

**Second 2019 SEMI-ANNUAL
GROUNDWATER MONITORING REPORT
OPERABLE UNIT 2 (OU2)
OLEAN WELL FIELD SUPERFUND SITE**

**FORMER McGRAW-EDISON FACILITY
OLEAN, NEW YORK**

Prepared For:

**Cooper Industries, LLC
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January 29, 2020

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PROJECT 186-04

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1.0 INTRODUCTION

1.1 GENERAL

McGraw-Edison Company, a wholly owned subsidiary of Cooper Industries, LLC (Cooper) entered into a Consent Decree with the United States Environmental Protection Agency (EPA) to conduct remedial activities in response to the presence of volatile organic compounds (VOCs) in groundwater at the Olean Well Field Superfund Site. The work activities are defined in the Operable Unit 2 (OU2) Record of Decision (ROD) and the Statement of Work (SOW), which were included as Appendices A and B to the Consent Decree. The effective date of the Consent Decree is March 17, 1998.

In February 1999, Cooper submitted a Remedial Design/Remedial Action Work Plan (Work Plan) to the EPA describing the activities to be completed to design and implement the OU2 remedy for the Upper Aquifer at the McGraw-Edison property (Property) pursuant to the Consent Decree. The Work Plan provided an overall plan for completing the Remedial Design, Remedial Action, Operation and Maintenance (O&M), and Post-Remediation Groundwater Monitoring Program. The Work Plan was prepared in accordance with the “Superfund Remedial Design and Remedial Action Guidance” dated June 1986, and additional guidance documents developed by the EPA.

The construction of the groundwater remediation system for the Upper Aquifer was completed in the summer of 2001. The system consists of two wells (EW-1 and EW-2) extracting groundwater from the Upper Aquifer, a shallow tray-air stripper to remove VOCs from the extracted water, and a reinjection well (underground injection control well permitted by rule) to return treated water (VOC non-detect) to the Lower Aquifer. The system began full-time operation in August 2001, when an EPA-approved Initial Testing Program was successfully completed. Under the provisions of the Consent Decree, Cooper is to perform groundwater extraction and treatment until the groundwater in the Upper Aquifer under the downgradient boundary of the Property meets the groundwater Performance Standards as specified in Section 1.6 of this report, or until a waiver is granted by EPA. By capturing and treating the groundwater in the Upper Aquifer beneath the Property, any potential for ongoing contamination migration vertically and horizontally from the Property to the municipal supply wells will be significantly reduced.

1.2 SITE DESCRIPTION

The Property is located on the eastern portion of the Olean Wellfield Site, north of East State Street and east of Dugan Road (see Figure 1). The general layout for the Property is shown on Figure 2. The Property occupies approximately 25 acres just north of the intersection of East State Street and Dugan Road. Three buildings – the Main Plant (Plant), a smaller plant addition (MOV Building), and a fire pump well house - are located on the Property and used by Cooper

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Power Systems for the manufacture of surge and lightning arrestors for the electric utility industry. Property uses to the north, south, and west of the former McGraw-Edison facility are residential and/or commercial. Olean Steel borders the McGraw-Edison property to the east.

In 1985, an air stripper was installed to treat water extracted by the Plant's Water Supply Well, which is completed in the Lower Aquifer at a depth of approximately 90 feet. The Lower Aquifer was impacted by chlorinated VOCs and is included in the Olean Wellfield Superfund Site, recognized as Operable Unit 1. The air stripper had a 300-gallon per minute capacity and its air discharge was covered by the facility-wide air exemption permit. In addition to providing treatment of the water prior to its use, the extraction and treatment of the groundwater also acted to remediate the Lower Aquifer beneath the Property. The air stripper was eliminated from service and the storage tank for treated groundwater was removed in 2011. The facility is using municipal water from the City of Olean.

As described in Section 1.5, two shallow groundwater extraction wells (EW-1 and EW-2) were installed and put into operation in 2001 with a new lower capacity air stripper to address VOC impacts to the Upper (shallow) Aquifer. A third extraction well, EW-3, is not being utilized as a recovery well but instead as a groundwater monitoring well since the trichloroethene (TCE) levels in the well are below the maximum contaminant level (MCL) for TCE established by the Safe Drinking Water Act, as well as New York State laws and regulations (10 NYCRR Part 5, 6 NYCRR Part 703).

1.3 HYDROGEOLOGIC SETTING

Previous groundwater investigations at the Property have shown that the upper 100 feet of sediment can be divided into two aquifers, each underlain by an aquitard. The lithologic units that comprise the upper 100 feet of sediment are referred to as the Upper Aquifer, upper aquitard, Lower Aquifer, lower aquitard. The Upper Aquifer is comprised of glaciofluvial coarse sands and sandy gravels, and recent fluvial deposits of fine sands and silts with some clay, and extends to depths ranging from approximately 25 to 29 feet below the ground surface (bgs). The water table generally ranges from 10 to 14 feet below the ground surface, resulting in a saturated thickness in the Upper Aquifer ranging from approximately 12 to 15 feet.

The underlying upper aquitard is a low-permeability lodgment till composed of greater than 50 percent silt and clay. The thickness of the upper aquitard generally ranges from 10 to 13 feet across the Property.

The Upper Aquifer potentiometric surface at the Property is relatively flat but shows that groundwater flow is generally toward the southwest, toward the Allegheny River under non-pumping conditions and towards the extraction wells during pumping conditions.

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1.4 REMEDIAL OBJECTIVES

As specified in the OU2 ROD, the groundwater remedial action objectives (RAOs) that apply to the Property include: 1) removal and/or control of the sources of contamination to the groundwater; and 2) removal of sources of contamination already in the shallow groundwater. Groundwater at the Property boundary must have contamination levels equal to or less than the MCLs established under the Safe Drinking Water Act, as well as New York State laws and regulations (10 NYCRR Part 5, 6 NYCRR Part 703). These criteria are presented in Section 1.6. As stated in the ROD, EPA has determined that soil at the Property does not constitute a source of groundwater contamination; and, as such, no soil remediation is necessary. As a result, the remedy for OU2 was selected to address VOC contamination in the Upper Aquifer only.

As specified in the Consent Decree, the scope of the remedy specified in the OU2 ROD for the Property included: (a) modification of the existing groundwater extraction and treatment system to provide for extraction and treatment of VOC contaminated groundwater from the Upper Aquifer; (b) groundwater monitoring upgradient and downgradient of the source area to determine the effectiveness of the Remedial Action Objectives (RAOs); and (c) implementation of institutional controls to prevent the installation or use of drinking water wells on the Property. Item (c) was addressed with City of Olean Code Section 27-24, which requires all property owners to be connected to the public water main and prohibits the use of future private water wells for potable water supply within the City of Olean. The groundwater extraction system and groundwater monitoring results are discussed in the following sections.

1.5 REMEDIAL SYSTEM

The current remediation system consists of two groundwater extraction wells, EW-1 and EW-2, located near the western and southern property boundaries, respectively. The extraction wells are shown on Figure 2 and were installed to screen the entire saturated thickness of the upper aquifer. The purpose of these wells is to capture groundwater from the portion of the Upper Aquifer beneath the Property that has been impacted by VOCs above ROD-based cleanup levels. Extracted groundwater is conveyed from the extraction wells to a water treatment system (shallow tray air stripper) located just south of the plant. Groundwater that is extracted from the Upper Aquifer is passed through the treatment system and reintroduced into the Lower Aquifer through an injection well (IW-1) located near the southeast corner of the Property and upgradient of the plant. The water treatment system for the remediation system consists of a shallow-tray low-profile, diffuse air stripper installed inside the treatment building.

1.6 PERFORMANCE STANDARDS

The Performance Standards for the remedy are specific goals established to protect human health and the environment. These standards were established to restore the Upper Aquifer under the Property to its beneficial use. The Performance Standards for the remedial system at the

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Property are that the groundwater in the Upper Aquifer at the downgradient boundaries of the Property must have contaminant levels equal to or less than the MCLs, as well as New York State Laws and regulations (10 NYCRR Part 5, 6 NYCRR Part 703), summarized below:

Contaminant	MCL (µg/L)	New York State Water Quality Standard (NYSWQS) (µg/L)
Benzene	5	1
2-Butanone	None Established	50
Cis-1,2-dichloroethene	70	5
Ethylbenzene	700	5
Tetrachloroethene	5	5
1,1,1-trichloroethane	200	5
Trichloroethene	5	5
Toluene	1,000	5
Vinyl Chloride	2	2
Xylene	10,000	5

MCL – Maximum Contaminant Limit

NYSWQS – New York State Water Quality Standards

ug/L – micrograms per liter

1.7 PURPOSE OF MONITORING PROGRAM

There are two components of the groundwater monitoring program: water level measurement and groundwater sampling and analysis. Water level measurement is performed to confirm that contaminated groundwater is being effectively captured at the downgradient boundaries of the Property, while the sampling and analysis is performed to evaluate whether the Performance Standards at the downgradient boundaries of the Property have been achieved and the VOC impacted groundwater is effectively treated in compliance with EPA air and water (no VOCs at the laboratory detection limit in the treated water) discharge requirements.

2.0 FIELD ACTIVITIES

2.1 SYSTEM MONITORING

In accordance with the Operation and Maintenance Plan (O&M Plan), influent samples from the extraction wells were initially collected monthly and analyzed for VOCs and total and dissolved metals. Treatment plant effluent samples were collected weekly for analysis of VOCs, and monthly for analysis of total and dissolved metals. Based on a review of the data collected through 2003, EPA approved a reduction in the sampling program. Beginning in 2003, effluent samples were collected weekly for VOCs using EPA Method 624 and semi-annually for total and dissolved metals [EPA Methods 6010B and 7470 (mercury)], while influent samples were sampled monthly only for VOCs using EPA Method 624. The sampling schedule was further revised in November 2007 when the EPA granted a request to reduce the effluent monitoring from weekly to monthly.

Table 1 summarizes the influent and effluent samples collected for analysis during the second half of 2019. Influent and effluent samples were collected at sampling ports located in the groundwater treatment building.

The groundwater remediation system is equipped with an electronic monitoring system that automatically sets off a signal in the pump house if there is a problem with the system. The plant personnel also monitor the system during monthly site inspections. System flow is checked monthly by an outside contractor, Empire Geo Services, Inc., as part of the monthly groundwater sampling and system inspection. Monthly system inspection records and sampling chain-of-custody forms are included in Appendix A.

2.2 GROUNDWATER MONITORING

In accordance with the current Groundwater Monitoring Program (Table 2), groundwater samples are collected semi-annually. The locations of the extraction wells, monitoring wells, and piezometers included in the monitoring program are shown on Figure 2 and Figure 4.

ENVIRONEERING, Inc. (ENVIRONEERING) conducted the second semi-annual 2019 groundwater monitoring event November 6, 2019. Groundwater samples were collected from eight (8) on-site monitoring locations (shallow wells A-1, B-1, C-1, D-1, D-2, G-1, CW-18A and EW-3). The samples were submitted for laboratory analysis to ALS Environmental in Rochester, NY.

For VOC plume delineation and compliance requirement, monitoring wells were purged and sampled using low-flow/low stress techniques. Extraction wells EW-1 and EW-2 are each sampled monthly as part of system monitoring (Section 2.1) and are sampled at the pump

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discharge line into the air stripper. Samples collected from EW-1 and EW-2 were submitted for laboratory analysis to TestAmerica Laboratories, Inc. in Amherst, NY.

Low-flow/low-stress monitoring well sampling procedures and protocols were followed as outlined in the USEPA Region II guidance document entitled “Groundwater Sampling Procedure, Low Stress (Low Flow) Purging and Sampling.” Generally, the low-flow/low-stress purging was conducted prior to sampling by evacuating groundwater at a rate of less than 500 milliliters per minute for a minimum of 15 minutes or until stabilization of the field parameters occurred. Purging was conducted using a 2-inch submersible pump, or a peristaltic pump, which are connected to dedicated tubing in each well. Two of the wells, B-1 and C-1 do not produce a sufficient amount of water for pumping. These wells are bailed dry with new, single use, disposal bailers at each well and allowed to recover before a sample is taken.

The groundwater samples were submitted for analysis of VOCs using CLP_VOA OLC02.1. Samples were labeled and packaged for shipment to the analytical laboratory in ice chests containing wet ice. Standard chain-of-custody protocol was adhered to during all phases of sample collection, transport, and delivery to the laboratory. Completed chain-of-custody forms are located in Appendix B with the analytical data report.

2.3 QA/QC SAMPLES

During this semi-annual groundwater monitoring event, one trip blank and one field duplicate were analyzed for quality assurance/quality control (QA/QC) purposes. Samples for laboratory analysis were collected in laboratory prepared volatile organic analysis (VOA) glass vials containing an appropriate amount of preservative. A trip blank was prepared by the laboratory and accompanied the sample bottles during sampling activities to evaluate whether samples and/or sample bottles were contaminated during shipment to and/or from the laboratory.

3.0 FINDINGS

3.1 SYSTEM PERFORMANCE

3.1.1 System Influent Concentrations

System influent results are summarized on Table 3 and the laboratory analytical reports are presented in Appendix B.

Trichloroethene (TCE) concentrations ranged from 1.4 “J” to 22 micrograms per liter (µg/L) at EW-1. The cis-1,2- dichloroethene (cDCE) concentrations in EW-1 were below the EPA standard and s the New York standard of 5µg/L No other VOCs were identified in the influent samples at concentrations above MCLs or New York standards. Time trends in concentrations are discussed in Section 3.3.

TCE concentrations ranged from 18 to 93 µg/L at EW-2. The cis-1,2- dichloroethene (cDCE) and Tetrachloroethene concentrations in EW-2 were below the EPA standard and the New York standard of 5 µg/L. No other VOCs were identified in the influent samples at concentrations above MCLs or New York standards. Time trends in concentrations are discussed in Section 3.3.

3.1.2 System Effluent Concentrations

The system effluent results are summarized in Table 4, and the laboratory reports are presented in Appendix B. The primary constituents in groundwater at the site (TCE and cDCE) were not detected in the treated effluent. Furthermore, there were no other VOCs detected in the treated effluent as shown in Table 4.

Total and/or dissolved levels of barium, calcium, copper, iron, magnesium, manganese, nickel, potassium, sodium, and zinc were detected in the treated effluent during the April 2019 monthly sampling. However, no metals were found to be in excess of EPA and New York standards.

3.1.3 System Flow and Performance

The remediation system has operated nearly continuously since start up on July 11, 2001. The system is set to record the system status every 30 minutes. The information is then downloaded and used to determine the system run time. The report indicates the operational status of the stripper and each of the two groundwater extraction wells.

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During the second half of 2019, the system ceased operation from August through September due to two major pieces of equipment failing. The motor on the transfer pump that is used to transfer the treated groundwater to the injection well failed and had to be replaced. After installation of the new pump motor, a solenoid valve malfunctioned which required the system to remain shut down until the equipment was ordered. The system was restored and brought back online as soon as possible after the repairs.

For the period that the system was operating during the second half of 2019 the average calculated extraction flow rate was 1.27 gallons per minute (gpm) for EW-1 and 16.18 gpm for EW-2. Table 5 summarizes the volume of water treated by the system for the reporting period and the approximate mass of TCE removed during the reporting period. The remediation system has removed approximately 4,160,830 gallons of water and 1.7 pounds of TCE during the second half of 2019. TCE accounts for nearly all of the contaminant mass within the extracted groundwater. A table with historic removal calculations is presented in Appendix D.

Table 6 summarizes the approximate mass of cDCE removed. This compound does not occur at levels above EPA drinking water standards, but is occasionally detected in samples at concentrations above the NY standard of 5 µg/L. During this monitoring period, the system removed approximately 0.041 pounds of cDCE.

Based on concentrations obtained from influent samples and the average daily pumping rate of the two extraction wells, approximately 170.14 pounds of TCE, and 4.96 pounds of cDCE have been removed since the system began operation in July 2001. Because of malfunctions of the flow totalizer meter, the total gallons of water removed since the system began, and the totals of TCE and cDCE removed are conservatively low.

3.2 GROUNDWATER ELEVATIONS

Water-level measurements from the monitoring wells and piezometers in the Upper Aquifer were converted to elevations above Mean Sea Level (MSL) for this monitoring event (Table 7) and used to generate a groundwater contour map for the property (Figure 3).

The Upper Aquifer potentiometric surface observed during November 2019 (Figure 3) shows a cone of depression around EW-1 and EW-2. The ground water contour map shows that affected groundwater at the site is captured by EW-1 and EW-2. Based on current analyses and historic groundwater contour maps, the extraction system appears to be capturing the impacted groundwater beneath the Property at the downgradient Property boundaries.

3.3 GROUNDWATER ANALYTICAL RESULTS

The analytical results for the November 2019 groundwater sampling event are summarized in Table 8 and shown on Figure 4. TCE was detected below the MCL and NYSWQS at shallow wells C-1 (0.47 J µg/L), D-1 (3.7 µg/L) and G-1 (1.9 µg/L), CW-18A (1.70 µg/L), and EW 3 (0.56 J µg/L); and deep well D-2 (0.33 J µg/L). Groundwater concentrations within the extraction wells are discussed in Section 3.1. Analytical results qualified with a “J” means that the analyte was detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection

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Limit (MDL). Concentrations within this range are estimated.

Acetone was detected in all samples but noted with a “B” qualifier. A “B” qualifying flag on the data indicates that the constituent was detected in the Trip Blanks and is known as a common laboratory contaminant.

Time-trend plots of TCE concentrations are presented in Appendix E, and the historic data from the monitoring wells and extraction wells is presented in Appendix D and show stable to decreasing VOC levels over time.

Shallow Extraction Wells EW-1 and EW-2: TCE concentrations at extraction wells EW-1 and EW-2 increased initially after pumping began in 2001; however, subsequent concentrations decreased substantially as shown in Appendix E. The initial increase after start-up of the pump and treat system may indicate that contaminated groundwater was being drawn into the extraction wells.

The concentration at EW-1 fell below the MCL and the NY standard during the June 2007 sampling event; however, this result appears to be the result of some downtime that the extraction pump experienced immediately preceding the sampling event. Concentrations at EW-1 returned to typical levels during the subsequent sampling events. This fluctuation in TCE concentrations at EW-1 supports the conclusion that this well is effective in capturing the plume. The TCE concentrations at EW-1 continue to show an overall decrease; however, concentrations remain above the MCLs. The TCE concentrations at EW-1 have decreased approximately 96% since system startup. For EW-1 the TCE concentrations ranged from 10 to 22 µg/L during the second semiannual event of 2019.

The current data indicate a 96% reduction in TCE since system startup in EW-2. For EW-2 the TCE concentrations ranged from 21 to 93 µg/L during the second semiannual event of 2019. The TCE concentrations at EW-2 appear to fluctuate more widely than at EW-1. Beginning in November 2007, TCE concentrations in EW-2 increased for a period of 3 to 4 months only to fall back to pre-existing concentrations. Recently, these concentration fluctuations appear to be seasonal.

Shallow Monitoring Well A-1: TCE concentrations at A-1 (initially as high as 2,700 µg/L) decreased through time and are currently below the MCL and NYSWQS. TCE was detected at a concentration of 0.27 J µg/L. Acetone, 2-Butanone, and chloromethane were detected but reported with “B” and/or “J” qualifiers in the November 2019 sampling event.

Shallow Monitoring Well B-1: Well B-1, located up gradient of EW-2, initially showed an increase in TCE concentrations at the startup of the system in 2001; however, concentrations subsequently decreased to levels at or below the performance standard. During the November 2019 sampling event VOC concentrations were 0.22 “J” µg/L for 1,1-Dichloroethane. Acetone, and chloromethane were detected but reported with “B” and/or “J” qualifiers. Currently, TCE concentrations have decreased approximately 99.91 % since system startup.

Shallow Monitoring Well C-1: Up gradient well, C-1, showed an increase in TCE concentrations at the startup of the system in 2001 with subsequent decreasing trends to concentrations at or below the NYSWQS. As with other site wells, the increase after the initiation of the pump and treat system may indicate that contaminated groundwater may have passed this well as it was being drawn toward the two extraction wells. The November 2019 concentration for TCE was 0.47 J µg/L. TCE

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concentrations have steadily decreased since system startup and have been below MCLs and the NYSWQS since mid-2006.

Shallow Monitoring Well D-1: TCE concentrations at D-1, located up gradient of EW-2, decreased dramatically from a high of 5,200 µg/L in 1984 to less than 100 µg/L immediately after system startup in 2001 with a subsequent steady decrease to 20 µg/L by June 2006. Concentrations have remained stable since that time. The November 2019 concentration for TCE was 3.7 µg/L, for tetrachloroethene and cDCE were <1.0 µg/L. Overall, TCE concentrations have decreased 98% since system startup.

Shallow Monitoring Well G-1: Well G-1, which is located between the extraction wells, has shown an overall downward trend in TCE concentrations. The November 2019 concentration for TCE was 1.9 µg/L and cDCE was 0.28 J µg/L. TCE concentrations have decreased since system startup. Levels have been below the MCL for the last 3 sampling events. Overall, TCE concentrations have decreased about 90% since system startup.

Shallow Monitoring Well EW-3: Onsite well EW-3, located along the downgradient property boundary continues to show a decreasing trend in TCE concentrations with a reduction of around 99% since startup of the remedial system. Concentrations appear stable and are near or below the MCL and NYSWQS since 2008. The November 2019 concentrations were 0.56 µg/ L for TCE.

Deep Monitoring Well D-2: Well D-2 is the only deep monitoring well sampled and it is included in the long-term groundwater monitoring program to evaluate the impact of re-injected treated groundwater on the Lower Aquifer. November 2019 analytical results for well D-2 indicated a TCE concentration of 0.33 “J” µg/L, below the performance standard of 5 µg/L and cDCE was not detected above a concentration of 1.0 µg/L (the laboratory detection limit). Throughout D-2’s monitoring history, only one slight exceedance of the MCL and NYSWQS for cDCE has been observed (7.5 µg/L in December 2006).

3.4 QA/QC REVIEW

The QA/QC laboratory results are summarized in Table 9. Analytical results for TCE from D-1 and its duplicate were comparable with only a small relative percent difference. The acetone, 2-Butanone, chloromethane, and 4-methyl-2-pentanone were reported in the trip blank analyses.

3.5 MAINTENANCE

During the second half of 2019 the system was discovered to be not in operation during the monthly site visit in August. The system shut down was due to two major pieces of equipment failing. The motor on the transfer pump that is used to transfer the treated groundwater to the injection well failed and had to be replaced. After installation of the new pump motor a solenoid valve malfunctioned which required the system to be remain shut down until the valve could be replaced. The system was restored and brought back online as soon as possible after the repairs were made. The system was down from early August until the beginning of October.

4.0 SUMMARY

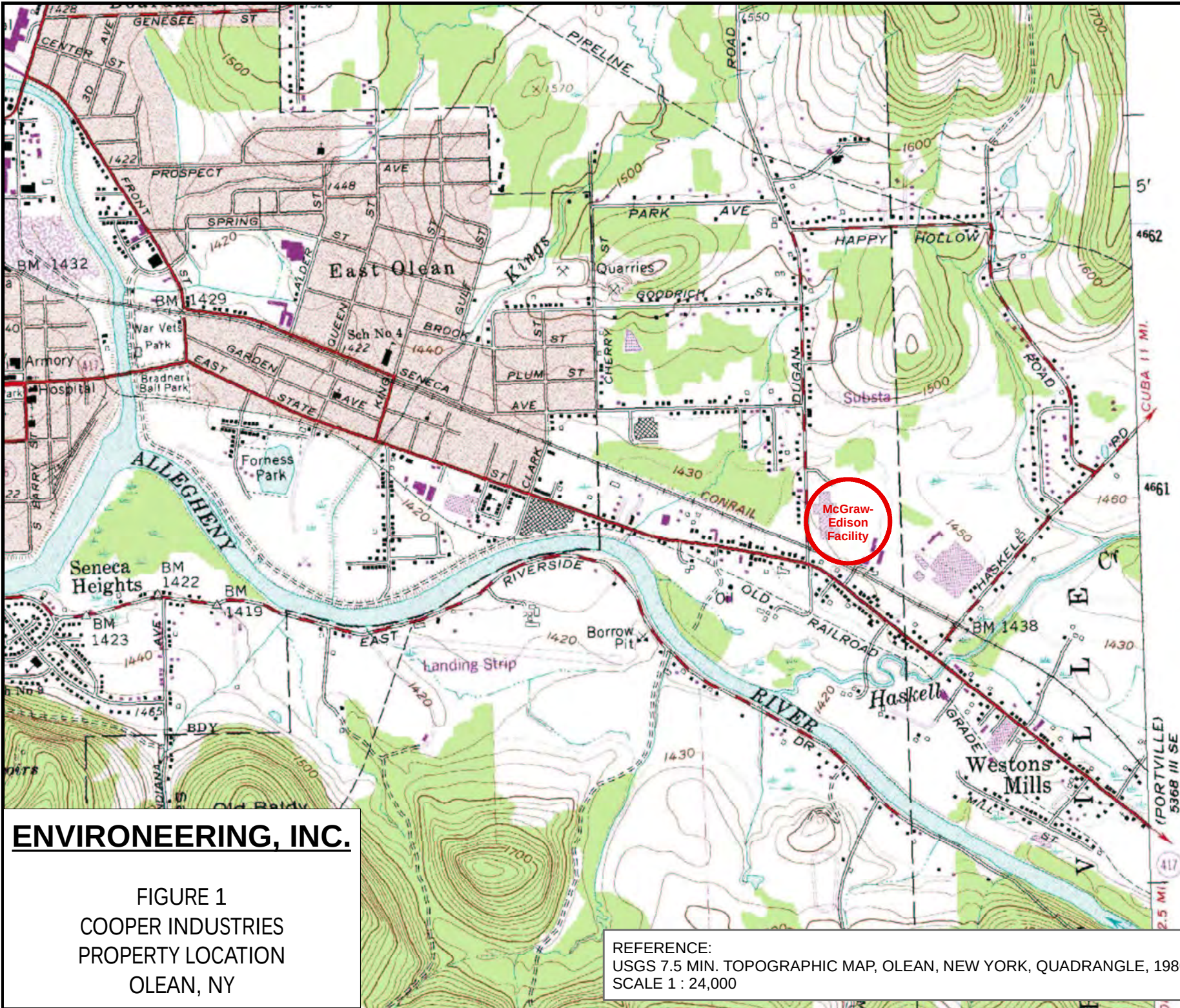
Influent wells EW-1 and EW-2 are effectively capturing the contaminant plume at the downgradient boundaries of the Property and are restricting off-site migration of VOCs in the Upper Aquifer, based on the groundwater data obtained during the second 2019 sampling event.

The treatment system is removing contaminant mass as designed. Significant and noticeable decreases and stable trends in VOC concentrations in the Upper Aquifer monitoring wells as measured since system startup and confirmed on time-trend graphs indicate that the remediation system is operating as designed. Based on the nearly 100 percent efficiency of the air stripper treatment system approximately 170 pounds of TCE, and 5 pounds of cDCE have been removed from the groundwater since the system was activated in July 2001. The remedial activities continue to positively impact the groundwater quality at the Property.

Effluent sampling to date indicates that the treatment system is effectively removing VOCs from the extracted groundwater to levels below laboratory detection limits, and the MCL and NYSWQS, prior to re-injection.

Groundwater quality continues to improve and TCE concentrations are stable or approaching the 5µg/L performance standard at many of the groundwater monitoring points at the perimeter boundary of the site. Groundwater monitoring and reporting to the EPA will continue to be conducted on a semiannual basis to track the performance of the remediation system.

Figures

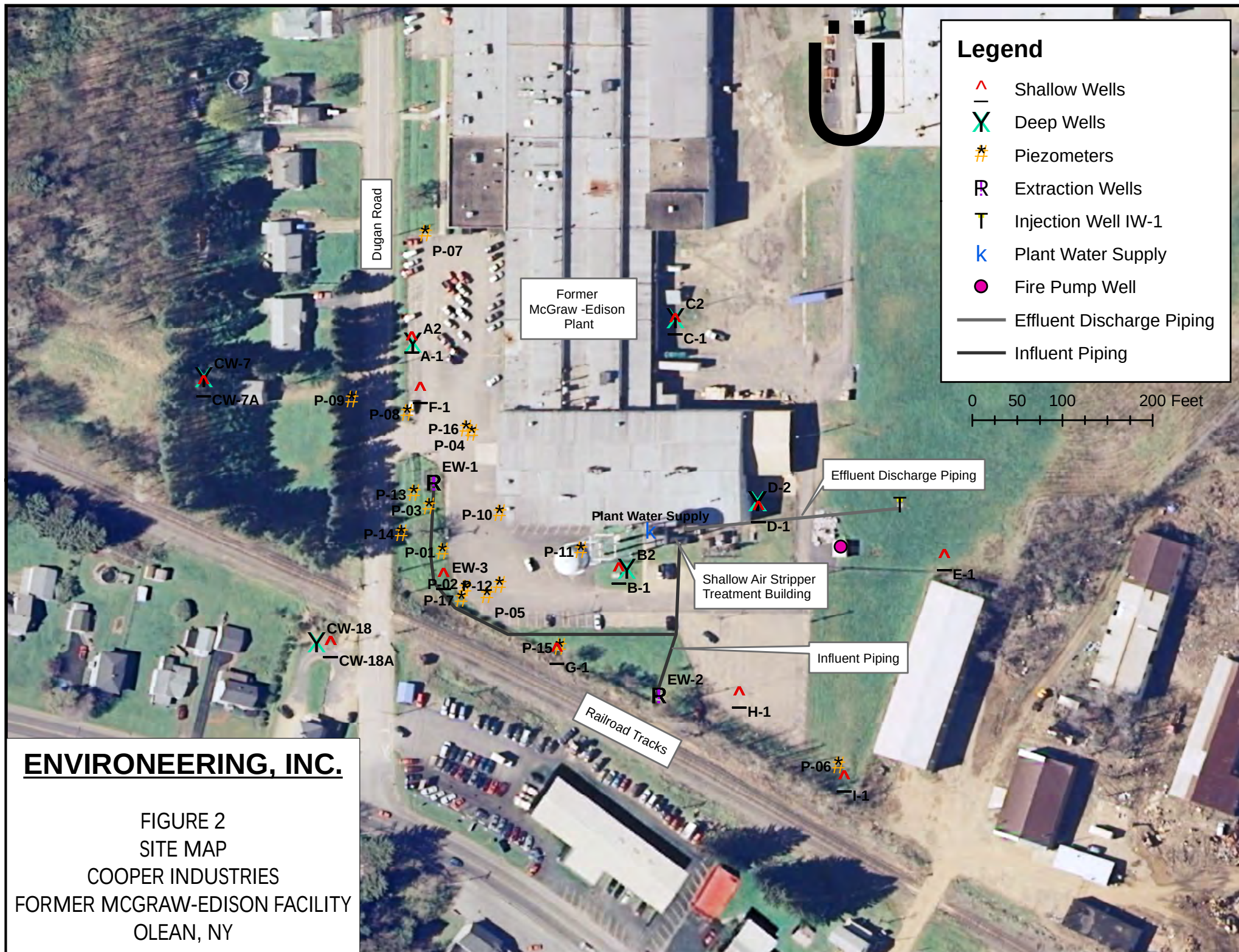


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FIGURE 1
COOPER INDUSTRIES
PROPERTY LOCATION
OLEAN, NY

REFERENCE:
USGS 7.5 MIN. TOPOGRAPHIC MAP, OLEAN, NEW YORK, QUADRANGLE, 1980. www.usgs.gov
SCALE 1 : 24,000



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FIGURE 2

SITE MAP

COOPER INDUSTRIES

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OLEAN, NY

Tables

Table 1
Summary of System Sampling
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Former McGraw-Edison Facility, Olean, New York

Sample Date	Sample Type	Analysis		
		Volatile Organic Compounds	Total Metals	Dissolved Metals
7/17/2019	Effluent	X		
7/17/2019	Influent #1	X		
7/17/2019	Influent #2	X		
10/7/2019	Effluent	X		
10/7/2019	Influent #1	X		
10/7/2019	Influent #2	X		
11/14/2019	Effluent	X		
11/14/2019	Influent #1	X		
11/14/2019	Influent #2	X		
12/20/2019	Effluent	X		
12/20/2019	Influent #1	X		
12/20/2019	Influent #2	X		
Notes:				

Influent #1 from extraction well EW-1

Influent #2 from extraction well EW-2

Effluent air stripper discharge to injection well I-1 deep aquifer

Table 2
Summary of Groundwater Monitoring Program
 Second Semi-Annual 2019 Report
 Former McGraw-Edison Facility, Olean, New York

Monitoring Location	Zone Monitored	First Two Years	Subsequent Years	Beginning in 2008
Onsite Monitoring Wells				
A-1	Shallow Aquifer	Q	S	S
B-1	Shallow Aquifer	Q	S	S
C-1	Shallow Aquifer	Q	S	S
D-1	Shallow Aquifer	Q	S	S
E-1	Shallow Aquifer	Q	S	A
F-1	Shallow Aquifer	Q	S	A
G-1	Shallow Aquifer	Q	S	S
H-1	Shallow Aquifer	Q	S	A
I-1	Shallow Aquifer	Q	S	A
EW-3	Shallow Aquifer	Q	S	S
A-2	Deep Aquifer	-	W	W
B-2	Deep Aquifer	-	W	W
C-2	Deep Aquifer	-	W	W
D-2	Deep Aquifer	Q	S	S
Offsite Monitoring Wells				
CW-7A	Shallow Aquifer	Q	S	A
CW-18A	Shallow Aquifer	Q	S	S
CW-7	Deep Aquifer	-	W	W
CW-18	Deep Aquifer	-	W	W
Extraction Wells				
EW-1	Shallow Aquifer	Q	S	*
EW-2	Shallow Aquifer	Q	S	*
Effluent	Air Stripper Discharge	W	W	*
Piezometers				
P-01	Shallow Aquifer	W	W	W
P-02	Shallow Aquifer	W	W	W
P-03	Shallow Aquifer	W	W	W
P-04	Shallow Aquifer	W	W	W
P-05	Shallow Aquifer	W	W	W
P-06	Shallow Aquifer	W	W	W
P-07	Shallow Aquifer	W	W	W
P-08	Shallow Aquifer	W	W	W
P-09	Shallow Aquifer	W	W	W
P-10	Shallow Aquifer	W	W	W
P-11	Shallow Aquifer	W	W	W
P-12	Shallow Aquifer	W	W	W
P-13	Shallow Aquifer	W	W	W
P-14	Shallow Aquifer	W	W	W
P-15	Shallow Aquifer	W	W	W
P-16	Shallow Aquifer	W	W	W
P-17	Shallow Aquifer	W	W	W

Q = Quarterly groundwater quality sampling

S = Semi-Annual groundwater quality sampling

A = Annual groundwater monitoring, conducted during the first semi-annual sampling event

W = water level only

* = Samples collected monthly by subcontractor during system monitoring and effluent sample from air stripper

Table 3

Summary of Treatment System Influent Analyses

Second Semi-Annual 2019 Report

Former McGraw-Edison Facility, Olean, New York

Lab used:	Test America				Test America					
Sample Identification: Sample Date:	Influent 1 (EW-1)				Influent 2 (EW-2)				MCL ²	New York Standards ³
	7/17/2019	10/7/2019	11/14/2019	12/20/2019	7/17/2019	10/7/2019	11/14/2019	12/20/2019		
Volatile Organic Compounds (ug/L) ¹										
1,1,1-Trichloroethane	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0	200	5
1,1,2,2-Tetrachloroethane	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
1,1,2-Trichloroethane	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
1,1-Dichloroethane	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
1,1-Dichloroethene	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
1,2-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
1,2-Dichloroethane	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
1,2-Dichloropropane	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
1,3-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
1,4-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
2-Chloroethyl vinyl ether	<25	<25	<25	<25	<50.0	<50.0	<50.0	<50.0		
Benzene	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0	5	1
Bromodichloromethane	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0	100	--
Bromoform	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0	80	--
Bromomethane	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0	-	5
Carbon Tetrachloride	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0	5	5
Chlorobenzene	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
Chlorodibromomehane	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
Chlorethane	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
Chloroform	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
Chloromethane	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0	-	5
cis-1,2-Dichloroethene	0.68 J	<5.0	<5.0	<5.0	1.8 J	0.64 J	1.2 J	1.4 J	70	5
cis-1,3-Dichloropropene	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0	-	0.4
Ethylbenzene	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0	700	5
Methylene Chloride	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
Tetrachloroethene	<5.0	<5.0	<5.0	<5.0	0.37J	<10.0	<10.0	0.49J	5	5
Toluene	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0	1000	5
trans-1,2-Dichloroethene	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
trans-1,3-Dichloropropene	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
Trichloroethene	22	10	20	20	21	25	66	93	5	5
Trichlorofluoromethane	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0		
Vinyl Chloride	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0	2	2

Notes:

1 - Only contaminants of concern listed, or those identified above the Reporting Limit in samples or blanks. See laboratory report for complete list of parameters a

2 - Maximum Contaminant Level established under the Safe Drinking Water Act

3 - New York State laws and regulations (10 NYCRR Par 5, 6 NYCRR Part 703)

4 - Shaded cells indicate an exceedance of the standard.

