECOM. MAX. OP. PRESSURE "WC	TYPICAL CFM* vs. STATIC PRESSURE WC					
		OPEN	1/2	CLOSED		0"	10"	15"	20"	25"	35"
HS2000 with cord	174-307	56.5	56.2	51.9	14	63	37	12	-	-	-
HS3000 with cord	120-250	47.9	48.0	46.2	21	39	30	25	19	-	-
HS5000 with cord	223-385	56.0	55.3	53.1	35	44	37	33	29	25	16
HS2000E with switch box	174-307	56.5	56.2	51.9	14	63	37	12	-	-	-
HS3000E with switch box	120-250	47.9	48.0	46.2	21	39	30	25	19	-	-
HS5000E with switch box	223-385	56.0	55.3	53.1	35	44	37	33	29	25	16

* Made in the USA with U.S. and imported parts.

* CFM measured through suction.

For Further Information, Contact Your Radon Professional:

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