Table 4
Summary of Treatment System Effluent Analyses
 Second Semi-Annual 2019 Report
 Former McGraw-Edison Facility, Olean, New York

Lab used:	Test America	Test America	Test America	Test America		
Sample Identification:	Effluent	Effluent	Effluent	Effluent	MCL ³	New York Standards ⁴
	Sample Date:	7/17/2019	10/7/2019	11/14/2019		
Volatile Organic Compounds (ug/l) ¹						
1,1,1-Trichloroethane	<5.0	<5.0	<5.0	<5.0		
1,1,2,2-Tetrachloroethane	<5.0	<5.0	<5.0	<5.0	5	1
1,1,2-Trichloroethane	<5.0	<5.0	<5.0	<5.0		
1,1-Dichloroethane	<5.0	<5.0	<5.0	<5.0	100	--
1,1-Dichloroethene	<5.0	<5.0	<5.0	<5.0	80	--
1,2-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	-	5
1,2-Dichloroethane	<5.0	<5.0	<5.0	<5.0		
1,2-Dichloropropane	<5.0	<5.0	<5.0	<5.0		
1,3-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	5	5
1,4-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0		
2-Chloroethyl vinyl ether	<25	<25	<25	<25		
Benzene	<5.0	<5.0	<5.0	<5.0	-	5
Bromochloromethane	<5.0	<5.0	<5.0	<5.0		
Bromodichloromethane	<5.0	<5.0	<5.0	<5.0		
Bromoform	<5.0	<5.0	<5.0	<5.0		
Bromomethane	<5.0	<5.0	<5.0	<5.0		
Carbon Tetrachloride	<5.0	<5.0	<5.0	<5.0		
Chlorobenzene	<5.0	<5.0	<5.0	<5.0		
Chlorodibromomehane	<5.0	<5.0	<5.0	<5.0		
Chlorethane	<5.0	<5.0	<5.0	<5.0		
Chloroform	<5.0	<5.0	<5.0	<5.0		
Chloromethane	<5.0	<5.0	<5.0	<5.0	70	5
cis-1,2-Dichloroethene	<5.0	<5.0	<5.0	<5.0		
cis-1,3-Dichloropropene	<5.0	<5.0	<5.0	<5.0		
Ethylbenzene	<5.0	<5.0	<5.0	<5.0		
Methylene Chloride	<5.0	<5.0	<5.0	<5.0	-	0.4
Tetrachloroethene	<5.0	<5.0	<5.0	<5.0		
Toluene	<5.0	<5.0	<5.0	<5.0	700	5
trans-1,2-Dichloroethene	<5.0	<5.0	<5.0	<5.0		
trans-1,3-Dichloropropene	<5.0	<5.0	<5.0	<5.0		
Trichloroethene	<5.0	<5.0	<5.0	<5.0		
Trichlorofluoromethane	<5.0	<5.0	<5.0	<5.0	100	5
Vinyl Chloride	<5.0	<5.0	<5.0	<5.0		
Metals (mg/l) ²	NA		NA	NA		
Aluminum (Dissolved)					NA	0.2
Aluminum (Total)					NA	0.2
Antimony (Dissolved)						0.003
Antimony (Total)						0.003
Arsenic (Dissolved)					0.01	0.05
Arsenic (Total)					0.01	0.05
Barium (Dissolved)					2	1
Barium (Total)					2	1
Beryllium (Dissolved)					0.004	0.011
Beryllium (Total)					0.004	0.011
Cadmium (Dissolved)					0.005	0.005
Cadmium (Total)					0.005	0.005
Calcium (Dissolved)					NS	NS
Calcium (Total)					NS	NS
Chromium (Dissolved)					0.1	0.05
Chromium (Total)					0.1	0.05
Copper (Dissolved)					1.3	0.2
Copper (Total)					1.3	0.2
Iron (Dissolved)					0.3	0.3
Iron (Total)					0.3	0.3
Lead (Dissolved)					0.015	0.008
Lead (Total)					0.015	0.008
Magnesium (Dissolved)					NS	NS
Magnesium (Total)					NS	NS
Manganese (Dissolved)					0.05	0.3
Manganese (Total)					0.05	0.3
Nickel (Dissolved)					NS	0.1
Nickel (Total)					NS	0.1
Potassium (Dissolved)					NS	NS
Potassium (Total)					NS	NS
Selenium (Dissolved)					0.05	0.01
Selenium (Total)					0.05	0.01
Silver (Dissolved)					0.1	0.05
Silver (Total)					0.1	0.05
Sodium (Dissolved)					NS	NS
Sodium (Total)					NS	NS
Thallium (Dissolved)					0.002	0.008
Thallium (Total)					0.002	0.008
Vanadium (Dissolved)						0.014
Vanadium (Total)						0.014
Zinc (Dissolved)					2	2
Zinc (Total)					2	2

Notes:
 1 - Only detected compounds and contaminants of concern listed. See laboratory report for complete list of parameters
 2 - Only detected metals are listed . See laboratory report for complete list of parameters and detection limits.
 3 - Maximum Contaminant Level established under the Safe Drinking Water Act
 4 - New York State laws and regulations (10 NYCRR Par 5, 6 NYCRR Part 703)
 NA indicates Not Analyzed
 NS indicates No Standard
 J - Approximate value
 B - Compound was found in the blank and sample

Table 5
Calculation of TCE Mass Removal

Second Semi-Annual 2019 Report
McGraw-Edison Facility, Olean New York

Sample Date	Days in Operation	Average Flow (gpm) ¹	Average Flow (gpd)	Total Discharge (gal) ²	Influent TCE Concentration (ug/l)	TCE Mass Removed This Period (lbs) ³	Cumulative Mass Removed Since System Startup (lbs)
EW-1							
7/17/2019	28	1.65	2,377	66,559	22	0.01222	28.47
8/29/2019	43	0.48	693	29,794	0	0.00000	28.47
10/7/2019	15	0.34	490	7,355	10	0.00061	28.47
11/14/2019	38	1.98	2,855	108,487	20	0.01811	28.49
12/20/2019	36	1.88	2,707	97,457	20	0.01627	28.50
Average EW-1 gpm:		1.27	Total EW-1 gal:	309,652			
EW-2							
7/17/2019	28	26.69	38438	1076270	21	0.189	141.78
8/29/2019	43	6.65	9577	411830		0.000	141.78
10/7/2019	15	5.70	8207	123101	25	0.026	141.81
11/14/2019	38	24.34	35049	1331874	66	0.734	142.54
12/20/2019	36	17.52	25225	908106	93	0.705	143.25
Average EW-2 gpm:		16.18	Total EW-2 gal:	3,851,181			
Total For Both Wells (gal):				4,160,833	Total Mass Removed:	1.70	170.14

Notes:

1 - Average flow for the reported period (Days in Operation). Value is rounded to the nearest 10th and may not directly correspond to the presented gallons per day (gpd)

2 - Total discharge in gallons for the reported period (Days in Operation)

3 - Pounds removed = Total Discharge (gal) * Concentration (ug/l) * 3.785 l/gal * 2.205x10⁻⁹ lbs/ug

Historic Calculations are presented in Appendix C

Table 6
Calculation of cis-1,2-DCE Mass Removal

Second Semi-Annual 2019 Report
McGraw-Edison Facility, Olean New York

Sample Date	Days in Operation	Average Flow (gpm) ¹	Average Flow (gpd)	Total Discharge (gal) ²	Influent cDCE Concentration (ug/l)	cDCE Mass Removed This Period (lbs) ³	Cumulative Mass Removed Since System Startup (lbs)
EW-1							
7/17/2019	28	1.65	2,377	66,559	0.68	0.000378	1.128
8/29/2019	43	0.48	693	29,794	0.0	0.000000	1.128
10/7/2019	15	0.34	490	7,355	0	0.000000	1.128
11/14/2019	38	1.98	2,855	108,487	0	0.000000	1.128
12/20/2019	36	1.88	2,707	97,457	0	0.000000	1.128
Average EW-1 gpm:		1.27	Total EW-1 gal:	309,652			
EW-2							
7/17/2019	28	26.69320437	38438.21429	1076270	1.8	0.016	3.89
8/29/2019	43	6.65	9577.44186	411830	0	0.000	3.89
10/7/2019	15	5.70	8206.733333	123101	0.64	0.001	3.89
11/14/2019	38	24.34	35049.31579	1331874	1.2	0.013	3.91
12/20/2019	36	17.52	25225.16667	908106	1.4	0.011	3.92
Average EW-2 gpm:		16.18	Total EW-2 gal:	3,851,181			
		Total For Both Wells (gal):		4,160,833	Total Mass Removed:	0.041	4.96

Notes:

1 - Average flow for the reported period (Days in Operation). Value is rounded to the nearest 10th and may not directly correspond to the presented gallons per day (gpd)

2 - Total discharge in gallons for the reported period (Days in Operation)

3 - Pounds removed = Total Discharge (gal) * Concentration (ug/l) * 3.785 l/gal * 2.205x10⁻⁹ lbs/ug

Historic Calculations are presented in Appendix

** Problems with flow meter. To be conservative, this event was omitted in mass calculations.

Table 7
Summary of Groundwater Elevations
 Second Semi-Annual 2019 Report
 Former McGraw-Edison Facility, Olean, New York

		November 14, 2019	
Monitoring Point	Top of Casing Elevation	Depth to Water (ft)	Groundwater Elevation (ft)
SHALLOW AQUIFER			
A-1	1438.56	13.73	1424.83
B-1	1441.62	17.44	1424.18
C-1	1440.52	15.76	1424.76
D-1	1443.05	18.59	1424.46
E-1R	1443.52	18.62	1424.90
F-1	1436.44	11.90	1424.54
G-1	1439.99	15.71	1424.28
H-1	1441.05	16.74	1424.31
I-1	1443.44	18.68	1424.76
CW-7A	1437.71	12.97	1424.74
CW-18A	1436.48	12.26	1424.22
EW-1	1433.96	19.40	1414.56
EW-2	1438.83	20.23	1418.60
EW-3	1436.68	12.21	1424.47
P-01	1437.08	12.59	1424.49
P-02	1434.06	9.62	1424.44
P-03	1434.20	9.51	1424.69
P-04	1436.13	11.48	1424.65
P-05	1435.05	10.63	1424.42
P-06	1441.95	17.19	1424.76
P-07	1437.84	12.60	1425.24
P-08	1436.00	11.21	1424.79
P-09	1435.48	10.65	1424.83
P-10	1436.28	11.92	1424.36
P-11	1438.70	14.32	1424.38
P-12	1436.16	11.87	1424.29
P-13	1434.33	9.65	1424.68
P-14	1433.61	8.99	1424.62
P-15	1437.34	13.19	1424.15
P-16	1436.18	11.57	1424.61
P-17	1434.08	9.77	1424.31
DEEP AQUIFER			
A-2	1438.33	31.27	1407.06
B-2	1441.31	34.07	1407.24
B-3	1441.16	33.92	1407.24
C-2	1441.09	33.91	1407.18
D-2R	1442.88	35.61	1407.27
CW-7	1438.35	31.35	1407.00
CW-18	1435.63	28.73	1406.90
KW-1	1434.98	10.34	1424.64

Table 8

Summary of Groundwater Analytical Results

Second Semi-Annual 2019 Report

Former McGraw-Edison Facility, Olean, New York

Monitoring Well:	A-1	B-1	C-1	D-1	D-2	G-1	G-1 DUP	CW-18A	EW-3	MCL ⁽¹⁾	New York
Date Sampled:	11/6/2019	11/6/2019	11/6/2019	11/6/2019	11/6/2019	11/6/2019	11/6/2019	11/6/2019	11/6/2019		Standards ⁽²⁾
Volatile Organic Compounds (ug/L)											
2-Butanone (MEK)	2.0 BJ	< 1.0	2.3 BJ	2.2 BJ	< 1.0	< 1.0	1.9 BJ	1.4 BJ	< 1.0	-	50
Acetone	7.9 B	6.8 B	8.6 B	7.8 B	5.2 B	6.2 B	7.1 B	7.9 B	5.8 B		
Chloromethane	0.68 J	0.59 J	0.6 J	0.64 J	< 1.0	< 1.0	< 1.0	0.47 BJ	0.36 J	-	5
1,1-Dichloroethane (1,1-DCA)	< 1.0	0.22 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
cis-1,2-Dichloroethene	< 1.0	< 1.0	< 1.0	0.92 J	< 1.0	0.28 J	0.43 J	< 1.0	< 1.0	70	5
4-Methyl-2-pentanone	< 1.0	< 1.0	< 1.0	< 1.0	0.52 BJ	0.38 BJ	< 1.0	< 1.0	0.53 BJ		
Tetrachloroethene (PCE)	< 1.0	< 1.0	< 1.0	0.38 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	5	5
Trichloroethene (TCE)	0.2 J	< 1.0	0.47 J	3.7	0.33 J	1.9	2.5	1.70	0.56	5	5
Field Parameters											
Turbidity (NTU)	17.5	32.1	34.6	10.4	200.0	42	42	72.3	8.4	NA	NA
Temperature (C)	15.7	14.5	14	11.3	9.96	14.50	14.50	14.1	14.7	NA	NA
Specific Conductance (mS/cm)	0.562	0.604	0.423	0.297	0.256	0.278	0.278	0.345	0.276	NA	NA
Dissolved Oxygen (mg/L)	1.86	2.86	0.85	2.84	2.95	15.52	15.52	3.95	7.04	NA	NA
pH (Standard Units)	7.26	7.29	7.28	7.05	6.94	7.16	7.16	7.46	7.10	NA	NA
ORP (mV)	29.4	-2.7	-74.5	-24.3	-21.2	40.3	40.3	59.5	52.1	NA	NA

Notes:

- Only parameters that were detected at levels above the limit of quantification are shown in the table.
- 1 - Maximum Contaminant Level established under the Safe Drinking Water Act
- 2 - New York State laws and regulations (10 NYCRR Par 5, 6 NYCRR Part 703)
- NA - Not Applicable
- Shaded numbers indicate an exceedance of the standard.
- J - Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit - Concentrations within this range are estimated
- D - Dilution required due to high concentration of target analyte(s)

Table 9
QA Data Summary

Second Semi-Annual 2019 Report
Former McGraw-Edison Facility, Olean, New York

Sample Identification:	G-1	Dup	RPD	Trip Blank
Volatile Organic Compounds (ug/l)				
1,1,1-Trichloroethane	<1.0	<1.0	0.00	<1.0
1,1,2,2-Tetrachloroethane	<1.0	<1.0	0.00	<1.0
1,1,2-Trichloroethane	<1.0	<1.0	0.00	<1.0
1,1-Dichloroethane	<1.0	<1.0	0.00	<1.0
1,1-Dichloroethene	<1.0	<1.0	0.00	<1.0
1,2,4-Trichlorobenzene	<1.0	<1.0	0.00	<1.0
1,2-Dibrom-3-Chloropropane	<1.0	<1.0	0.00	<1.0
1,2-Dibromoethane	<1.0	<1.0	0.00	<1.0
1,2-Dichlorobenzene	<1.0	<1.0	0.00	<1.0
1,2-Dichloroethane	<1.0	<1.0	0.00	<1.0
1,2-Dichloropropane	<1.0	<1.0	0.00	<1.0
1,3-Dichlorobenzene	<1.0	<1.0	0.00	<1.0
1,4-Dichlorobenzene	<1.0	<1.0	0.00	<1.0
2-Butanone (MEK)	1.5	1.9	5.88%	1.5
2-Hexanone	<5.0	<5.0	0.00	<5.0
4-Methyl-2-pentanone (MIBK)	0.38	0.39	0.65%	0.39
Acetone	6.2	7.1	3.38%	7.7
Benzene	<1.0	<1.0	0.00	<1.0
Bromochloromethane	<1.0	<1.0	0.00	<1.0
Bromodichloromethane	<1.0	<1.0	0.00	<1.0
Bromoform	<1.0	<1.0	0.00	<1.0
Bromomethane	<1.0	<1.0	0.00	<1.0
Carbon Tetrachloride	<1.0	<1.0	0.00	<1.0
Chlorethane	<1.0	<1.0	0.00	<1.0
Chlorobenzene	<1.0	<1.0	0.00	<1.0
Chlorodibromomethane	<1.0	<1.0	0.00	<1.0
Chloroform	<1.0	<1.0	0.00	<1.0
Chloromethane	<5.0	<5.0	0.00	0.56
cis-1,2-Dichloroethene	0.28	0.43	10.56%	< 1.0
cis-1,3-Dichloropropene	<1.0	<1.0	0.00	<1.0
Ethylbenzene	<1.0	<1.0	0.00	<1.0
Methylene Chloride	<1.0	<1.0	0.00	<1.0
Styrene	<1.0	<1.0	0.00	<1.0
Tetrachloroethene	<1.0	<1.0	0.00	<1.0
Toluene	<1.0	<1.0	0.00	<1.0
trans-1,2-Dichloroethene	<1.0	<1.0	0.00	<1.0
trans-1,3-Dichloropropene	<1.0	<1.0	0.00	<1.0
Trichloroethene	1.9	2.5	6.82%	<1.0
Vinyl Chloride	<1.0	<1.0	0.00	<1.0
Xylenes (Total)	<1.0	<1.0	0.00	<1.0

Appendix A
Field Sampling Forms

CLIENT / SITE: Enviroengineering/Cooper-Olean
Site Address: 1648 Dugan Road Olean NY

Job Number BEV-09-007
Date Completed: 7-17-19

System Operational Data:

System on upon arrival?

Y/N

Laboratory
TestAmerica, Inc.
Call Melissa Deyo at 716-504-9874

SITE CONTACTS

James Zemak EHS Manager
716-375-7255 office
740-815-1315 cell

Ryan Merritt
Maintenance Manager
716-375-7123 office

Monthly Effluent Sampling and System Data

Collect the effluent samples from the Water treatment system

Collect system totalizer readings as indicated below

TOT1 4057206
TOT2 53985756
PERM-1 ~~22531628~~
PERM-2 18023822

Flow-1 2.0
Flow-2 26.3

Magnehelic in H2O

18"

YOUR COMMENTS BELOW:

CLIENT / SITE: Enviroengineering/Cooper-Olean
Site Address: 1648 Dugan Road Olean NY

Job Number BEV-09-007
Date Completed: 8-29-19

System Operational Data:

System on upon arrival?

Y (N)

Laboratory
TestAmerica, Inc.
Call Melissa Deyo at 716-504-9874

SITE CONTACTS

James Zemak EHS Manager
716-375-7255 office
740-815-1315 cell

Ryan Merritt
Maintenance Manager
716-375-7123 office

Monthly Effluent Sampling and System Data

Collect the effluent samples from the Water treatment system

Collect system totalizer readings as indicated below

TOT1 4087065
TOT2 45397650
PERM-1 22561422
PERM-2 18435652

Flow-1 1.0
Flow-2 25.9

Magnehelic in H2O 18"

YOUR COMMENTS BELOW:

OFF HIGH SUMP LEVEL + HIGH FILTER PRESS.
POSSIBLE THAT MOTORIZED VALVE DID NOT OPEN.
FIXED DISCHARGE PUMP PIPING. RESTARTED SYSTEM.

CLIENT / SITE: Enviroengineering/Cooper-Olean
Site Address: 1648 Dugan Road Olean NY

Job Number BEV-09-007
Date Completed: 10-7-19

System Operational Data:

System on upon arrival?

Y / N

SITE CONTACTS

James Zemak EHS Manager
716-375-7255 office
740-815-1315 cell

Ryan Merritt
Maintenance Manager
716-375-7123 office

Laboratory
TestAmerica, Inc.

Call ~~Melissa Deyo~~ at 716-504-9874

Brian Fischer @ 716-504-9835

Monthly Effluent Sampling and System Data

Collect the effluent samples from the Water treatment system

Collect system totalizer readings as indicated below

TOT1 4094360

Flow-1 .6

TOT2 54520754

Flow-2 25.5

PERM-1 22568777

PERM-2 18558753

Magnehelic in H2O 18"

YOUR COMMENTS BELOW:

REPLACED OUTLET VALVE, RESTARTED SYSTEM

CLIENT / SITE: Enviroengineering/Cooper-Olean
Site Address: 1648 Dugan Road Olean NY

Job Number BEV-09-007
Date Completed: 11-14-19

System Operational Data:

System on upon arrival?

Y N

Laboratory
TestAmerica, Inc.
Call Melissa Deyo at 716-504-9874

SITE CONTACTS

James Zemak EHS Manager
716-375-7255 office
740-815-1315 cell

Ryan Merritt
Maintenance Manager
716-375-7123 office

Monthly Effluent Sampling and System Data

Collect the effluent samples from the Water treatment system

Collect system totalizer readings as indicated below

TOT1 4202848

Flow-1 1.7

TOT2 55852631

Flow-2 21.2

PERM-1 22677264

PERM-2 19890627

Magnehelic in H2O 19

YOUR COMMENTS BELOW:

COLLECTED UNPRESERVED SAMPLE FOR METALS ANALYSIS
AS A REPLACEMENT FOR THE ONE COLLECTED OCT. 7, 2019

Summary of Groundwater Elevations
Cooper Industries Facility, Olean, New York

		November 14, 2019	
Monitoring Point	Top of Casing Elevation	Depth to Water (ft)	Groundwater Elevation (ft)
SHALLOW AQUIFER			
A-1	1438.56	13.73	1424.83
B-1	1441.62	17.44	1424.18
C-1	1440.52	15.76	1424.76
D-1	1443.05	18.59	1424.46
E-1R	1443.52	18.62	1424.90
F-1	1436.44	11.90	1424.54
G-1	1439.99	15.71	1424.28
H-1	1441.05	16.74	1424.31
I-1	1443.44	18.68	1424.76
CW-7A	1437.71	12.97	1424.74
CW-18A	1436.48	12.26	1424.22
EW-1	1433.96	19.40	1414.56
EW-2	1438.83	20.23	1418.60
EW-3	1436.68	12.21	1424.47
P-01	1437.08	12.59	1424.49
P-02	1434.06	9.62	1424.44
P-03	1434.20	9.51	1424.69
P-04	1436.13	11.48	1424.65
P-05	1435.05	10.63	1424.42
P-06	1441.95	17.19	1424.76
P-07	1437.84	12.60	1425.24
P-08	1436.00	11.21	1424.79
P-09	1435.48	10.65	1424.83
P-10	1436.28	11.92	1424.36
P-11	1438.70	14.32	1424.38
P-12	1436.16	11.87	1424.29
P-13	1434.33	9.65	1424.68
P-14	1433.61	8.99	1424.62
P-15	1437.34	13.19	1424.15
P-16	1436.18	11.57	1424.61
P-17	1434.08	9.77	1424.31
DEEP AQUIFER			
A-2	1438.33	31.27	1407.06
B-2	1441.31	34.07	1407.24
B-3	1441.16	33.92	1407.24
C-2	1441.09	33.91	1407.18
D-2R	1442.88	35.61	1407.27
CW-7	1438.35	31.35	1407.00
CW-18	1435.63	28.73	1406.90
KW-1	1434.98	10.34	1424.64

CLIENT / SITE: Enviroengineering/Cooper-Olean
Site Address: 1648 Dugan Road Olean NY

Job Number BEV-09-007
Date Completed: DEC. 20, 2019

System Operational Data:

System on upon arrival?

Y/N

Laboratory

TestAmerica, Inc.

Call ~~Melissa Deyo~~ at 716-504-9874

BRIAN FISCHER 716-504-9835

SITE CONTACTS

James Zemak EHS Manager

716-375-7255 office

740-815-1315 cell

Ryan Merritt

Maintenance Manager

716-375-7123 office

Monthly Effluent Sampling and System Data

Collect the effluent samples from the Water treatment system

Collect system totalizer readings as indicated below

TOT1 04300287

Flow-1 2.3

TOT2 56760529

Flow-2 18.6

PERM-1 22774724

PERM-2 20798733

Magnehelic in H2O 19.3

YOUR COMMENTS BELOW:

CLEANED OUT SAMPLING PORT FOR FW-2.

Appendix B

Chain-of-Custody Forms and Laboratory Reports



November 14, 2019

Service Request No:R1910938

Mr. Michael Worden
Environeering, Inc.
16100 Cairnway Dr.
Suite 320
Houston, TX 77084

Laboratory Results for: Cooper - Olean, NY

Dear Mr.Worden,

Enclosed are the results of the sample(s) submitted to our laboratory November 07, 2019
For your reference, these analyses have been assigned our service request number **R1910938**.

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro for
Janice Jaeger
Project Manager

ADDRESS

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

PHONE +1 585 288 5380 | **FAX** +1 585 288 8475

ALS Group USA, Corp.
dba ALS Environmental



Narrative Documents

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com



Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY
Sample Matrix: Water

Service Request: R1910938
Date Received: 11/07/2019

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Nine water samples were received for analysis at ALS Environmental on 11/07/2019. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Volatiles by GC/MS:

Method 8260C, 11/13/2019: The Method Blank contained a low level of the following analytes above the Reporting Limit: acetone. All associated sample results less than ten times the level found in the Method Blank are flagged. The samples were not reprepared/reanalyzed because the vials used in sampling have acetone contamination. We are working with a new vendor to supply clean vials.

Approved by 

Date 11/14/2019

SAMPLE DETECTION SUMMARY

CLIENT ID: A-1	Lab ID: R1910938-001
-----------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
2-Butanone (MEK)	2.0	BJ	0.78	5.0	ug/L	8260C
Acetone	7.9	B	2.1	5.0	ug/L	8260C
Chloromethane	0.68	J	0.28	1.0	ug/L	8260C
Trichloroethene (TCE)	0.20	J	0.20	1.0	ug/L	8260C

CLIENT ID: B-1	Lab ID: R1910938-002
-----------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
1,1-Dichloroethane (1,1-DCA)	0.22	J	0.20	1.0	ug/L	8260C
Acetone	6.8	B	2.1	5.0	ug/L	8260C
Chloromethane	0.59	J	0.28	1.0	ug/L	8260C

CLIENT ID: C-1	Lab ID: R1910938-003
-----------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
2-Butanone (MEK)	2.3	BJ	0.78	5.0	ug/L	8260C
Acetone	8.6	B	2.1	5.0	ug/L	8260C
Chloromethane	0.60	J	0.28	1.0	ug/L	8260C
Trichloroethene (TCE)	0.47	J	0.20	1.0	ug/L	8260C

CLIENT ID: D-1	Lab ID: R1910938-004
-----------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
2-Butanone (MEK)	2.2	BJ	0.78	5.0	ug/L	8260C
Acetone	7.8	B	2.1	5.0	ug/L	8260C
Chloromethane	0.64	J	0.28	1.0	ug/L	8260C
cis-1,2-Dichloroethene	0.92	J	0.23	1.0	ug/L	8260C
Tetrachloroethene (PCE)	0.38	J	0.21	1.0	ug/L	8260C
Trichloroethene (TCE)	3.7		0.20	1.0	ug/L	8260C

CLIENT ID: D-2	Lab ID: R1910938-005
-----------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
4-Methyl-2-pentanone	0.52	BJ	0.20	5.0	ug/L	8260C
Acetone	5.2	B	2.1	5.0	ug/L	8260C
Trichloroethene (TCE)	0.33	J	0.20	1.0	ug/L	8260C

CLIENT ID: G-1	Lab ID: R1910938-006
-----------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
4-Methyl-2-pentanone	0.38	BJ	0.20	5.0	ug/L	8260C
Acetone	6.2	B	2.1	5.0	ug/L	8260C
cis-1,2-Dichloroethene	0.28	J	0.23	1.0	ug/L	8260C
Trichloroethene (TCE)	1.9		0.20	1.0	ug/L	8260C

CLIENT ID: G-1 Dup	Lab ID: R1910938-007
---------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
2-Butanone (MEK)	1.9	BJ	0.78	5.0	ug/L	8260C
Acetone	7.1	B	2.1	5.0	ug/L	8260C

SAMPLE DETECTION SUMMARY

CLIENT ID: G-1 Dup	Lab ID: R1910938-007
---------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Chloromethane	1.0		0.28	1.0	ug/L	8260C
cis-1,2-Dichloroethene	0.43	J	0.23	1.0	ug/L	8260C
Trichloroethene (TCE)	2.5		0.20	1.0	ug/L	8260C

CLIENT ID: EW3	Lab ID: R1910938-008
-----------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
4-Methyl-2-pentanone	0.53	BJ	0.20	5.0	ug/L	8260C
Acetone	5.8	B	2.1	5.0	ug/L	8260C
Chloromethane	0.36	J	0.28	1.0	ug/L	8260C
Trichloroethene (TCE)	0.56	J	0.20	1.0	ug/L	8260C

CLIENT ID: Trip Blank	Lab ID: R1910938-009
------------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
2-Butanone (MEK)	1.5	BJ	0.78	5.0	ug/L	8260C
4-Methyl-2-pentanone	0.39	BJ	0.20	5.0	ug/L	8260C
Acetone	7.7	B	2.1	5.0	ug/L	8260C
Chloromethane	0.56	J	0.28	1.0	ug/L	8260C



Sample Receipt Information

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04

Service Request:R1910938

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R1910938-001	A-1	11/6/2019	1320
R1910938-002	B-1	11/6/2019	1420
R1910938-003	C-1	11/6/2019	1430
R1910938-004	D-1	11/6/2019	1020
R1910938-005	D-2	11/6/2019	1140
R1910938-006	G-1	11/6/2019	1230
R1910938-007	G-1 Dup	11/6/2019	1230
R1910938-008	EW3	11/6/2019	1600
R1910938-009	Trip Blank	11/6/2019	



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

59544

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name COOPER		Project Number 186-04		ANALYSIS REQUESTED (Include Method Number and Container Preservative)													
Project Manager TIM WHITE		Report CC		PRESERVATIVE													
Company/Address 16100 CAIRNWAY DR ENVIRONMENTAL HOUSTON, TX 16100 CAIRNWAY DR SUITE 300 HOUSTON, TX 832-674-0000				NUMBER OF CONTAINERS	GC/MS VOAs • 8260 • 824 • CLP GC/MS SVOAs • 8270 • 825 GC VOAs • 8021 • 801/802 PESTICIDES • 8081 • 808 PCBs • 8082 • 808 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) 8260 C/FP											Preservative Key 0. NONE 1. HCL 2. HNO ₃ 3. H ₂ SO ₄ 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO ₄ 8. Other ZCC	
Phone # 832-674-0000																	
Donor's Signature [Signature]		Donor's Printed Name HAYDEN MURKEL		REMARKS/ ALTERNATE DESCRIPTION													
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE		TIME	MATRIX												
A-1		11/6/19	1320	AQ	3												
B-1			1420														
C-1			1430														
D-1			1020														
D-2			1140														
E-1			1230														
G-1 DUP			1230														
EW3			1600														
TRIP BLANK																	
TRIP BLANK																	
SPECIAL INSTRUCTIONS/COMMENTS Metals						TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day 2 day 3 day 4 day 5 day Standard (10 business days-No Surcharge) REQUESTED REPORT DATE				REPORT REQUIREMENTS I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data Edata Yes No				INVOICE INFORMATION PO # BILL TO:			
See QAPP ☐																	
STATE WHERE SAMPLES WERE COLLECTED																	
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY			
Signature [Signature]		Signature [Signature]		Signature [Signature]		Signature [Signature]		Signature [Signature]		Signature [Signature]		Signature [Signature]		Signature [Signature]			
Printed Name HAYDEN MURKEL		Printed Name [Signature]		Printed Name [Signature]		Printed Name [Signature]		Printed Name [Signature]		Printed Name [Signature]		Printed Name [Signature]		Printed Name [Signature]			
Firm ENVIRONMENTAL		Firm ALS		Firm ALS		Firm ALS		Firm ALS		Firm ALS		Firm ALS		Firm ALS			
Date/Time 11/7/19 950		Date/Time 11/7/19 0910		Date/Time 11/7/19 0910		Date/Time 11/7/19 0910		Date/Time 11/7/19 0910		Date/Time 11/7/19 0910		Date/Time 11/7/19 0910		Date/Time 11/7/19 0910			

R1910938

Environmental, Inc.
Cooper - Olson, NY

5





Cooler Receipt and Preservation Check Form

R1910938

5

Enviroengineering, Inc.
Cooper - Olean, NY

Project/Client Enviroengineering Folder Number _____

Cooler received on 11-7-19 by: HE

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y ☒ N ☒
2	Custody papers properly completed (ink, signed)?	Y ☒ N ☒
3	Did all bottles arrive in good condition (unbroken)?	Y ☒ N ☒
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	Y ☒ N ☒

5a	Perchlorate samples have required headspace?	Y ☒ N ☒ NA ☒
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y ☒ N ☒ NA ☒
6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
7	Soil VOA received as: Bulk Encore 5035set	<u>NA</u>

8. Temperature Readings Date: 11-7-19 Time: 10:07 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>2.3</u>	<u>2.7</u>					
Within 0-6°C?	Y ☒ N ☒	Y ☒ N ☒	Y ☒ N ☒	Y ☒ N ☒	Y ☒ N ☒	Y ☒ N ☒	Y ☒ N ☒
If <0°C, were samples frozen?	Y ☒ N ☒	Y ☒ N ☒	Y ☒ N ☒	Y ☒ N ☒	Y ☒ N ☒	Y ☒ N ☒	Y ☒ N ☒

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule
& Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by HE on 11-7-19 at 10:13
5035 samples placed in storage location: _____ by _____ on _____ at _____

Cooler Breakdown/Preservation Check**: Date: 11/7/19 Time: 1620 by: SH

9. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
10. Did all bottle labels and tags agree with custody papers? YES NO
11. Were correct containers used for the tests indicated? YES NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO N/A
13. Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized Tedlar® Bags Inflated N/A

pH	Lot of test paper	Reagent	Preserved?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
≤2		HNO ₃								
≤2		H ₂ SO ₄								
<4		NaHSO ₄								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add Na ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).					
		Na ₂ S ₂ O ₃								
		Zn Acetate	-	-						
		HCl	**	**	<u>5050-11</u>	<u>4/22</u>	**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			

Bottle lot numbers: 6927-C7594

Explain all Discrepancies/ Other Comments:

* Trip Blank for Cooper Olean: 1 of 3 vials

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: AL

PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



Miscellaneous Forms

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.	+	Correlation coefficient for MSA is <0.995.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Aroclors).	N	Inorganics- Matrix spike recovery was outside laboratory limits.
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.	N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.	S	Concentration has been determined using Method of Standard Additions (MSA).
E	Organics- Concentration has exceeded the calibration range for that specific analysis.	W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.	P	Concentration >40% difference between the two GC columns.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.	C	Confirmed by GC/MS
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.	Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (100% Difference between two GC columns).
#	Spike was diluted out.	X	See Case Narrative for discussion.
		MRL	Method Reporting Limit. Also known as:
		LOQ	Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
		MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
		LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
		ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.



Rochester Lab ID # for State Certifications¹

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

¹ Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to <https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental>

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.

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Analyst Summary report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04

Service Request: R1910938

Sample Name: A-1
Lab Code: R1910938-001
Sample Matrix: Water

Date Collected: 11/6/19
Date Received: 11/7/19

Analysis Method
8260C

Extracted/Digested By

Analyzed By
AMOSSES

Sample Name: B-1
Lab Code: R1910938-002
Sample Matrix: Water

Date Collected: 11/6/19
Date Received: 11/7/19

Analysis Method
8260C

Extracted/Digested By

Analyzed By
AMOSSES

Sample Name: C-1
Lab Code: R1910938-003
Sample Matrix: Water

Date Collected: 11/6/19
Date Received: 11/7/19

Analysis Method
8260C

Extracted/Digested By

Analyzed By
AMOSSES

Sample Name: D-1
Lab Code: R1910938-004
Sample Matrix: Water

Date Collected: 11/6/19
Date Received: 11/7/19

Analysis Method
8260C

Extracted/Digested By

Analyzed By
AMOSSES

Sample Name: D-2
Lab Code: R1910938-005
Sample Matrix: Water

Date Collected: 11/6/19
Date Received: 11/7/19

Analysis Method
8260C

Extracted/Digested By

Analyzed By
AMOSSES

ALS Group USA, Corp.

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Analyst Summary report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04

Service Request: R1910938

Sample Name: G-1
Lab Code: R1910938-006
Sample Matrix: Water

Date Collected: 11/6/19
Date Received: 11/7/19

Analysis Method
8260C

Extracted/Digested By

Analyzed By
AMOSSES

Sample Name: G-1 Dup
Lab Code: R1910938-007
Sample Matrix: Water

Date Collected: 11/6/19
Date Received: 11/7/19

Analysis Method
8260C

Extracted/Digested By

Analyzed By
AMOSSES

Sample Name: EW3
Lab Code: R1910938-008
Sample Matrix: Water

Date Collected: 11/6/19
Date Received: 11/7/19

Analysis Method
8260C

Extracted/Digested By

Analyzed By
AMOSSES

Sample Name: Trip Blank
Lab Code: R1910938-009
Sample Matrix: Water

Date Collected: 11/6/19
Date Received: 11/7/19

Analysis Method
8260C

Extracted/Digested By

Analyzed By
AMOSSES



INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.



Sample Results

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

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Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 13:20
Date Received: 11/07/19 09:50

Sample Name: A-1
Lab Code: R1910938-001

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.21	1	11/13/19 15:19	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/13/19 15:19	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/13/19 15:19	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/13/19 15:19	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.25	1	11/13/19 15:19	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 15:19	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.25	1	11/13/19 15:19	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/13/19 15:19	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/13/19 15:19	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/13/19 15:19	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 15:19	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/13/19 15:19	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 15:19	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 15:19	
2-Butanone (MEK)	2.0 BJ	5.0	0.78	1	11/13/19 15:19	
2-Hexanone	5.0 U	5.0	0.20	1	11/13/19 15:19	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/13/19 15:19	
Acetone	7.9 B	5.0	2.1	1	11/13/19 15:19	
Benzene	1.0 U	1.0	0.20	1	11/13/19 15:19	
Bromochloromethane	1.0 U	1.0	0.24	1	11/13/19 15:19	
Bromodichloromethane	1.0 U	1.0	0.22	1	11/13/19 15:19	
Bromoform	1.0 U	1.0	0.25	1	11/13/19 15:19	
Bromomethane	1.0 U	1.0	0.70	1	11/13/19 15:19	
Carbon Disulfide	1.0 U	1.0	0.25	1	11/13/19 15:19	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/13/19 15:19	
Chlorobenzene	1.0 U	1.0	0.20	1	11/13/19 15:19	
Chloroethane	1.0 U	1.0	0.23	1	11/13/19 15:19	
Chloroform	1.0 U	1.0	0.24	1	11/13/19 15:19	
Chloromethane	0.68 J	1.0	0.28	1	11/13/19 15:19	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/13/19 15:19	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/13/19 15:19	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/13/19 15:19	
Ethylbenzene	1.0 U	1.0	0.20	1	11/13/19 15:19	
Hexachlorobutadiene	2.0 U	2.0	0.33	1	11/13/19 15:19	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/13/19 15:19	
Dichloromethane (Methylene Chloride)	1.0 U	1.0	0.36	1	11/13/19 15:19	
o-Xylene	1.0 U	1.0	0.20	1	11/13/19 15:19	
Styrene	1.0 U	1.0	0.20	1	11/13/19 15:19	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/13/19 15:19	
Toluene	1.0 U	1.0	0.20	1	11/13/19 15:19	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/13/19 15:19	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/13/19 15:19	
Trichloroethene (TCE)	0.20 J	1.0	0.20	1	11/13/19 15:19	

ALS Group USA, Corp.
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Analytical Report

Client: Environeering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 13:20
Date Received: 11/07/19 09:50

Sample Name: A-1
Lab Code: R1910938-001

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/13/19 15:19	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/13/19 15:19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	85 - 122	11/13/19 15:19	
Dibromofluoromethane	100	89 - 119	11/13/19 15:19	
Toluene-d8	101	87 - 121	11/13/19 15:19	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 14:20
Date Received: 11/07/19 09:50

Sample Name: B-1
Lab Code: R1910938-002

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.21	1	11/13/19 15:41	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/13/19 15:41	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/13/19 15:41	
1,1-Dichloroethane (1,1-DCA)	0.22 J	1.0	0.20	1	11/13/19 15:41	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.25	1	11/13/19 15:41	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 15:41	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.25	1	11/13/19 15:41	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/13/19 15:41	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/13/19 15:41	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/13/19 15:41	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 15:41	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/13/19 15:41	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 15:41	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 15:41	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/13/19 15:41	
2-Hexanone	5.0 U	5.0	0.20	1	11/13/19 15:41	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/13/19 15:41	
Acetone	6.8 B	5.0	2.1	1	11/13/19 15:41	
Benzene	1.0 U	1.0	0.20	1	11/13/19 15:41	
Bromochloromethane	1.0 U	1.0	0.24	1	11/13/19 15:41	
Bromodichloromethane	1.0 U	1.0	0.22	1	11/13/19 15:41	
Bromoform	1.0 U	1.0	0.25	1	11/13/19 15:41	
Bromomethane	1.0 U	1.0	0.70	1	11/13/19 15:41	
Carbon Disulfide	1.0 U	1.0	0.25	1	11/13/19 15:41	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/13/19 15:41	
Chlorobenzene	1.0 U	1.0	0.20	1	11/13/19 15:41	
Chloroethane	1.0 U	1.0	0.23	1	11/13/19 15:41	
Chloroform	1.0 U	1.0	0.24	1	11/13/19 15:41	
Chloromethane	0.59 J	1.0	0.28	1	11/13/19 15:41	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/13/19 15:41	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/13/19 15:41	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/13/19 15:41	
Ethylbenzene	1.0 U	1.0	0.20	1	11/13/19 15:41	
Hexachlorobutadiene	2.0 U	2.0	0.33	1	11/13/19 15:41	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/13/19 15:41	
Dichloromethane (Methylene Chloride)	1.0 U	1.0	0.36	1	11/13/19 15:41	
o-Xylene	1.0 U	1.0	0.20	1	11/13/19 15:41	
Styrene	1.0 U	1.0	0.20	1	11/13/19 15:41	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/13/19 15:41	
Toluene	1.0 U	1.0	0.20	1	11/13/19 15:41	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/13/19 15:41	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/13/19 15:41	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/13/19 15:41	

ALS Group USA, Corp.
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Analytical Report

Client: Environeering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 14:20
Date Received: 11/07/19 09:50

Sample Name: B-1
Lab Code: R1910938-002

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/13/19 15:41	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/13/19 15:41	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	85 - 122	11/13/19 15:41	
Dibromofluoromethane	100	89 - 119	11/13/19 15:41	
Toluene-d8	103	87 - 121	11/13/19 15:41	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 14:30
Date Received: 11/07/19 09:50

Sample Name: C-1
Lab Code: R1910938-003

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.21	1	11/13/19 16:02	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/13/19 16:02	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/13/19 16:02	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/13/19 16:02	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.25	1	11/13/19 16:02	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:02	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.25	1	11/13/19 16:02	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/13/19 16:02	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/13/19 16:02	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/13/19 16:02	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:02	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/13/19 16:02	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:02	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:02	
2-Butanone (MEK)	2.3 BJ	5.0	0.78	1	11/13/19 16:02	
2-Hexanone	5.0 U	5.0	0.20	1	11/13/19 16:02	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/13/19 16:02	
Acetone	8.6 B	5.0	2.1	1	11/13/19 16:02	
Benzene	1.0 U	1.0	0.20	1	11/13/19 16:02	
Bromochloromethane	1.0 U	1.0	0.24	1	11/13/19 16:02	
Bromodichloromethane	1.0 U	1.0	0.22	1	11/13/19 16:02	
Bromoform	1.0 U	1.0	0.25	1	11/13/19 16:02	
Bromomethane	1.0 U	1.0	0.70	1	11/13/19 16:02	
Carbon Disulfide	1.0 U	1.0	0.25	1	11/13/19 16:02	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/13/19 16:02	
Chlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:02	
Chloroethane	1.0 U	1.0	0.23	1	11/13/19 16:02	
Chloroform	1.0 U	1.0	0.24	1	11/13/19 16:02	
Chloromethane	0.60 J	1.0	0.28	1	11/13/19 16:02	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/13/19 16:02	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/13/19 16:02	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/13/19 16:02	
Ethylbenzene	1.0 U	1.0	0.20	1	11/13/19 16:02	
Hexachlorobutadiene	2.0 U	2.0	0.33	1	11/13/19 16:02	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/13/19 16:02	
Dichloromethane (Methylene Chloride)	1.0 U	1.0	0.36	1	11/13/19 16:02	
o-Xylene	1.0 U	1.0	0.20	1	11/13/19 16:02	
Styrene	1.0 U	1.0	0.20	1	11/13/19 16:02	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/13/19 16:02	
Toluene	1.0 U	1.0	0.20	1	11/13/19 16:02	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/13/19 16:02	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/13/19 16:02	
Trichloroethene (TCE)	0.47 J	1.0	0.20	1	11/13/19 16:02	

ALS Group USA, Corp.
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Analytical Report

Client: Environeering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 14:30
Date Received: 11/07/19 09:50

Sample Name: C-1
Lab Code: R1910938-003

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/13/19 16:02	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/13/19 16:02	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	85 - 122	11/13/19 16:02	
Dibromofluoromethane	101	89 - 119	11/13/19 16:02	
Toluene-d8	102	87 - 121	11/13/19 16:02	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Enviroengineering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 10:20
Date Received: 11/07/19 09:50

Sample Name: D-1
Lab Code: R1910938-004

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.21	1	11/13/19 16:24	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/13/19 16:24	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/13/19 16:24	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/13/19 16:24	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.25	1	11/13/19 16:24	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:24	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.25	1	11/13/19 16:24	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/13/19 16:24	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/13/19 16:24	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/13/19 16:24	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:24	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/13/19 16:24	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:24	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:24	
2-Butanone (MEK)	2.2 BJ	5.0	0.78	1	11/13/19 16:24	
2-Hexanone	5.0 U	5.0	0.20	1	11/13/19 16:24	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/13/19 16:24	
Acetone	7.8 B	5.0	2.1	1	11/13/19 16:24	
Benzene	1.0 U	1.0	0.20	1	11/13/19 16:24	
Bromochloromethane	1.0 U	1.0	0.24	1	11/13/19 16:24	
Bromodichloromethane	1.0 U	1.0	0.22	1	11/13/19 16:24	
Bromoform	1.0 U	1.0	0.25	1	11/13/19 16:24	
Bromomethane	1.0 U	1.0	0.70	1	11/13/19 16:24	
Carbon Disulfide	1.0 U	1.0	0.25	1	11/13/19 16:24	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/13/19 16:24	
Chlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:24	
Chloroethane	1.0 U	1.0	0.23	1	11/13/19 16:24	
Chloroform	1.0 U	1.0	0.24	1	11/13/19 16:24	
Chloromethane	0.64 J	1.0	0.28	1	11/13/19 16:24	
cis-1,2-Dichloroethene	0.92 J	1.0	0.23	1	11/13/19 16:24	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/13/19 16:24	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/13/19 16:24	
Ethylbenzene	1.0 U	1.0	0.20	1	11/13/19 16:24	
Hexachlorobutadiene	2.0 U	2.0	0.33	1	11/13/19 16:24	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/13/19 16:24	
Dichloromethane (Methylene Chloride)	1.0 U	1.0	0.36	1	11/13/19 16:24	
o-Xylene	1.0 U	1.0	0.20	1	11/13/19 16:24	
Styrene	1.0 U	1.0	0.20	1	11/13/19 16:24	
Tetrachloroethene (PCE)	0.38 J	1.0	0.21	1	11/13/19 16:24	
Toluene	1.0 U	1.0	0.20	1	11/13/19 16:24	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/13/19 16:24	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/13/19 16:24	
Trichloroethene (TCE)	3.7	1.0	0.20	1	11/13/19 16:24	

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Analytical Report

Client: Environeering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 10:20
Date Received: 11/07/19 09:50

Sample Name: D-1
Lab Code: R1910938-004

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/13/19 16:24	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/13/19 16:24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	85 - 122	11/13/19 16:24	
Dibromofluoromethane	101	89 - 119	11/13/19 16:24	
Toluene-d8	101	87 - 121	11/13/19 16:24	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 11:40
Date Received: 11/07/19 09:50

Sample Name: D-2
Lab Code: R1910938-005

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.21	1	11/13/19 16:46	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/13/19 16:46	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/13/19 16:46	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/13/19 16:46	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.25	1	11/13/19 16:46	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:46	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.25	1	11/13/19 16:46	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/13/19 16:46	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/13/19 16:46	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/13/19 16:46	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:46	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/13/19 16:46	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:46	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:46	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/13/19 16:46	
2-Hexanone	5.0 U	5.0	0.20	1	11/13/19 16:46	
4-Methyl-2-pentanone	0.52 BJ	5.0	0.20	1	11/13/19 16:46	
Acetone	5.2 B	5.0	2.1	1	11/13/19 16:46	
Benzene	1.0 U	1.0	0.20	1	11/13/19 16:46	
Bromochloromethane	1.0 U	1.0	0.24	1	11/13/19 16:46	
Bromodichloromethane	1.0 U	1.0	0.22	1	11/13/19 16:46	
Bromoform	1.0 U	1.0	0.25	1	11/13/19 16:46	
Bromomethane	1.0 U	1.0	0.70	1	11/13/19 16:46	
Carbon Disulfide	1.0 U	1.0	0.25	1	11/13/19 16:46	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/13/19 16:46	
Chlorobenzene	1.0 U	1.0	0.20	1	11/13/19 16:46	
Chloroethane	1.0 U	1.0	0.23	1	11/13/19 16:46	
Chloroform	1.0 U	1.0	0.24	1	11/13/19 16:46	
Chloromethane	1.0 U	1.0	0.28	1	11/13/19 16:46	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/13/19 16:46	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/13/19 16:46	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/13/19 16:46	
Ethylbenzene	1.0 U	1.0	0.20	1	11/13/19 16:46	
Hexachlorobutadiene	2.0 U	2.0	0.33	1	11/13/19 16:46	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/13/19 16:46	
Dichloromethane (Methylene Chloride)	1.0 U	1.0	0.36	1	11/13/19 16:46	
o-Xylene	1.0 U	1.0	0.20	1	11/13/19 16:46	
Styrene	1.0 U	1.0	0.20	1	11/13/19 16:46	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/13/19 16:46	
Toluene	1.0 U	1.0	0.20	1	11/13/19 16:46	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/13/19 16:46	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/13/19 16:46	
Trichloroethene (TCE)	0.33 J	1.0	0.20	1	11/13/19 16:46	

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Analytical Report

Client: Environeering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 11:40
Date Received: 11/07/19 09:50

Sample Name: D-2
Lab Code: R1910938-005

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/13/19 16:46	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/13/19 16:46	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	85 - 122	11/13/19 16:46	
Dibromofluoromethane	100	89 - 119	11/13/19 16:46	
Toluene-d8	101	87 - 121	11/13/19 16:46	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

ALS Group USA, Corp.
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Analytical Report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 12:30
Date Received: 11/07/19 09:50

Sample Name: G-1
Lab Code: R1910938-006

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.21	1	11/13/19 17:07	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/13/19 17:07	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/13/19 17:07	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/13/19 17:07	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.25	1	11/13/19 17:07	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:07	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.25	1	11/13/19 17:07	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/13/19 17:07	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/13/19 17:07	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/13/19 17:07	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:07	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/13/19 17:07	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:07	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:07	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/13/19 17:07	
2-Hexanone	5.0 U	5.0	0.20	1	11/13/19 17:07	
4-Methyl-2-pentanone	0.38 BJ	5.0	0.20	1	11/13/19 17:07	
Acetone	6.2 B	5.0	2.1	1	11/13/19 17:07	
Benzene	1.0 U	1.0	0.20	1	11/13/19 17:07	
Bromochloromethane	1.0 U	1.0	0.24	1	11/13/19 17:07	
Bromodichloromethane	1.0 U	1.0	0.22	1	11/13/19 17:07	
Bromoform	1.0 U	1.0	0.25	1	11/13/19 17:07	
Bromomethane	1.0 U	1.0	0.70	1	11/13/19 17:07	
Carbon Disulfide	1.0 U	1.0	0.25	1	11/13/19 17:07	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/13/19 17:07	
Chlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:07	
Chloroethane	1.0 U	1.0	0.23	1	11/13/19 17:07	
Chloroform	1.0 U	1.0	0.24	1	11/13/19 17:07	
Chloromethane	1.0 U	1.0	0.28	1	11/13/19 17:07	
cis-1,2-Dichloroethene	0.28 J	1.0	0.23	1	11/13/19 17:07	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/13/19 17:07	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/13/19 17:07	
Ethylbenzene	1.0 U	1.0	0.20	1	11/13/19 17:07	
Hexachlorobutadiene	2.0 U	2.0	0.33	1	11/13/19 17:07	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/13/19 17:07	
Dichloromethane (Methylene Chloride)	1.0 U	1.0	0.36	1	11/13/19 17:07	
o-Xylene	1.0 U	1.0	0.20	1	11/13/19 17:07	
Styrene	1.0 U	1.0	0.20	1	11/13/19 17:07	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/13/19 17:07	
Toluene	1.0 U	1.0	0.20	1	11/13/19 17:07	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/13/19 17:07	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/13/19 17:07	
Trichloroethene (TCE)	1.9	1.0	0.20	1	11/13/19 17:07	

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Analytical Report

Client: Environeering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 12:30
Date Received: 11/07/19 09:50

Sample Name: G-1
Lab Code: R1910938-006

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/13/19 17:07	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/13/19 17:07	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	11/13/19 17:07	
Dibromofluoromethane	101	89 - 119	11/13/19 17:07	
Toluene-d8	104	87 - 121	11/13/19 17:07	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

ALS Group USA, Corp.
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Analytical Report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 12:30
Date Received: 11/07/19 09:50

Sample Name: G-1 Dup
Lab Code: R1910938-007

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.21	1	11/13/19 17:29	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/13/19 17:29	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/13/19 17:29	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/13/19 17:29	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.25	1	11/13/19 17:29	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:29	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.25	1	11/13/19 17:29	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/13/19 17:29	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/13/19 17:29	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/13/19 17:29	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:29	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/13/19 17:29	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:29	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:29	
2-Butanone (MEK)	1.9 BJ	5.0	0.78	1	11/13/19 17:29	
2-Hexanone	5.0 U	5.0	0.20	1	11/13/19 17:29	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/13/19 17:29	
Acetone	7.1 B	5.0	2.1	1	11/13/19 17:29	
Benzene	1.0 U	1.0	0.20	1	11/13/19 17:29	
Bromochloromethane	1.0 U	1.0	0.24	1	11/13/19 17:29	
Bromodichloromethane	1.0 U	1.0	0.22	1	11/13/19 17:29	
Bromoform	1.0 U	1.0	0.25	1	11/13/19 17:29	
Bromomethane	1.0 U	1.0	0.70	1	11/13/19 17:29	
Carbon Disulfide	1.0 U	1.0	0.25	1	11/13/19 17:29	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/13/19 17:29	
Chlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:29	
Chloroethane	1.0 U	1.0	0.23	1	11/13/19 17:29	
Chloroform	1.0 U	1.0	0.24	1	11/13/19 17:29	
Chloromethane	1.0	1.0	0.28	1	11/13/19 17:29	
cis-1,2-Dichloroethene	0.43 J	1.0	0.23	1	11/13/19 17:29	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/13/19 17:29	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/13/19 17:29	
Ethylbenzene	1.0 U	1.0	0.20	1	11/13/19 17:29	
Hexachlorobutadiene	2.0 U	2.0	0.33	1	11/13/19 17:29	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/13/19 17:29	
Dichloromethane (Methylene Chloride)	1.0 U	1.0	0.36	1	11/13/19 17:29	
o-Xylene	1.0 U	1.0	0.20	1	11/13/19 17:29	
Styrene	1.0 U	1.0	0.20	1	11/13/19 17:29	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/13/19 17:29	
Toluene	1.0 U	1.0	0.20	1	11/13/19 17:29	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/13/19 17:29	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/13/19 17:29	
Trichloroethene (TCE)	2.5	1.0	0.20	1	11/13/19 17:29	

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Analytical Report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 12:30
Date Received: 11/07/19 09:50

Sample Name: G-1 Dup
Lab Code: R1910938-007

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/13/19 17:29	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/13/19 17:29	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	85 - 122	11/13/19 17:29	
Dibromofluoromethane	101	89 - 119	11/13/19 17:29	
Toluene-d8	103	87 - 121	11/13/19 17:29	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 16:00
Date Received: 11/07/19 09:50

Sample Name: EW3
Lab Code: R1910938-008

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.21	1	11/13/19 17:51	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/13/19 17:51	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/13/19 17:51	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/13/19 17:51	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.25	1	11/13/19 17:51	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:51	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.25	1	11/13/19 17:51	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/13/19 17:51	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/13/19 17:51	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/13/19 17:51	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:51	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/13/19 17:51	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:51	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:51	
2-Butanone (MEK)	5.0 U	5.0	0.78	1	11/13/19 17:51	
2-Hexanone	5.0 U	5.0	0.20	1	11/13/19 17:51	
4-Methyl-2-pentanone	0.53 BJ	5.0	0.20	1	11/13/19 17:51	
Acetone	5.8 B	5.0	2.1	1	11/13/19 17:51	
Benzene	1.0 U	1.0	0.20	1	11/13/19 17:51	
Bromochloromethane	1.0 U	1.0	0.24	1	11/13/19 17:51	
Bromodichloromethane	1.0 U	1.0	0.22	1	11/13/19 17:51	
Bromoform	1.0 U	1.0	0.25	1	11/13/19 17:51	
Bromomethane	1.0 U	1.0	0.70	1	11/13/19 17:51	
Carbon Disulfide	1.0 U	1.0	0.25	1	11/13/19 17:51	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/13/19 17:51	
Chlorobenzene	1.0 U	1.0	0.20	1	11/13/19 17:51	
Chloroethane	1.0 U	1.0	0.23	1	11/13/19 17:51	
Chloroform	1.0 U	1.0	0.24	1	11/13/19 17:51	
Chloromethane	0.36 J	1.0	0.28	1	11/13/19 17:51	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/13/19 17:51	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/13/19 17:51	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/13/19 17:51	
Ethylbenzene	1.0 U	1.0	0.20	1	11/13/19 17:51	
Hexachlorobutadiene	2.0 U	2.0	0.33	1	11/13/19 17:51	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/13/19 17:51	
Dichloromethane (Methylene Chloride)	1.0 U	1.0	0.36	1	11/13/19 17:51	
o-Xylene	1.0 U	1.0	0.20	1	11/13/19 17:51	
Styrene	1.0 U	1.0	0.20	1	11/13/19 17:51	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/13/19 17:51	
Toluene	1.0 U	1.0	0.20	1	11/13/19 17:51	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/13/19 17:51	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/13/19 17:51	
Trichloroethene (TCE)	0.56 J	1.0	0.20	1	11/13/19 17:51	

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Analytical Report

Client: Environeering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19 16:00
Date Received: 11/07/19 09:50

Sample Name: EW3
Lab Code: R1910938-008

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/13/19 17:51	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/13/19 17:51	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	85 - 122	11/13/19 17:51	
Dibromofluoromethane	101	89 - 119	11/13/19 17:51	
Toluene-d8	102	87 - 121	11/13/19 17:51	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19
Date Received: 11/07/19 09:50

Sample Name: Trip Blank
Lab Code: R1910938-009

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.21	1	11/13/19 18:13	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/13/19 18:13	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/13/19 18:13	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/13/19 18:13	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.25	1	11/13/19 18:13	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 18:13	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.25	1	11/13/19 18:13	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/13/19 18:13	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/13/19 18:13	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/13/19 18:13	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 18:13	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/13/19 18:13	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 18:13	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 18:13	
2-Butanone (MEK)	1.5 BJ	5.0	0.78	1	11/13/19 18:13	
2-Hexanone	5.0 U	5.0	0.20	1	11/13/19 18:13	
4-Methyl-2-pentanone	0.39 BJ	5.0	0.20	1	11/13/19 18:13	
Acetone	7.7 B	5.0	2.1	1	11/13/19 18:13	
Benzene	1.0 U	1.0	0.20	1	11/13/19 18:13	
Bromochloromethane	1.0 U	1.0	0.24	1	11/13/19 18:13	
Bromodichloromethane	1.0 U	1.0	0.22	1	11/13/19 18:13	
Bromoform	1.0 U	1.0	0.25	1	11/13/19 18:13	
Bromomethane	1.0 U	1.0	0.70	1	11/13/19 18:13	
Carbon Disulfide	1.0 U	1.0	0.25	1	11/13/19 18:13	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/13/19 18:13	
Chlorobenzene	1.0 U	1.0	0.20	1	11/13/19 18:13	
Chloroethane	1.0 U	1.0	0.23	1	11/13/19 18:13	
Chloroform	1.0 U	1.0	0.24	1	11/13/19 18:13	
Chloromethane	0.56 J	1.0	0.28	1	11/13/19 18:13	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/13/19 18:13	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/13/19 18:13	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/13/19 18:13	
Ethylbenzene	1.0 U	1.0	0.20	1	11/13/19 18:13	
Hexachlorobutadiene	2.0 U	2.0	0.33	1	11/13/19 18:13	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/13/19 18:13	
Dichloromethane (Methylene Chloride)	1.0 U	1.0	0.36	1	11/13/19 18:13	
o-Xylene	1.0 U	1.0	0.20	1	11/13/19 18:13	
Styrene	1.0 U	1.0	0.20	1	11/13/19 18:13	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/13/19 18:13	
Toluene	1.0 U	1.0	0.20	1	11/13/19 18:13	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/13/19 18:13	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/13/19 18:13	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/13/19 18:13	

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Analytical Report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: 11/06/19
Date Received: 11/07/19 09:50

Sample Name: Trip Blank
Lab Code: R1910938-009

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/13/19 18:13	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/13/19 18:13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	85 - 122	11/13/19 18:13	
Dibromofluoromethane	104	89 - 119	11/13/19 18:13	
Toluene-d8	102	87 - 121	11/13/19 18:13	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			



QC Summary Forms

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

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Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory

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QA/QC Report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Sample Name	Lab Code	4-Bromofluorobenzene	Dibromofluoromethane	Toluene-d8
		85-122	89-119	87-121
A-1	R1910938-001	98	100	101
B-1	R1910938-002	97	100	103
C-1	R1910938-003	99	101	102
D-1	R1910938-004	97	101	101
D-2	R1910938-005	100	100	101
G-1	R1910938-006	103	101	104
G-1 Dup	R1910938-007	97	101	103
EW3	R1910938-008	98	101	102
Trip Blank	R1910938-009	99	104	102
Method Blank	RQ1913304-06	98	103	99
Lab Control Sample	RQ1913304-05	97	97	98

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Analytical Report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ1913304-06

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.21	1	11/13/19 14:57	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/13/19 14:57	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/13/19 14:57	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/13/19 14:57	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.25	1	11/13/19 14:57	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 14:57	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.25	1	11/13/19 14:57	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/13/19 14:57	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/13/19 14:57	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/13/19 14:57	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 14:57	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/13/19 14:57	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 14:57	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/13/19 14:57	
2-Butanone (MEK)	1.8 J	5.0	0.78	1	11/13/19 14:57	
2-Hexanone	5.0 U	5.0	0.20	1	11/13/19 14:57	
4-Methyl-2-pentanone	0.36 J	5.0	0.20	1	11/13/19 14:57	
Acetone	5.6	5.0	2.1	1	11/13/19 14:57	
Benzene	1.0 U	1.0	0.20	1	11/13/19 14:57	
Bromochloromethane	1.0 U	1.0	0.24	1	11/13/19 14:57	
Bromodichloromethane	1.0 U	1.0	0.22	1	11/13/19 14:57	
Bromoform	1.0 U	1.0	0.25	1	11/13/19 14:57	
Bromomethane	1.0 U	1.0	0.70	1	11/13/19 14:57	
Carbon Disulfide	1.0 U	1.0	0.25	1	11/13/19 14:57	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/13/19 14:57	
Chlorobenzene	1.0 U	1.0	0.20	1	11/13/19 14:57	
Chloroethane	1.0 U	1.0	0.23	1	11/13/19 14:57	
Chloroform	1.0 U	1.0	0.24	1	11/13/19 14:57	
Chloromethane	1.0 U	1.0	0.28	1	11/13/19 14:57	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/13/19 14:57	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/13/19 14:57	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/13/19 14:57	
Ethylbenzene	1.0 U	1.0	0.20	1	11/13/19 14:57	
Hexachlorobutadiene	2.0 U	2.0	0.33	1	11/13/19 14:57	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/13/19 14:57	
Dichloromethane (Methylene Chloride)	1.0 U	1.0	0.36	1	11/13/19 14:57	
o-Xylene	1.0 U	1.0	0.20	1	11/13/19 14:57	
Styrene	1.0 U	1.0	0.20	1	11/13/19 14:57	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/13/19 14:57	
Toluene	1.0 U	1.0	0.20	1	11/13/19 14:57	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/13/19 14:57	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/13/19 14:57	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/13/19 14:57	

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Analytical Report

Client: Environneering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ1913304-06

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/13/19 14:57	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/13/19 14:57	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	85 - 122	11/13/19 14:57	
Dibromofluoromethane	103	89 - 119	11/13/19 14:57	
Toluene-d8	99	87 - 121	11/13/19 14:57	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Enviroengineering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Analyzed: 11/13/19

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1913304-05

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	17.4	20.0	87	75-125
1,1,2,2-Tetrachloroethane	8260C	18.6	20.0	93	78-126
1,1,2-Trichloroethane	8260C	20.2	20.0	101	82-121
1,1-Dichloroethane (1,1-DCA)	8260C	18.8	20.0	94	80-124
1,1-Dichloroethene (1,1-DCE)	8260C	17.3	20.0	86	71-118
1,2,3-Trichlorobenzene	8260C	19.9	20.0	99	67-136
1,2,4-Trichlorobenzene	8260C	20.0	20.0	100	75-132
1,2-Dibromo-3-chloropropane (DBCP)	8260C	17.4	20.0	87	55-136
1,2-Dibromoethane	8260C	19.2	20.0	96	82-127
1,2-Dichloroethane	8260C	18.7	20.0	93	71-127
1,2-Dichlorobenzene	8260C	19.3	20.0	97	80-119
1,2-Dichloropropane	8260C	19.0	20.0	95	80-119
1,3-Dichlorobenzene	8260C	18.8	20.0	94	83-121
1,4-Dichlorobenzene	8260C	18.9	20.0	94	79-119
2-Butanone (MEK)	8260C	16.3	20.0	81	61-137
2-Hexanone	8260C	15.8	20.0	79	63-124
4-Methyl-2-pentanone	8260C	15.9	20.0	79	66-124
Acetone	8260C	17.4	20.0	87	40-161
Benzene	8260C	18.9	20.0	95	79-119
Bromochloromethane	8260C	19.2	20.0	96	81-126
Bromodichloromethane	8260C	19.3	20.0	96	81-123
Bromoform	8260C	18.4	20.0	92	65-146
Bromomethane	8260C	16.8	20.0	84	42-166
Carbon Disulfide	8260C	19.8	20.0	99	66-128
Carbon Tetrachloride	8260C	17.2	20.0	86	70-127
Chlorobenzene	8260C	18.5	20.0	92	80-121
Chloroethane	8260C	17.4	20.0	87	62-131
Chloroform	8260C	19.4	20.0	97	79-120
Chloromethane	8260C	18.2	20.0	91	65-135
cis-1,2-Dichloroethene	8260C	18.0	20.0	90	80-121
cis-1,3-Dichloropropene	8260C	19.4	20.0	97	77-122
Dibromochloromethane	8260C	20.4	20.0	102	72-128
Ethylbenzene	8260C	18.6	20.0	93	76-120

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QA/QC Report

Client: Environeering, Inc. (Houston)
Project: Cooper - Olean, NY/186-04
Sample Matrix: Water

Service Request: R1910938
Date Analyzed: 11/13/19

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1913304-05

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Hexachlorobutadiene	8260C	17.6	20.0	88	54-172
m,p-Xylenes	8260C	37.3	40.0	93	80-126
Dichloromethane (Methylene Chloride)	8260C	18.4	20.0	92	73-122
o-Xylene	8260C	18.6	20.0	93	79-123
Styrene	8260C	18.7	20.0	94	80-124
Tetrachloroethene (PCE)	8260C	16.5	20.0	82	72-125
Toluene	8260C	18.4	20.0	92	79-119
trans-1,2-Dichloroethene	8260C	18.3	20.0	92	73-118
trans-1,3-Dichloropropene	8260C	19.5	20.0	97	71-133
Trichloroethene (TCE)	8260C	17.4	20.0	87	74-122
Trichlorofluoromethane (CFC 11)	8260C	18.0	20.0	90	71-136
Vinyl Chloride	8260C	17.3	20.0	86	74-159



November 21, 2019

Service Request No:R1910939

Mr. Tim White
Environeering, Inc.
16100 Cairnway Dr
Suite 320
Houston, TX 77084

Laboratory Results for: OU1

Dear Mr.White,

Enclosed are the results of the sample(s) submitted to our laboratory November 07, 2019
For your reference, these analyses have been assigned our service request number **R1910939**.

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

CC: Hayden Murrell

ADDRESS

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Narrative Documents

ALS Environmental—Rochester Laboratory

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Client: Environneering, Inc. (Houston)
Project: OU1
Sample Matrix: Water

Service Request: R1910939
Date Received: 11/07/2019

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

One water sample was received for analysis at ALS Environmental on 11/07/2019. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Volatiles by GC/MS:

Method 8260C, 11/14/2019: The Method Blank contained a low level of the following analytes above the Reporting Limit: acetone. All associated sample results less than ten times the level found in the Method Blank are flagged. The samples were not reprepared/reanalyzed because the vials used in sampling are contaminated with acetone. We are working with a new vendor to provide clean vials.

Approved by 

Date 11/21/2019

SAMPLE DETECTION SUMMARY**CLIENT ID: CW-18A****Lab ID: R1910939-001**

Analyte	Results	Flag	MDL	MRL	Units	Method
2-Butanone (MEK)	1.4	BJ	0.78	5.0	ug/L	8260C
Acetone	7.9	B	2.1	5.0	ug/L	8260C
Chloromethane	0.47	BJ	0.28	1.0	ug/L	8260C
Trichloroethene (TCE)	1.7		0.20	1.0	ug/L	8260C



Sample Receipt Information

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

Client: Environneering, Inc. (Houston)
Project: OU1/150-01

Service Request:R1910939

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R1910939-001	CW-18A	11/5/2019	1430

[illegible]

R1910939

Engineering, Inc.
0111

011

2



Cooler Receipt and Preservation Check Form

R1910939

5

Enviroengineering, Inc.
OU1Project/Client Enviroengineering

Folder Number _____

Cooler received on 11-7-19by: HECOURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y <u>N</u>
2	Custody papers properly completed (ink, signed)?	<u>Y</u> N
3	Did all bottles arrive in good condition (unbroken)?	Y N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<u>Y</u> N

5a	Perchlorate samples have required headspace?	Y N <u>NA</u>
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	<u>Y</u> N NA *
6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
7	Soil VOA received as: Bulk Encore 5035set	<u>NA</u>

8. Temperature Readings Date: 11-7-19 Time: 10:07 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>2.3</u>	<u>2.3</u>					
Within 0-6°C?	<u>Y</u> N	<u>Y</u> N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

& Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by HE on 11-7-19 at 10:13
5035 samples placed in storage location: _____ by _____ on _____ at _____Cooler Breakdown/Preservation Check**: Date: 11/7/19 Time: 1620 by: SH

9. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
10. Did all bottle labels and tags agree with custody papers? YES NO
11. Were correct containers used for the tests indicated? YES NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO N/A
13. Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized N/A Tedlar® Bags Inflated N/A

pH	Lot of test paper	Reagent	Preserved?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
≤2		HNO ₃								
≤2		H ₂ SO ₄								
<4		NaHSO ₄								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add Na ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).					
		Na ₂ S ₂ O ₃								
		ZnAcetate	-	-						
		HCl	**	**	<u>5050-1</u>	<u>472</u>	**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			

Bottle lot numbers: 6922-CZ544

Explain all Discrepancies/ Other Comments:

* Trip Blank for Cooper Olean: 1 of 3 vials

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: AL

PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

ALS Group USA, Corp.
dba ALS Environmental
Internal Chain of Custody Report

Client: Environeering, Inc.
Project: OU1/150-01

Service Request: R1910939

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R1910939-001.01	8260C				
		11/7/2019	1630	SMO / GLAFORCE	
		11/7/2019	1632	R-001 / GLAFORCE	
		11/14/2019	1222	In Lab / AMOSES	
		11/14/2019	1541	R-001-S10 / AMOSES	
		11/19/2019	1140	R-001 / AMOSES	
R1910939-001.02					
		11/7/2019	1630	SMO / GLAFORCE	
		11/7/2019	1632	R-001 / GLAFORCE	
R1910939-001.03					
		11/7/2019	1630	SMO / GLAFORCE	
		11/7/2019	1632	R-001 / GLAFORCE	



Miscellaneous Forms

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REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.	+	Correlation coefficient for MSA is <0.995.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Aroclors).	N	Inorganics- Matrix spike recovery was outside laboratory limits.
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.	N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.	S	Concentration has been determined using Method of Standard Additions (MSA).
E	Organics- Concentration has exceeded the calibration range for that specific analysis.	W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.	P	Concentration >40% difference between the two GC columns.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.	C	Confirmed by GC/MS
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.	Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (100% Difference between two GC columns).
#	Spike was diluted out.	X	See Case Narrative for discussion.
		MRL	Method Reporting Limit. Also known as:
		LOQ	Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
		MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
		LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
		ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.



Rochester Lab ID # for State Certifications¹

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

¹ Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to <https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental>

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.

dba ALS Environmental

Analyst Summary report

Client: Environneering, Inc. (Houston)
Project: OU1/150-01

Service Request: R1910939

Sample Name: CW-18A
Lab Code: R1910939-001
Sample Matrix: Water

Date Collected: 11/5/19
Date Received: 11/7/19

Analysis Method
8260C

Extracted/Digested By

Analyzed By
AMOSSES



INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.



Sample Results

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Volatile Organic Compounds by GC/MS

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Environneering, Inc. (Houston)
Project: OU1/150-01
Sample Matrix: Water

Service Request: R1910939
Date Collected: 11/05/19 14:30
Date Received: 11/07/19 09:50

Sample Name: CW-18A
Lab Code: R1910939-001

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.21	1	11/14/19 16:40	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.25	1	11/14/19 16:40	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.25	1	11/14/19 16:40	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/14/19 16:40	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/14/19 16:40	
2-Butanone (MEK)	1.4 BJ	5.0	0.78	1	11/14/19 16:40	
2-Hexanone	5.0 U	5.0	0.20	1	11/14/19 16:40	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/14/19 16:40	
Acetone	7.9 B	5.0	2.1	1	11/14/19 16:40	
Benzene	1.0 U	1.0	0.20	1	11/14/19 16:40	
Bromochloromethane	1.0 U	1.0	0.24	1	11/14/19 16:40	
Bromodichloromethane	1.0 U	1.0	0.22	1	11/14/19 16:40	
Bromoform	1.0 U	1.0	0.25	1	11/14/19 16:40	
Bromomethane	1.0 U	1.0	0.70	1	11/14/19 16:40	
Carbon Disulfide	1.0 U	1.0	0.25	1	11/14/19 16:40	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/14/19 16:40	
Chlorobenzene	1.0 U	1.0	0.20	1	11/14/19 16:40	
Chloroethane	1.0 U	1.0	0.23	1	11/14/19 16:40	
Chloroform	1.0 U	1.0	0.24	1	11/14/19 16:40	
Chloromethane	0.47 BJ	1.0	0.28	1	11/14/19 16:40	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/14/19 16:40	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/14/19 16:40	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/14/19 16:40	
Ethylbenzene	1.0 U	1.0	0.20	1	11/14/19 16:40	
Hexachlorobutadiene	2.0 U	2.0	0.33	1	11/14/19 16:40	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/14/19 16:40	
Dichloromethane (Methylene Chloride)	1.0 U	1.0	0.36	1	11/14/19 16:40	
o-Xylene	1.0 U	1.0	0.20	1	11/14/19 16:40	
Styrene	1.0 U	1.0	0.20	1	11/14/19 16:40	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/14/19 16:40	
Toluene	1.0 U	1.0	0.20	1	11/14/19 16:40	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/14/19 16:40	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/14/19 16:40	
Trichloroethene (TCE)	1.7	1.0	0.20	1	11/14/19 16:40	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Environeering, Inc. (Houston)
Project: OU1/150-01
Sample Matrix: Water

Service Request: R1910939
Date Collected: 11/05/19 14:30
Date Received: 11/07/19 09:50

Sample Name: CW-18A
Lab Code: R1910939-001

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/14/19 16:40	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/14/19 16:40	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	11/14/19 16:40	
Dibromofluoromethane	106	89 - 119	11/14/19 16:40	
Toluene-d8	105	87 - 121	11/14/19 16:40	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			



QC Summary Forms

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Volatile Organic Compounds by GC/MS

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Environneering, Inc. (Houston)
Project: OU1/150-01
Sample Matrix: Water

Service Request: R1910939

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Sample Name	Lab Code	4-Bromofluorobenzene	Dibromofluoromethane	Toluene-d8
		85-122	89-119	87-121
CW-18A	R1910939-001	103	106	105
Method Blank	RQ1913389-06	99	105	104
Lab Control Sample	RQ1913389-05	102	103	102

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Environneering, Inc. (Houston)
Project: OU1/150-01
Sample Matrix: Water

Service Request: R1910939
Date Analyzed: 11/14/19 12:40

Method Blank Summary
Volatile Organic Compounds by GC/MS

Sample Name: Method Blank**Instrument ID:** R-MS-10**Lab Code:** RQ1913389-06**File ID:** I:\ACQUDATA\msvoa10\data\111419\E5946.D**Analysis Method:** 8260C**Analysis Lot:** 659892

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ1913389-05	I:\ACQUDATA\msvoa10\data\111419\E5943.D\	11/14/19 11:22
CW-18A	R1910939-001	I:\ACQUDATA\msvoa10\data\111419\E5957.D\	11/14/19 16:40

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Environneering, Inc. (Houston)
Project: OU1/150-01
Sample Matrix: Water

Service Request: R1910939
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ1913389-06

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.21	1	11/14/19 12:40	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/14/19 12:40	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/14/19 12:40	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/14/19 12:40	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.25	1	11/14/19 12:40	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.20	1	11/14/19 12:40	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.25	1	11/14/19 12:40	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/14/19 12:40	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/14/19 12:40	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/14/19 12:40	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/14/19 12:40	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/14/19 12:40	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/14/19 12:40	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/14/19 12:40	
2-Butanone (MEK)	2.8 J	5.0	0.78	1	11/14/19 12:40	
2-Hexanone	5.0 U	5.0	0.20	1	11/14/19 12:40	
4-Methyl-2-pentanone	0.26 J	5.0	0.20	1	11/14/19 12:40	
Acetone	7.5	5.0	2.1	1	11/14/19 12:40	
Benzene	1.0 U	1.0	0.20	1	11/14/19 12:40	
Bromochloromethane	1.0 U	1.0	0.24	1	11/14/19 12:40	
Bromodichloromethane	1.0 U	1.0	0.22	1	11/14/19 12:40	
Bromoform	1.0 U	1.0	0.25	1	11/14/19 12:40	
Bromomethane	1.0 U	1.0	0.70	1	11/14/19 12:40	
Carbon Disulfide	1.0 U	1.0	0.25	1	11/14/19 12:40	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/14/19 12:40	
Chlorobenzene	1.0 U	1.0	0.20	1	11/14/19 12:40	
Chloroethane	1.0 U	1.0	0.23	1	11/14/19 12:40	
Chloroform	1.0 U	1.0	0.24	1	11/14/19 12:40	
Chloromethane	0.29 J	1.0	0.28	1	11/14/19 12:40	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/14/19 12:40	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/14/19 12:40	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/14/19 12:40	
Ethylbenzene	1.0 U	1.0	0.20	1	11/14/19 12:40	
Hexachlorobutadiene	2.0 U	2.0	0.33	1	11/14/19 12:40	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/14/19 12:40	
Dichloromethane (Methylene Chloride)	1.0 U	1.0	0.36	1	11/14/19 12:40	
o-Xylene	1.0 U	1.0	0.20	1	11/14/19 12:40	
Styrene	1.0 U	1.0	0.20	1	11/14/19 12:40	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/14/19 12:40	
Toluene	1.0 U	1.0	0.20	1	11/14/19 12:40	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/14/19 12:40	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/14/19 12:40	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/14/19 12:40	

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Analytical Report

Client: Environneering, Inc. (Houston)
Project: OU1/150-01
Sample Matrix: Water

Service Request: R1910939
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ1913389-06

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/14/19 12:40	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/14/19 12:40	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	85 - 122	11/14/19 12:40	
Dibromofluoromethane	105	89 - 119	11/14/19 12:40	
Toluene-d8	104	87 - 121	11/14/19 12:40	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

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QA/QC Report

Client: Environneering, Inc. (Houston)
Project: OU1/150-01
Sample Matrix: Water

Service Request: R1910939
Date Analyzed: 11/14/19 11:22

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Sample Name: Lab Control Sample**Instrument ID:**R-MS-10**Lab Code:** RQ1913389-05**File ID:**I:\ACQUDATA\msvoa10\data\111419\E5943.D**Analysis Method:** 8260C**Analysis Lot:**659892

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	RQ1913389-06	I:\ACQUDATA\msvoa10\data\111419\E5946.D\	11/14/19 12:40
CW-18A	R1910939-001	I:\ACQUDATA\msvoa10\data\111419\E5957.D\	11/14/19 16:40

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Environeering, Inc. (Houston)
Project: OU1/150-01
Sample Matrix: Water

Service Request: R1910939
Date Analyzed: 11/14/19

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1913389-05

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	20.9	20.0	105	75-125
1,1,2,2-Tetrachloroethane	8260C	19.7	20.0	98	78-126
1,1,2-Trichloroethane	8260C	20.4	20.0	102	82-121
1,1-Dichloroethane (1,1-DCA)	8260C	21.0	20.0	105	80-124
1,1-Dichloroethene (1,1-DCE)	8260C	19.8	20.0	99	71-118
1,2,3-Trichlorobenzene	8260C	19.4	20.0	97	67-136
1,2,4-Trichlorobenzene	8260C	20.9	20.0	104	75-132
1,2-Dibromo-3-chloropropane (DBCP)	8260C	18.5	20.0	93	55-136
1,2-Dibromoethane	8260C	20.0	20.0	100	82-127
1,2-Dichloroethane	8260C	19.8	20.0	99	71-127
1,2-Dichlorobenzene	8260C	20.2	20.0	101	80-119
1,2-Dichloropropane	8260C	20.4	20.0	102	80-119
1,3-Dichlorobenzene	8260C	20.1	20.0	100	83-121
1,4-Dichlorobenzene	8260C	19.3	20.0	97	79-119
2-Butanone (MEK)	8260C	18.1	20.0	91	61-137
2-Hexanone	8260C	17.7	20.0	89	63-124
4-Methyl-2-pentanone	8260C	17.6	20.0	88	66-124
Acetone	8260C	17.4	20.0	87	40-161
Benzene	8260C	20.9	20.0	105	79-119
Bromochloromethane	8260C	20.0	20.0	100	81-126
Bromodichloromethane	8260C	20.5	20.0	103	81-123
Bromoform	8260C	18.4	20.0	92	65-146
Bromomethane	8260C	16.4	20.0	82	42-166
Carbon Disulfide	8260C	23.0	20.0	115	66-128
Carbon Tetrachloride	8260C	19.8	20.0	99	70-127
Chlorobenzene	8260C	20.7	20.0	104	80-121
Chloroethane	8260C	19.0	20.0	95	62-131
Chloroform	8260C	21.0	20.0	105	79-120
Chloromethane	8260C	19.2	20.0	96	65-135
cis-1,2-Dichloroethene	8260C	21.2	20.0	106	80-121
cis-1,3-Dichloropropene	8260C	20.6	20.0	103	77-122
Dibromochloromethane	8260C	20.9	20.0	104	72-128
Ethylbenzene	8260C	21.0	20.0	105	76-120

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QA/QC Report

Client: Environeering, Inc. (Houston)
Project: OU1/150-01
Sample Matrix: Water

Service Request: R1910939
Date Analyzed: 11/14/19

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1913389-05

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Hexachlorobutadiene	8260C	18.5	20.0	92	54-172
m,p-Xylenes	8260C	42.8	40.0	107	80-126
Dichloromethane (Methylene Chloride)	8260C	21.2	20.0	106	73-122
o-Xylene	8260C	21.5	20.0	107	79-123
Styrene	8260C	20.3	20.0	102	80-124
Tetrachloroethene (PCE)	8260C	19.4	20.0	97	72-125
Toluene	8260C	20.5	20.0	103	79-119
trans-1,2-Dichloroethene	8260C	20.8	20.0	104	73-118
trans-1,3-Dichloropropene	8260C	19.7	20.0	99	71-133
Trichloroethene (TCE)	8260C	19.1	20.0	95	74-122
Trichlorofluoromethane (CFC 11)	8260C	21.3	20.0	107	71-136
Vinyl Chloride	8260C	19.7	20.0	99	74-159

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QC/QC Report

Client: Environneering, Inc. (Houston)
Project: OU1/150-01

Service Request: R1910939
Date Analyzed: 11/14/19 09:56

Tune Summary
Volatile Organic Compounds by GC/MS

File ID: I:\ACQUDATA\msvoa10\data\111419\E5941.D\
Instrument ID: R-MS-10

Analytical Method: 8260C
Analysis Lot: 659892

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	21.23	28640	Pass
75	95	30	60	50.86	68609	Pass
95	95	100	100	100.00	134901	Pass
96	95	5	9	6.68	9009	Pass
173	174	0	2	1.28	1395	Pass
174	95	50	120	80.84	109051	Pass
175	174	5	9	8.42	9177	Pass
176	174	95	101	99.81	108843	Pass
177	176	5	9	6.84	7445	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	RQ1913389-04	I:\ACQUDATA\msvoa10\data\111419\E5942.D\	11/14/19 10:43	
Lab Control Sample	RQ1913389-05	I:\ACQUDATA\msvoa10\data\111419\E5943.D\	11/14/19 11:22	
Method Blank	RQ1913389-06	I:\ACQUDATA\msvoa10\data\111419\E5946.D\	11/14/19 12:40	
CW-18A	R1910939-001	I:\ACQUDATA\msvoa10\data\111419\E5957.D\	11/14/19 16:40	

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QA/QC Report

Client: Environneering, Inc. (Houston)
Project: OU1/150-01

Service Request:R1910939
Date Analyzed:11/14/19 10:43

Internal Standard Area and RT SUMMARY
Volatile Organic Compounds by GC/MS

File ID: I:\ACQUDATA\msvoa10\data\111419\E5942.D\
Instrument ID: R-MS-10
Analysis Method: 8260C

Lab Code:RQ1913389-04
Analysis Lot:659892
Signal ID:1

	Chlorobenzene-d5		1,4-Dichlorobenzene-d4		1,4-Difluorobenzene	
	Area	RT	Area	RT	Area	RT
Result ==>	381,913	9.80	213,695	11.85	431,199	6.49
Upper Limit ==>	763,826	10.30	427,390	12.35	862,398	6.99
Lower Limit ==>	190,957	9.30	106,848	11.35	215,600	5.99

Associated Analyses

Lab Control Sample	RQ1913389-05	385198	9.80	215941	11.85	443980	6.49
Method Blank	RQ1913389-06	349401	9.80	186326	11.85	409871	6.49
CW-18A	R1910939-001	335201	9.80	173357	11.85	389576	6.49

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QA/QC Report

Client: Environneering, Inc. (Houston)
Project: OU1/150-01

Service Request:R1910939
Date Analyzed:11/14/19 10:43

Internal Standard Area and RT SUMMARY
Volatile Organic Compounds by GC/MS

File ID: I:\ACQUDATA\msvoa10\data\111419\E5942.D\
Instrument ID: R-MS-10
Analysis Method: 8260C

Lab Code:RQ1913389-04
Analysis Lot:659892
Signal ID:1

	Pentafluorobenzene	
	Area	RT
Result ==>	291,891	5.39
Upper Limit ==>	583,782	5.89
Lower Limit ==>	145,946	4.89

Associated Analyses

Lab Control Sample	RQ1913389-05	301358	5.39
Method Blank	RQ1913389-06	277031	5.40
CW-18A	R1910939-001	254254	5.40



Raw Data

ALS Environmental—Rochester Laboratory

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Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory

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Analytical Report

Client: Enviroengineering, Inc. (Houston)
Project: OU1/150-01
Sample Matrix: Water

Service Request: R1910939
Date Collected: 11/05/19 14:30
Date Received: 11/07/19 09:50

Sample Name: CW-18A
Lab Code: R1910939-001

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.21	1	11/14/19 16:40	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.25	1	11/14/19 16:40	
1,2,3-Trichlorobenzene	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,2,4-Trichlorobenzene	1.0 U	1.0	0.25	1	11/14/19 16:40	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	0.45	1	11/14/19 16:40	
1,2-Dibromoethane	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,2-Dichlorobenzene	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,3-Dichlorobenzene	1.0 U	1.0	0.20	1	11/14/19 16:40	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/14/19 16:40	
2-Butanone (MEK)	1.4 BJ	5.0	0.78	1	11/14/19 16:40	
2-Hexanone	5.0 U	5.0	0.20	1	11/14/19 16:40	
4-Methyl-2-pentanone	5.0 U	5.0	0.20	1	11/14/19 16:40	
Acetone	7.9 B	5.0	2.1	1	11/14/19 16:40	
Benzene	1.0 U	1.0	0.20	1	11/14/19 16:40	
Bromochloromethane	1.0 U	1.0	0.24	1	11/14/19 16:40	
Bromodichloromethane	1.0 U	1.0	0.22	1	11/14/19 16:40	
Bromoform	1.0 U	1.0	0.25	1	11/14/19 16:40	
Bromomethane	1.0 U	1.0	0.70	1	11/14/19 16:40	
Carbon Disulfide	1.0 U	1.0	0.25	1	11/14/19 16:40	
Carbon Tetrachloride	1.0 U	1.0	0.34	1	11/14/19 16:40	
Chlorobenzene	1.0 U	1.0	0.20	1	11/14/19 16:40	
Chloroethane	1.0 U	1.0	0.23	1	11/14/19 16:40	
Chloroform	1.0 U	1.0	0.24	1	11/14/19 16:40	
Chloromethane	0.47 BJ	1.0	0.28	1	11/14/19 16:40	
cis-1,2-Dichloroethene	1.0 U	1.0	0.23	1	11/14/19 16:40	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/14/19 16:40	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/14/19 16:40	
Ethylbenzene	1.0 U	1.0	0.20	1	11/14/19 16:40	
Hexachlorobutadiene	2.0 U	2.0	0.33	1	11/14/19 16:40	
m,p-Xylenes	2.0 U	2.0	0.20	1	11/14/19 16:40	
Dichloromethane (Methylene Chloride)	1.0 U	1.0	0.36	1	11/14/19 16:40	
o-Xylene	1.0 U	1.0	0.20	1	11/14/19 16:40	
Styrene	1.0 U	1.0	0.20	1	11/14/19 16:40	
Tetrachloroethene (PCE)	1.0 U	1.0	0.21	1	11/14/19 16:40	
Toluene	1.0 U	1.0	0.20	1	11/14/19 16:40	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/14/19 16:40	
trans-1,3-Dichloropropene	1.0 U	1.0	0.23	1	11/14/19 16:40	
Trichloroethene (TCE)	1.7	1.0	0.20	1	11/14/19 16:40	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Environeering, Inc. (Houston)
Project: OU1/150-01
Sample Matrix: Water

Service Request: R1910939
Date Collected: 11/05/19 14:30
Date Received: 11/07/19 09:50

Sample Name: CW-18A
Lab Code: R1910939-001

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.24	1	11/14/19 16:40	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/14/19 16:40	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	11/14/19 16:40	
Dibromofluoromethane	106	89 - 119	11/14/19 16:40	
Toluene-d8	105	87 - 121	11/14/19 16:40	

Tentatively Identified Compounds

CAS#	Compound Identification	RT	Result ug/L	Q
	No Tentatively Identified Compounds Detected			

Data Path : I:\ACQUDATA\msvoa10\data\111419\
 Data File : E5957.D
 Acq On : 14 Nov 2019 4:40 pm
 Operator : AMOSES
 Sample : R1910939-001
 Misc : ENVIRO 17173 T4
 ALS Vial : 14 Sample Multiplier: 1

Inst : MSVOA10

Quant Time: Nov 18 15:24:15 2019
 Quant Method : I:\ACQUDATA\MSVOA10\METHODS\W111219.M
 Quant Title : MS#10 - 8260B WATERS 5.0mL Purge
 QLast Update : Wed Nov 13 13:19:07 2019
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.397	168	254254	50.00	ug/L	0.00
41) 1,4-Difluorobenzene	6.494	114	389576	50.00	ug/L	0.00
70) d5-Chlorobenzene	9.805	117	335201	50.00	ug/L	0.00
90) 1,4-Dichlorobenzene-d4	11.853	152	173357	50.00	ug/L	0.00
System Monitoring Compounds						
43) surr4,Dibrflmethane	5.245	113	131032	53.13	ug/L	0.00
Spiked Amount	50.000	Range 89 - 119	Recovery	=	106.26%	
46) surr1,1,2-dichloroetha...	5.781	65	166725	53.68	ug/L	0.00
Spiked Amount	50.000	Range 73 - 125	Recovery	=	107.36%	
64) SURR3,Toluene-d8	8.311	98	502822	52.38	ug/L	0.00
Spiked Amount	50.000	Range 87 - 121	Recovery	=	104.76%	
69) SURR2,BFB	10.878	95	186545	51.42	ug/L	0.00
Spiked Amount	50.000	Range 85 - 122	Recovery	=	102.84%	
Target Compounds						
3) Chloromethane	1.288	50	1902	0.47	ug/L	97
15) Acetone	2.331	43	9612	7.92	ug/L	97
16) 2-Propanol	2.465	45	113257	493.10	ug/L	99
22) Methylene Chloride	2.733	84	118	Below Cal	#	4
23) TBA	2.861	59	1922	5.63	ug/L	99
34) 2-Butanone	4.440	43	2371	1.36	ug/L	86
53) Trichloroethene	6.830	130	4174	1.73	ug/L	# 79
79) 4-Chlorobenzotrifluoride	9.902	180	934	0.31	ug/L	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-156453-1

Client Project/Site: Cooper Olean Site Discharge Analysis

For:

Environeering Inc
16100 Cairnway
Suite 320
Houston, Texas 77084

Attn: Mr. Tim White



Authorized for release by:

7/26/2019 3:51:07 PM

Julianna DuHart, Project Management Assistant I
julianna.duhart@testamericainc.com

Designee for

Brian Fischer, Manager of Project Management
(716)504-9835
brian.fischer@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-156453-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-156453-1

Job ID: 480-156453-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-156453-1

Receipt

The samples were received on 7/18/2019 12:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.6° C.

GC/MS VOA

Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following samples were received preserved with hydrochloric acid: EW-1-7-17-19 (480-156453-1), EW-2-7-17-19 (480-156453-2) and EFF-7-17-19 (480-156453-3). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-156453-1

Client Sample ID: EW-1-7-17-19

Lab Sample ID: 480-156453-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.68	J	5.0	0.57	ug/L	1		624.1	Total/NA
Trichloroethene	22		5.0	0.60	ug/L	1		624.1	Total/NA

Client Sample ID: EW-2-7-17-19

Lab Sample ID: 480-156453-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.8	J	5.0	0.57	ug/L	1		624.1	Total/NA
Tetrachloroethene	0.37	J	5.0	0.34	ug/L	1		624.1	Total/NA
Trichloroethene	21		5.0	0.60	ug/L	1		624.1	Total/NA

Client Sample ID: EFF-7-17-19

Lab Sample ID: 480-156453-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-156453-1

Client Sample ID: EW-1-7-17-19

Lab Sample ID: 480-156453-1

Date Collected: 07/17/19 13:55

Matrix: Water

Date Received: 07/18/19 12:35

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			07/23/19 17:15	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			07/23/19 17:15	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			07/23/19 17:15	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			07/23/19 17:15	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			07/23/19 17:15	1
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			07/23/19 17:15	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			07/23/19 17:15	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			07/23/19 17:15	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			07/23/19 17:15	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			07/23/19 17:15	1
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			07/23/19 17:15	1
Benzene	ND		5.0	0.60	ug/L			07/23/19 17:15	1
Bromodichloromethane	ND		5.0	0.54	ug/L			07/23/19 17:15	1
Bromoform	ND		5.0	0.47	ug/L			07/23/19 17:15	1
Bromomethane	ND		5.0	1.2	ug/L			07/23/19 17:15	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			07/23/19 17:15	1
Chlorobenzene	ND		5.0	0.48	ug/L			07/23/19 17:15	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			07/23/19 17:15	1
Chloroethane	ND		5.0	0.87	ug/L			07/23/19 17:15	1
Chloroform	ND		5.0	0.54	ug/L			07/23/19 17:15	1
Chloromethane	ND		5.0	0.64	ug/L			07/23/19 17:15	1
cis-1,2-Dichloroethene	0.68	J	5.0	0.57	ug/L			07/23/19 17:15	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			07/23/19 17:15	1
Ethylbenzene	ND		5.0	0.46	ug/L			07/23/19 17:15	1
Methylene Chloride	ND		5.0	0.81	ug/L			07/23/19 17:15	1
Tetrachloroethene	ND		5.0	0.34	ug/L			07/23/19 17:15	1
Toluene	ND		5.0	0.45	ug/L			07/23/19 17:15	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			07/23/19 17:15	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			07/23/19 17:15	1
Trichloroethene	22		5.0	0.60	ug/L			07/23/19 17:15	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			07/23/19 17:15	1
Vinyl chloride	ND		5.0	0.75	ug/L			07/23/19 17:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		68 - 130		07/23/19 17:15	1
4-Bromofluorobenzene (Surr)	98		76 - 123		07/23/19 17:15	1
Dibromofluoromethane (Surr)	97		75 - 123		07/23/19 17:15	1
Toluene-d8 (Surr)	96		77 - 120		07/23/19 17:15	1

Client Sample ID: EW-2-7-17-19

Lab Sample ID: 480-156453-2

Date Collected: 07/17/19 14:00

Matrix: Water

Date Received: 07/18/19 12:35

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			07/23/19 17:39	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			07/23/19 17:39	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			07/23/19 17:39	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			07/23/19 17:39	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			07/23/19 17:39	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-156453-1

Client Sample ID: EW-2-7-17-19

Lab Sample ID: 480-156453-2

Date Collected: 07/17/19 14:00

Matrix: Water

Date Received: 07/18/19 12:35

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			07/23/19 17:39	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			07/23/19 17:39	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			07/23/19 17:39	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			07/23/19 17:39	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			07/23/19 17:39	1
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			07/23/19 17:39	1
Benzene	ND		5.0	0.60	ug/L			07/23/19 17:39	1
Bromodichloromethane	ND		5.0	0.54	ug/L			07/23/19 17:39	1
Bromoform	ND		5.0	0.47	ug/L			07/23/19 17:39	1
Bromomethane	ND		5.0	1.2	ug/L			07/23/19 17:39	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			07/23/19 17:39	1
Chlorobenzene	ND		5.0	0.48	ug/L			07/23/19 17:39	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			07/23/19 17:39	1
Chloroethane	ND		5.0	0.87	ug/L			07/23/19 17:39	1
Chloroform	ND		5.0	0.54	ug/L			07/23/19 17:39	1
Chloromethane	ND		5.0	0.64	ug/L			07/23/19 17:39	1
cis-1,2-Dichloroethene	1.8	J	5.0	0.57	ug/L			07/23/19 17:39	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			07/23/19 17:39	1
Ethylbenzene	ND		5.0	0.46	ug/L			07/23/19 17:39	1
Methylene Chloride	ND		5.0	0.81	ug/L			07/23/19 17:39	1
Tetrachloroethene	0.37	J	5.0	0.34	ug/L			07/23/19 17:39	1
Toluene	ND		5.0	0.45	ug/L			07/23/19 17:39	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			07/23/19 17:39	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			07/23/19 17:39	1
Trichloroethene	21		5.0	0.60	ug/L			07/23/19 17:39	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			07/23/19 17:39	1
Vinyl chloride	ND		5.0	0.75	ug/L			07/23/19 17:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		68 - 130		07/23/19 17:39	1
4-Bromofluorobenzene (Surr)	96		76 - 123		07/23/19 17:39	1
Dibromofluoromethane (Surr)	93		75 - 123		07/23/19 17:39	1
Toluene-d8 (Surr)	95		77 - 120		07/23/19 17:39	1

Client Sample ID: EFF-7-17-19

Lab Sample ID: 480-156453-3

Date Collected: 07/17/19 14:05

Matrix: Water

Date Received: 07/18/19 12:35

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			07/23/19 18:02	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			07/23/19 18:02	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			07/23/19 18:02	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			07/23/19 18:02	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			07/23/19 18:02	1
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			07/23/19 18:02	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			07/23/19 18:02	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			07/23/19 18:02	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			07/23/19 18:02	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			07/23/19 18:02	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-156453-1

Client Sample ID: EFF-7-17-19

Lab Sample ID: 480-156453-3

Date Collected: 07/17/19 14:05

Matrix: Water

Date Received: 07/18/19 12:35

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			07/23/19 18:02	1
Benzene	ND		5.0	0.60	ug/L			07/23/19 18:02	1
Bromodichloromethane	ND		5.0	0.54	ug/L			07/23/19 18:02	1
Bromoform	ND		5.0	0.47	ug/L			07/23/19 18:02	1
Bromomethane	ND		5.0	1.2	ug/L			07/23/19 18:02	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			07/23/19 18:02	1
Chlorobenzene	ND		5.0	0.48	ug/L			07/23/19 18:02	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			07/23/19 18:02	1
Chloroethane	ND		5.0	0.87	ug/L			07/23/19 18:02	1
Chloroform	ND		5.0	0.54	ug/L			07/23/19 18:02	1
Chloromethane	ND		5.0	0.64	ug/L			07/23/19 18:02	1
cis-1,2-Dichloroethene	ND		5.0	0.57	ug/L			07/23/19 18:02	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			07/23/19 18:02	1
Ethylbenzene	ND		5.0	0.46	ug/L			07/23/19 18:02	1
Methylene Chloride	ND		5.0	0.81	ug/L			07/23/19 18:02	1
Tetrachloroethene	ND		5.0	0.34	ug/L			07/23/19 18:02	1
Toluene	ND		5.0	0.45	ug/L			07/23/19 18:02	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			07/23/19 18:02	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			07/23/19 18:02	1
Trichloroethene	ND		5.0	0.60	ug/L			07/23/19 18:02	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			07/23/19 18:02	1
Vinyl chloride	ND		5.0	0.75	ug/L			07/23/19 18:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		68 - 130		07/23/19 18:02	1
4-Bromofluorobenzene (Surr)	97		76 - 123		07/23/19 18:02	1
Dibromofluoromethane (Surr)	99		75 - 123		07/23/19 18:02	1
Toluene-d8 (Surr)	96		77 - 120		07/23/19 18:02	1

Surrogate Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-156453-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (68-130)	BFB (76-123)	DBFM (75-123)	TOL (77-120)
480-156453-1	EW-1-7-17-19	96	98	97	96
480-156453-2	EW-2-7-17-19	94	96	93	95
480-156453-3	EFF-7-17-19	98	97	99	96
LCS 480-483205/5	Lab Control Sample	97	101	99	99
MB 480-483205/7	Method Blank	96	100	101	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-156453-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-483205/7

Matrix: Water

Analysis Batch: 483205

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			07/23/19 11:21	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			07/23/19 11:21	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			07/23/19 11:21	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			07/23/19 11:21	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			07/23/19 11:21	1
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			07/23/19 11:21	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			07/23/19 11:21	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			07/23/19 11:21	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			07/23/19 11:21	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			07/23/19 11:21	1
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			07/23/19 11:21	1
Benzene	ND		5.0	0.60	ug/L			07/23/19 11:21	1
Bromodichloromethane	ND		5.0	0.54	ug/L			07/23/19 11:21	1
Bromoform	ND		5.0	0.47	ug/L			07/23/19 11:21	1
Bromomethane	ND		5.0	1.2	ug/L			07/23/19 11:21	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			07/23/19 11:21	1
Chlorobenzene	ND		5.0	0.48	ug/L			07/23/19 11:21	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			07/23/19 11:21	1
Chloroethane	ND		5.0	0.87	ug/L			07/23/19 11:21	1
Chloroform	ND		5.0	0.54	ug/L			07/23/19 11:21	1
Chloromethane	ND		5.0	0.64	ug/L			07/23/19 11:21	1
cis-1,2-Dichloroethene	ND		5.0	0.57	ug/L			07/23/19 11:21	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			07/23/19 11:21	1
Ethylbenzene	ND		5.0	0.46	ug/L			07/23/19 11:21	1
Methylene Chloride	ND		5.0	0.81	ug/L			07/23/19 11:21	1
Tetrachloroethene	ND		5.0	0.34	ug/L			07/23/19 11:21	1
Toluene	ND		5.0	0.45	ug/L			07/23/19 11:21	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			07/23/19 11:21	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			07/23/19 11:21	1
Trichloroethene	ND		5.0	0.60	ug/L			07/23/19 11:21	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			07/23/19 11:21	1
Vinyl chloride	ND		5.0	0.75	ug/L			07/23/19 11:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		68 - 130		07/23/19 11:21	1
4-Bromofluorobenzene (Surr)	100		76 - 123		07/23/19 11:21	1
Dibromofluoromethane (Surr)	101		75 - 123		07/23/19 11:21	1
Toluene-d8 (Surr)	97		77 - 120		07/23/19 11:21	1

Lab Sample ID: LCS 480-483205/5

Matrix: Water

Analysis Batch: 483205

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	21.5		ug/L		107	52 - 162
1,1,2,2-Tetrachloroethane	20.0	18.2		ug/L		91	46 - 157
1,1,2-Trichloroethane	20.0	19.0		ug/L		95	52 - 150
1,1-Dichloroethane	20.0	21.0		ug/L		105	59 - 155

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-156453-1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-483205/5

Matrix: Water

Analysis Batch: 483205

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	20.0	21.3		ug/L		107	1 - 234
1,2-Dichlorobenzene	20.0	20.1		ug/L		100	18 - 190
1,2-Dichloroethane	20.0	20.0		ug/L		100	49 - 155
1,2-Dichloropropane	20.0	20.2		ug/L		101	1 - 210
1,3-Dichlorobenzene	20.0	20.5		ug/L		102	59 - 156
1,4-Dichlorobenzene	20.0	20.4		ug/L		102	18 - 190
2-Chloroethyl vinyl ether	20.0	18.9	J	ug/L		94	1 - 305
Benzene	20.0	20.5		ug/L		103	37 - 151
Bromodichloromethane	20.0	20.5		ug/L		102	35 - 155
Bromoform	20.0	19.7		ug/L		98	45 - 169
Bromomethane	20.0	20.8		ug/L		104	1 - 242
Carbon tetrachloride	20.0	21.6		ug/L		108	70 - 140
Chlorobenzene	20.0	20.2		ug/L		101	37 - 160
Chlorodibromomethane	20.0	20.1		ug/L		101	53 - 149
Chloroethane	20.0	20.3		ug/L		101	14 - 230
Chloroform	20.0	20.6		ug/L		103	51 - 138
Chloromethane	20.0	19.8		ug/L		99	1 - 273
cis-1,3-Dichloropropene	20.0	20.3		ug/L		102	1 - 227
Ethylbenzene	20.0	20.9		ug/L		104	37 - 162
Methylene Chloride	20.0	19.8		ug/L		99	1 - 221
Tetrachloroethene	20.0	21.0		ug/L		105	64 - 148
Toluene	20.0	20.2		ug/L		101	47 - 150
trans-1,2-Dichloroethene	20.0	20.8		ug/L		104	54 - 156
trans-1,3-Dichloropropene	20.0	19.9		ug/L		99	17 - 183
Trichloroethene	20.0	21.0		ug/L		105	71 - 157
Trichlorofluoromethane	20.0	21.8		ug/L		109	17 - 181
Vinyl chloride	20.0	20.3		ug/L		102	1 - 251

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		68 - 130
4-Bromofluorobenzene (Surr)	101		76 - 123
Dibromofluoromethane (Surr)	99		75 - 123
Toluene-d8 (Surr)	99		77 - 120

QC Association Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-156453-1

GC/MS VOA

Analysis Batch: 483205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-156453-1	EW-1-7-17-19	Total/NA	Water	624.1	
480-156453-2	EW-2-7-17-19	Total/NA	Water	624.1	
480-156453-3	EFF-7-17-19	Total/NA	Water	624.1	
MB 480-483205/7	Method Blank	Total/NA	Water	624.1	
LCS 480-483205/5	Lab Control Sample	Total/NA	Water	624.1	

Lab Chronicle

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-156453-1

Client Sample ID: EW-1-7-17-19

Date Collected: 07/17/19 13:55

Date Received: 07/18/19 12:35

Lab Sample ID: 480-156453-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	483205	07/23/19 17:15	S1V	TAL BUF

Client Sample ID: EW-2-7-17-19

Date Collected: 07/17/19 14:00

Date Received: 07/18/19 12:35

Lab Sample ID: 480-156453-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	483205	07/23/19 17:39	S1V	TAL BUF

Client Sample ID: EFF-7-17-19

Date Collected: 07/17/19 14:05

Date Received: 07/18/19 12:35

Lab Sample ID: 480-156453-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	483205	07/23/19 18:02	S1V	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-156453-1

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-156453-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-156453-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-156453-1	EW-1-7-17-19	Water	07/17/19 13:55	07/18/19 12:35	
480-156453-2	EW-2-7-17-19	Water	07/17/19 14:00	07/18/19 12:35	
480-156453-3	EFF-7-17-19	Water	07/17/19 14:05	07/18/19 12:35	

Chain of Custody Record

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228
716-691-2600

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact

Company Name: COOPER IND
Address: 600 TRAVIS SUITE 5800
City/State/Zip: HOUSTON, TX, 77002
Phone: _____
FAX: _____
Project Name: COOPER OCEAN
Site: OCEAN, NY
O # _____

Project Manager:

Tel/Fax:	Analysis Turnaround Time	
	☐ CALENDAR DAYS	☐ WORKING DAYS
	TAT if different from Below <u>Per Contract</u>	
	☐ 2 weeks	
	☐ 1 week	
	☐ 2 days	
	☐ 1 day	

Site Contact:

Lab Contact:

Carrier:

Sample:	5-KOSKE
For Lab Use Only:	
Walk-in Client:	
Lab Sampling:	
Job / SDG No.:	
Sample Specific Notes:	

Sample Identification

EW-1-7-17-19
EW-2-7-17-19
EF-7-17-19

Sample Date	Sample Time	type (C=Comp, G=Grab)	Matrix	# of Cont.
-------------	-------------	-----------------------------	--------	---------------

7-17-19	13:55	↺	W	3
	14:00	↺	↓	3
	14:05	↺	↓	3

Sample Specific Notes:

Preservation Used: 1= Ice. 2= HCl. 3= H2SO4. 4= HNO3. 5= NaOH. 6= Other

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard	☐ Corrosive	☐ Skin Irritant
--	------------------------------------	--

Special Instructions/QC Requirements & Comments:

—

Custody Seals Intact	☐	Yes	☐
----------------------	--------------------------	-----	--------------------------

Belinquished by:

acquired by:

Relinquished by:

Jack

Relinquished by:

1111

011

Login Sample Receipt Checklist

Client: Environeering Inc

Job Number: 480-156453-1

Login Number: 156453

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Stopa, Erik S

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	SJB SERVICES
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-160515-1

Client Project/Site: Cooper Olean Site Discharge Analysis

For:

Environeering Inc
16100 Cairnway
Suite 320
Houston, Texas 77084

Attn: Mr. Tim White



Authorized for release by:

10/23/2019 10:20:58 AM

Alexander Gilbert, Project Management Assistant I
alexander.gilbert@testamericainc.com

Designee for

Brian Fischer, Manager of Project Management
(716)504-9835
brian.fischer@testamericainc.com

LINKS

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Job ID: 480-160515-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-160515-1

Comments

No additional comments.

Receipt

The samples were received on 10/8/2019 1:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

Receipt Exceptions

The dissolved metals container was received broken and the dissolved metals test was canceled. Affected sample: EFF-10-7-19 (480-160515-3)

GC/MS VOA

Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following sample was received preserved with hydrochloric acid: EW-1-10-7-19 (480-160515-1). The requested target analyte list contains 2-Chloroethyl vinyl ether, which are acid-labile compounds that degrade in an acidic medium.

Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following samples were received preserved with hydrochloric acid: EW-2-10-7-19 (480-160515-2) and EFF-10-7-19 (480-160515-3). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Client Sample ID: EW-1-10-7-19

Lab Sample ID: 480-160515-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	10		5.0	0.60	ug/L	1		624.1	Total/NA

Client Sample ID: EW-2-10-7-19

Lab Sample ID: 480-160515-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.64	J	5.0	0.57	ug/L	1		624.1	Total/NA
Trichloroethene	25		5.0	0.60	ug/L	1		624.1	Total/NA

Client Sample ID: EFF-10-7-19

Lab Sample ID: 480-160515-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.060		0.0020	0.00070	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	23.0		0.50	0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Copper	0.0062	J	0.010	0.0016	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.031	J	0.050	0.019	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	3.8		0.20	0.043	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.0022	J	0.0030	0.00040	mg/L	1		200.7 Rev 4.4	Total/NA
Nickel	0.0014	J	0.010	0.0013	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	1.7	B	0.50	0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	27.2	B	1.0	0.32	mg/L	1		200.7 Rev 4.4	Total/NA
Zinc	0.026	B	0.010	0.0015	mg/L	1		200.7 Rev 4.4	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Enviroengineering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Client Sample ID: EW-1-10-7-19

Lab Sample ID: 480-160515-1

Date Collected: 10/07/19 13:00

Matrix: Water

Date Received: 10/08/19 13:00

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			10/10/19 18:07	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			10/10/19 18:07	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			10/10/19 18:07	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			10/10/19 18:07	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			10/10/19 18:07	1
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			10/10/19 18:07	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			10/10/19 18:07	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			10/10/19 18:07	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			10/10/19 18:07	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			10/10/19 18:07	1
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			10/10/19 18:07	1
Benzene	ND		5.0	0.60	ug/L			10/10/19 18:07	1
Bromodichloromethane	ND		5.0	0.54	ug/L			10/10/19 18:07	1
Bromoform	ND		5.0	0.47	ug/L			10/10/19 18:07	1
Bromomethane	ND		5.0	1.2	ug/L			10/10/19 18:07	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			10/10/19 18:07	1
Chlorobenzene	ND		5.0	0.48	ug/L			10/10/19 18:07	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			10/10/19 18:07	1
Chloroethane	ND		5.0	0.87	ug/L			10/10/19 18:07	1
Chloroform	ND		5.0	0.54	ug/L			10/10/19 18:07	1
Chloromethane	ND		5.0	0.64	ug/L			10/10/19 18:07	1
cis-1,2-Dichloroethene	ND		5.0	0.57	ug/L			10/10/19 18:07	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			10/10/19 18:07	1
Ethylbenzene	ND		5.0	0.46	ug/L			10/10/19 18:07	1
Methylene Chloride	ND		5.0	0.81	ug/L			10/10/19 18:07	1
Tetrachloroethene	ND		5.0	0.34	ug/L			10/10/19 18:07	1
Toluene	ND		5.0	0.45	ug/L			10/10/19 18:07	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			10/10/19 18:07	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			10/10/19 18:07	1
Trichloroethene	10		5.0	0.60	ug/L			10/10/19 18:07	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			10/10/19 18:07	1
Vinyl chloride	ND		5.0	0.75	ug/L			10/10/19 18:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		68 - 130		10/10/19 18:07	1
4-Bromofluorobenzene (Surr)	94		76 - 123		10/10/19 18:07	1
Dibromofluoromethane (Surr)	85		75 - 123		10/10/19 18:07	1
Toluene-d8 (Surr)	84		77 - 120		10/10/19 18:07	1

Client Sample ID: EW-2-10-7-19

Lab Sample ID: 480-160515-2

Date Collected: 10/07/19 13:05

Matrix: Water

Date Received: 10/08/19 13:00

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			10/11/19 13:37	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			10/11/19 13:37	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			10/11/19 13:37	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			10/11/19 13:37	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			10/11/19 13:37	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Enviroengineering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Client Sample ID: EW-2-10-7-19

Lab Sample ID: 480-160515-2

Date Collected: 10/07/19 13:05

Matrix: Water

Date Received: 10/08/19 13:00

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			10/11/19 13:37	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			10/11/19 13:37	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			10/11/19 13:37	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			10/11/19 13:37	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			10/11/19 13:37	1
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			10/11/19 13:37	1
Benzene	ND		5.0	0.60	ug/L			10/11/19 13:37	1
Bromodichloromethane	ND		5.0	0.54	ug/L			10/11/19 13:37	1
Bromoform	ND		5.0	0.47	ug/L			10/11/19 13:37	1
Bromomethane	ND		5.0	1.2	ug/L			10/11/19 13:37	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			10/11/19 13:37	1
Chlorobenzene	ND		5.0	0.48	ug/L			10/11/19 13:37	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			10/11/19 13:37	1
Chloroethane	ND		5.0	0.87	ug/L			10/11/19 13:37	1
Chloroform	ND		5.0	0.54	ug/L			10/11/19 13:37	1
Chloromethane	ND		5.0	0.64	ug/L			10/11/19 13:37	1
cis-1,2-Dichloroethene	0.64	J	5.0	0.57	ug/L			10/11/19 13:37	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			10/11/19 13:37	1
Ethylbenzene	ND		5.0	0.46	ug/L			10/11/19 13:37	1
Methylene Chloride	ND		5.0	0.81	ug/L			10/11/19 13:37	1
Tetrachloroethene	ND		5.0	0.34	ug/L			10/11/19 13:37	1
Toluene	ND		5.0	0.45	ug/L			10/11/19 13:37	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			10/11/19 13:37	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			10/11/19 13:37	1
Trichloroethene	25		5.0	0.60	ug/L			10/11/19 13:37	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			10/11/19 13:37	1
Vinyl chloride	ND		5.0	0.75	ug/L			10/11/19 13:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	75		68 - 130		10/11/19 13:37	1
4-Bromofluorobenzene (Surr)	94		76 - 123		10/11/19 13:37	1
Dibromofluoromethane (Surr)	86		75 - 123		10/11/19 13:37	1
Toluene-d8 (Surr)	83		77 - 120		10/11/19 13:37	1

Client Sample ID: EFF-10-7-19

Lab Sample ID: 480-160515-3

Date Collected: 10/07/19 13:10

Matrix: Water

Date Received: 10/08/19 13:00

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			10/11/19 14:01	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			10/11/19 14:01	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			10/11/19 14:01	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			10/11/19 14:01	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			10/11/19 14:01	1
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			10/11/19 14:01	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			10/11/19 14:01	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			10/11/19 14:01	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			10/11/19 14:01	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			10/11/19 14:01	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Client Sample ID: EFF-10-7-19

Lab Sample ID: 480-160515-3

Date Collected: 10/07/19 13:10

Matrix: Water

Date Received: 10/08/19 13:00

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			10/11/19 14:01	1
Benzene	ND		5.0	0.60	ug/L			10/11/19 14:01	1
Bromodichloromethane	ND		5.0	0.54	ug/L			10/11/19 14:01	1
Bromoform	ND		5.0	0.47	ug/L			10/11/19 14:01	1
Bromomethane	ND		5.0	1.2	ug/L			10/11/19 14:01	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			10/11/19 14:01	1
Chlorobenzene	ND		5.0	0.48	ug/L			10/11/19 14:01	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			10/11/19 14:01	1
Chloroethane	ND		5.0	0.87	ug/L			10/11/19 14:01	1
Chloroform	ND		5.0	0.54	ug/L			10/11/19 14:01	1
Chloromethane	ND		5.0	0.64	ug/L			10/11/19 14:01	1
cis-1,2-Dichloroethene	ND		5.0	0.57	ug/L			10/11/19 14:01	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			10/11/19 14:01	1
Ethylbenzene	ND		5.0	0.46	ug/L			10/11/19 14:01	1
Methylene Chloride	ND		5.0	0.81	ug/L			10/11/19 14:01	1
Tetrachloroethene	ND		5.0	0.34	ug/L			10/11/19 14:01	1
Toluene	ND		5.0	0.45	ug/L			10/11/19 14:01	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			10/11/19 14:01	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			10/11/19 14:01	1
Trichloroethene	ND		5.0	0.60	ug/L			10/11/19 14:01	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			10/11/19 14:01	1
Vinyl chloride	ND		5.0	0.75	ug/L			10/11/19 14:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	76		68 - 130		10/11/19 14:01	1
4-Bromofluorobenzene (Surr)	97		76 - 123		10/11/19 14:01	1
Dibromofluoromethane (Surr)	85		75 - 123		10/11/19 14:01	1
Toluene-d8 (Surr)	85		77 - 120		10/11/19 14:01	1

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		10/10/19 07:50	10/10/19 19:26	1
Antimony	ND		0.020	0.0068	mg/L		10/10/19 07:50	10/10/19 19:26	1
Arsenic	ND		0.015	0.0056	mg/L		10/10/19 07:50	10/10/19 19:26	1
Barium	0.060		0.0020	0.00070	mg/L		10/10/19 07:50	10/10/19 19:26	1
Beryllium	ND		0.0020	0.00030	mg/L		10/10/19 07:50	10/10/19 19:26	1
Cadmium	ND		0.0020	0.00050	mg/L		10/10/19 07:50	10/10/19 19:26	1
Calcium	23.0		0.50	0.10	mg/L		10/10/19 07:50	10/10/19 19:26	1
Chromium	ND		0.0040	0.0010	mg/L		10/10/19 07:50	10/10/19 19:26	1
Copper	0.0062	J	0.010	0.0016	mg/L		10/10/19 07:50	10/10/19 19:26	1
Iron	0.031	J	0.050	0.019	mg/L		10/10/19 07:50	10/10/19 19:26	1
Lead	ND		0.010	0.0030	mg/L		10/10/19 07:50	10/10/19 19:26	1
Magnesium	3.8		0.20	0.043	mg/L		10/10/19 07:50	10/10/19 19:26	1
Manganese	0.0022	J	0.0030	0.00040	mg/L		10/10/19 07:50	10/10/19 19:26	1
Nickel	0.0014	J	0.010	0.0013	mg/L		10/10/19 07:50	10/10/19 19:26	1
Potassium	1.7	B	0.50	0.10	mg/L		10/10/19 07:50	10/10/19 19:26	1
Selenium	ND		0.025	0.0087	mg/L		10/10/19 07:50	10/10/19 19:26	1
Silver	ND		0.0060	0.0017	mg/L		10/10/19 07:50	10/10/19 19:26	1
Sodium	27.2	B	1.0	0.32	mg/L		10/10/19 07:50	10/10/19 19:26	1
Thallium	ND		0.020	0.010	mg/L		10/10/19 07:50	10/10/19 19:26	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Client Sample ID: EFF-10-7-19

Lab Sample ID: 480-160515-3

Date Collected: 10/07/19 13:10

Matrix: Water

Date Received: 10/08/19 13:00

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	ND		0.0050	0.0015	mg/L		10/10/19 07:50	10/10/19 19:26	1
Zinc	0.026	B	0.010	0.0015	mg/L		10/10/19 07:50	10/10/19 19:26	1

Method: 245.1 - Mercury

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		10/22/19 13:44	10/22/19 17:00	1

Surrogate Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCA (68-130)	BFB (76-123)	DBFM (75-123)	TOL (77-120)
480-160515-1	EW-1-10-7-19	79	94	85	84
480-160515-2	EW-2-10-7-19	75	94	86	83
480-160515-3	EFF-10-7-19	76	97	85	85
LCS 480-497142/5	Lab Control Sample	77	97	89	88
LCS 480-497369/5	Lab Control Sample	76	96	83	85
MB 480-497142/7	Method Blank	74	91	85	82
MB 480-497369/7	Method Blank	75	93	83	81

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Enviroengineering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-497142/7

Matrix: Water

Analysis Batch: 497142

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			10/10/19 10:50	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			10/10/19 10:50	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			10/10/19 10:50	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			10/10/19 10:50	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			10/10/19 10:50	1
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			10/10/19 10:50	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			10/10/19 10:50	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			10/10/19 10:50	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			10/10/19 10:50	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			10/10/19 10:50	1
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			10/10/19 10:50	1
Benzene	ND		5.0	0.60	ug/L			10/10/19 10:50	1
Bromodichloromethane	ND		5.0	0.54	ug/L			10/10/19 10:50	1
Bromoform	ND		5.0	0.47	ug/L			10/10/19 10:50	1
Bromomethane	ND		5.0	1.2	ug/L			10/10/19 10:50	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			10/10/19 10:50	1
Chlorobenzene	ND		5.0	0.48	ug/L			10/10/19 10:50	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			10/10/19 10:50	1
Chloroethane	ND		5.0	0.87	ug/L			10/10/19 10:50	1
Chloroform	ND		5.0	0.54	ug/L			10/10/19 10:50	1
Chloromethane	ND		5.0	0.64	ug/L			10/10/19 10:50	1
cis-1,2-Dichloroethene	ND		5.0	0.57	ug/L			10/10/19 10:50	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			10/10/19 10:50	1
Ethylbenzene	ND		5.0	0.46	ug/L			10/10/19 10:50	1
Methylene Chloride	ND		5.0	0.81	ug/L			10/10/19 10:50	1
Tetrachloroethene	ND		5.0	0.34	ug/L			10/10/19 10:50	1
Toluene	ND		5.0	0.45	ug/L			10/10/19 10:50	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			10/10/19 10:50	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			10/10/19 10:50	1
Trichloroethene	ND		5.0	0.60	ug/L			10/10/19 10:50	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			10/10/19 10:50	1
Vinyl chloride	ND		5.0	0.75	ug/L			10/10/19 10:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	74		68 - 130		10/10/19 10:50	1
4-Bromofluorobenzene (Surr)	91		76 - 123		10/10/19 10:50	1
Dibromofluoromethane (Surr)	85		75 - 123		10/10/19 10:50	1
Toluene-d8 (Surr)	82		77 - 120		10/10/19 10:50	1

Lab Sample ID: LCS 480-497142/5

Matrix: Water

Analysis Batch: 497142

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	19.1		ug/L		96	52 - 162
1,1,2,2-Tetrachloroethane	20.0	17.3		ug/L		86	46 - 157
1,1,2-Trichloroethane	20.0	17.7		ug/L		89	52 - 150
1,1-Dichloroethane	20.0	19.8		ug/L		99	59 - 155

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Enviroengineering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-497142/5

Matrix: Water

Analysis Batch: 497142

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	20.0	21.0		ug/L		105	1 - 234
1,2-Dichlorobenzene	20.0	19.6		ug/L		98	18 - 190
1,2-Dichloroethane	20.0	18.1		ug/L		90	49 - 155
1,2-Dichloropropane	20.0	19.3		ug/L		97	1 - 210
1,3-Dichlorobenzene	20.0	19.8		ug/L		99	59 - 156
1,4-Dichlorobenzene	20.0	19.7		ug/L		98	18 - 190
2-Chloroethyl vinyl ether	20.0	17.7	J	ug/L		89	1 - 305
Benzene	20.0	20.2		ug/L		101	37 - 151
Bromodichloromethane	20.0	18.5		ug/L		92	35 - 155
Bromoform	20.0	15.4		ug/L		77	45 - 169
Bromomethane	20.0	22.0		ug/L		110	1 - 242
Carbon tetrachloride	20.0	17.6		ug/L		88	70 - 140
Chlorobenzene	20.0	19.4		ug/L		97	37 - 160
Chlorodibromomethane	20.0	16.4		ug/L		82	53 - 149
Chloroethane	20.0	21.5		ug/L		107	14 - 230
Chloroform	20.0	19.3		ug/L		96	51 - 138
Chloromethane	20.0	19.9		ug/L		100	1 - 273
cis-1,3-Dichloropropene	20.0	18.3		ug/L		92	1 - 227
Ethylbenzene	20.0	19.8		ug/L		99	37 - 162
Methylene Chloride	20.0	20.2		ug/L		101	1 - 221
Tetrachloroethene	20.0	20.2		ug/L		101	64 - 148
Toluene	20.0	19.5		ug/L		97	47 - 150
trans-1,2-Dichloroethene	20.0	20.9		ug/L		105	54 - 156
trans-1,3-Dichloropropene	20.0	16.6		ug/L		83	17 - 183
Trichloroethene	20.0	20.1		ug/L		100	71 - 157
Trichlorofluoromethane	20.0	21.3		ug/L		106	17 - 181
Vinyl chloride	20.0	22.0		ug/L		110	1 - 251

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	77		68 - 130
4-Bromofluorobenzene (Surr)	97		76 - 123
Dibromofluoromethane (Surr)	89		75 - 123
Toluene-d8 (Surr)	88		77 - 120

Lab Sample ID: MB 480-497369/7

Matrix: Water

Analysis Batch: 497369

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			10/11/19 10:47	1
1,1,1,2-Tetrachloroethane	ND		5.0	0.26	ug/L			10/11/19 10:47	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			10/11/19 10:47	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			10/11/19 10:47	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			10/11/19 10:47	1
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			10/11/19 10:47	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			10/11/19 10:47	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			10/11/19 10:47	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			10/11/19 10:47	1

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Enviroengineering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 480-497369/7

Matrix: Water

Analysis Batch: 497369

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			10/11/19 10:47	1
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			10/11/19 10:47	1
Benzene	ND		5.0	0.60	ug/L			10/11/19 10:47	1
Bromodichloromethane	ND		5.0	0.54	ug/L			10/11/19 10:47	1
Bromoform	ND		5.0	0.47	ug/L			10/11/19 10:47	1
Bromomethane	ND		5.0	1.2	ug/L			10/11/19 10:47	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			10/11/19 10:47	1
Chlorobenzene	ND		5.0	0.48	ug/L			10/11/19 10:47	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			10/11/19 10:47	1
Chloroethane	ND		5.0	0.87	ug/L			10/11/19 10:47	1
Chloroform	ND		5.0	0.54	ug/L			10/11/19 10:47	1
Chloromethane	ND		5.0	0.64	ug/L			10/11/19 10:47	1
cis-1,2-Dichloroethene	ND		5.0	0.57	ug/L			10/11/19 10:47	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			10/11/19 10:47	1
Ethylbenzene	ND		5.0	0.46	ug/L			10/11/19 10:47	1
Methylene Chloride	ND		5.0	0.81	ug/L			10/11/19 10:47	1
Tetrachloroethene	ND		5.0	0.34	ug/L			10/11/19 10:47	1
Toluene	ND		5.0	0.45	ug/L			10/11/19 10:47	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			10/11/19 10:47	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			10/11/19 10:47	1
Trichloroethene	ND		5.0	0.60	ug/L			10/11/19 10:47	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			10/11/19 10:47	1
Vinyl chloride	ND		5.0	0.75	ug/L			10/11/19 10:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	75		68 - 130		10/11/19 10:47	1
4-Bromofluorobenzene (Surr)	93		76 - 123		10/11/19 10:47	1
Dibromofluoromethane (Surr)	83		75 - 123		10/11/19 10:47	1
Toluene-d8 (Surr)	81		77 - 120		10/11/19 10:47	1

Lab Sample ID: LCS 480-497369/5

Matrix: Water

Analysis Batch: 497369

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	17.7		ug/L		89	52 - 162
1,1,1,2-Tetrachloroethane	20.0	18.4		ug/L		92	46 - 157
1,1,2-Trichloroethane	20.0	18.8		ug/L		94	52 - 150
1,1-Dichloroethane	20.0	19.3		ug/L		96	59 - 155
1,1-Dichloroethene	20.0	20.0		ug/L		100	1 - 234
1,2-Dichlorobenzene	20.0	19.3		ug/L		97	18 - 190
1,2-Dichloroethane	20.0	18.5		ug/L		93	49 - 155
1,2-Dichloropropane	20.0	19.4		ug/L		97	1 - 210
1,3-Dichlorobenzene	20.0	19.4		ug/L		97	59 - 156
1,4-Dichlorobenzene	20.0	19.6		ug/L		98	18 - 190
2-Chloroethyl vinyl ether	20.0	18.7	J	ug/L		94	1 - 305
Benzene	20.0	19.7		ug/L		99	37 - 151
Bromodichloromethane	20.0	18.4		ug/L		92	35 - 155

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-497369/5

Matrix: Water

Analysis Batch: 497369

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromoform	20.0	16.0		ug/L		80	45 - 169
Bromomethane	20.0	21.2		ug/L		106	1 - 242
Carbon tetrachloride	20.0	17.1		ug/L		86	70 - 140
Chlorobenzene	20.0	19.1		ug/L		95	37 - 160
Chlorodibromomethane	20.0	16.8		ug/L		84	53 - 149
Chloroethane	20.0	20.7		ug/L		104	14 - 230
Chloroform	20.0	19.2		ug/L		96	51 - 138
Chloromethane	20.0	19.5		ug/L		97	1 - 273
cis-1,3-Dichloropropene	20.0	18.7		ug/L		94	1 - 227
Ethylbenzene	20.0	19.2		ug/L		96	37 - 162
Methylene Chloride	20.0	19.4		ug/L		97	1 - 221
Tetrachloroethene	20.0	19.4		ug/L		97	64 - 148
Toluene	20.0	19.0		ug/L		95	47 - 150
trans-1,2-Dichloroethene	20.0	20.3		ug/L		101	54 - 156
trans-1,3-Dichloropropene	20.0	17.2		ug/L		86	17 - 183
Trichloroethene	20.0	19.7		ug/L		99	71 - 157
Trichlorofluoromethane	20.0	20.1		ug/L		100	17 - 181
Vinyl chloride	20.0	20.7		ug/L		103	1 - 251

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	76		68 - 130
4-Bromofluorobenzene (Surr)	96		76 - 123
Dibromofluoromethane (Surr)	83		75 - 123
Toluene-d8 (Surr)	85		77 - 120

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 480-497075/1-A

Matrix: Water

Analysis Batch: 497344

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 497075

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		10/10/19 07:50	10/10/19 19:19	1
Antimony	ND		0.020	0.0068	mg/L		10/10/19 07:50	10/10/19 19:19	1
Arsenic	ND		0.015	0.0056	mg/L		10/10/19 07:50	10/10/19 19:19	1
Barium	ND		0.0020	0.00070	mg/L		10/10/19 07:50	10/10/19 19:19	1
Beryllium	0.000480	J	0.0020	0.00030	mg/L		10/10/19 07:50	10/10/19 19:19	1
Cadmium	ND		0.0020	0.00050	mg/L		10/10/19 07:50	10/10/19 19:19	1
Calcium	ND		0.50	0.10	mg/L		10/10/19 07:50	10/10/19 19:19	1
Chromium	ND		0.0040	0.0010	mg/L		10/10/19 07:50	10/10/19 19:19	1
Copper	ND		0.010	0.0016	mg/L		10/10/19 07:50	10/10/19 19:19	1
Iron	ND		0.050	0.019	mg/L		10/10/19 07:50	10/10/19 19:19	1
Lead	ND		0.010	0.0030	mg/L		10/10/19 07:50	10/10/19 19:19	1
Magnesium	ND		0.20	0.043	mg/L		10/10/19 07:50	10/10/19 19:19	1
Manganese	ND		0.0030	0.00040	mg/L		10/10/19 07:50	10/10/19 19:19	1
Nickel	ND		0.010	0.0013	mg/L		10/10/19 07:50	10/10/19 19:19	1
Potassium	0.491	J	0.50	0.10	mg/L		10/10/19 07:50	10/10/19 19:19	1
Selenium	ND		0.025	0.0087	mg/L		10/10/19 07:50	10/10/19 19:19	1
Silver	ND		0.0060	0.0017	mg/L		10/10/19 07:50	10/10/19 19:19	1

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MB 480-497075/1-A

Matrix: Water

Analysis Batch: 497344

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 497075

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	0.611	J	1.0	0.32	mg/L		10/10/19 07:50	10/10/19 19:19	1
Thallium	ND		0.020	0.010	mg/L		10/10/19 07:50	10/10/19 19:19	1
Vanadium	ND		0.0050	0.0015	mg/L		10/10/19 07:50	10/10/19 19:19	1
Zinc	0.00237	J	0.010	0.0015	mg/L		10/10/19 07:50	10/10/19 19:19	1

Lab Sample ID: LCS 480-497075/2-A

Matrix: Water

Analysis Batch: 497344

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 497075

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10.0	9.62		mg/L		96	85 - 115
Antimony	0.200	0.216		mg/L		108	85 - 115
Arsenic	0.200	0.203		mg/L		101	85 - 115
Barium	0.200	0.207		mg/L		104	85 - 115
Beryllium	0.200	0.201		mg/L		100	85 - 115
Cadmium	0.200	0.200		mg/L		100	85 - 115
Calcium	10.0	10.09		mg/L		101	85 - 115
Chromium	0.200	0.203		mg/L		102	85 - 115
Copper	0.200	0.197		mg/L		98	85 - 115
Iron	10.0	10.32		mg/L		103	85 - 115
Lead	0.200	0.198		mg/L		99	85 - 115
Magnesium	10.0	9.90		mg/L		99	85 - 115
Manganese	0.200	0.200		mg/L		100	85 - 115
Nickel	0.200	0.196		mg/L		98	85 - 115
Potassium	10.0	9.73		mg/L		97	85 - 115
Selenium	0.200	0.190		mg/L		95	85 - 115
Silver	0.0500	0.0495		mg/L		99	85 - 115
Sodium	10.0	9.67		mg/L		97	85 - 115
Thallium	0.200	0.205		mg/L		103	85 - 115
Vanadium	0.200	0.199		mg/L		99	85 - 115
Zinc	0.200	0.205		mg/L		102	85 - 115

Lab Sample ID: 480-160515-3 MS

Matrix: Water

Analysis Batch: 497344

Client Sample ID: EFF-10-7-19

Prep Type: Total/NA

Prep Batch: 497075

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	ND		10.0	9.37		mg/L		94	70 - 130
Antimony	ND		0.200	0.212		mg/L		106	70 - 130
Arsenic	ND		0.200	0.197		mg/L		99	70 - 130
Barium	0.060		0.200	0.260		mg/L		100	70 - 130
Beryllium	ND		0.200	0.197		mg/L		99	70 - 130
Cadmium	ND		0.200	0.195		mg/L		97	70 - 130
Calcium	23.0		10.0	31.82		mg/L		88	70 - 130
Chromium	ND		0.200	0.197		mg/L		99	70 - 130
Copper	0.0062	J	0.200	0.197		mg/L		95	70 - 130
Iron	0.031	J	10.0	9.98		mg/L		99	70 - 130
Lead	ND		0.200	0.194		mg/L		97	70 - 130
Magnesium	3.8		10.0	13.26		mg/L		94	70 - 130

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 480-160515-3 MS

Matrix: Water

Analysis Batch: 497344

Client Sample ID: EFF-10-7-19

Prep Type: Total/NA

Prep Batch: 497075

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	0.0022	J	0.200	0.195		mg/L		96	70 - 130
Nickel	0.0014	J	0.200	0.193		mg/L		96	70 - 130
Potassium	1.7	B	10.0	11.11		mg/L		94	70 - 130
Selenium	ND		0.200	0.186		mg/L		93	70 - 130
Silver	ND		0.0500	0.0476		mg/L		95	70 - 130
Sodium	27.2	B	10.0	35.96		mg/L		88	70 - 130
Thallium	ND		0.200	0.199		mg/L		100	70 - 130
Vanadium	ND		0.200	0.193		mg/L		96	70 - 130
Zinc	0.026	B	0.200	0.220		mg/L		97	70 - 130

Lab Sample ID: 480-160515-3 MSD

Matrix: Water

Analysis Batch: 497344

Client Sample ID: EFF-10-7-19

Prep Type: Total/NA

Prep Batch: 497075

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	ND		10.0	9.31		mg/L		93	70 - 130	1	20
Antimony	ND		0.200	0.214		mg/L		107	70 - 130	1	20
Arsenic	ND		0.200	0.200		mg/L		100	70 - 130	1	20
Barium	0.060		0.200	0.259		mg/L		100	70 - 130	0	20
Beryllium	ND		0.200	0.197		mg/L		99	70 - 130	0	20
Cadmium	ND		0.200	0.196		mg/L		98	70 - 130	1	20
Calcium	23.0		10.0	31.86		mg/L		89	70 - 130	0	20
Chromium	ND		0.200	0.197		mg/L		98	70 - 130	0	20
Copper	0.0062	J	0.200	0.198		mg/L		96	70 - 130	1	20
Iron	0.031	J	10.0	10.03		mg/L		100	70 - 130	0	20
Lead	ND		0.200	0.195		mg/L		98	70 - 130	1	20
Magnesium	3.8		10.0	13.30		mg/L		95	70 - 130	0	20
Manganese	0.0022	J	0.200	0.196		mg/L		97	70 - 130	1	20
Nickel	0.0014	J	0.200	0.194		mg/L		96	70 - 130	1	20
Potassium	1.7	B	10.0	11.16		mg/L		94	70 - 130	0	20
Selenium	ND		0.200	0.192		mg/L		96	70 - 130	3	20
Silver	ND		0.0500	0.0481		mg/L		96	70 - 130	1	20
Sodium	27.2	B	10.0	35.79		mg/L		86	70 - 130	0	20
Thallium	ND		0.200	0.200		mg/L		100	70 - 130	0	20
Vanadium	ND		0.200	0.194		mg/L		97	70 - 130	1	20
Zinc	0.026	B	0.200	0.223		mg/L		99	70 - 130	1	20

Method: 245.1 - Mercury

Lab Sample ID: MB 480-499482/1-A

Matrix: Water

Analysis Batch: 499552

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 499482

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		10/22/19 13:44	10/22/19 16:57	1

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Method: 245.1 - Mercury (Continued)

Lab Sample ID: LCS 480-499482/2-A

Matrix: Water

Analysis Batch: 499552

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 499482

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.00667	0.00658		mg/L		99	85 - 115		

Lab Sample ID: 480-160515-3 MS

Matrix: Water

Analysis Batch: 499552

Client Sample ID: EFF-10-7-19

Prep Type: Total/NA

Prep Batch: 499482

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		0.00667	0.00692		mg/L		104	70 - 130		

Lab Sample ID: 480-160515-3 MSD

Matrix: Water

Analysis Batch: 499552

Client Sample ID: EFF-10-7-19

Prep Type: Total/NA

Prep Batch: 499482

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00667	0.00705		mg/L		106	70 - 130	2	20

QC Association Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

GC/MS VOA

Analysis Batch: 497142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-160515-1	EW-1-10-7-19	Total/NA	Water	624.1	
MB 480-497142/7	Method Blank	Total/NA	Water	624.1	
LCS 480-497142/5	Lab Control Sample	Total/NA	Water	624.1	

Analysis Batch: 497369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-160515-2	EW-2-10-7-19	Total/NA	Water	624.1	
480-160515-3	EFF-10-7-19	Total/NA	Water	624.1	
MB 480-497369/7	Method Blank	Total/NA	Water	624.1	
LCS 480-497369/5	Lab Control Sample	Total/NA	Water	624.1	

Metals

Prep Batch: 497075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-160515-3	EFF-10-7-19	Total/NA	Water	200.7	
MB 480-497075/1-A	Method Blank	Total/NA	Water	200.7	
LCS 480-497075/2-A	Lab Control Sample	Total/NA	Water	200.7	
480-160515-3 MS	EFF-10-7-19	Total/NA	Water	200.7	
480-160515-3 MSD	EFF-10-7-19	Total/NA	Water	200.7	

Analysis Batch: 497344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-160515-3	EFF-10-7-19	Total/NA	Water	200.7 Rev 4.4	497075
MB 480-497075/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	497075
LCS 480-497075/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	497075
480-160515-3 MS	EFF-10-7-19	Total/NA	Water	200.7 Rev 4.4	497075
480-160515-3 MSD	EFF-10-7-19	Total/NA	Water	200.7 Rev 4.4	497075

Prep Batch: 499482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-160515-3	EFF-10-7-19	Total/NA	Water	245.1	
MB 480-499482/1-A	Method Blank	Total/NA	Water	245.1	
LCS 480-499482/2-A	Lab Control Sample	Total/NA	Water	245.1	
480-160515-3 MS	EFF-10-7-19	Total/NA	Water	245.1	
480-160515-3 MSD	EFF-10-7-19	Total/NA	Water	245.1	

Analysis Batch: 499552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-160515-3	EFF-10-7-19	Total/NA	Water	245.1	499482
MB 480-499482/1-A	Method Blank	Total/NA	Water	245.1	499482
LCS 480-499482/2-A	Lab Control Sample	Total/NA	Water	245.1	499482
480-160515-3 MS	EFF-10-7-19	Total/NA	Water	245.1	499482
480-160515-3 MSD	EFF-10-7-19	Total/NA	Water	245.1	499482

Lab Chronicle

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Client Sample ID: EW-1-10-7-19

Lab Sample ID: 480-160515-1

Date Collected: 10/07/19 13:00

Matrix: Water

Date Received: 10/08/19 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	497142	10/10/19 18:07	S1V	TAL BUF

Client Sample ID: EW-2-10-7-19

Lab Sample ID: 480-160515-2

Date Collected: 10/07/19 13:05

Matrix: Water

Date Received: 10/08/19 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	497369	10/11/19 13:37	S1V	TAL BUF

Client Sample ID: EFF-10-7-19

Lab Sample ID: 480-160515-3

Date Collected: 10/07/19 13:10

Matrix: Water

Date Received: 10/08/19 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	497369	10/11/19 14:01	S1V	TAL BUF
Total/NA	Prep	200.7			497075	10/10/19 07:50	NSW	TAL BUF
Total/NA	Analysis	200.7 Rev 4.4		1	497344	10/10/19 19:26	LMH	TAL BUF
Total/NA	Prep	245.1			499482	10/22/19 13:44	BMB	TAL BUF
Total/NA	Analysis	245.1		1	499552	10/22/19 17:00	BMB	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-20

1

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Method Summary

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF
200.7 Rev 4.4	Metals (ICP)	EPA	TAL BUF
245.1	Mercury	EPA	TAL BUF
200.7	Preparation, Total Metals	EPA	TAL BUF
245.1	Preparation, Mercury	EPA	TAL BUF

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-160515-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-160515-1	EW-1-10-7-19	Water	10/07/19 13:00	10/08/19 13:00	
480-160515-2	EW-2-10-7-19	Water	10/07/19 13:05	10/08/19 13:00	
480-160515-3	EFF-10-7-19	Water	10/07/19 13:10	10/08/19 13:00	

>>> Select a Laboratory <<<

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228
716-691-2600

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:[illegible]

Form No. CA-C-WI-002, Rev. 4.15, dated 9/27/2017

10/23/2019

Login Sample Receipt Checklist

Client: Environneering Inc

Job Number: 480-160515-1

Login Number: 160515

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Harper, Marcus D

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

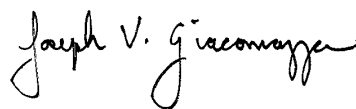
Laboratory Job ID: 480-162837-1

Client Project/Site: Cooper Olean Site Discharge Analysis

For:

Environeering Inc
16100 Cairnway
Suite 320
Houston, Texas 77084

Attn: Mr. Tim White



Authorized for release by:

12/4/2019 4:00:53 PM

Joe Giacomazza, Project Management Assistant II
joe.giacomazza@testamericainc.com

Designee for

Brian Fischer, Manager of Project Management
(716)504-9835
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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-162837-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-162837-1

Job ID: 480-162837-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-162837-1

Comments

No additional comments.

Receipt

The samples were received on 11/15/2019 11:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.3° C.

GC/MS VOA

Method 624.1: The continuing calibration verification (CCV) associated with batch 480-505315 recovered above the upper control limit for Bromoform. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: EW-1-11-14-19 (480-162837-1), EW-2-11-14-19 (480-162837-2) and EFF-11-14-19 (480-162837-3).

Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following samples were received preserved with hydrochloric acid: EW-1-11-14-19 (480-162837-1), EW-2-11-14-19 (480-162837-2) and EFF-11-14-19 (480-162837-3). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-162837-1

Client Sample ID: EW-1-11-14-19

Lab Sample ID: 480-162837-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	20		5.0	0.60	ug/L	1		624.1	Total/NA

Client Sample ID: EW-2-11-14-19

Lab Sample ID: 480-162837-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.2	J	5.0	0.57	ug/L	1		624.1	Total/NA
Trichloroethene	66		5.0	0.60	ug/L	1		624.1	Total/NA

Client Sample ID: EFF-11-14-19

Lab Sample ID: 480-162837-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-162837-1

Client Sample ID: EW-1-11-14-19

Lab Sample ID: 480-162837-1

Date Collected: 11/14/19 11:50

Matrix: Water

Date Received: 11/15/19 11:50

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			11/19/19 16:37	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			11/19/19 16:37	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			11/19/19 16:37	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			11/19/19 16:37	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			11/19/19 16:37	1
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			11/19/19 16:37	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			11/19/19 16:37	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			11/19/19 16:37	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			11/19/19 16:37	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			11/19/19 16:37	1
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			11/19/19 16:37	1
Benzene	ND		5.0	0.60	ug/L			11/19/19 16:37	1
Bromodichloromethane	ND		5.0	0.54	ug/L			11/19/19 16:37	1
Bromoform	ND		5.0	0.47	ug/L			11/19/19 16:37	1
Bromomethane	ND		5.0	1.2	ug/L			11/19/19 16:37	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			11/19/19 16:37	1
Chlorobenzene	ND		5.0	0.48	ug/L			11/19/19 16:37	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			11/19/19 16:37	1
Chloroethane	ND		5.0	0.87	ug/L			11/19/19 16:37	1
Chloroform	ND		5.0	0.54	ug/L			11/19/19 16:37	1
Chloromethane	ND		5.0	0.64	ug/L			11/19/19 16:37	1
cis-1,2-Dichloroethene	ND		5.0	0.57	ug/L			11/19/19 16:37	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			11/19/19 16:37	1
Ethylbenzene	ND		5.0	0.46	ug/L			11/19/19 16:37	1
Methylene Chloride	ND		5.0	0.81	ug/L			11/19/19 16:37	1
Tetrachloroethene	ND		5.0	0.34	ug/L			11/19/19 16:37	1
Toluene	ND		5.0	0.45	ug/L			11/19/19 16:37	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			11/19/19 16:37	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			11/19/19 16:37	1
Trichloroethene	20		5.0	0.60	ug/L			11/19/19 16:37	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			11/19/19 16:37	1
Vinyl chloride	ND		5.0	0.75	ug/L			11/19/19 16:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		68 - 130		11/19/19 16:37	1
4-Bromofluorobenzene (Surr)	105		76 - 123		11/19/19 16:37	1
Dibromofluoromethane (Surr)	108		75 - 123		11/19/19 16:37	1
Toluene-d8 (Surr)	101		77 - 120		11/19/19 16:37	1

Client Sample ID: EW-2-11-14-19

Lab Sample ID: 480-162837-2

Date Collected: 11/14/19 11:55

Matrix: Water

Date Received: 11/15/19 11:50

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			11/19/19 17:01	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			11/19/19 17:01	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			11/19/19 17:01	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			11/19/19 17:01	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			11/19/19 17:01	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-162837-1

Client Sample ID: EW-2-11-14-19

Lab Sample ID: 480-162837-2

Date Collected: 11/14/19 11:55

Matrix: Water

Date Received: 11/15/19 11:50

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			11/19/19 17:01	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			11/19/19 17:01	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			11/19/19 17:01	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			11/19/19 17:01	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			11/19/19 17:01	1
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			11/19/19 17:01	1
Benzene	ND		5.0	0.60	ug/L			11/19/19 17:01	1
Bromodichloromethane	ND		5.0	0.54	ug/L			11/19/19 17:01	1
Bromoform	ND		5.0	0.47	ug/L			11/19/19 17:01	1
Bromomethane	ND		5.0	1.2	ug/L			11/19/19 17:01	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			11/19/19 17:01	1
Chlorobenzene	ND		5.0	0.48	ug/L			11/19/19 17:01	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			11/19/19 17:01	1
Chloroethane	ND		5.0	0.87	ug/L			11/19/19 17:01	1
Chloroform	ND		5.0	0.54	ug/L			11/19/19 17:01	1
Chloromethane	ND		5.0	0.64	ug/L			11/19/19 17:01	1
cis-1,2-Dichloroethene	1.2	J	5.0	0.57	ug/L			11/19/19 17:01	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			11/19/19 17:01	1
Ethylbenzene	ND		5.0	0.46	ug/L			11/19/19 17:01	1
Methylene Chloride	ND		5.0	0.81	ug/L			11/19/19 17:01	1
Tetrachloroethene	ND		5.0	0.34	ug/L			11/19/19 17:01	1
Toluene	ND		5.0	0.45	ug/L			11/19/19 17:01	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			11/19/19 17:01	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			11/19/19 17:01	1
Trichloroethene	66		5.0	0.60	ug/L			11/19/19 17:01	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			11/19/19 17:01	1
Vinyl chloride	ND		5.0	0.75	ug/L			11/19/19 17:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		68 - 130		11/19/19 17:01	1
4-Bromofluorobenzene (Surr)	104		76 - 123		11/19/19 17:01	1
Dibromofluoromethane (Surr)	108		75 - 123		11/19/19 17:01	1
Toluene-d8 (Surr)	101		77 - 120		11/19/19 17:01	1

Client Sample ID: EFF-11-14-19

Lab Sample ID: 480-162837-3

Date Collected: 11/14/19 12:00

Matrix: Water

Date Received: 11/15/19 11:50

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			11/19/19 17:25	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			11/19/19 17:25	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			11/19/19 17:25	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			11/19/19 17:25	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			11/19/19 17:25	1
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			11/19/19 17:25	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			11/19/19 17:25	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			11/19/19 17:25	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			11/19/19 17:25	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			11/19/19 17:25	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-162837-1

Client Sample ID: EFF-11-14-19

Lab Sample ID: 480-162837-3

Date Collected: 11/14/19 12:00

Matrix: Water

Date Received: 11/15/19 11:50

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			11/19/19 17:25	1
Benzene	ND		5.0	0.60	ug/L			11/19/19 17:25	1
Bromodichloromethane	ND		5.0	0.54	ug/L			11/19/19 17:25	1
Bromoform	ND		5.0	0.47	ug/L			11/19/19 17:25	1
Bromomethane	ND		5.0	1.2	ug/L			11/19/19 17:25	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			11/19/19 17:25	1
Chlorobenzene	ND		5.0	0.48	ug/L			11/19/19 17:25	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			11/19/19 17:25	1
Chloroethane	ND		5.0	0.87	ug/L			11/19/19 17:25	1
Chloroform	ND		5.0	0.54	ug/L			11/19/19 17:25	1
Chloromethane	ND		5.0	0.64	ug/L			11/19/19 17:25	1
cis-1,2-Dichloroethene	ND		5.0	0.57	ug/L			11/19/19 17:25	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			11/19/19 17:25	1
Ethylbenzene	ND		5.0	0.46	ug/L			11/19/19 17:25	1
Methylene Chloride	ND		5.0	0.81	ug/L			11/19/19 17:25	1
Tetrachloroethene	ND		5.0	0.34	ug/L			11/19/19 17:25	1
Toluene	ND		5.0	0.45	ug/L			11/19/19 17:25	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			11/19/19 17:25	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			11/19/19 17:25	1
Trichloroethene	ND		5.0	0.60	ug/L			11/19/19 17:25	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			11/19/19 17:25	1
Vinyl chloride	ND		5.0	0.75	ug/L			11/19/19 17:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		68 - 130		11/19/19 17:25	1
4-Bromofluorobenzene (Surr)	107		76 - 123		11/19/19 17:25	1
Dibromofluoromethane (Surr)	106		75 - 123		11/19/19 17:25	1
Toluene-d8 (Surr)	103		77 - 120		11/19/19 17:25	1

Surrogate Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-162837-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (68-130)	BFB (76-123)	DBFM (75-123)	TOL (77-120)
480-162837-1	EW-1-11-14-19	108	105	108	101
480-162837-2	EW-2-11-14-19	109	104	108	101
480-162837-3	EFF-11-14-19	110	107	106	103
LCS 480-505315/3	Lab Control Sample	108	110	109	103
MB 480-505315/7	Method Blank	109	106	106	106

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-162837-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-505315/7

Matrix: Water

Analysis Batch: 505315

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			11/19/19 12:13	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			11/19/19 12:13	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			11/19/19 12:13	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			11/19/19 12:13	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			11/19/19 12:13	1
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			11/19/19 12:13	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			11/19/19 12:13	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			11/19/19 12:13	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			11/19/19 12:13	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			11/19/19 12:13	1
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			11/19/19 12:13	1
Benzene	ND		5.0	0.60	ug/L			11/19/19 12:13	1
Bromodichloromethane	ND		5.0	0.54	ug/L			11/19/19 12:13	1
Bromoform	ND		5.0	0.47	ug/L			11/19/19 12:13	1
Bromomethane	ND		5.0	1.2	ug/L			11/19/19 12:13	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			11/19/19 12:13	1
Chlorobenzene	ND		5.0	0.48	ug/L			11/19/19 12:13	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			11/19/19 12:13	1
Chloroethane	ND		5.0	0.87	ug/L			11/19/19 12:13	1
Chloroform	ND		5.0	0.54	ug/L			11/19/19 12:13	1
Chloromethane	ND		5.0	0.64	ug/L			11/19/19 12:13	1
cis-1,2-Dichloroethene	ND		5.0	0.57	ug/L			11/19/19 12:13	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			11/19/19 12:13	1
Ethylbenzene	ND		5.0	0.46	ug/L			11/19/19 12:13	1
Methylene Chloride	ND		5.0	0.81	ug/L			11/19/19 12:13	1
Tetrachloroethene	ND		5.0	0.34	ug/L			11/19/19 12:13	1
Toluene	ND		5.0	0.45	ug/L			11/19/19 12:13	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			11/19/19 12:13	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			11/19/19 12:13	1
Trichloroethene	ND		5.0	0.60	ug/L			11/19/19 12:13	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			11/19/19 12:13	1
Vinyl chloride	ND		5.0	0.75	ug/L			11/19/19 12:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		68 - 130		11/19/19 12:13	1
4-Bromofluorobenzene (Surr)	106		76 - 123		11/19/19 12:13	1
Dibromofluoromethane (Surr)	106		75 - 123		11/19/19 12:13	1
Toluene-d8 (Surr)	106		77 - 120		11/19/19 12:13	1

Lab Sample ID: LCS 480-505315/3

Matrix: Water

Analysis Batch: 505315

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	23.5		ug/L		118	52 - 162
1,1,2,2-Tetrachloroethane	20.0	20.9		ug/L		104	46 - 157
1,1,2-Trichloroethane	20.0	20.5		ug/L		102	52 - 150
1,1-Dichloroethane	20.0	21.4		ug/L		107	59 - 155

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-162837-1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-505315/3

Matrix: Water

Analysis Batch: 505315

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	20.0	22.6		ug/L		113	1 - 234
1,2-Dichlorobenzene	20.0	20.2		ug/L		101	18 - 190
1,2-Dichloroethane	20.0	21.1		ug/L		105	49 - 155
1,2-Dichloropropane	20.0	20.1		ug/L		100	1 - 210
1,3-Dichlorobenzene	20.0	20.7		ug/L		103	59 - 156
1,4-Dichlorobenzene	20.0	20.7		ug/L		104	18 - 190
2-Chloroethyl vinyl ether	20.0	22.0	J	ug/L		110	1 - 305
Benzene	20.0	21.2		ug/L		106	37 - 151
Bromodichloromethane	20.0	22.1		ug/L		110	35 - 155
Bromoform	20.0	27.4		ug/L		137	45 - 169
Bromomethane	20.0	23.0		ug/L		115	1 - 242
Carbon tetrachloride	20.0	25.8		ug/L		129	70 - 140
Chlorobenzene	20.0	20.9		ug/L		104	37 - 160
Chlorodibromomethane	20.0	24.1		ug/L		121	53 - 149
Chloroethane	20.0	22.8		ug/L		114	14 - 230
Chloroform	20.0	21.4		ug/L		107	51 - 138
Chloromethane	20.0	23.9		ug/L		119	1 - 273
cis-1,3-Dichloropropene	20.0	21.6		ug/L		108	1 - 227
Ethylbenzene	20.0	21.6		ug/L		108	37 - 162
Methylene Chloride	20.0	22.5		ug/L		112	1 - 221
Tetrachloroethene	20.0	21.5		ug/L		107	64 - 148
Toluene	20.0	20.9		ug/L		104	47 - 150
trans-1,2-Dichloroethene	20.0	22.2		ug/L		111	54 - 156
trans-1,3-Dichloropropene	20.0	22.0		ug/L		110	17 - 183
Trichloroethene	20.0	21.7		ug/L		108	71 - 157
Trichlorofluoromethane	20.0	24.2		ug/L		121	17 - 181
Vinyl chloride	20.0	24.4		ug/L		122	1 - 251

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	108		68 - 130
4-Bromofluorobenzene (Surr)	110		76 - 123
Dibromofluoromethane (Surr)	109		75 - 123
Toluene-d8 (Surr)	103		77 - 120

QC Association Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-162837-1

GC/MS VOA

Analysis Batch: 505315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-162837-1	EW-1-11-14-19	Total/NA	Water	624.1	
480-162837-2	EW-2-11-14-19	Total/NA	Water	624.1	
480-162837-3	EFF-11-14-19	Total/NA	Water	624.1	
MB 480-505315/7	Method Blank	Total/NA	Water	624.1	
LCS 480-505315/3	Lab Control Sample	Total/NA	Water	624.1	

Lab Chronicle

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-162837-1

Client Sample ID: EW-1-11-14-19

Date Collected: 11/14/19 11:50

Date Received: 11/15/19 11:50

Lab Sample ID: 480-162837-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	505315	11/19/19 16:37	S1V	TAL BUF

Client Sample ID: EW-2-11-14-19

Date Collected: 11/14/19 11:55

Date Received: 11/15/19 11:50

Lab Sample ID: 480-162837-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	505315	11/19/19 17:01	S1V	TAL BUF

Client Sample ID: EFF-11-14-19

Date Collected: 11/14/19 12:00

Date Received: 11/15/19 11:50

Lab Sample ID: 480-162837-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	505315	11/19/19 17:25	S1V	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-162837-1

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-162837-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-162837-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-162837-1	EW-1-11-14-19	Water	11/14/19 11:50	11/15/19 11:50	
480-162837-2	EW-2-11-14-19	Water	11/14/19 11:55	11/15/19 11:50	
480-162837-3	EFF-11-14-19	Water	11/14/19 12:00	11/15/19 11:50	

Login Sample Receipt Checklist

Client: Environeering Inc

Job Number: 480-162837-1

Login Number: 162837

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Manhardt, Kara M

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	TAL
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-164593-1

Client Project/Site: Cooper Olean Site Discharge Analysis

For:

Environeering Inc
16100 Cairnway
Suite 320
Houston, Texas 77084

Attn: Mr. Tim White



Authorized for release by:

12/26/2019 3:32:01 PM

Rebecca Jones, Project Management Assistant I
rebecca.jones@testamericainc.com

Designee for

Brian Fischer, Manager of Project Management
(716)504-9835
brian.fischer@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Enviroengineering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-164593-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-164593-1

Job ID: 480-164593-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-164593-1

Comments

No additional comments.

Receipt

The samples were received on 12/23/2019 12:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

GC/MS VOA

Method 624.1: The continuing calibration verification (CCV) associated with batch 480-511598 recovered above the upper control limit for Carbon tetrachloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: EW-1-12-20-19 (480-164593-1), EW-2-12-20-19 (480-164593-2) and EFF-12-20-19 (480-164593-3).

Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following samples were received preserved with hydrochloric acid: EW-1-12-20-19 (480-164593-1), EW-2-12-20-19 (480-164593-2) and EFF-12-20-19 (480-164593-3). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-164593-1

Client Sample ID: EW-1-12-20-19

Lab Sample ID: 480-164593-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	20		5.0	0.60	ug/L	1		624.1	Total/NA

Client Sample ID: EW-2-12-20-19

Lab Sample ID: 480-164593-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.4	J	5.0	0.57	ug/L	1		624.1	Total/NA
Tetrachloroethene	0.49	J	5.0	0.34	ug/L	1		624.1	Total/NA
Trichloroethene	93		5.0	0.60	ug/L	1		624.1	Total/NA

Client Sample ID: EFF-12-20-19

Lab Sample ID: 480-164593-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Enviroengineering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-164593-1

Client Sample ID: EW-1-12-20-19

Lab Sample ID: 480-164593-1

Date Collected: 12/20/19 08:10

Matrix: Water

Date Received: 12/23/19 12:30

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			12/24/19 12:03	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			12/24/19 12:03	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			12/24/19 12:03	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			12/24/19 12:03	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			12/24/19 12:03	1
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			12/24/19 12:03	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			12/24/19 12:03	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			12/24/19 12:03	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			12/24/19 12:03	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			12/24/19 12:03	1
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			12/24/19 12:03	1
Benzene	ND		5.0	0.60	ug/L			12/24/19 12:03	1
Bromodichloromethane	ND		5.0	0.54	ug/L			12/24/19 12:03	1
Bromoform	ND		5.0	0.47	ug/L			12/24/19 12:03	1
Bromomethane	ND		5.0	1.2	ug/L			12/24/19 12:03	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			12/24/19 12:03	1
Chlorobenzene	ND		5.0	0.48	ug/L			12/24/19 12:03	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			12/24/19 12:03	1
Chloroethane	ND		5.0	0.87	ug/L			12/24/19 12:03	1
Chloroform	ND		5.0	0.54	ug/L			12/24/19 12:03	1
Chloromethane	ND		5.0	0.64	ug/L			12/24/19 12:03	1
cis-1,2-Dichloroethene	ND		5.0	0.57	ug/L			12/24/19 12:03	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			12/24/19 12:03	1
Ethylbenzene	ND		5.0	0.46	ug/L			12/24/19 12:03	1
Methylene Chloride	ND		5.0	0.81	ug/L			12/24/19 12:03	1
Tetrachloroethene	ND		5.0	0.34	ug/L			12/24/19 12:03	1
Toluene	ND		5.0	0.45	ug/L			12/24/19 12:03	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			12/24/19 12:03	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			12/24/19 12:03	1
Trichloroethene	20		5.0	0.60	ug/L			12/24/19 12:03	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			12/24/19 12:03	1
Vinyl chloride	ND		5.0	0.75	ug/L			12/24/19 12:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		68 - 130		12/24/19 12:03	1
4-Bromofluorobenzene (Surr)	104		76 - 123		12/24/19 12:03	1
Dibromofluoromethane (Surr)	102		75 - 123		12/24/19 12:03	1
Toluene-d8 (Surr)	88		77 - 120		12/24/19 12:03	1

Client Sample ID: EW-2-12-20-19

Lab Sample ID: 480-164593-2

Date Collected: 12/20/19 08:30

Matrix: Water

Date Received: 12/23/19 12:30

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			12/24/19 12:27	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			12/24/19 12:27	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			12/24/19 12:27	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			12/24/19 12:27	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			12/24/19 12:27	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-164593-1

Client Sample ID: EW-2-12-20-19

Lab Sample ID: 480-164593-2

Date Collected: 12/20/19 08:30

Matrix: Water

Date Received: 12/23/19 12:30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			12/24/19 12:27	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			12/24/19 12:27	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			12/24/19 12:27	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			12/24/19 12:27	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			12/24/19 12:27	1
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			12/24/19 12:27	1
Benzene	ND		5.0	0.60	ug/L			12/24/19 12:27	1
Bromodichloromethane	ND		5.0	0.54	ug/L			12/24/19 12:27	1
Bromoform	ND		5.0	0.47	ug/L			12/24/19 12:27	1
Bromomethane	ND		5.0	1.2	ug/L			12/24/19 12:27	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			12/24/19 12:27	1
Chlorobenzene	ND		5.0	0.48	ug/L			12/24/19 12:27	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			12/24/19 12:27	1
Chloroethane	ND		5.0	0.87	ug/L			12/24/19 12:27	1
Chloroform	ND		5.0	0.54	ug/L			12/24/19 12:27	1
Chloromethane	ND		5.0	0.64	ug/L			12/24/19 12:27	1
cis-1,2-Dichloroethene	1.4	J	5.0	0.57	ug/L			12/24/19 12:27	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			12/24/19 12:27	1
Ethylbenzene	ND		5.0	0.46	ug/L			12/24/19 12:27	1
Methylene Chloride	ND		5.0	0.81	ug/L			12/24/19 12:27	1
Tetrachloroethene	0.49	J	5.0	0.34	ug/L			12/24/19 12:27	1
Toluene	ND		5.0	0.45	ug/L			12/24/19 12:27	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			12/24/19 12:27	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			12/24/19 12:27	1
Trichloroethene	93		5.0	0.60	ug/L			12/24/19 12:27	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			12/24/19 12:27	1
Vinyl chloride	ND		5.0	0.75	ug/L			12/24/19 12:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		68 - 130		12/24/19 12:27	1
4-Bromofluorobenzene (Surr)	104		76 - 123		12/24/19 12:27	1
Dibromofluoromethane (Surr)	101		75 - 123		12/24/19 12:27	1
Toluene-d8 (Surr)	87		77 - 120		12/24/19 12:27	1

Client Sample ID: EFF-12-20-19

Lab Sample ID: 480-164593-3

Date Collected: 12/20/19 08:20

Matrix: Water

Date Received: 12/23/19 12:30

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			12/24/19 12:50	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			12/24/19 12:50	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			12/24/19 12:50	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			12/24/19 12:50	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			12/24/19 12:50	1
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			12/24/19 12:50	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			12/24/19 12:50	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			12/24/19 12:50	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			12/24/19 12:50	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			12/24/19 12:50	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-164593-1

Client Sample ID: EFF-12-20-19

Lab Sample ID: 480-164593-3

Date Collected: 12/20/19 08:20

Matrix: Water

Date Received: 12/23/19 12:30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			12/24/19 12:50	1
Benzene	ND		5.0	0.60	ug/L			12/24/19 12:50	1
Bromodichloromethane	ND		5.0	0.54	ug/L			12/24/19 12:50	1
Bromoform	ND		5.0	0.47	ug/L			12/24/19 12:50	1
Bromomethane	ND		5.0	1.2	ug/L			12/24/19 12:50	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			12/24/19 12:50	1
Chlorobenzene	ND		5.0	0.48	ug/L			12/24/19 12:50	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			12/24/19 12:50	1
Chloroethane	ND		5.0	0.87	ug/L			12/24/19 12:50	1
Chloroform	ND		5.0	0.54	ug/L			12/24/19 12:50	1
Chloromethane	ND		5.0	0.64	ug/L			12/24/19 12:50	1
cis-1,2-Dichloroethene	ND		5.0	0.57	ug/L			12/24/19 12:50	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			12/24/19 12:50	1
Ethylbenzene	ND		5.0	0.46	ug/L			12/24/19 12:50	1
Methylene Chloride	ND		5.0	0.81	ug/L			12/24/19 12:50	1
Tetrachloroethene	ND		5.0	0.34	ug/L			12/24/19 12:50	1
Toluene	ND		5.0	0.45	ug/L			12/24/19 12:50	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			12/24/19 12:50	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			12/24/19 12:50	1
Trichloroethene	ND		5.0	0.60	ug/L			12/24/19 12:50	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			12/24/19 12:50	1
Vinyl chloride	ND		5.0	0.75	ug/L			12/24/19 12:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		68 - 130		12/24/19 12:50	1
4-Bromofluorobenzene (Surr)	103		76 - 123		12/24/19 12:50	1
Dibromofluoromethane (Surr)	105		75 - 123		12/24/19 12:50	1
Toluene-d8 (Surr)	87		77 - 120		12/24/19 12:50	1

Surrogate Summary

Client: Environeering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-164593-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCA (68-130)	BFB (76-123)	DBFM (75-123)	TOL (77-120)
480-164593-1	EW-1-12-20-19	101	104	102	88
480-164593-2	EW-2-12-20-19	105	104	101	87
480-164593-3	EFF-12-20-19	102	103	105	87
LCS 480-511598/5	Lab Control Sample	104	106	100	88
MB 480-511598/7	Method Blank	101	103	100	88

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Enviroengineering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-164593-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-511598/7

Matrix: Water

Analysis Batch: 511598

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.39	ug/L			12/24/19 11:15	1
1,1,1,2,2-Tetrachloroethane	ND		5.0	0.26	ug/L			12/24/19 11:15	1
1,1,2-Trichloroethane	ND		5.0	0.48	ug/L			12/24/19 11:15	1
1,1-Dichloroethane	ND		5.0	0.59	ug/L			12/24/19 11:15	1
1,1-Dichloroethene	ND		5.0	0.85	ug/L			12/24/19 11:15	1
1,2-Dichlorobenzene	ND		5.0	0.44	ug/L			12/24/19 11:15	1
1,2-Dichloroethane	ND		5.0	0.60	ug/L			12/24/19 11:15	1
1,2-Dichloropropane	ND		5.0	0.61	ug/L			12/24/19 11:15	1
1,3-Dichlorobenzene	ND		5.0	0.54	ug/L			12/24/19 11:15	1
1,4-Dichlorobenzene	ND		5.0	0.51	ug/L			12/24/19 11:15	1
2-Chloroethyl vinyl ether	ND		25	1.9	ug/L			12/24/19 11:15	1
Benzene	ND		5.0	0.60	ug/L			12/24/19 11:15	1
Bromodichloromethane	ND		5.0	0.54	ug/L			12/24/19 11:15	1
Bromoform	ND		5.0	0.47	ug/L			12/24/19 11:15	1
Bromomethane	ND		5.0	1.2	ug/L			12/24/19 11:15	1
Carbon tetrachloride	ND		5.0	0.51	ug/L			12/24/19 11:15	1
Chlorobenzene	ND		5.0	0.48	ug/L			12/24/19 11:15	1
Chlorodibromomethane	ND		5.0	0.41	ug/L			12/24/19 11:15	1
Chloroethane	ND		5.0	0.87	ug/L			12/24/19 11:15	1
Chloroform	ND		5.0	0.54	ug/L			12/24/19 11:15	1
Chloromethane	ND		5.0	0.64	ug/L			12/24/19 11:15	1
cis-1,2-Dichloroethene	ND		5.0	0.57	ug/L			12/24/19 11:15	1
cis-1,3-Dichloropropene	ND		5.0	0.33	ug/L			12/24/19 11:15	1
Ethylbenzene	ND		5.0	0.46	ug/L			12/24/19 11:15	1
Methylene Chloride	ND		5.0	0.81	ug/L			12/24/19 11:15	1
Tetrachloroethene	ND		5.0	0.34	ug/L			12/24/19 11:15	1
Toluene	ND		5.0	0.45	ug/L			12/24/19 11:15	1
trans-1,2-Dichloroethene	ND		5.0	0.59	ug/L			12/24/19 11:15	1
trans-1,3-Dichloropropene	ND		5.0	0.44	ug/L			12/24/19 11:15	1
Trichloroethene	ND		5.0	0.60	ug/L			12/24/19 11:15	1
Trichlorofluoromethane	ND		5.0	0.45	ug/L			12/24/19 11:15	1
Vinyl chloride	ND		5.0	0.75	ug/L			12/24/19 11:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		68 - 130		12/24/19 11:15	1
4-Bromofluorobenzene (Surr)	103		76 - 123		12/24/19 11:15	1
Dibromofluoromethane (Surr)	100		75 - 123		12/24/19 11:15	1
Toluene-d8 (Surr)	88		77 - 120		12/24/19 11:15	1

Lab Sample ID: LCS 480-511598/5

Matrix: Water

Analysis Batch: 511598

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	24.3		ug/L		121	52 - 162
1,1,1,2,2-Tetrachloroethane	20.0	18.0		ug/L		90	46 - 157
1,1,2-Trichloroethane	20.0	18.7		ug/L		94	52 - 150
1,1-Dichloroethane	20.0	21.2		ug/L		106	59 - 155

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Enviroengineering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-164593-1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-511598/5

Matrix: Water

Analysis Batch: 511598

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	20.0	21.8		ug/L		109	1 - 234
1,2-Dichlorobenzene	20.0	19.0		ug/L		95	18 - 190
1,2-Dichloroethane	20.0	21.2		ug/L		106	49 - 155
1,2-Dichloropropane	20.0	20.0		ug/L		100	1 - 210
1,3-Dichlorobenzene	20.0	18.8		ug/L		94	59 - 156
1,4-Dichlorobenzene	20.0	18.9		ug/L		94	18 - 190
2-Chloroethyl vinyl ether	20.0	20.9	J	ug/L		105	1 - 305
Benzene	20.0	20.7		ug/L		103	37 - 151
Bromodichloromethane	20.0	22.3		ug/L		112	35 - 155
Bromoform	20.0	21.3		ug/L		106	45 - 169
Bromomethane	20.0	22.5		ug/L		113	1 - 242
Carbon tetrachloride	20.0	25.2		ug/L		126	70 - 140
Chlorobenzene	20.0	19.3		ug/L		97	37 - 160
Chlorodibromomethane	20.0	20.7		ug/L		104	53 - 149
Chloroethane	20.0	21.7		ug/L		108	14 - 230
Chloroform	20.0	22.0		ug/L		110	51 - 138
Chloromethane	20.0	21.7		ug/L		108	1 - 273
cis-1,3-Dichloropropene	20.0	21.9		ug/L		110	1 - 227
Ethylbenzene	20.0	19.7		ug/L		98	37 - 162
Methylene Chloride	20.0	20.2		ug/L		101	1 - 221
Tetrachloroethene	20.0	20.1		ug/L		100	64 - 148
Toluene	20.0	19.1		ug/L		96	47 - 150
trans-1,2-Dichloroethene	20.0	21.8		ug/L		109	54 - 156
trans-1,3-Dichloropropene	20.0	20.8		ug/L		104	17 - 183
Trichloroethene	20.0	21.5		ug/L		107	71 - 157
Trichlorofluoromethane	20.0	25.8		ug/L		129	17 - 181
Vinyl chloride	20.0	21.7		ug/L		108	1 - 251

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		68 - 130
4-Bromofluorobenzene (Surr)	106		76 - 123
Dibromofluoromethane (Surr)	100		75 - 123
Toluene-d8 (Surr)	88		77 - 120

QC Association Summary

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-164593-1

GC/MS VOA

Analysis Batch: 511598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-164593-1	EW-1-12-20-19	Total/NA	Water	624.1	
480-164593-2	EW-2-12-20-19	Total/NA	Water	624.1	
480-164593-3	EFF-12-20-19	Total/NA	Water	624.1	
MB 480-511598/7	Method Blank	Total/NA	Water	624.1	
LCS 480-511598/5	Lab Control Sample	Total/NA	Water	624.1	

Lab Chronicle

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-164593-1

Client Sample ID: EW-1-12-20-19

Lab Sample ID: 480-164593-1

Date Collected: 12/20/19 08:10

Matrix: Water

Date Received: 12/23/19 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	511598	12/24/19 12:03	LCH	TAL BUF

Client Sample ID: EW-2-12-20-19

Lab Sample ID: 480-164593-2

Date Collected: 12/20/19 08:30

Matrix: Water

Date Received: 12/23/19 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	511598	12/24/19 12:27	LCH	TAL BUF

Client Sample ID: EFF-12-20-19

Lab Sample ID: 480-164593-3

Date Collected: 12/20/19 08:20

Matrix: Water

Date Received: 12/23/19 12:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	511598	12/24/19 12:50	LCH	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-164593-1

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-20

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Method Summary

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-164593-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Environneering Inc
Project/Site: Cooper Olean Site Discharge Analysis

Job ID: 480-164593-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-164593-1	EW-1-12-20-19	Water	12/20/19 08:10	12/23/19 12:30	
480-164593-2	EW-2-12-20-19	Water	12/20/19 08:30	12/23/19 12:30	
480-164593-3	EFF-12-20-19	Water	12/20/19 08:20	12/23/19 12:30	

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:		TestAmerica Laboratories, Inc.	
Client Contact Cooper Industries 1 Travis - Suite 5800 Houston, TX 77002		Project Manager: Tel/Fax:	
Analysis Turnaround Time ☐ CALENDAR DAYS ☐ WORKING DAYS TAT if different from Below - PER CONTRACT ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Site Contact: Lab Contact:	
Object Name: Monthly Monitoring For: Cooper Power Systems - Olean NY O# Existing Contract		Date: Carrier:	
Sample Identification		Sample Specific Notes:	
Sample Date 12-20-19 12-20-19 12-20-19	Sample Time 0810 0830 0820	Sample Type (C=Comp, G=Grab) G G G	Matrix W W W
# of Cont. 3 3 3		Filtered Sample (Y/N) N N N	
Preservation VOA - 624		Barcode: 480-164593 Chain of Custody	
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months			
Special Instructions/QC Requirements & Comments:			
Custody Seal No.: Company: SUB Services, Inc. Company:			
Relinquished by: David R. Stearns Date/Time: 12-23-19 11:10 Relinquished by: Date/Time: 12-23-19 12:30 Relinquished by: Date/Time: 12-23-19 12:30			

Login Sample Receipt Checklist

Client: Environeering Inc

Job Number: 480-164593-1

Login Number: 164593

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Kolb, Chris M

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	SJB
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Appendix C

Calculations of TCE and cDCE Mass Removal

Calculation of TCE Mass Removal
McGraw-Edison Facility, Olean New York

Sample Date	Days in Operation	Average Flow (gpm) ¹	Average Flow (gpd)	Total Discharge (gal) ²	Influent TCE Concentration (ug/l)	TCE Mass Removed (lbs) ³	Cumulative Mass Removed (lbs)
EW-1							
7/11/2001					580	0.00	0.00
10/31/2001	112	1.75	2,514	281,603	510	1.20	1.20
11/28/2001	28	1.79	2,578	72,183	940	0.57	1.76
12/19/2001	21	2.03	2,921	61,351	850	0.44	2.20
2/14/2002	57	2.95	4,244	241,908	1600	3.23	5.43
2/20/2002	6	2.95	4,244	25,464	1500	0.32	5.75
2/28/2002	8	2.95	4,244	33,952	1500	0.43	6.17
3/27/2002	27	2.95	4,244	114,588	1500	1.43	7.61
4/24/2002	28	4.26	6,138	171,864	700	1.00	8.61
5/10/2002	16	4.26	6,138	98,208	360	0.30	8.91
5/15/2002	5	4.26	6,138	30,690	360	0.09	9.00
6/4/2002	20	4.26	6,138	122,760	377	0.39	9.39
7/3/2002	29	5.22	7,521	218,123	260	0.47	9.86
8/9/2002	37	5.22	7,521	278,294	240	0.56	10.42
9/5/2002	27	5.22	7,521	203,080	240	0.41	10.82
10/25/2002	50	4.28	6,160	307,991	380	0.98	11.80
11/13/2002	19	4.28	6,160	117,036	535 (4)	0.52	12.32
12/17/2002	34	4.28	6,160	209,434	690	1.21	13.53
1/6/2003	20	3.63	5,234	104,686	250	0.22	13.75
2/10/2003	35	3.63	5,234	183,201	240	0.37	14.11
3/20/2003	38	3.63	5,234	198,904	200	0.33	14.45
4/1/2003	12	4.46	6,425	77,100	330	0.21	14.66
5/9/2003	38	4.46	6,425	244,150	230	0.47	15.13
6/19/2003	41	4.46	6,425	263,425	170	0.37	15.50
7/17/2003	28	6.40	9,228	258,384	130	0.28	15.78
8/6/2003	20	6.40	9,228	184,560	120	0.18	15.97
9/24/2003	49	6.40	9,228	452,172	110	0.42	16.38
10/9/2003	15	6.40	9,228	138,420	91	0.11	16.49
11/24/2003	46	6.40	9,228	424,488	120	0.43	16.91
12/18/2003	24	6.40	9,228	221,472	130	0.24	17.15
1/29/2004	42	3.80	5,528	232,176	99	0.19	17.34
2/27/2004	29	3.80	5,528	160,312	120	0.16	17.50
3/26/2004	28	3.80	5,528	154,784	110	0.14	17.65
4/23/2004	28	3.80	5,528	154,784	93	0.12	17.77
6/17/2004	55	3.80	5,528	304,040	73	0.19	17.95
7/30/2004	43	5.20	7,546	324,492	81	0.22	18.17
8/30/2004	31	5.20	7,546	233,936	98	0.19	18.36
9/30/2004	31	5.20	7,546	233,936	160	0.31	18.68
11/30/2004	61	5.20	7,546	460,325	110	0.42	19.10
1/31/2005	62	3.70	5,375	333,250	100	0.28	19.38
2/24/2005	24	3.70	5,375	129,000	54	0.06	19.43
4/29/2005	64	3.70	5,375	344,000	71	0.20	19.64
5/20/2005	21	3.70	5,375	112,875	63	0.06	19.70
6/29/2005	40	3.70	5,375	215,000	95	0.17	19.87
7/30/2005	30	2.90	4,223	130,913	110	0.12	19.99
9/23/2005	21	2.90	4,223	232,265	130	0.25	20.24
10/5/2005	43	2.90	4,223	50,676	150	0.06	20.30
10/31/2005	25	2.90	4,223	109,798	240	0.22	20.52
1/5/2006	66	5.40	7,799	514,734	94	0.40	20.93
2/2/2006	28	5.40	7,799	218,372	100	0.18	21.11
6/1/2006	119	5.40	7,799	928,081	130	1.01	22.12
6/22/2006	21	5.40	7,799	163,779	170	0.23	22.35
9/20/2006	87	3.00	5,113	460,170	130	0.50	22.85
10/26/2006	36	3.00	5,113	184,068	110	0.17	23.02
12/4/2006	39	3.00	5,113	199,407	89	0.15	23.17
12/18/2006	14	3.00	5,113	71,582	97	0.06	23.22
1/11/2007	24	2.20	3,176	76,224	66	0.04	23.27
2/22/2007	42	2.20	3,176	133,392	64	0.07	23.34
3/15/2007	21	2.20	3,176	66,696	63	0.04	23.37
5/14/2007	60	2.20	3,168	190,080	54	0.09	23.46
8/2/2007	80	1.60	2,304	184,320	70	0.11	23.56
9/6/2007	35	1.60	2,304	80,640	140	0.09	23.66
10/23/2007	47	1.60	2,304	108,288	190	0.17	23.83
11/12/2007	20	1.80	2,592	51,840	110	0.05	23.88
11/27/2007	15	1.70	2,448	36,720	110	0.03	23.91
12/11/2007	14	1.80	2,592	36,288	83	0.03	23.94
1/17/2008	37	3.00	4,320	159,840	65	0.09	24.02
2/13/2008	27	2.70	3,888	104,976	66	0.06	24.08
3/12/2008	28	3.10	4,464	124,992	63	0.07	24.15
4/29/2008	48	3.20	4,608	221,184	77	0.14	24.29
5/14/2008	15	**	**	**	79	**	24.29
6/5/2008	22	2.50	3,600	79,200	100	0.07	24.36
7/7/2008	32	2.40	3,456	110,592	110	0.10	24.46

Calculation of TCE Mass Removal
McGraw-Edison Facility, Olean New York

Sample Date	Days in Operation	Average Flow (gpm) ¹	Average Flow (gpd)	Total Discharge (gal) ²	Influent TCE Concentration (ug/l)	TCE Mass Removed (lbs) ³	Cumulative Mass Removed (lbs)
8/12/2008	36	2.60	3,744	134,784	88	0.10	24.56
9/22/2008	41	2.20	3,168	129,888	82	0.09	24.65
10/8/2008	16	1.30	1,872	29,952	100	0.02	24.67
11/11/2008	34	2.70	3,888	132,192	110	0.12	24.79
12/16/2008	35	1.80	2,592	90,720	86.7	0.07	24.86
1/13/2009	28	2.00	2,880	80,640	109	0.07	24.93
2/4/2009	22	1.50	2,160	47,520	104	0.04	24.97
3/10/2009	34	2.20	3,168	107,712	54.8	0.049	25.02
4/6/2009	27	3.00	4,320	116,640	57.4	0.056	25.08
5/7/2009	31	4.40	6,336	196,416	73.6	0.121	25.20
6/15/2009	39	2.10	3,024	117,936	95.3	0.094	25.29
7/2/2009	17	1.40	2,016	34,272	57.5	0.016	25.31
8/3/2009	32	2.80	4,032	129,024	85.4	0.092	25.40
9/4/2009	32	1.80	2,592	82,944	67.7	0.047	25.45
10/1/2009	27	2.50	3,600	97,200	84.1	0.068	25.52
11/2/2009	32	2.70	3,888	124,416	78.4	0.081	25.60
12/3/2009	31	1.20	1,728	53,568	69.9	0.031	25.63
1/20/2010	48	2.50	3,600	172,800	82.6	0.119	25.75
2/10/2010	21	2.60	3,744	78,624	65.7	0.043	25.79
3/3/2010	21	2.60	3,744	78,624	82.0	0.054	25.84
4/27/2010	55	1.50	2,160	118,800	130.0	0.129	25.97
5/14/2010	17	2.20	3,168	53,856	49.0	0.022	25.99
6/10/2010	27	2.50	3,600	97,200	71	0.058	26.05
7/30/2010	50	2.27	3,268	163,416	72	0.098	26.15
8/20/2010	21	2.18	3,138	65,891	89	0.049	26.20
9/14/2010	25	2.18	3,144	78,589	85	0.056	26.26
10/1/2010	17	2.02	2,912	49,510	90	0.037	26.29
11/5/2010	35	1.78	2,559	89,580	70	0.052	26.34
12/29/2010	54	2.24	3,230	174,410	53	0.077	26.42
1/29/2011	31	2.23	3,205	99,355	69	0.057	26.48
2/15/2011	17	2.09	3,013	51,221	67	0.029	26.51
3/18/2011	31	3.61	5,204	161,324	31	0.042	26.55
4/28/2011	41	4.49	6,471	265,311	21	0.046	26.60
5/27/2011	29	5.37	7,733	224,257	29	0.054	26.65
6/30/2011	34	3.92	5,645	191,930	55	0.088	26.74
7/28/2011	28	2.30	3,311	92,718	73	0.056	26.79
8/24/2011	27	2.47	3,551	95,878	70	0.056	26.85
9/29/2011	36	2.52	3,627	130,573	51	0.056	26.91
10/28/2011	29	2.22	3,194	92,635	43	0.033	26.94
11/14/2011	17	2.30	3,316	56,373	51	0.024	26.96
12/19/2011	35	2.26	3,248	113,693	48	0.046	27.01
1/13/2012	25	2.42	3,479	86,985	39	0.028	27.04
2/16/2012	34	2.46	3,541	120,390	47	0.047	27.08
3/29/2012	42	2.27	3,268	137,262	51	0.058	27.14
4/23/2012	25	2.05	2,946	73,655	20	0.012	27.16
5/18/2012	25	2.14	3,085	77,125	50	0.032	27.19
6/21/2012	34	1.85	2,670	90,773	50	0.038	27.23
7/31/2012	40	1.60	2,308	92,316	65	0.050	27.28
8/30/2012	30	2.14	3,085	92,551	52	0.040	27.32
9/26/2012	27	1.54	2,214	59,776	55	0.027	27.34
10/15/2012	19	1.08	1,560	29,644	62	0.02	27.36
11/16/2012	32	1.51	2,179	69,712	0	0.00	27.36
12/13/2012	27	1.61	2,314	62,481	45	0.02	27.38
1/16/2013	34	2.19	3,152	107,163	35	0.03	27.41
2/20/2013	35	2.01	2,898	101,418	30	0.03	27.44
3/12/2013	20	1.29	1,856	37,111	30	0.01	27.45
4/30/2013	49	1.94	2,796	137,028	35	0.04	27.49
5/29/2013	29	1.78	2,566	74,408	23	0.01	27.50
6/13/2013	15	1.90	2,739	41,085	35	0.01	27.51
7/25/2013	42	1.62	2,335	98,086	49	0.04	27.55
8/29/2013	35	1.29	1,851	64,799	50	0.03	27.58
9/12/2013	14	1.34	1,927	26,971	44	0.01	27.59
10/24/2013	42	0.99	1,431	60,100	42	0.02	27.61
11/14/2013	21	1.04	1,497	31,438	36	0.01	27.62
12/31/2013	47	1.02	1,463	68,771	32	0.02	27.64
1/27/2014	27	1.38	1,988	53,676	30	0.01	27.65
2/10/2014	14	1.33	1,917	26,836	33	0.01	27.66
3/18/2014	36	1.25	1,796	64,651	29	0.02	27.68
4/14/2014	27	0.53	766	20,692	2.5	0.0004	27.68
5/20/2014	36	2.30	3,314	119,316	14	0.01	27.69
6/6/2014	17	2.47	3,555	60,433	20	0.01	27.70
7/17/2014	41	2.27	3,263	133,795	25	0.03	27.73
8/18/2014	32	1.88	2,701	86,442	27	0.02	27.75
9/16/2014	29	1.43	2,055	59,588	20	0.01	27.76

Calculation of TCE Mass Removal
McGraw-Edison Facility, Olean New York

Sample Date	Days in Operation	Average Flow (gpm) ¹	Average Flow (gpd)	Total Discharge (gal) ²	Influent TCE Concentration (ug/l)	TCE Mass Removed (lbs) ³	Cumulative Mass Removed (lbs)
10/27/2014	41	0.85	1,218	49,920	31	0.01	27.77
11/17/2014	21	0.85	1,221	25,637	19	0.004	27.78
12/8/2014	21	0.81	1,167	24,509	22	0.005	27.78
1/5/2015	28	0.65	930	26,027	29	0.01	27.79
2/3/2015	29	0.39	569	16,495	28	0.004	27.79
3/5/2015	30	0.54	776	23,277	35	0.01	27.80
4/28/2015	54	1.85	2,659	143,571	16	0.02	27.82
5/27/2015	29	2.48	3,565	103,376	25	0.02	27.84
6/17/2015	21	1.65	2,371	49,787	32	0.01	27.85
7/9/2015	22	1.62	2,336	51,388	23	0.01	27.86
8/14/2015	36	1.61	2,317	83,410	32	0.02	27.88
9/29/2015	46	0.94	1,360	62,582	33	0.02	27.90
10/15/2015	16	1.24	1,786	28,577	24	0.01	27.91
11/25/2015	41	3.48	5,011	205,445	27	0.05	27.95
12/29/2015	34	3.43	4,939	167,926	11	0.02	27.97
1/27/2016	27	2.50	3,600	97,200	3.5	0.00	27.97
2/26/2016	30	2.80	4,032	120,960	18	0.02	27.99
3/31/2016	34	3.10	4,464	151,776	14	0.02	28.01
4/22/2016	22	2.60	3,744	82,368	17	0.01	28.02
5/31/2016	39	3.50	5,040	196,560	35	0.06	28.08
6/24/2016	24	2.10	3,024	72,576	35	0.02	28.10
7/22/2016	27	3.50	5,040	136,080	3.4	0.045	28.14
8/22/2016	31	3.40	4,896	151,776	2.6	0.058	28.20
9/30/2016	39	0.40	576	22,464	2.5	0.006	28.21
10/21/2016	21	9.60	13,824	290,304	0	0.008	28.21
11/21/2016	31	0.70	1,008	31,248	1.8	0.009	28.22
12/15/2016	24	2.50	3,600	86,400	1.2	0.022	28.25
1/10/2017	27	2.50	3,600	97,200	17	0.014	28.26
2/9/2017	30	3.00	4,320	129,600	17	0.018	28.28
3/5/2017	24	3.50	5,040	120,960	1	0.001	28.28
4/6/2017	32	3.50	5,040	161,280	10	0.013	28.29
5/2/2017	26	4.50	6,480	168,480	0.96	0.001	28.29
6/7/2017	36	2.10	3,024	108,864	7.1	0.006	28.30
7/11/2017	27	1.50	2,160	58,320	6	0.003	28.30
8/22/2017	42	0.50	720	30,240	28	0.007	28.31
9/20/2017	29	1.70	2,448	70,992	11	0.007	28.31
10/20/2017	30	3.00	4,320	129,600	35	0.038	28.35
11/7/2017	18	3.20	4,608	82,944	29	0.020	28.37
12/6/2017	29	2.20	3,168	91,872	21	0.016	28.39
1/5/2018	30	0.98	1405	42,143	19	0.007	28.39
2/7/2018	33	0.00	4	139	64	0.000	28.39
3/2/2018	23	0.00	7	155	0.66	0.000	28.39
4/5/2018	34	0.15	215	7,324	0.9	0.000	28.39
5/10/2018	35	0.16	236	8,245	1.3	0.000	28.39
6/8/2018	29	0.41	586	17,003	2.9	0.000	28.39
7/25/2018	47	1.26	1814	85,254	8.3	0.00591	28.40
8/14/2018	20	1.37	1975	39,504	20	0.00659	28.41
9/28/2018	45	0.19	279	12,558	17	0.00178	28.41
10/31/2018	33	0.08	112	3,695	0.81	0.00002	28.41
11/15/2018	15	2.54	3664	54,953	13	0.00596	28.42
12/24/2018	39	1.40	2012	78,479	4.8	0.00314	28.42
1/17/2019	24	0.05	70	1,687	2.3	0.00003	28.42
2/15/2019	29	0.21	298	8,644	20	0.00144	28.42
3/14/2019	27	1.49	2142	57,845	15	0.01	28.43
4/29/2019	46	1.13	1624	74,689	19	0.01184	28.44
5/20/2019	21	1.44	2067	43,414	19	0.00688	28.45
6/19/2019	30	1.57	2259	67,775	20	0.01131	28.46
7/17/2019	28	1.65	2377	66,559	22	0.01222	28.47
8/29/2019	43	0.48	693	29,794	0	0.00000	28.47
10/7/2019	15	0.34	490	7,355	10	0.00061	28.47
11/14/2019	38	1.98	2855	108,487	20	0.01811	28.49
12/20/2019	36	1.88	2707	97,457	20	0.01627	28.50
EW-2							
7/11/2001					420	0.00	0.00
10/31/2001	112	5.51	7,936	888,792	740	5.49	5.49
11/28/2001	28	5.65	8,137	227,823	960	1.83	7.31
12/19/2001	21	6.69	9,628	202,191	540	0.91	8.23
2/14/2002	57	12.70	18,288	1,042,416	450	3.92	12.14
2/20/2002	6	12.70	18,288	109,728	460	0.42	12.56
2/28/2002	8	12.70	18,288	146,304	350	0.43	12.99
3/27/2002	27	12.70	18,288	493,776	440	1.81	14.80
4/24/2002	28	14.32	20,622	577,416	460	2.22	17.02
5/10/2002	16	14.32	20,622	329,952	340	0.94	17.96
5/15/2002	5	14.32	20,622	103,110	350	0.30	18.26

Calculation of TCE Mass Removal
McGraw-Edison Facility, Olean New York

Sample Date	Days in Operation	Average Flow (gpm) ¹	Average Flow (gpd)	Total Discharge (gal) ²	Influent TCE Concentration (ug/l)	TCE Mass Removed (lbs) ³	Cumulative Mass Removed (lbs)
6/4/2002	20	14.32	20,622	412,440	273	0.94	19.20
7/3/2002	29	17.45	25,134	728,885	280	1.70	20.90
8/9/2002	37	17.45	25,134	929,957	330	2.56	23.46
9/5/2002	27	17.45	25,134	678,617	480	2.72	26.18
10/25/2002	50	11.36	16,352	817,616	500	3.41	29.59
11/13/2002	19	11.36	16,352	310,694	330	0.86	30.45
12/17/2002	34	11.36	16,352	555,979	220	1.02	31.47
1/6/2003	20	5.85	8,429	168,584	760	1.07	32.54
2/10/2003	35	5.85	8,429	295,022	340	0.84	33.37
3/20/2003	38	5.85	8,429	320,310	350	0.94	34.31
4/1/2003	12	13.61	19,599	235,188	190	0.37	34.68
5/9/2003	38	13.61	19,599	744,762	250	1.55	36.24
6/19/2003	41	13.61	19,599	803,559	210	1.41	37.65
7/17/2003	28	24.20	34,814	974,792	130	1.06	38.70
8/6/2003	20	24.20	34,814	696,280	140	0.81	39.52
9/24/2003	49	24.20	34,814	1,705,886	200	2.85	42.36
10/9/2003	15	24.20	34,814	522,210	200	0.87	43.24
11/24/2003	46	24.20	34,814	1,601,444	220	2.94	46.18
12/18/2003	24	24.20	34,814	835,536	200	1.39	47.57
1/29/2004	42	20.40	29,346	1,232,532	240	2.47	50.04
2/27/2004	29	20.40	29,346	851,034	260	1.85	51.89
3/26/2004	28	20.40	29,346	821,688	110	0.75	52.64
4/28/2004	33	20.40	29,346	968,418	140	1.13	53.77
6/17/2004	50	20.40	29,346	1,467,300	160	1.96	55.73
7/30/2004	43	27.50	39,573	1,701,645	150	2.13	57.86
8/30/2004	31	27.50	39,573	1,226,767	190	1.95	59.81
9/30/2004	31	27.50	39,573	1,226,767	85	0.87	60.68
11/30/2004	61	27.50	39,573	2,413,961	170	3.42	64.10
1/31/2005	62	17.90	25,810	1,600,220	120	1.60	65.71
2/24/2005	24	17.90	25,810	619,440	130	0.67	66.38
4/29/2005	64	17.90	25,810	1,651,840	140	1.93	68.31
5/20/2005	21	17.90	25,810	542,010	140	0.63	68.94
6/29/2005	40	17.90	25,810	1,032,400	130	1.12	70.06
7/30/2005	31	18.80	27,110	840,410	51	0.36	70.42
9/23/2005	55	18.80	27,110	1,491,050	150	1.87	72.29
10/5/2005	12	18.80	27,110	325,320	130	0.35	72.64
10/31/2005	26	18.80	27,110	704,860	140	0.82	73.46
1/5/2006	66	16.40	23,167	2,131,364	92	1.64	75.10
2/2/2006	28	16.40	23,167	2,177,698	120	2.18	77.28
6/1/2006	119	16.40	23,167	3,405,549	130	3.69	80.97
6/22/2006	21	16.40	23,167	3,243,380	120	3.25	84.22
9/20/2006	90	14.50	19,022	1,711,980	48	0.69	84.91
10/26/2006	36	14.50	19,022	684,792	58	0.33	85.24
12/4/2006	39	14.50	19,022	741,858	86	0.53	85.77
12/18/2006	14	14.50	19,022	266,308	80	0.18	85.95
1/11/2007	24	10.70	15,473	371,352	75	0.23	86.18
2/22/2007	42	10.70	15,473	649,866	84	0.46	86.64
3/15/2007	21	10.70	15,473	324,933	61	0.17	86.80
5/14/2007	60	10.70	15,408	924,480	55	0.42	87.23
8/2/2007	80	9.00	12,960	1,036,800	88	0.76	87.99
9/6/2007	35	9.00	12,960	453,600	89	0.34	88.33
10/23/2007	47	9.00	12,960	609,120	92	0.47	88.79
11/12/2007	20	7.80	11,232	224,640	260	0.49	89.28
11/27/2007	15	8.80	12,672	190,080	260	0.41	89.69
12/11/2007	14	18.20	26,208	366,912	250	0.77	90.46
1/17/2008	37	22.60	32,544	1,204,128	83	0.83	91.29
2/13/2008	27	22.00	31,680	855,360	76	0.54	91.84
3/12/2008	28	2.50	3,600	100,800	55	0.05	91.88
4/29/2008	48	11.80	16,992	815,616	52	0.35	92.24
5/14/2008	15	21.90	31,536	473,040	44	0.17	92.41
6/5/2008	22	21.80	31,392	690,624	45	0.26	92.67
7/7/2008	32	14.10	20,304	649,728	52	0.28	92.95
8/12/2008	36	17.30	24,912	896,832	93	0.70	93.65
9/22/2008	41	7.70	11,088	454,608	91	0.35	93.99
10/8/2008	16	3.70	5,328	85,248	130	0.09	94.09
11/11/2008	34	8.00	11,520	391,680	220	0.72	94.80
12/16/2008	35	5.20	7,488	262,080	395	0.86	95.67
1/13/2009	28	0.80	1,152	32,256	362	0.10	95.77
2/4/2009	22	6.20	8,928	196,416	263	0.43	96.20
3/10/2009	34	18.20	26,208	891,072	88.1	0.655	96.85
4/6/2009	27	23.00	33,120	894,240	64	0.478	97.33
5/7/2009	31	38.60	55,584	1,723,104	58.5	0.841	98.17
6/15/2009	39	6.60	9,504	370,656	74.7	0.231	98.40
7/2/2009	17	20.90	30,096	511,632	53.2	0.227	98.63

Calculation of TCE Mass Removal
McGraw-Edison Facility, Olean New York

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8/3/2009	32	17.30	24,912	797,184	93.7	0.623	99.25
9/4/2009	32	16.10	23,184	741,888	104	0.644	99.90
10/1/2009	27	6.50	9,360	252,720	95.4	0.201	100.10
11/2/2009	32	6.20	8,928	285,696	176	0.420	100.52
12/3/2009	31	6.80	9,792	303,552	375	0.950	101.47
1/20/2010	48	15.20	21,888	1,050,624	152	1.333	102.80
2/10/2010	21	23.00	33,120	695,520	109	0.633	103.43
3/3/2010	21	16.50	23,760	498,960	70.2	0.292	103.73
4/27/2010	55	19.10	27,504	1,512,720	93	1.174	104.90
5/14/2010	17	**	**	**	68	**	104.90
6/10/2010	27	**	**	**	79	**	104.90
7/30/2010	50	**	**	**	78	**	104.90
8/20/2010	21	0.56	806	16,919	130	0.018	104.92
9/14/2010	25	5.88	8,463	211,567	160	0.283	105.20
10/1/2010	17	5.25	7,566	128,623	270	0.290	105.49
11/5/2010	35	5.63	8,106	283,713	310	0.734	106.22
12/29/2010	54	12.70	18,286	987,447	200	1.648	107.87
1/29/2011	31	11.90	17,141	531,371	82	0.364	108.24
2/15/2011	17	5.94	8,547	145,299	110	0.133	108.37
3/18/2011	31	18.88	27,184	842,704	110	0.774	109.14
4/28/2011	41	22.36	32,202	1,320,282	51	0.562	109.71
5/27/2011	29	20.61	29,677	860,633	44	0.316	110.02
6/30/2011	34	23.57	33,942	1,154,028	48	0.462	110.48
7/28/2011	28	19.23	27,692	775,388	46	0.298	110.78
8/24/2011	27	12.68	18,256	492,903	53	0.218	111.00
9/29/2011	36	16.82	24,219	871,900	58	0.422	111.42
10/28/2011	29	21.23	30,578	886,770	62	0.459	111.88
11/14/2011	17	9.50	13,679	232,549	61	0.118	112.00
12/19/2011	35	18.84	27,127	949,456	60	0.475	112.47
1/13/2012	25	22.75	32,756	818,901	49	0.335	112.81
2/16/2012	34	23.57	33,944	1,154,089	39	0.376	113.18
3/29/2012	42	18.87	27,168	1,141,062	44	0.419	113.60
4/23/2012	25	12.99	18,698	467,462	38	0.148	113.75
5/18/2012	25	13.75	19,804	495,110	61	0.252	114.00
6/21/2012	34	11.78	16,967	576,876	57	0.274	114.28
7/31/2012	40	7.33	10,550	422,009	71	0.250	114.53
8/30/2012	30	12.26	17,660	529,810	150	0.663	115.19
9/26/2012	27	7.39	10,637	287,194	140	0.336	115.53
10/15/2012	19	6.40	9,210	174,993	170	0.248	115.78
11/16/2012	32	5.43	7,818	250,174	220	0.459	116.24
12/13/2012	27	8.64	12,445	336,012	130	0.365	116.60
1/16/2013	34	18.74	26,981	917,341	90	0.689	117.29
2/20/2013	35	18.49	26,625	931,861	81	0.630	117.92
3/12/2013	20	12.48	17,970	359,394	0.39	0.001	117.92
4/30/2013	49	18.72	26,961	1,321,098	49	0.540	118.46
5/29/2013	29	15.70	22,615	655,838	35	0.192	118.65
6/13/2013	15	14.98	21,570	323,643	43	0.116	118.77
7/25/2013	42	11.58	16,669	700,110	67	0.391	119.16
8/29/2013	35	6.59	9,489	332,111	73	0.202	119.36
9/12/2013	14	5.65	8,143	114,004	120	0.114	119.48
10/24/2013	42	9.39	13,527	568,144	160	0.759	120.23
11/14/2013	21	**	**	**	200	**	120.23
12/31/2013	47	**	**	**	180	**	120.23
1/27/2014	27	**	**	**	140	**	120.23
2/10/2014	14	16.47	23,722	332,110	95	0.263	120.50
3/18/2014	36	8.87	12,766	459,592	98	0.376	120.87
4/14/2014	27	8.61	12,400	334,806	160	0.447	121.32
5/20/2014	36	22.90	32,979	1,187,236	49	0.486	121.81
6/6/2014	17	23.33	33,589	571,007	49	0.234	122.04
7/17/2014	41	23.3	33,492	1,373,162	39	0.447	122.49
8/18/2014	32	20.1	28,985	927,509	34	0.263	122.75
9/16/2014	29	22.53	32,437	940,679	28	0.220	122.97
10/27/2014	41	18.08	26,301	1,067,252	91	0.811	123.78
11/17/2014	21	14.47	20,840	437,650	89	0.325	124.11
12/8/2014	21	13.48	19,416	407,734	120	0.408	124.51
1/5/2015	28	15.32	22,054	617,513	350	1.804	126.32
2/3/2015	29	17.92	25,801	748,240	130	0.812	127.13
3/5/2015	30	6.04	8,697	260,924	210	0.457	127.59
4/28/2015	54	0.17	243	13,106	110	0.012	127.60
5/27/2015	29	0.59	844	24,464	260	0.053	127.65
6/17/2015	21	13.57	19,544	410,433	110	0.377	127.98
7/9/2015	22	17.45	25,128	552,809	58	0.268	127.92
8/14/2015	36	14.99	21,588	777,157			
9/29/2015	46	0.00	4	172			

Calculation of TCE Mass Removal
McGraw-Edison Facility, Olean New York

Sample Date	Days in Operation	Average Flow (gpm) ¹	Average Flow (gpd)	Total Discharge (gal) ²	Influent TCE Concentration (ug/l)	TCE Mass Removed (lbs) ³	Cumulative Mass Removed (lbs)
10/15/2015	16	0.00	5	77			
11/25/2015	41	0.00	3	104			
12/29/2015	34	0.00	3	102			
1/27/2016	29	0.00	0	0			
2/26/2016	30	0.00	0	0			
3/31/2016	34	0.00	0	0			
4/22/2016	22	0.00	0	0			
5/31/2016	39	0.00	0	0			
6/24/2016	24	0.00	0	0			
7/22/2016	28	0.00	0	0			
8/22/2016	31	8.49	12226	379008	81	0.256	128.18
9/30/2016	39	13.40	19296	752544	0.37	0.002	128.18
10/21/2016	21	14.80	21312	447552	120	0.448	128.63
11/21/2016	31	26.10	37584	1165104	180	1.750	130.38
12/15/2016	24	19.80	28512	684288	110	0.628	131.00
1/10/2017	26	3.01	4337	112752	120	0.113	131.12
2/9/2017	30	27.00	38880	1166400	190	1.850	132.97
3/5/2017	24	26.00	37440	898560	110	0.825	133.79
4/6/2017	32	27.00	38880	1244160	49	0.509	134.30
5/2/2017	26	26.50	38160	992160	69	0.571	134.87
6/7/2017	36	26.00	37440	1347840	81	0.911	135.78
7/11/2017	34	21.28	30647	1041984	52	0.452	135.78
8/22/2017	42	25.00	36000	1512000	41	0.517	136.30
9/20/2017	29	24.00	34560	1002240	66	0.552	136.85
10/20/2017	30	12.10	17424	522720	120	0.524	137.37
11/7/2017	18	26.40	38016	684288	140	0.800	138.17
12/6/2017	29	26.00	37440	1085760	68	0.616	138.79
1/5/2018	30	12.17	17528	525852	77	0.338	139.13
2/7/2018	33	0.12	178	5882	76	0.004	139.13
3/2/2018	23	1.05	1507	34672	95	0.027	139.16
4/5/2018	34	1.27	1822	61956	120	0.062	139.22
5/10/2018	35	1.69	2434	85,196	100	0.071	139.29
6/8/2018	29	4.55	6556	190128	77	0.122	139.41
7/25/2018	47	25.69	36987	1738398	29	0.421	139.83
8/14/2018	20	23.86	34363	687251	42	0.241	140.07
9/28/2018	45	2.83	4079	183559	51	0.078	140.15
10/31/2018	33	0.84	1216	40116	64	0.021	140.17
11/15/2018	15	25.01	36017	540248	47	0.212	140.39
12/24/2018	39	17.81	25646	1000192	60	0.501	140.89
1/17/2019	24	0.61	884	21,210	97	0.01717	140.90
2/15/2019	29	3.02	4343	125,954	0	0.00000	140.90
3/14/2019	27	23.88	34393	928,618	21	0.16	141.07
4/29/2019	46	19.62	28256	1,299,765	21	0.23	141.29
5/20/2019	21	26.54	38213	802,476	19	0.13	141.42
6/19/2019	30	26.60	38310	1,149,310	18	0.17	141.59
7/17/2019	28	26.69	38438	1,076,270	21	0.19	141.78
8/29/2019	43	6.65	9577	411,830		0.00	141.78
10/7/2019	15	5.70	8207	123,101	25	0.03	141.81
11/14/2019	38	24.34	35049	1,331,874	66	0.73	142.54
12/20/2019	36	17.52	25225	908,106	93	0.70	143.25
Totals	6736			163,739,456		172.58	

Notes:

1 - Average flow for the reported period (Days in Operation). Value is rounded to the nearest 10th and may not directly correspond to the presented gallons per day (gpd)

2 - Total discharge in gallons for the reported period (Days in Operation)

3 - Pounds removed = Total Discharge (gal) * Concentration (ug/l) * 3.785 l/gal * 2.205x10⁻⁹ lbs/ug

4 - Well not in operation during sampling event. Concentration estimated using average of previous and following monthly sample.

** Problems with flow meter. To be conservative, this event was omitted in mass calculations.

Calculation of cis-1,2-DCE Mass Removal
McGraw-Edison Facility, Olean New York

Sample Date	Days in Operation	Average Flow (gpm) ¹	Average Flow (gpd)	Total Discharge (gal) ²	Influent c-1,2DCE Concentration (ug/l)	DCE Mass Removed (lbs) ³	Cumulative Mass Removed (lbs)
EW-1							
7/11/2001						0.000	0.000
10/31/2001	112	1.75	2,514	281,603	11	0.026	0.026
11/28/2001	28	1.79	2,578	72,183	14	0.008	0.034
12/19/2001	21	2.03	2,921	61,351	14	0.007	0.041
2/14/2002	57	2.95	4,244	241,908	19	0.038	0.080
2/20/2002	6	2.95	4,244	25,464	20	0.004	0.084
2/28/2002	8	2.95	4,244	33,952	19	0.005	0.089
3/27/2002	27	2.95	4,244	114,588	23	0.022	0.111
4/24/2002	28	4.26	6,138	171,864	23	0.033	0.144
5/10/2002	16	4.26	6,138	98,208	15	0.012	0.157
5/15/2002	5	4.26	6,138	30,690	14	0.004	0.160
6/4/2002	20	4.26	6,138	122,760	16.8	0.017	0.178
7/3/2002	29	5.22	7,521	218,123	16	0.029	0.207
8/9/2002	37	5.22	7,521	278,294	17	0.039	0.246
9/5/2002	27	5.22	7,521	203,080	14	0.024	0.270
10/25/2002	50	4.28	6,160	307,991	16	0.041	0.311
11/13/2002	19	4.28	6,160	117,036	16	0.016	0.327
12/17/2002	34	4.28	6,160	209,434	11	0.019	0.346
1/6/2003	20	3.63	5,234	104,686	15	0.013	0.359
2/10/2003	35	3.63	5,234	183,201	18	0.028	0.386
3/20/2003	38	3.63	5,234	198,904	13	0.022	0.408
4/1/2003	12	4.46	6,425	77,100	8.2 J	0.005	0.413
5/9/2003	38	4.46	6,425	244,150	14	0.029	0.442
6/19/2003	41	4.46	6,425	263,425	11	0.024	0.466
7/17/2003	28	6.40	9,228	258,384	0	0.000	0.466
8/6/2003	20	6.40	9,228	184,560	0	0.000	0.466
9/24/2003	49	6.40	9,228	452,172	16	0.060	0.526
10/9/2003	15	6.40	9,228	138,420	12	0.014	0.540
11/24/2003	46	6.40	9,228	424,488	11	0.039	0.579
12/18/2003	24	6.40	9,228	221,472	9	0.016	0.596
1/29/2004	42	3.80	5,528	232,176	8.9	0.017	0.613
2/27/2004	29	3.80	5,528	160,312	8.6	0.012	0.624
3/26/2004	28	3.80	5,528	154,784	6.7	0.009	0.633
4/23/2004	28	3.80	5,528	154,784	5.8	0.007	0.641
6/17/2004	55	3.80	5,528	304,040	8.3	0.021	0.662
7/30/2004	43	5.20	7,546	324,492	8.8	0.024	0.686
8/30/2004	31	5.20	7,546	233,936	8.9	0.017	0.703
9/30/2004	31	5.20	7,546	233,936	1.3	0.003	0.705
11/30/2004	61	5.20	7,546	460,325	6.8	0.026	0.732
1/31/2005	62	3.70	5,375	333,250	6.4	0.018	0.749
2/24/2005	24	3.70	5,375	129,000	4	0.004	0.754
4/29/2005	64	3.70	5,375	344,000	6.9	0.020	0.773
5/20/2005	21	3.70	5,375	112,875	7.4	0.007	0.780
6/29/2005	40	3.70	5,375	215,000	5.1	0.009	0.790
7/30/2005	30	2.90	4,223	130,913	7.4	0.008	0.798
9/23/2005	21	2.90	4,223	232,265	6.8	0.013	0.811
10/5/2005	43	2.90	4,223	50,676	8.4	0.004	0.814
10/31/2005	25	2.90	4,223	109,798	12	0.011	0.825
1/5/2006	66	5.40	7,799	514,734	7.3	0.031	0.857
2/2/2006	28	5.40	7,799	218,372	7.1	0.013	0.870
6/1/2006	119	5.40	7,799	928,081	1.1	0.009	0.878
6/22/2006	21	5.40	7,799	163,779	7.8	0.011	0.889
9/20/2006	87	3.00	5,113	460,170	17	0.065	0.954
10/26/2006	36	3.00	5,113	184,068	16	0.025	0.979
12/4/2006	39	3.00	5,113	199,407	11	0.018	0.997
12/18/2006	14	3.00	5,113	71,582	4.1	0.002	1.000
1/11/2007	24	2.20	3,176	76,224	12	0.008	1.007
2/22/2007	42	2.20	3,176	133,392	8.7	0.010	1.017
3/15/2007	21	2.20	3,176	66,696	12	0.007	1.024
5/14/2007	60	2.20	3,168	190,080	8.5	0.013	1.037
8/2/2007	80	1.60	2,304	184,320	9.5	0.015	1.052
9/6/2007	35	1.60	2,304	80,640	10	0.007	1.058
10/23/2007	47	1.60	2,304	108,288	10	0.009	1.067
11/12/2007	20	1.80	2,592	51,840	0	0.000	1.067
11/27/2007	15	1.70	2,448	36,720	0	0.000	1.067
12/11/2007	14	1.80	2,592	36,288	0	0.000	1.067
1/17/2008	37	3.00	4,320	159,840	0	0.000	1.067
2/13/2008	27	2.70	3,888	104,976	0	0.000	1.067
3/12/2008	28	3.10	4,464	124,992	0	0.000	1.067
4/29/2008	48	3.20	4,608	221,184	1.3	0.002	1.070
5/14/2008	15	**	**	**	0	**	1.070
6/5/2008	22	2.50	3,600	79,200	1.1	0.001	1.071

Calculation of cis-1,2-DCE Mass Removal
McGraw-Edison Facility, Olean New York

Sample Date	Days in Operation	Average Flow (gpm) ¹	Average Flow (gpd)	Total Discharge (gal) ²	Influent c-1,2DCE Concentration (ug/l)	DCE Mass Removed (lbs) ³	Cumulative Mass Removed (lbs)
7/7/2008	32	2.40	3,456	110,592	1.2	0.001	1.072
8/12/2008	36	2.60	3,744	134,784	0	0.000	1.072
9/22/2008	41	2.20	3,168	129,888	0	0.000	1.072
10/8/2008	16	1.30	1,872	29,952	0	0.000	1.072
11/11/2008	34	2.70	3,888	132,192	1.1	0.001	1.073
12/16/2008	35	1.80	2,592	90,720	1	0.001	1.074
1/13/2009	28	2.00	2,880	80,640	0	0.000	1.074
2/4/2009	22	1.50	2,160	47,520	0	0.000	1.074
3/10/2009	34	2.20	3,168	107,712	0	0.000	1.074
4/6/2009	27	3.00	4,320	116,640	0	0.000	1.074
5/7/2009	31	4.40	6,336	196,416	0	0.000	1.074
6/15/2009	39	2.10	3,024	117,936	0	0.000	1.074
7/2/2009	17	1.40	2,016	34,272	0	0.000	1.074
8/3/2009	32	2.80	4,032	129,024	1.2	0.001	1.075
9/4/2009	32	1.80	2,592	82,944	0	0.000	1.075
10/1/2009	27	2.50	3,600	97,200	1.2	0.001	1.076
11/2/2009	32	2.70	3,888	124,416	1.3	0.001	1.077
12/3/2009	31	1.20	1,728	53,568	0	0.000	1.077
1/20/2010	48	2.50	3,600	172,800	1	0.001	1.079
2/10/2010	21	2.60	3,744	78,624	1	0.001	1.080
3/3/2010	21	2.60	3,744	78,624	1.5	0.001	1.081
4/27/2010	55	1.50	2,160	118,800	1.2	0.001	1.082
5/14/2010	17	2.20	3,168	53,856	0.8	0.000	1.082
6/10/2010	27	2.50	3,600	97,200	1.1	0.001	1.083
7/30/2010	50	2.27	3,268	163,416	1.4	0.002	1.085
8/20/2010	21	2.18	3,138	65,891	1.9	0.001	1.086
9/14/2010	25	2.18	3,144	78,589	1.8	0.001	1.087
10/1/2010	17	2.02	2,912	49,510	1.8	0.001	1.088
11/5/2010	35	1.78	2,559	89,580	1.4	0.001	1.089
12/29/2010	54	2.24	3,230	174,410	1.1	0.002	1.090
1/29/2011	31	2.23	3,205	99,355	0	0.000	1.090
2/15/2011	17	2.09	3,013	51,221	0.87	0.000	1.091
3/18/2011	31	3.61	5,204	161,324	0	0.000	1.091
4/28/2011	41	4.49	6,471	265,311	0	0.000	1.091
5/27/2011	29	5.37	7,733	224,257	0	0.000	1.091
6/30/2011	34	3.92	5,645	191,930	1.1	0.002	1.093
7/28/2011	28	2.30	3,311	92,718	1.2	0.001	1.094
8/24/2011	27	2.47	3,551	95,878	0	0.000	1.094
9/29/2011	36	2.52	3,627	130,573	0	0.000	1.094
10/28/2011	29	2.22	3,194	92,635	0	0.000	1.094
11/14/2011	17	2.30	3,316	56,373	0	0.000	1.094
12/19/2011	35	2.26	3,248	113,693	0	0.000	1.094
1/13/2012	25	2.42	3,479	86,985	0	0.000	1.094
2/16/2012	34	2.46	3,541	120,390	0	0.000	1.094
3/29/2012	42	2.27	3,268	137,262	0	0.000	1.094
4/23/2012	25	2.05	2,946	73,655	0	0.000	1.094
5/18/2012	25	2.14	3,085	77,125	0	0.000	1.094
6/21/2012	34	1.85	2,670	90,773	0	0.000	1.094
7/31/2012	40	1.60	2,308	92,316	0	0.000	1.094
8/30/2012	30	2.14	3,085	92,551	0	0.000	1.094
9/26/2012	27	1.54	2,214	59,776	0	0.000	1.094
10/15/2012	19	1.08	1,560	29,644	0	0.000	1.094
11/16/2012	32	1.51	2,179	69,712	0	0.000	1.094
12/13/2012	27	1.61	2,314	62,481	0	0.000	1.094
1/16/2013	34	2.19	3,152	107,163	0	0.000	1.094
2/20/2013	35	2.01	2,898	101,418	0	0.000	1.094
3/15/2013	23	1.10	1,614	37,111	0	0.000	1.094
4/30/2013	46	2.10	2,979	137,028	0	0.000	1.094
5/29/2013	29	1.80	2,566	74,408	0	0.000	1.094
6/13/2013	15	1.90	2,739	41,085	0	0.000	1.094
7/25/2013	42	1.62	2,335	98,086	0	0.000	1.094
8/29/2013	35	1.29	1,851	64,799	0	0.000	1.094
9/12/2013	14	1.34	1,927	26,971	0	0.000	1.094
10/24/2013	42	0.99	1,431	60,100	0	0.000	1.094
11/14/2013	21	1.04	1,497	31,438	0	0.000	1.094
12/31/2013	47	1.02	1,463	68,771	0	0.000	1.094
1/27/2014	27	1.38	1,988	53,676	0	0.000	1.094
2/10/2014	14	1.33	1,917	26,836	0	0.000	1.094
3/18/2014	36	1.25	1,796	64,651	0	0.000	1.094
4/14/2014	27	0.53	766	20,692	0	0.000	1.094
5/20/2014	36	2.3	3,314	119,316	0	0.000	1.094
6/6/2014	17	2.47	3,555	60,433	0	0.000	1.094
7/17/2014	41	2.27	3,263	133,795	0	0.000	1.094

Calculation of cis-1,2-DCE Mass Removal
McGraw-Edison Facility, Olean New York

Sample Date	Days in Operation	Average Flow (gpm) ¹	Average Flow (gpd)	Total Discharge (gal) ²	Influent c-1,2DCE Concentration (ug/l)	DCE Mass Removed (lbs) ³	Cumulative Mass Removed (lbs)
8/18/2014	32	1.88	2,701	86,442	0	0.000	1.094
9/16/2014	29	1.43	2,055	59,588	0	0.000	1.094
10/27/2014	41	0.85	1,218	49,920	0	0.000	1.094
11/17/2014	21	0.85	1,221	25,637	0	0.000	1.094
12/8/2014	21	0.81	1,167	24,509	0	0.000	1.094
1/5/2015	28	0.65	930	26,027	0	0.000	1.094
2/3/2015	29	0.39	569	16,495	0	0.000	1.094
3/5/2015	30	0.54	776	23,277	0	0.000	1.094
4/28/2015	54	1.85	2,659	143,571	0	0.000	1.094
5/27/2015	29	2.48	3,565	103,376	0	0.000	1.094
6/17/2015	21	1.65	2,371	49,787	0	0.000	1.094
7/9/2015	22	1.62	2,336	51,388	0.58	0.000	1.094
8/14/2015	36	1.61	2,317	83,410	2.0	0.001	1.095
9/29/2015	46	0.94	1,360	62,582	1.5	0.001	1.096
10/15/2015	16	1.24	1,786	28,577	1.3	0.000	1.096
11/25/2015	41	3.48	5,011	205,445	1.8	0.003	1.099
12/29/2015	34	3.43	4,939	16,941	0	0.000	1.099
1/27/2016	27	2.50	3,600	97,200	0.68	0.001	1.100
2/26/2016	30	2.80	4,032	120,960	1.5	0.002	1.101
3/31/2016	34	3.10	4,464	151,776	1.1	0.001	1.103
4/22/2016	22	2.60	3,744	82,368	1.9	0.001	1.104
5/31/2016	39	3.50	5,040	196,560	4	0.007	1.111
6/24/2016	24	2.10	3,024	72,576	3.2	0.002	1.113
7/22/2016	27	3.50	5,040	136,080	3.4	0.004	1.117
8/22/2016	31	3.40	4,896	151,776	2.6	0.003	1.120
9/30/2016	39	0.40	576	22,464	2.5	0.000	1.120
10/21/2016	21	9.60	13,824	290,304	0	0.000	1.120
11/21/2016	31	0.70	1,008	31,248	1.8	0.000	1.120
12/15/2016	24	2.50	3,600	86,400	1.2	0.001	1.121
1/10/2017	27	2.50	3,600	97,200	0.71	0.001	1.122
2/9/2017	30	3.00	4,320	129,600	0	0.000	1.122
3/5/2017	24	3.50	5,040	120,960	2.5	0.003	1.125
4/6/2017	32	3.50	5,040	161,280	0	0.000	1.125
5/2/2017	26	4.50	6,480	168,480	0	0.000	1.125
6/7/2017	36	2.1	3,024	108,864	0	0	1.125
7/11/2017	27	1.5	2,160	58,320	0	0	1.124
8/22/2017	42	0.5	720	30,240	1.2	0.000302857	1.124
9/20/2017	29	1.7	2,448	70,992	0	0	1.124
10/20/2017	30	3	4,320	129,600	1	0.001081632	1.125
11/7/2017	18	3.2	4,608	82,944	0	0	1.125
12/6/2017	29	2.2	3,168	91,872	0	0	1.125
1/5/2018	30	0.98	1,405	42,143	0	0.000	1.125
2/7/2018	33	0.00	4	139	0	0.000	1.125
3/2/2018	23	0.00	7	155	0	0.000	1.125
4/5/2018	34	0.15	215	7,324	0	0.000	1.125
5/10/2018	35	0.16	236	8,245	0	0.000	1.125
6/8/2018	29	0.41	586	17,003	0	0.000	1.125
7/25/2018	76	0.78	1,122	85,254	0	0.000	1.125
8/14/2018	20	1.37	1,975	39,504	0.75	0.0002473	1.126
9/28/2018	45	0.19	279	12,558	0	0.000	1.126
10/31/2018	33	0.08	112	3,695	0	0.000	1.126
11/15/2018	15	2.54	3,664	54,953	0.84	0.0003853	1.126
12/24/2018	39	1.40	2,012	78,479	0	0.000	1.126
1/17/2019	24	0.05	70	1,687	0	0.000	1.126
2/15/2019	29	0.21	298	8,644	0.75	0.000	1.126
3/14/2019	27	1.49	2,142	57,845	0.71	0.000	1.126
4/29/2019	46	1.13	1,624	74,689	0.81	0.001	1.127
5/20/2019	21	1.44	2,067	43,414	0.77	0.000	1.127
6/19/2019	30	1.57	2,259	67,775	0.78	0.000	1.128
7/17/2019	28	1.65	2,377	66,559	0.68	0.000	1.128
8/29/2019	43	0.48	693	29,794	0	0.000	1.128
10/7/2019	15	0.34	490	7,355	0	0.000	1.128
11/14/2019	38	1.98	2,855	108,487	0	0.000	1.128
12/20/2019	36	1.88	2,707	97,457	0	0.000	1.128
EW-2							
7/11/2001						0.000	0.000
10/31/2001	112	5.51	7,936	888,792	15	0.111	0.111
11/28/2001	28	5.65	8,137	227,823	18	0.034	0.145
12/19/2001	21	6.69	9,628	202,191	12	0.020	0.166
2/14/2002	57	12.70	18,288	1,042,416	9	0.078	0.244
2/20/2002	6	12.70	18,288	109,728	8.2	0.008	0.252
2/28/2002	8	12.70	18,288	146,304	6.3	0.008	0.259

Calculation of cis-1,2-DCE Mass Removal
McGraw-Edison Facility, Olean New York

Sample Date	Days in Operation	Average Flow (gpm) ¹	Average Flow (gpd)	Total Discharge (gal) ²	Influent c-1,2DCE Concentration (ug/l)	DCE Mass Removed (lbs) ³	Cumulative Mass Removed (lbs)
3/27/2002	27	12.70	18,288	493,776	8.6	0.035	0.295
4/24/2002	28	14.32	20,622	577,416	7.7	0.037	0.332
5/10/2002	16	14.32	20,622	329,952	4.9	0.013	0.345
5/15/2002	5	14.32	20,622	103,110	5	0.004	0.350
6/4/2002	20	14.32	20,622	412,440	0	0.000	0.350
7/3/2002	29	17.45	25,134	728,885	5.5	0.033	0.383
8/9/2002	37	17.45	25,134	929,957	8.1	0.063	0.446
9/5/2002	27	17.45	25,134	678,617	8.6	0.049	0.495
10/25/2002	50	11.36	16,352	817,616	10	0.068	0.563
11/13/2002	19	11.36	16,352	310,694	6.1	0.016	0.579
12/17/2002	34	11.36	16,352	555,979	0	0.000	0.579
1/6/2003	20	5.85	8,429	168,584	4.9	0.007	0.586
2/10/2003	35	5.85	8,429	295,022	0	0.000	0.586
3/20/2003	38	5.85	8,429	320,310	3.6	0.010	0.595
4/1/2003	12	13.61	19,599	235,188	0	0.000	0.595
5/9/2003	38	13.61	19,599	744,762	4.6 J	0.029	0.624
6/19/2003	41	13.61	19,599	803,559	0	0.000	0.624
7/17/2003	28	24.20	34,814	974,792	0	0.000	0.624
8/6/2003	20	24.20	34,814	696,280	0	0.000	0.624
9/24/2003	49	24.20	34,814	1,705,886	0	0.000	0.624
10/9/2003	15	24.20	34,814	522,210	0	0.000	0.624
11/24/2003	46	24.20	34,814	1,601,444	0	0.000	0.624
12/18/2003	24	24.20	34,814	835,536	0	0.000	0.624
1/29/2004	42	20.40	29,346	1,232,532	3.3	0.034	0.658
2/27/2004	29	20.40	29,346	851,034	2.4	0.017	0.675
3/26/2004	28	20.40	29,346	821,688	1.7	0.012	0.686
4/28/2004	33	20.40	29,346	968,418	1.1	0.009	0.695
6/17/2004	50	20.40	29,346	1,467,300	2.1	0.026	0.721
7/30/2004	43	27.50	39,573	1,701,645	1.9	0.027	0.748
8/30/2004	31	27.50	39,573	1,226,767	2.1	0.022	0.770
9/30/2004	31	27.50	39,573	1,226,767	7	0.072	0.841
11/30/2004	61	27.50	39,573	2,413,961	1.9	0.038	0.879
1/31/2005	62	17.90	25,810	1,600,220	1.2	0.016	0.896
2/24/2005	24	17.90	25,810	619,440	1.4	0.007	0.903
4/29/2005	64	17.90	25,810	1,651,840	1.5	0.021	0.923
5/20/2005	21	17.90	25,810	542,010	1.6	0.007	0.931
6/29/2005	40	17.90	25,810	1,032,400	1.3	0.011	0.942
7/30/2005	30	18.80	27,110	840,410	1.7	0.012	0.954
9/23/2005	21	18.80	27,110	1,491,050	0.0	0.000	0.954
10/5/2005	43	18.80	27,110	325,320	1.5	0.004	0.958
10/31/2005	25	18.80	27,110	704,860	1.6	0.009	0.967
1/5/2006	66	16.40	23,167	2,131,364	1.1	0.020	0.987
2/2/2006	28	16.40	23,167	2,177,698	1.1	0.020	1.007
6/1/2006	119	16.40	23,167	3,405,549	8.0	0.227	1.234
6/22/2006	21	16.40	23,167	3,243,380	1.2	0.032	1.267
9/20/2006	90	14.50	19,022	1,711,980	0.0	0.000	1.267
10/26/2006	36	14.50	19,022	684,792	1.1	0.006	1.273
12/4/2006	39	14.50	19,022	741,858	3.4	0.021	1.294
12/18/2006	14	14.50	19,022	266,308	9.7	0.022	1.316
1/11/2007	24	10.70	15,473	371,352	3.0	0.009	1.325
2/22/2007	42	10.70	15,473	649,866	3.5	0.019	1.344
3/15/2007	21	10.70	15,473	324,933	10.0	0.027	1.371
5/14/2007	60	10.70	15,408	924,480	8.2	0.063	1.434
8/2/2007	80	9.00	12,960	1,036,800	1.7	0.015	1.449
9/6/2007	35	9.00	12,960	453,600	1.2	0.005	1.454
10/23/2007	47	9.00	12,960	609,120	0.0	0.000	1.454
11/12/2007	20	7.80	11,232	224,640	11.0	0.021	1.474
11/27/2007	15	8.80	12,672	190,080	8.3	0.013	1.487
12/11/2007	14	18.20	26,208	366,912	9.8	0.030	1.517
1/17/2008	37	22.60	32,544	1,204,128	5.6	0.056	1.574
2/13/2008	27	22.00	31,680	855,360	9.1	0.065	1.639
3/12/2008	28	2.50	3,600	100,800	6.3	0.005	1.644
4/29/2008	48	11.80	16,992	815,616	6.9	0.047	1.691
5/14/2008	15	21.90	31,536	473,040	5.1	0.020	1.711
6/5/2008	22	21.80	31,392	690,624	4.7	0.027	1.738
7/7/2008	32	14.10	20,304	649,728	5.3	0.029	1.767
8/12/2008	36	17.30	24,912	896,832	5.2	0.039	1.806
9/22/2008	41	7.70	11,088	454,608	7.0	0.027	1.832
10/8/2008	16	3.70	5,328	85,248	6.5	0.005	1.837
11/11/2008	34	8.00	11,520	391,680	5.9	0.019	1.856
12/16/2008	35	5.20	7,488	262,080	7.5	0.016	1.873
1/13/2009	28	0.80	1,152	32,256	9.3	0.003	1.875
2/4/2009	22	6.20	8,928	196,416	8.2	0.013	1.889

Calculation of cis-1,2-DCE Mass Removal
McGraw-Edison Facility, Olean New York

Sample Date	Days in Operation	Average Flow (gpm) ¹	Average Flow (gpd)	Total Discharge (gal) ²	Influent c-1,2DCE Concentration (ug/l)	DCE Mass Removed (lbs) ³	Cumulative Mass Removed (lbs)
3/10/2009	34	18.20	26,208	891,072	6.8	0.051	1.939
4/6/2009	27	23.00	33,120	894,240	5.9	0.044	1.983
5/7/2009	31	38.60	55,584	1,723,104	5.4	0.078	2.061
6/15/2009	39	6.60	9,504	370,656	5.0	0.015	2.076
7/2/2009	17	20.90	30,096	511,632	5.4	0.023	2.099
8/3/2009	32	17.30	24,912	797,184	6.6	0.044	2.143
9/4/2009	32	16.10	23,184	741,888	5.5	0.034	2.177
10/1/2009	27	6.50	9,360	252,720	5.1	0.011	2.188
11/2/2009	32	6.20	8,928	285,696	7.4	0.018	2.206
12/3/2009	31	6.80	9,792	303,552	5.4	0.014	2.219
1/20/2010	48	15.20	21,888	1,050,624	5.4	0.047	2.267
2/10/2010	21	23.00	33,120	695,520	4.8	0.028	2.295
3/3/2010	21	16.50	23,760	498,960	3.8	0.016	2.310
4/27/2010	55	19.10	27,504	1,512,720	6.4	0.081	2.391
5/14/2010	17	**	**	**	4.5	**	2.391
6/10/2010	27	**	**	**	5.1	**	2.391
7/30/2010	50	**	**	**	5.1	**	2.391
8/20/2010	21	0.56	806	16,919	5.8	0.001	2.392
9/14/2010	25	5.88	8,463	211,567	4.7	0.008	2.400
10/1/2010	17	5.25	7,566	128,623	5.4	0.006	2.406
11/5/2010	35	5.63	8,106	283,713	4.6	0.011	2.417
12/29/2010	54	12.70	18,286	987,447	8.0	0.066	2.483
1/29/2011	31	11.90	17,141	531,371	4.9	0.022	2.505
2/15/2011	17	5.94	8,547	145,299	5.7	0.007	2.512
3/18/2011	31	18.88	27,184	842,704	7.0	0.049	2.561
4/28/2011	41		32,202	1,320,282	6.5	0.072	2.632
5/27/2011	29	20.61	29,677	860,633	7.5	0.054	2.686
6/30/2011	34	23.57	33,942	1,154,028	8.5	0.082	2.768
7/28/2011	28	19.23	27,692	775,388	5.0	0.032	2.801
8/24/2011	27	12.68	18,256	492,903	5.4	0.022	2.823
9/29/2011	36	16.82	24,219	871,900	0.0	0.000	2.823
10/28/2011	29	21.23	30,578	886,770	5.1	0.038	2.861
11/14/2011	17	9.50	13,679	232,549	3.9	0.008	2.868
12/19/2011	35	18.84	27,127	949,456	4.0	0.032	2.900
1/13/2012	25	22.75	32,756	818,901	3.6	0.025	2.924
2/16/2012	34	23.57	33,944	1,154,089	3.2	0.031	2.955
3/29/2012	42	18.87	27,168	1,141,062	0.0	0.000	2.955
4/23/2012	25	12.99	18,698	467,462	2.9	0.011	2.967
5/18/2012	25	13.75	19,804	495,110	3.3	0.014	2.980
6/21/2012	34	11.78	16,967	576,876	3.5	0.017	2.997
7/31/2012	40	7.33	10,550	422,009	3.6	0.013	3.010
8/30/2012	30	12.26	17,660	529,810	4.9	0.022	3.031
9/26/2012	27	7.39	10,637	287,194	3.7	0.009	3.040
10/15/2012	19	6.40	30,578	174,993	3.4	0.005	3.045
11/16/2012	32	5.43	13,679	250,174	4.5	0.009	3.055
12/13/2012	27	8.64	27,127	336,012	3.3	0.009	3.064
1/16/2013	34	18.74	26,981	917,341	4.0	0.031	3.094
2/20/2013	35	18.49	26,625	931,861	0.0	0.000	3.094
3/15/2013	23	10.90	15,626	359,394	3.4	0.010	3.105
4/30/2013	46	19.90	28,720	1,321,098	3.7	0.041	3.145
5/29/2013	29	15.70	22,615	655,838	3.4	0.019	3.164
6/13/2013	15	15.00	21,576	323,643	3.4	0.009	3.173
7/25/2013	42	11.58	16,669	700,110	3.6	0.021	3.194
8/29/2013	35	6.59	9,489	332,111	2.5	0.007	3.201
9/12/2013	14	5.65	8,143	114,004	3.0	0.003	3.204
10/24/2013	42	9.39	13,527	568,144	0.0	0.000	3.204
11/14/2013	21	**	**	**	3.1	**	3.204
12/31/2013	47	**	**	**	0.0	**	3.204
1/27/2014	27	**	**	**	4.2	**	3.204
2/10/2014	14	16.47	23,722	332,110	3.8	0.011	3.215
3/18/2014	36	8.87	12,766	459,592	3.7	0.014	3.229
4/14/2014	27	8.61	12,400	334,806	0.0	0.000	3.229
5/20/2014	36	22.9	32,979	1,187,236	2.8	0.028	3.257
6/6/2014	17	23.3	33,589	571,007	3.2	0.015	3.272
7/17/2014	41	23.3	33,492	1,373,162	3.6	0.041	3.313
8/18/2014	32	20.1	28,985	927,509	0.0	0.000	3.313
9/16/2014	29	22.5	32,437	940,679	2.0	0.016	3.329
10/27/2014	41	18.1	26,301	1,067,252	2.2	0.020	3.348
11/17/2014	21	14.5	20,840	437,650	1.6	0.006	3.354
12/8/2014	21	13.48	19,416	407,734	1.8	0.006	3.360
1/5/2015	28	15.32	22,054	617,513	2.6	0.013	3.37
2/3/2015	29	17.92	25,801	748,240	3.1	0.019	3.39
3/5/2015	30	6.04	8,697	260,924	0.0	0.000	3.39

Calculation of cis-1,2-DCE Mass Removal
McGraw-Edison Facility, Olean New York

Sample Date	Days in Operation	Average Flow (gpm) ¹	Average Flow (gpd)	Total Discharge (gal) ²	Influent c-1,2DCE Concentration (ug/l)	DCE Mass Removed (lbs) ³	Cumulative Mass Removed (lbs)
4/28/2015	54	0.17	243	13106	1.4	0.000	3.39
5/27/2015	29	0.59	844	24464	2.8	0.001	3.39
6/17/2015	21	13.57	19544	410433	3.0	0.010	3.40
7/9/2015	22	17.45	25128	552809	2.6	0.012	3.42
8/14/2015	36	14.99	21588	777157			
9/29/2015	46	0.00	4	172			
10/15/2015	16	0.00	5	77			
11/25/2015	41	0.00	3	104			
12/29/2015	34	0.00	3	102			
1/27/2016	27	0.00	0.00	0.00			
2/26/2016	30	0.00	0.00	0.00			
3/31/2016	34	0.00	0.00	0.00			
4/22/2016	22	0.00	0.00	0.00			
5/31/2016	39	0.00	0.00	0.00			
6/24/2016	24	0.00	0.00	0.00			
7/22/2016	0	0.00	0.00	0.00			
8/22/2016	8	32.90	47376	379008	0.0	0.000	3.42
9/30/2016	39	13.40	19296	752544	2.9	0.018	3.43
10/21/2016	21	14.80	21312	447552	2.9	0.011	3.45
11/21/2016	31	26.10	37584	1165104	2.9	0.028	3.47
12/15/2016	24	19.80	28512	684288	3.5	0.020	3.49
1/10/2017	27	2.90	4176	112752	3.4	0.003	3.50
2/9/2017	30	27.00	38880	1166400	2.0	0.019	3.52
3/5/2017	24	26.00	37440	898560	2.4	0.018	3.53
4/6/2017	32	27.00	38880	1244160	2.9	0.030	3.56
5/2/2017	26	26.50	38160	992160	3.0	0.025	3.59
6/7/2017	36	26.00	37440	1347840	3.4	0.038	3.63
7/11/2017	27	26.80	38592	1041984	2.8	0.024	3.63
8/22/2017	30	25.00	36000	1080000	2.3	0.021	3.65
9/20/2017	29	24.00	34560	1002240	2.2	0.018	3.67
10/20/2017	30	12.10	17424	522720	2.3	0.010	3.68
11/7/2017	18	26.40	38016	684288	2.7	0.015	3.69
12/6/2017	29	26.00	37440	1085760	2.3	0.021	3.72
1/5/2018	30	12.17	17528	525852	1.2	0.005	3.72
2/7/2018	33	0.12	178	5882	0.0	0.000	3.72
3/2/2018	23	1.05	1507	34672	0.0	0.000	3.72
4/5/2018	34	1.27	1822	61956	1.7	0.001	3.72
5/10/2018	35	1.69	2434	85,196	2.4	0.002	3.72
6/8/2018	29	4.55	6556	190128	1.7	0.003	3.73
7/25/2018	47	25.69	36987	1738398	2.5	0.036	3.76
8/14/2018	20	23.86	34363	687251	2.1	0.012	3.77
9/28/2018	45	2.83	4079	183559	1.9	0.003	3.78
10/31/2018	33	0.84	1216	40116	2.0	0.001	3.78
11/15/2018	15	25.01	36017	540248	2.0	0.009	3.79
12/24/2018	39	17.81	25646	1000192	3.0	0.025	3.81
1/17/2019	24	0.61	884	21,210	2.3	0.000	3.81
2/15/2019	29	3.02	4343	125,954	0.0	0.000	3.81
3/14/2019	27	23.88	34393	928,618	1.9	0.015	3.83
4/29/2019	46	19.62	28256	1,299,765	2.0	0.022	3.85
5/20/2019	21	26.54	38213	802,476	1.8	0.012	3.86
6/19/2019	30	26.60	38310	1,149,310	1.7	0.016	3.88
7/17/2019	28	26.69	38438	1,076,270	1.8	0.016	3.89
8/29/2019	43	6.65	9577	411,830	0.0	0.000	3.89
10/7/2019	15	5.70	8207	123,101	0.64	0.001	3.89
11/14/2019	38	24.34	35049	1,331,874	1.2	0.013	3.91
12/20/2019	36	17.52	25225	908,106	1.4	0.011	3.92
Totals	6736			163,156,471		5.068	

Notes:

1 - Average flow for the reported period (Days in Operation). Value is rounded to the nearest 10th and may not directly correspond to the presented gallons per day (gpd)

2 - Total discharge in gallons for the reported period (Days in Operation)

3 - Pounds removed = Total Discharge (gal) * Concentration (ug/l) * 3.785 l/gal * 2.205x10⁻⁹ lbs/ug

4 - Well not in operation during sampling event. Concentration estimated using average of previous and following monthly sample.

** Problems with flow meter. To be conservative, this event was omitted in mass calculations.

Appendix D
Historic Database

Olean Database
A-1

	Sample Date:	7/15/1984	12/15/1991	4/15/1998	7/15/1998	10/15/1998	3/19/2001	8/3/2001	12/11/2001	2/20/2002	5/15/2002	8/7/2002	11/6/2002	2/7/2003	6/19/2003	11/4/2003	5/21/2004	9/30/2004	5/4/2005	9/23/2005	6/2/2006	12/19/2006	6/28/2007	11/28/2007	6/6/2008	9/3/2008	3/25/2009
Volatile Organic Compounds (ug/l)																											
1,1,1,2-Tetrachloroethane											<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	NA	<10	2.9	<2.0	4	1.3	1.6	<1.0	<1	<1	1.6	1.1	1	0.7	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane						<1.0	<5.0	<5.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane						<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	NA	2	<1.0	<8.0	<8.0	1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	NA	<10	1.1	<8.0	<8.0	<1.0	1	<1.0	<1	<1.5	<1.5	<1.5	<1.5	<1.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene										<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichlorobenzene										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichloropropane										<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibrom-3-Chloropropane										<1.6	<1.6	<1.6	<1.6	<1.6	<5	<5	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dibromoethane										<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane						1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane						<1.0	<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene										<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichloropropane										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene										<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane										<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone						<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5.0
2-Chlorotoluene										<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Hexanone						<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5.0
4-Chlorotoluene										<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-Isopropyl toluene															<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-Methyl-2-Pentanone						<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5.0
Acetone						<1.0	2.2	<1.0	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.94 J
Benzene						<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromobenzene										<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromochloromethane										<0.9	<0.9	<0.9	<0.9	<0.9	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoforn						<1.0	<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane						<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Disulfide						<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
Carbon Tetrachloride						<1.0	<1.0	<1.0	<1	<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene						<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane						<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane						<1.0	<1.0	<1.0	<1	<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform						<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane						<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cumene															<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromomethane										<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorobromomethane						<1.0	<1.0	<1.0	<1	<0.3	<0.3	<0.3	<0.3	<0.3	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane										<2.1	<2.1	<2.1	<2.1	<2.1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	NA	<10	5.7	<8.0	<8.0	<1.0	1.5	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene						<1.0	<1.0	<1.0	<1	<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene						<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Hexachlorobutadiene										<7.5	<7.5	<7.5	<7.5	<7.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Isopropylbenzene										<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene						<1	<1	<1.0	<1.0	<1.2	<1.2	<1.2	<1.2	<1.2	<2	<2	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methylene Chloride						<1.0	<1.0	<1.0	<1	<6.3	<6.3	<6.3	<6.3	<6.3	<1	<1	1.4	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<2.0
Naphthalene										<0.6	<0.6	0.6	0.6	<0.6	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	2.9		

[illegible]

Olean Database
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Sample Date:	7/15/1984	4/15/1998	7/15/1998	10/15/1998	3/19/2001	8/3/2001	12/11/2001	2/20/2002	5/15/2002	8/7/2002	11/6/2002	2/7/2003	6/10/2003	11/4/2003	5/21/2004	9/30/2004	5/4/2005	9/23/2005	6/2/2006	12/18/2006	6/28/2007
Volatiles Organic Compounds (ug/l)																					
1,1,1,2-Tetrachloroethane									<0.7	<0.7	<0.7	1.1	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	NA	3.8	<1.6	5.3	<1.0	4.9	<1.0	2.1	4.2	4.2	5.8	4.1	2	<1	2.3	<1	<1	<1	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane					<1.0	<5.0	<5.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,1,2-Trichloroethane					<1.0	<1.0	<1.0	<1	<0.8	<0.8	0.9	0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,1-Dichloroethane	NA	4.6	4.7	<1.6	5.6	3.9	6.7	4.5	4.1	5.5	7.8	4.4	3.6	4.1	4.2	4.3	3	3	2.6	3	2
1,1-Dichloroethene	NA	<1.0	<1.6	<1.6	<1.0	1.2	1.4	1.3	2.2	1.6	2.4	<1.5	<1.5	1.2	1.1	1.1	<1	<1	<1.0	<1.0	<1.0
1,1-Dichloropropene									<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,2,3-Trichlorobenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,2,3-Trichloropropane									<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,2-Dibrom-3-Chloropropane									<1.6	<1.6	<1.6	<1.6	<1.6	<5	<5	<5	<5	<5	<5.0	<5.0	<5.0
1,2-Dibromoethane									<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,2-Dichlorobenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,2-Dichloroethane					<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,2-Dichloropropane					<1.0	<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene									<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,3-Dichlorobenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,3-Dichloropropane									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
1,4-Dichlorobenzene									<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
2,2-Dichloropropane									<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
2-Butanone					<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene									<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
2-Hexanone					<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene									<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
4-Isopropyl toluene														<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
4-Methyl-2-Pentanone					<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone					<1.0	2.4	<1.0	1.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene					<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Bromobenzene									<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Bromochloromethane									<0.9	<0.9	<0.9	<0.9	<0.9	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Dichlorobromomethane					<1.0	<1.0	<1.0	<1	<0.3	<0.3	<0.3	<0.3	<0.3	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Bromoform					<1.0	<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Bromomethane					<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Carbon Disulfide					<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride					<1.0	<1.0	<1.0	<1	<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Chlorobenzene					<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Chloroethane							<1.0	<1	<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Chloroform					<1.0	1.7	<1.0	<1	0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Chloromethane					<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	4.2	<1.0	<1.0
Cumene														<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Chlorodibromomethane					<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Dibromomethane									<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Dichlorodifluoromethane									<2.1	<2.1	<2.1	<2.1	<2.1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	NA	31	54	53	44	67	55	51	50	49	88	58	29	27	34	18	6.3	13	2	9.7	<1.0
cis-1,3-Dichloropropene					<1.0	<1.0	<1.0	<1	<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Ethylbenzene					<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Hexachlorobutadiene									<7.5	<7.5	<7.5	<7.5	<7.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Isopropylbenzene									<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene					<1	<1.0	<1.0	<1.0	<1.2	<1.2	<1.2	<1.2	<1.2	<2	<2	<2	<2	<2	<2.0	<2.0	<2.0
Methylene Chloride					<1.0	<1.0	<1.0	<1	<6.3	<6.3	<6.3	<6.3	<6.3	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Naphthalene									<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
n-Butylbenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
n-Propylbenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
o-Xylene					<1	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
p-Isopropyltoluene									<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene									<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Styrene					<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
tert-Butylbenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Tetrachloroethene	NA	<1.0	<1.6	<1.6	<1.0	1.9	<1.0	1.3	1.6	1.5	1.6	1.4	0.9	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Toluene					<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene					<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Trichloroethene	1800	240 D	310	260	92	410	200	240	330	360	310	280	230	130	150	82	24	44	4.5	17	3.6
Trichlorofluoromethane									<2.1	<2.1	<2.1	<2.1	<2.1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0
Vinyl Chloride	NA	<1.0	<1.6	<1.6	<1.0	<1.0	<1.0	<1	<1.5	<1.5	<1.5	<1.5	<1.5	<2	<2	<2	<2	<2	<2.0	<2.0	<2.0
Xylenes, Total																					
Total VOCs	0	39.4	58.7	58.3	49.6	81.1	63.1	60.7	61	60.3	104.9										

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Sample Date:	11/27/2007	6/5/2008	9/3/2008	3/25/2009	9/17/2009	6/17/2010	11/16/2010	5/24/2011	12/1/2011	6/22/2012	12/5/2012	5/9/2013	11/21/2013	6/12/2014	12/3/2014	6/18/2015	11/11/2015	6/8/2016	10/5/2016	6/7/2017	9/28/2017	6/27/2018
Volatile Organic Compounds (ug/l)																						
1,1,1,2-Tetrachloroethane	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	<1.0	3.1	1.3	2.1	2	0.83 J	<1.0	1.2	1.2	1.2	<1.0	<1.0	<1.0	<5.0	1.0	1.1 DJ	1.1	<1.0	0.77 J	<1.0	0.87 J	<1.0
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	2.7	2.2	2.1	2.9	2.7	2.0	<1.0	2.3	2.2	1.9	1.8	1.8	1.7	1.8	1.8	1.2 DJ	1.9	2.2	1.5	1.3	1.2	1.2
1,1-Dichloroethene	<1.0	<1.0	<1.0	<1.0	0.35 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	<1.0	1.8	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibrom-3-Chloropropane	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichloropropane	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	0.56 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25.0	<5.0	<25.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Chlorotoluene	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25.0	<5.0	<25.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Chlorotoluene	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyl toluene	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25.0	<5.0	<25.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	NA	NA	NA	2.7 J	3.3 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25.0	6.0	<25.0	6.4	<5.0	11	2.4	2.4	2.4
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	0.11 J	<1.0	<1.0	<1.0	<1.0	<1.0
Bromobenzene	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorobromomethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	0.50 BJ	<1.0
Carbon Disulfide	NA	NA	NA	0.61 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	0.35	<5.0	0.35	<5.0	0.15 J	<5.0	<5.0	<5.0
Carbon Tetrachloride	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<5.0	<5.0	<1.0	<1.0	<1.0
Chlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<5.0	<5.0	<1.0	<1.0	<1.0
Chloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<5.0	<5.0	<1.0	<1.0	<1.0
Chloroform	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<5.0	0.12 J	<1.0	<1.0	<1.0
Chloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<5.0	<5.0	<1.0	<1.0	<1.0
Cumene	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorodibromomethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<5.0	<5.0	<1.0	<1.0	<1.0
Dibromomethane	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	7.2	14	9.3	13	16	6.7	10	9.5	3.4	1.9	1.5	3.0	6.6	10	9.5	8	9.1	2.8	8	1.4	8.2	2.2
cis-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<5.0	<5.0	<1.0	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<5.0	<5.0	<1.0	<1.0	<1.0
Hexachlorobutadiene	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	<2.0	<2.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	<1.0	<1.0	1.2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	8.1	<1.0	<5.0	<1.0	<5.0	<5.0	<1.0	<1.0	<1.0
Naphthalene	<1.0	2.8	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<5.0	<1.0	<5.0	<5.0	<1.0	<1.0	<1.0
tert-Butylbenzene	<1.0	<1.0	<1.0	NA</																		

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Sample Date:	10/25/2018	6/12/2019	11/6/2019
Volatile Organic Compounds (ug/l)			
1,1,1,2-Tetrachloroethane	NA	NA	NA
1,1,1-Trichloroethane	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		<1.0	<1.0
1,1-Dichloroethane	0.75	0.37	0.22
1,1-Dichloroethene	<1.0	<1.0	<1.0
1,1-Dichloropropene	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA
1,2,4-Trichlorobenzene	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	NA	NA	NA
1,2-Dibrom-3-Chloropropane	<1.0	<1.0	<1.0
1,2-Dibromoethane	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	<1.0	<1.0	<1.0
1,2-Dichloroethane	<1.0	<1.0	<1.0
1,2-Dichloropropane	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	NA	NA	NA
1,3-Dichlorobenzene	<1.0	<1.0	<1.0
1,3-Dichloropropane	NA	NA	NA
1,4-Dichlorobenzene	<1.0	<1.0	<1.0
2,2-Dichloropropane	NA	NA	NA
2-Butanone	<5.0	<5.0	<5.0
2-Chlorotoluene	NA	NA	NA
2-Hexanone	<5.0	<5.0	<5.0
4-Chlorotoluene	NA	NA	NA
4-Isopropyl toluene	NA	NA	NA
4-Methyl-2-Pentanone	<5.0	<5.0	<5.0
Acetone	<5.0	<5.0	6.8
Benzene	<1.0	<1.0	<1.0
Bromobenzene	NA	NA	NA
Bromochloromethane	<1.0	<1.0	<1.0
Dichlorobromomethane	<1.0	<1.0	<1.0
Bromoform	<1.0	<1.0	<1.0
Bromomethane	<1.0	<1.0	<1.0
Carbon Disulfide	<5.0	<5.0	<5.0
Carbon Tetrachloride	<1.0	<1.0	<1.0
Chlorobenzene	<1.0	<1.0	<1.0
Chloroethane	<1.0	<1.0	<1.0
Chloroform	<1.0	<1.0	<1.0
Chloromethane	<1.0	<1.0	0.59
Cumene	NA	NA	NA
Chlorodibromomethane	<1.0	<1.0	<1.0
Dibromomethane	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA
cis-1,2-Dichloroethene	1.1	1.1	1.1
cis-1,3-Dichloropropene	<1.0	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0
Hexachlorobutadiene	NA	NA	NA
Isopropylbenzene	NA	NA	NA
m,p-Xylene	NA	NA	NA
Methylene Chloride	<1.0	<1.0	<1.0
Naphthalene	NA	NA	NA
n-Butylbenzene	NA	NA	NA
n-Propylbenzene	NA	NA	NA
o-Xylene	NA	NA	NA
p-Isopropyltoluene	NA	NA	NA
sec-Butylbenzene	NA	NA	NA
Styrene	<1.0	<1.0	<1.0
tert-Butylbenzene	NA	NA	NA
Tetrachloroethene	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	<1.0	<1.0	<1.0
Trichloroethene	1.2	0.37	0.37
Trichlorofluoromethane	NA	NA	NA
Vinyl Chloride	<1.0	<1.0	<1.0
Xylenes, Total	<2.0	<2.0	<2.0
Total VOCs	3.05	1.84	9.08
Percent TCE Reduction since Startup	99.71%	99.91%	99.91%

Olean Database
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Sample Date:	7/15/1984	12/15/1991	4/15/1998	7/15/1998	10/15/1998	3/19/2001	8/3/2001	12/11/2001	2/20/2002	5/15/2002	8/7/2002	11/6/2002	2/7/2003	6/10/2003	11/4/2003	5/21/2004	9/30/2004	5/4/2005	9/23/2005	6/2/2006
Volatile Organic Compounds (ug/l)																				
1,1,1,2-Tetrachloroethane										<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0
1,1,1-Trichloroethane	NA	4 J	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	3.7	6.2	2.9	<1	4.3	<1	<1	1.4 J	1.8	<1	<1	1.7
1,1,2,2-Tetrachloroethane						<1.0	<5.0	<5.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
1,1,2-Trichloroethane						<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0
1,1-Dichloroethane	NA	4 J	<1.0	<1.0	<1.0	1.8	2.3	1.8	1.9	2.5	1.4	1.2	0.7	1.8	<1	<1	<1	<1	<1	<1.0
1,1-Dichloroethene	NA	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1.5	<1.5	<1.5	<1.5	<1.5	<1	<1	<1	<1	<1	<1.0
1,1-Dichloropropene										<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1	<1	<1	<1.0
1,2,3-Trichlorobenzene										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
1,2,3-Trichloropropane										<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0
1,2,4-Trichlorobenzene										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
1,2,4-Trimethylbenzene										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
1,2-Dibrom-3-Chloropropane										<1.6	<1.6	<1.6	<1.6	<1.6	<5	<5	<5	<5	<5	<5.0
1,2-Dibromoethane										<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0
1,2-Dichlorobenzene										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
1,2-Dichloroethane						<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0
1,2-Dichloropropane						<1.0	<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0
1,3,5-Trimethylbenzene										<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0
1,3-Dichlorobenzene										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
1,3-Dichloropropane										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
1,4-Dichlorobenzene										<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0
2,2-Dichloropropane										<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1	<1	<1	<1.0
2-Butanone						<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene										<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0
2-Hexanone						<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene										<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0
4-Isopropyl toluene															<1	<1	<1	<1	<1	<1.0
4-Methyl-2-Pentanone						<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone						2.4	2.4	1.6	2.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene						<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
Bromobenzene										<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0
Bromochloromethane										<0.9	<0.9	<0.9	<0.9	<0.9	<1	<1	<1	<1	<1	<1.0
Dichlorobromomethane						<1.0	<1.0	<1.0	<1	<0.3	<0.3	<0.3	<0.3	<0.3	<1	<1	<1	<1	<1	<1.0
Bromoform						<1.0	<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0
Bromomethane						<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0
Carbon Disulfide						<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride						<1.0	<1.0	<1.0	<1	<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1	<1	<1	<1.0
Chlorobenzene						<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
Chloroethane								<1.0	<1	<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1	<1	<1	<1.0
Chloroform						<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
Chloromethane						<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	4.1
Cumene															<1	<1	<1	<1	<1	<1.0
Chlorodibromomethane						<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0
Dibromomethane						<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0
Dichlorodifluoromethane										<2.1	<2.1	<2.1	<2.1	<2.1	<1	<1	<1	<1	<1	<1.0
cis-1,2-Dichloroethene	NA	8 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	0.9	0.5	<1	<1	<1	<1	<1	<1.0
cis-1,3-Dichloropropene						<1.0	<1.0	<1.0	<1	<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0
Ethylbenzene						<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
Hexachlorobutadiene										<7.5	<7.5	<7.5	<7.5	<7.5	<1	<1	<1	<1	<1	<1.0
Isopropylbenzene										<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA	NA	NA	NA	NA
m,p-Xylene						1.7	<1.0	<1.0	<1	<1.2	<1.2	<1.2	<1.2	<1.2	<2	<2	<2	<2	<2	<2.0
Methylene Chloride						<1.0	<1.0	<1.0	<1	<6.3	<6.3	<6.3	<6.3	<6.3	<1	<1	1.4	<1	<1	<1.0
Naphthalene										<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0
n-Butylbenzene										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
n-Propylbenzene										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
o-Xylene						<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
p-Isopropyltoluene										<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA	NA	NA	NA	NA
sec-Butylbenzene										<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0
Styrene						<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0
tert-Butylbenzene										<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
Tetrachloroethene	NA	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	0.3	<0.8	<1	<1	<1	<1	<1	<1.0
Toluene						<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0
trans-1,2-Dichloroethene	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0
trans-1,3-Dichloropropene						<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0
Trichloroethene	760	50	7.2	4.7	3.2	5.9	4.6	3.5	11	15	14	4.3	13	1.9	4.3	5.7	11	3	5.3	5
Trichlorofluoromethane										<2.1	<2.1	<2.1	<2.1	<2.1	<1	<1	<1	<1	<1	<1.0
Vinyl Chloride	NA	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1.5	<1.5	<1.5	<1.5	<1.5	<2	<2	<2	<2	<2	<2.0
Xylenes, Total																				
Total VOCs	0	0	0	0	0	7.3	4.7	3.4	7.7	8.7	4.3	1.2	5.9	2.3	0	1.4	3.2	0	0	5.8
Percent TCE Reduction since Startup	--	--	--	--	--	--	--	23.91%	-139.13%	-226.09%	-204.35%	6.52%	-182.61%	58.70%	6.52%	-23.91%	-139.13%	34.78%	-15.22%	-8.70%

Olean Database

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	Sample Date:	12/18/2006	6/28/2007	11/27/2007	6/5/2008	9/3/2008	3/25/2009	9/17/2009	6/17/2010	11/16/2010	5/24/2011	12/1/2011	6/22/2012	12/5/2012	5/9/2013	11/20/2013	6/12/2014	12/3/2014	6/18/2015	11/11/2015	6/8/2016	10/5/2016	6/7/2017
Volatile Organic Compounds (ug/l)																							
1,1,1,2-Tetrachloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.31 J	0.46 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.23 J	0.2 J	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.15 J	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibrom-3-Chloropropane		<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichloropropane		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone		NA	NA	NA	NA	NA	0.52 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Chlorotoluene		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone		NA	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Chlortoluene		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyl toluene		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone		NA	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone		NA	NA	NA	NA	NA	2.7 J	<5.0	<5.0	4.1	<5.0	<5.0	<5.0	<5.0	<5.0	2.8	1.5	2.7	<5.0	2.7 J	3.7	5.5	2.2
Benzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.11 J	<1.0	<1.0	<1.0
Bromobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorobromomethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Disulfide		NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	<1.0	<1.0	0.39	0.22 J	<1.0
Carbon Tetrachloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cumene		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorodibromomethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromomethane		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	0.2	<1.0	<1.0
cis-1,3-Dichloropropene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Hexachlorobutadiene		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene		<2.0	<2.0	<2.0	<2.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride		<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Naphthalene		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
p-Isopropyltoluene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<											

Olean Database
C-1

Sample Date:	9/28/2017	6/27/2018	10/25/2018	6/12/2019	11/6/2019
Volatile Organic Compounds (ug/l)					
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	NA	NA	NA	NA	NA
1,1-Dichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA
1,2-Dibrom-3-Chloropropane	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichloropropane	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane	NA	NA	NA	NA	NA
2-Butanone	<5.0	<5.0	<5.0	<5.0	2.3
2-Chlorotoluene	NA	NA	NA	NA	NA
2-Hexanone	<5.0	<5.0	<5.0	<5.0	<5.0
4-Chlorotoluene	NA	NA	NA	NA	NA
4-Isopropyl toluene	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	3.2 J	<5.0	<5.0	<5.0	8.6
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0
Bromobenzene	NA	NA	NA	NA	NA
Bromochloromethane	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorobromomethane	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Disulfide	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	<1.0	<1.0	<1.0	<1.0	0.6
Cumene	NA	NA	NA	NA	NA
Chlorodibromomethane	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromomethane	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0
Hexachlorobutadiene	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA
Methylene Chloride	<2.0	<2.0	<2.0	<2.0	<2.0
Naphthalene	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA
p-Isopropyltoluene	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA
Styrene	<1.0	<1.0	<1.0	<1.0	<1.0
tert-Butylbenzene	NA	NA	NA	NA	NA
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	2	0.23	0.32	1.2	0.47
Trichlorofluoromethane	NA	NA	NA	NA	NA
Vinyl Chloride	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes, Total	<2.0	<2.0	<2.0	<2.0	<2.0
Total VOCs	2	0.23	0.32	1.2	11.97
Percent TCE Reduction since Startup	56.52%	95.00%	93.04%	73.91%	89.78%

Olean Database
CW-18A

Sample Date:	12/15/1991	3/27/1996	6/6/1996	9/18/1996	11/6/1996	2/24/1997	5/6/1997	8/13/1997	10/28/1997	4/8/1998	10/15/1998	6/9/1999	2/7/2003	5/31/2000	12/14/2000	3/19/2001	5/9/2001	8/3/2001	12/11/2001	2/20/2002	5/15/2002	8/7/2002	11/6/2002	2/7/2003	6/20/2003	11/4/2003	5/21/2004	9/30/2004
Volatile Organic Compounds (ug/l)																												
1,1,1-Trichloroethane	15	<10	<10	5.9	6.4	<1	7.9	<1	3.5	2	<2	2	1	2	2	1.6	2	<1.0	<1.0	1.4	1.1	1.4	2	1.1	1.1	<1	<1	<1
1,1,1,2-Tetrachloroethane																												
1,1,2,2-Tetrachloroethane																<1.0		<5.0	<5.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
1,1,2-Trichloroethane																<1.0		<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1
1,1-Dichloroethane	2	<10	<10	1.7	3.1	<1	<1	<1	<1	<1	<2	<10	<10	0.7	0.5	<1.0	0.5	<1.0	<1.0	<1	<0.5	<0.5	<0.5	0.2	<0.5	<1	<1	<1
1,1-Dichloroethene	0.9 J	<10	<10	0.8	<1	<1	0.7	<1	<1	<1	<2	<10	<10	<1	<1	<1.0	NA	<1.0	<1.0	<1	<1.5	<1.5	<1.5	<1.5	<1.5	<1	<1	<1
1,1-Dichloropropene																					<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1
1,2,3-Trichlorobenzene																					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
1,2,3-Trichloropropane																					<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1
1,2,4-Trichlorobenzene																					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
1,2,4-Trimethylbenzene																					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
1,2-Dibrom-3-Chloropropane																					<1.6	<1.6	<1.6	<1.6	<1.6	<5	<5	<5
1,2-Dibromoethane																					<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1
1,2-Dichlorobenzene																					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
1,2-Dichloroethane																<1.0		<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1
1,2-Dichloropropane																<1.0		<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1
1,3,5-Trimethylbenzene																					<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1
1,3-Dichlorobenzene																					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
1,3-Dichloropropane																					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
1,4-Dichlorobenzene																					<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1
2,2-Dichloropropane																					<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1
2-Butanone										NA						<1.0		<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene																					<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1
2-Hexanone										NA						<1.0		<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene																												
4-Isopropyl toluene																					<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1
4-Methyl-2-Pentanone										NA						<1.0		<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA
Acetone																<1.0		<1.0	5.2	<1	NA	NA	NA	NA	NA	NA	NA	NA
Benzene																<1.0		<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
Bromobenzene																					<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1
Bromochloromethane																					<0.9	<0.9	<0.9	<0.9	<0.9	<1	<1	<1
Dichlorobromomethane																<1.0		<1.0	<1.0	<1	<0.3	<0.3	<0.3	<0.3	<0.3	<1	<1	<1
Bromoform																<1.0		<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1
Bromomethane																<1.0		<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon Disulfide																<1.0		<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride																<1.0		<1.0	<1.0	<1	<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1
Chlorobenzene																<1.0		<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
Chloroethane																<1.0		<1.0	<1.0	<1	<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1
Chloroform																<1.0		<1.0	<1.0	<1	<0.5	0.8	1.2	0.5	0.5	<1	<1	<1
Chloromethane																<1.0		<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1
Cumene																										<1	<1	<1
Dibromomethane																					<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1
Chlorodibromomethane																<1.0		<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1
Dichlorodifluoromethane																					<2.1	<2.1	<2.1	<2.1	<2.1	<1	<1	<1
cis-1,2-Dichloroethene	20	<10	13	16	17	15	16	24	8.9	5	8	9	9	8	5	6.3	7	4.6	6.2	6.3	4.7	2.9	4.5	3	2.4	<1	1.3	1.2
cis-1,3-Dichloropropene																<1.0		<1.0	<1.0	<1	<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1
Ethylbenzene																<1.0		<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
Hexachlorobutadiene																					<7.5	<7.5	<7.5	<7.5	<7.5	<1	<1	<1
Isopropylbenzene																					<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA	NA
m,p-Xylene																		<1	<1.0	<1.0	<1.2	<1.2	<1.2	<1.2	<1.2	<2	<2	<2
Methylene Chloride																<1.0		<1.0	<1.0	<1	<6.3	<6.3	<6.3	<6.3	<6.3	<1	<1	1.5
Naphthalene																					<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1
n-Butylbenzene																					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
n-Propylbenzene																					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
o-Xylene																					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
p-Isopropyltoluene																		<1	<1.0	<1.0	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1
sec-Butylbenzene																					<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA	NA
Styrene																<1.0		<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1
tert-Butylbenzene																					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
Tetrachloroethene	2	<10	<10	51.3	1.4	1.8	1.5	<1	<1	<1.0	<2	<10	0.2	0.8	0.4	<1.0	0.6	<1.0	<1.0	<1	<0.8	<0.8	<0.8	0.3 J	<0.8	<1	<1	<1
Toluene																<1.0		<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
trans-1,2-Dichloroethene	ND	<10	<10	<1	<1	<1	<1	<1	<1	<1.0	<1	<10	<10	<1	<1	<1.0	<1	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1
trans-1,3-Dichloropropene																<1.0		<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1
Trichloroethene	670	210	210	190	210	210	210	150	140	110	160	140	20	100	64													

Sample Date:	5/4/2005	9/23/2005	6/2/2006	12/18/2006	6/28/2007	11/28/2007	6/6/2008	9/3/2008	3/25/2009	9/17/2009	6/16/2010	11/16/2010	5/25/2011	6/23/2012	12/5/2012	5/8/2013	11/20/2013	6/12/2014	12/2/2014	6/18/2015	11/10/2015	11/6/2019
Volatile Organic Compounds (ug/l)																						
1,1,1-Trichloroethane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1,2-Tetrachloroethane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	1.8	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibrom-3-Chloropropane	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromobenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichloropropane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Chlorotoluene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Chlotoluene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyl toluene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	NA	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromobenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorobromomethane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	<1	<1	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.11	<1.0	<1.0	<1.0
Carbon Tetrachloride	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	<1	<1	4.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.47
Cumene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromomethane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorodibromomethane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.37	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Hexachlorobutadiene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Naphthalene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA
p-isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
tert-Butylbenzene	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA												

Notes:

NA - Not Analyzed
Remediation System started
in July 2001.

Olean Database
D-1

Sample Date:	7/15/1984	4/15/1998	7/15/1998	10/15/1998	3/19/2001	8/3/2001	12/11/2001	2/20/2002	5/15/2002	8/7/2002	11/6/2002	2/7/2003	6/19/2003	11/4/2003	5/21/2004	9/29/2004	5/4/2005	9/23/2005	6/2/2006	12/18/2006
Volatiles Organic Compounds (ug/l)																				
1,1,1,2-Tetrachloroethane									<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	0.4	0.4 J	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane					<1.0	<5.0	<5.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane					<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	NA	<1.0	<4.0	<4.0	<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	NA	<1.0	<4.0	<4.0	<1.0	<1.0	<1.0	<1	<1.5	<1.5	<1.5	<1.5	<1.5	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene									<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane									<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene									<0.5	<0.5	2.1	<0.5	<0.5	<1	<1	<1	1	<1	<1	<1
1,2-Dibrom-3-Chloropropane									<1.6	<1.6	<1.6	<1.6	<1.6	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane									<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane					<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane					<1.0	<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene									<0.4	<0.4	0.8	<0.4	<0.4	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene									<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1	<1
2,2-Dichloropropane									<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1	<1	<1	<1	<1
2-Butanone					<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene					<1.0	<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1	<1
2-Hexanone					<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene									<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1	<1
4-Isopropyl toluene														<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-Pentanone					<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone					<1.0	<1.0	2.9	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene					<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
Bromobenzene									<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane									<0.9	<0.9	<0.9	<0.9	<0.9	<1	<1	<1	<1	<1	<1	<1
Dichlorobromomethane					<1.0	<1.0	<1.0	<1	<0.3	<0.3	<0.3	<0.3	<0.3	<1	<1	<1	<1	<1	<1	<1
Bromoform					<1.0	<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1	<1
Bromomethane					<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon Disulfide					<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride					<1.0	<1.0	<1.0	<1	<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene					<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
Chloroethane					<1.0	<1.0	<1.0	<1	<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1	<1	<1	<1	<1
Chloroform					<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
Chloromethane					<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	4.1	<1
Cumene														<1	<1	<1	<1	<1	<1	<1
Chlorodibromomethane					<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1	<1
Dibromomethane									<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane									<2.1	<2.1	<2.1	<2.1	<2.1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	NA	1.4	<4.0	<4.0	<1.0	1.5	<1.0	<1	<1	<1	1	1.3	1	1	1	1	1.2	2.1	1.4	1.9
cis-1,3-Dichloropropene					<1.0	<1.0	<1.0	<1	<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene					<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene									<7.5	<7.5	<7.5	<7.5	<7.5	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene									<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene					<1.0	<1.0	<1.0	<1	<1.2	<1.2	<1.2	<1.2	<1.2	<2	<2	<2	<2	<2	<2	<2
Methylene Chloride					<1.0	<1.0	<1.0	<1	<6.3	<6.3	<6.3	<6.3	<6.3	<1	<1	<1	<1	<1	<1	<1
Naphthalene									<0.6	<0.6	3.8	<0.6	<0.6	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
o-Xylene					<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene									<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene									<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1	<1
Styrene					<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	NA	<1.0	<4.0	<4.0	<1.0	<1.0	<1.0	<1	<0.8	<0.8	1.3	1.6	1.3	1.7	1.8	2.1	1.5	1.7	1.3	1.7
Toluene					<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	3	<1	<1	<1
trans-1,2-Dichloroethene	NA	<1.0	<2.5	<2.5	<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene					<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	5200	700 D	630	720	400	340	240	94	89	57	59	58	43	36	31	35	23	25	20	42
Trichlorodifluoromethane									<2.1	<2.1	<2.1	<2.1	<2.1	<1	<1	<1	<1	<1	<1	<1
Vinyl Chloride	NA	<1.0	<4.0	<4.0	<1.0	<1.0	<1.0	<1	<1.5	<1.5	<1.5	<1.5	<1.5	<2	<2	<2	<2	<2	<2	<2
Xylenes, Total																				
Total VOCs	0	1.4	0	0	0	1.5	2.9	1.4	0	0	7.7	1.7	1.4	1	1	1	2.2	2.1	5.5	1.9
Percent TCE Reduction since Startup	--	--	--	--	--	15.00%	40.00%	76.50%	77.75%	85.75%	85.25%	85.50%	89.25%	91.00%	92.25%	91.25%	94.25%	93.75%	95.00%	89.50%

Olean Database

D-1

Sample Date:	6/27/2007	11/28/2007	6/5/2008	9/3/2008	3/25/2009	9/17/2009	6/17/2010	11/16/2010	5/24/2011	12/1/2011	6/23/2012	12/5/2012	5/8/2013	11/20/2013	6/12/2014	12/3/2014	6/17/2015	11/11/2015	6/8/2016	10/5/2016	6/7/2017	9/28/2017
Volatile Organic Compounds (ug/l)																						
1,1,1,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	<1.0	0.60 J	0.42 J	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.14	0.14	<1.0	<1.0
1,1-Dichloroethene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibrom-3-Chloropropane	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichloropropane	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Chlorotoluene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Chlorotoluene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyl toluene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	NA	NA	NA	NA	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	NA	NA	NA	NA	1.2 J	<5.0	<25	<5.0	<5.0	1.5 J	<5.0	<5.0	<5.0	1.9	1.7	<5.0	<5.0	2.4 J	<5.0	4.5 J	1.9	3.8 J
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromobenzene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorobromomethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.66 BJ
Carbon Disulfide	NA	NA	NA	NA	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.58	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cumene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorodibromomethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromomethane	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	2	4.4	2	1.9	3.4	2.8	2.0 J	<1.0	2.4	3	2.8	1.8	1.4	1.1	1.8	1.4	1.8	0.73 J	1.6	0.50 J	<1.0	0.85 J
cis-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Hexachlorobutadiene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	<1.0	<1.0	<1.0	1.3	<2.0	<2.0	2.6 J	7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.90 J
Naphthalene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
tert-Butylbenzene	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.6	2.1	1.3	1.4	1.0 J																	

Olean Database
D-1

Sample Date:	6/27/2018	10/25/2018	6/12/2019	11/6/2019
Volatile Organic Compounds (ug/l)				
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	0.22	<1.0	<1.0	<1.0
1,1-Dichloroethene	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA
1,2,4-Trichlorobenzene	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	NA	NA	NA	NA
1,2-Dibrom-3-Chloropropane	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	NA	NA	NA	NA
1,3-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0
1,3-Dichloropropane	NA	NA	NA	NA
1,4-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane	NA	NA	NA	NA
2-Butanone	<5.0	<5.0	<5.0	2.2
2-Chlorotoluene	NA	NA	NA	NA
2-Hexanone	<5.0	<5.0	<5.0	<5.0
4-Chlorotoluene	NA	NA	NA	NA
4-Isopropyl toluene	NA	NA	NA	NA
4-Methyl-2-Pentanone	<5.0	<5.0	<5.0	<5.0
Acetone	<5.0	4.6	4.6	7.8
Benzene	<1.0	<1.0	<1.0	<1.0
Bromobenzene	NA	NA	NA	NA
Bromochloromethane	<1.0	<1.0	<1.0	<1.0
Dichlorobromomethane	<1.0	<1.0	<1.0	<1.0
Bromoform	<1.0	<1.0	<1.0	<1.0
Bromomethane	<1.0	<1.0	<1.0	<1.0
Carbon Disulfide	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	<1.0	<1.0	<1.0	<1.0
Chloroethane	<1.0	<1.0	<1.0	<1.0
Chloroform	<1.0	<1.0	<1.0	<1.0
Chloromethane	<1.0	<1.0	<1.0	<1.0
Cumene	NA	NA	NA	NA
Chlorodibromomethane	<1.0	<1.0	<1.0	<1.0
Dibromomethane	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA
cis-1,2-Dichloroethene	2.7	0.91	1.7	0.92
cis-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0
Hexachlorobutadiene	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA
Methylene Chloride	<2.0	<2.0	<2.0	<2.0
Naphthalene	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA
p-Isopropyltoluene	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA
Styrene	<1.0	<1.0	<1.0	<1.0
tert-Butylbenzene	NA	NA	NA	NA
Tetrachloroethene	0.47	0.34	0.43	0.38
Toluene	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0
Trichloroethene	10	5.3	10	3.7
Trichlorofluoromethane	NA	NA	NA	NA
Vinyl Chloride	<1.0	<1.0	<1.0	<1.0
Xylenes, Total	<1.0	<1.0	<1.0	<1.0
Total VOCs	13.39	11.15	16.73	15
Percent TCE Reduction since Startup	97.50%	98.68%	97.50%	99.08%

Olean Database

D-2

Sample Date:	3/19/2001	8/3/2001	12/11/2001	2/20/2002	5/15/2002	8/7/2002	11/6/2002	2/7/2003	6/19/2003	11/4/2003	5/21/2004	9/29/2004	5/4/2005	9/23/2005	6/22/2006	12/18/2006	6/27/2007	11/28/2007	6/5/2008	9/3/2008
Volatile Organic Compounds (ug/l)																				
1,1,1,2-Tetrachloroethane					<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	<1.0	<5.0	<5.0	<5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	<1.0	<1.0	<1.0	<1	<1.5	<1.5	<1.5	<1.5	<1.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene					<1.3	<1.3	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichlorobenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichloropropane					<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibrom-3-Chloropropane					<1.6	<1.6	<1.6	<1.6	<5	<5	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dibromoethane					<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	<1.0	<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene					<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichloropropane					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene					<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane					<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone	<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene					<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Hexanone	<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene					<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-Isopropyl toluene										<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-Methyl-2-Pentanone	<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	2	2.4	3	2.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromobenzene					<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromochloromethane					<0.9	<0.9	<0.9	<0.9	<0.9	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorobromomethane	<1.0	<1.0	<1.0	<1	<0.3	<0.3	<0.3	<0.3	<0.3	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	<1.0	<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Disulfide	<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	<1.0	<1.0	<1.0	<1	<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	<1.0	<1.0	<1.0	<1	<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	4	<1.0	<1.0	<1.0	<1.0	<1.0
Cumene										<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromomethane					<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane					<2.1	<2.1	<2.1	<2.1	<2.1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1	<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Hexachlorobutadiene					<7.5	<7.5	<7.5	<7.5	<7.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Isopropylbenzene					<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	<1.0	<1.0	<1.0	<1	<1.2	<1.2	<1.2	<1.2	<1.2	<2	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	<1.0	<1.0	<1.0	<1	<6.3	<6.3	<6.3	<6.3	<6.3	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene					<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene	<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
p-Isopropyltoluene					<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene					<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene	<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
tert-Butylbenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	2.9	2.9	2.6	2.8	1.7	2.4	1	0.9	1.2	1.9	<1	1.5	1.1	2.2	2.1	7.5	3.1	3.2	1.5	2.8
Trichlorofluoromethane					<2.1	<2.1	<2.1	<2.1	<2.1	<1										

Olean Database

D-

[illegible]

Olean Database
EW-3

Sample Date:	12/15/1991	4/15/1998	7/15/1998	10/15/1998	3/19/2001	8/3/2001	12/11/2001	2/20/2002	5/15/2002	8/7/2002	11/6/2002	2/7/2003	6/20/2003	11/4/2003	5/21/2004	9/30/2004	5/4/2005	9/23/2005	6/2/2006	12/18/2006	6/28/2007	11/28/2007	6/6/2008	9/3/2008	3/25/2009	9/17/2009	
Volatile Organic Compounds (ug/l)																											
1,1,1,2-Tetrachloroethane									<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	3.1	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA
1,1,1-Trichloroethane	<10	<1.0	2.1	<1.5	<1.0	<1.0	<1.0	<1	<1	1.5	<1	1.4	0.6 J	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
1,1,2,2-Tetrachloroethane					<1.0	<5.0	<5.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
1,1,2-Trichloroethane					<1.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
1,1-Dichloroethane	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	0.2	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
1,1-Dichloroethene	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1.5	<1.5	<1.5	<1.5	<1.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
1,1-Dichloropropene									<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
1,2,3-Trichlorobenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
1,2,3-Trichloropropane									<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
1,2,4-Trichlorobenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
1,2,4-Trimethylbenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
1,2-Dibrom-3-Chloropropane									<1.6	<1.6	<1.6	<1.6	<1.6	<5	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	
1,2-Dibromoethane									<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dichlorobenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dichloroethane					<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dichloropropane					<1.0	<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
1,3,5-Trimethylbenzene									<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
1,3-Dichlorobenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
1,3-Dichloropropane									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
1,4-Dichlorobenzene									<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
2,2-Dichloropropane									<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
2-Butanone					<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.0	
2-Chlorotoluene									<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
2-Hexanone					<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.0	
4-Chlorotoluene									<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
4-Isopropyl toluene														<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
4-Methyl-2-Pentanone					<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.0	
Acetone					<1.0	<1.0	2.7	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5.0	<5.0	
Benzene					<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Bromobenzene									<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
Bromochloromethane									<0.9	<0.9	<0.9	<0.9	<0.9	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Bromodichloromethane					<1.0	<1.0	<1.0	<1	<0.3	<0.3	<0.3	<0.3	<0.3	<1	<1	<1	<1	<1	<1.0	2.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Bromofom					<1.0	<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	4.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Bromomethane					<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	
Carbon Disulfide					<1.0	<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	<1.0	
Carbon Tetrachloride					<1.0	<1.0	<1.0	<1	<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Chlorobenzene					<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Chloroethane					<1.0	<1.0	<1.0	<1	<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Chloroform					<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Chloromethane					<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	4.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Cumene														<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
Dibromochloromethane					<1.0	<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibromomethane									<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
Dichlorodifluoromethane									<2.1	<2.1	<2.1	<2.1	<2.1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
cis-1,2-Dichloroethene	<10	<1.0	<1.0	<1.0	8	15	11	9.7	<1	7.2	7.8	6.7	13	2.6	1.8	1	<1	<1	<1.0	7	3.6	<1.0	1	<1.0	<1.0	<1.0	
cis-1,3-Dichloropropene					<1.0	<1.0	<1.0	<1	<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Ethylbenzene					<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Hexachlorobutadiene									<7.5	<7.5	<7.5	<7.5	<7.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
Isopropylbenzene									<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
m,p-Xylene					<1	<1.0	<1.0	<1.0	<1.2	<1.2	<1.2	<1.2	<1.2	<2	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	NA	
Methylene Chloride					<1.0	<1.0	<1.0	<1	<6.3	<6.3	<6.3	<6.3	<6.3	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	
Naphthalene									<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	
n-Butylbenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	

[illegible]

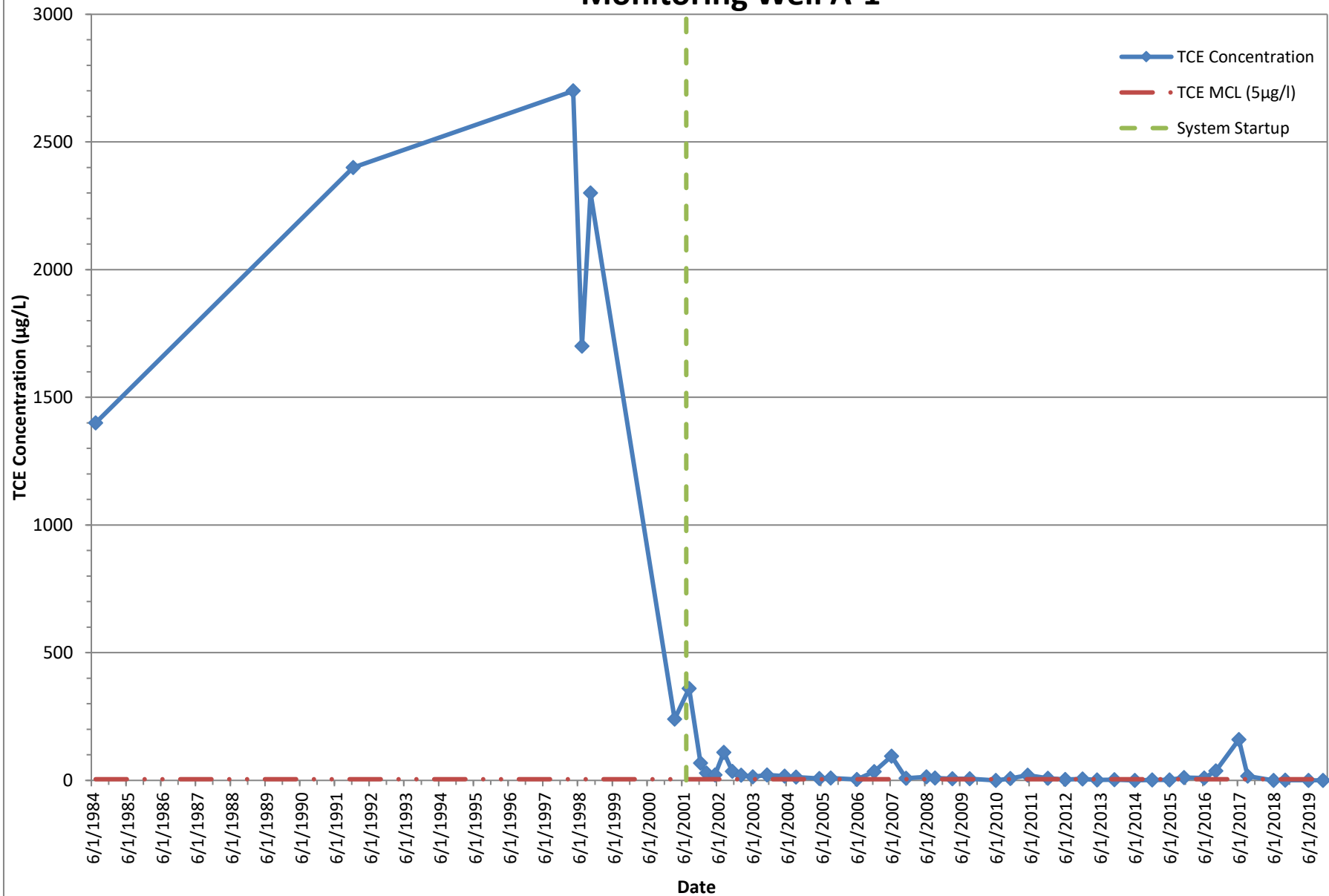
Olean Database
G-1

Sample Date:	3/19/2001	8/3/2001	12/11/2001	2/20/2002	5/15/2002	8/7/2002	11/6/2002	2/7/2003	6/19/2003	11/4/2003	5/21/2004	9/30/2004	5/4/2005	9/23/2005	6/2/2006	12/18/2006	6/28/2007	11/28/2007	6/6/2008	9/3/2008
Volatile Organic Compounds (ug/l)																				
1,1,1,2-Tetrachloroethane					<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	<5.0	1	<1.0	1.4	1	1.7	2	3.8	1.4	1.3 J	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane		<5.0	<5.0	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	<5.0	<1.0	<1.0	<1	<0.5	<0.5	0.6	1.5	0.4 J	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	<5.0	<1.0	<1.0	<1	<1.5	<1.5	<1.5	<1.5	<1.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene					<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichlorobenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichloropropane					<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibrom-3-Chloropropane					<1.6	<1.6	<1.6	<1.6	<1.6	<5	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dibromoethane					<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane		<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane		<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene					<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichloropropane					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene					<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane					<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone		<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene					<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Hexanone		<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene					<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-Isopropyl toluene										<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-Methyl-2-Pentanone		<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	<1.0	8.4	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene		<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromobenzene					<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromochloromethane					<0.9	<0.9	<0.9	<0.9	<0.9	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorobromomethane		<1.0	<1.0	<1	<0.3	<0.3	<0.3	<0.3	<0.3	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform		<1.0	<1.0	<1	<0.7	<0.7	<0.7	<0.7	<0.7	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane		<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Disulfide		<1.0	<1.0	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride		<1.0	<1.0	<1	<1.3	<1.3	<1.3	<1.3	<1.3	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene		<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane		<1.0	<1.0	<1	<1.2	<1.2	<1.2	<1.2	<1.2	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform		<1.0	<1.0	<1	<0.5	0.7	0.3	1	1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane		<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	<5.0	2.3	<1.0	3.9	1.4	3.9	3.4	7.4	2.4	3.5	1.8	1.7	3.5	3.4	2.9	1.9	1.5	<1.0	1.5	1.2
cis-1,3-Dichloropropene		<1.0	<1.0	<1	<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cumene										<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromomethane					<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane		<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane					<2.1	<2.1	<2.1	<2.1	<2.1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene		<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Hexachlorobutadiene					<7.5	<7.5	<7.5	<7.5	<7.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Isopropylbenzene					<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene		<1.0	<1.0	<1	<1.2	<1.2	<1.2	<1.2	<1.2	<2	<2	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methylene Chloride		1.1	1.7	<1	<6.3	<6.3	<6.3	<6.3	<6.3	<1	<1	1.8	1.1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene					<0.6	<0.6	<0.6	<0.6	<0.6	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene		<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
p-Isopropyltoluene					<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene					<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene		<1.0	<1.0	<1	<0.4	<0.4	<0.4	<0.4	<0.4	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
tert-Butylbenzene					<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	<5.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene		<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	<5.0	<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene		<1.0	<1.0	<1	<0.8	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	<5.0	34	22	33	16	28	28	37	16	20	10	13	10	16	11	7	8.2	4.7	6	8.1
Trichlorofluoromethane					<2.1															

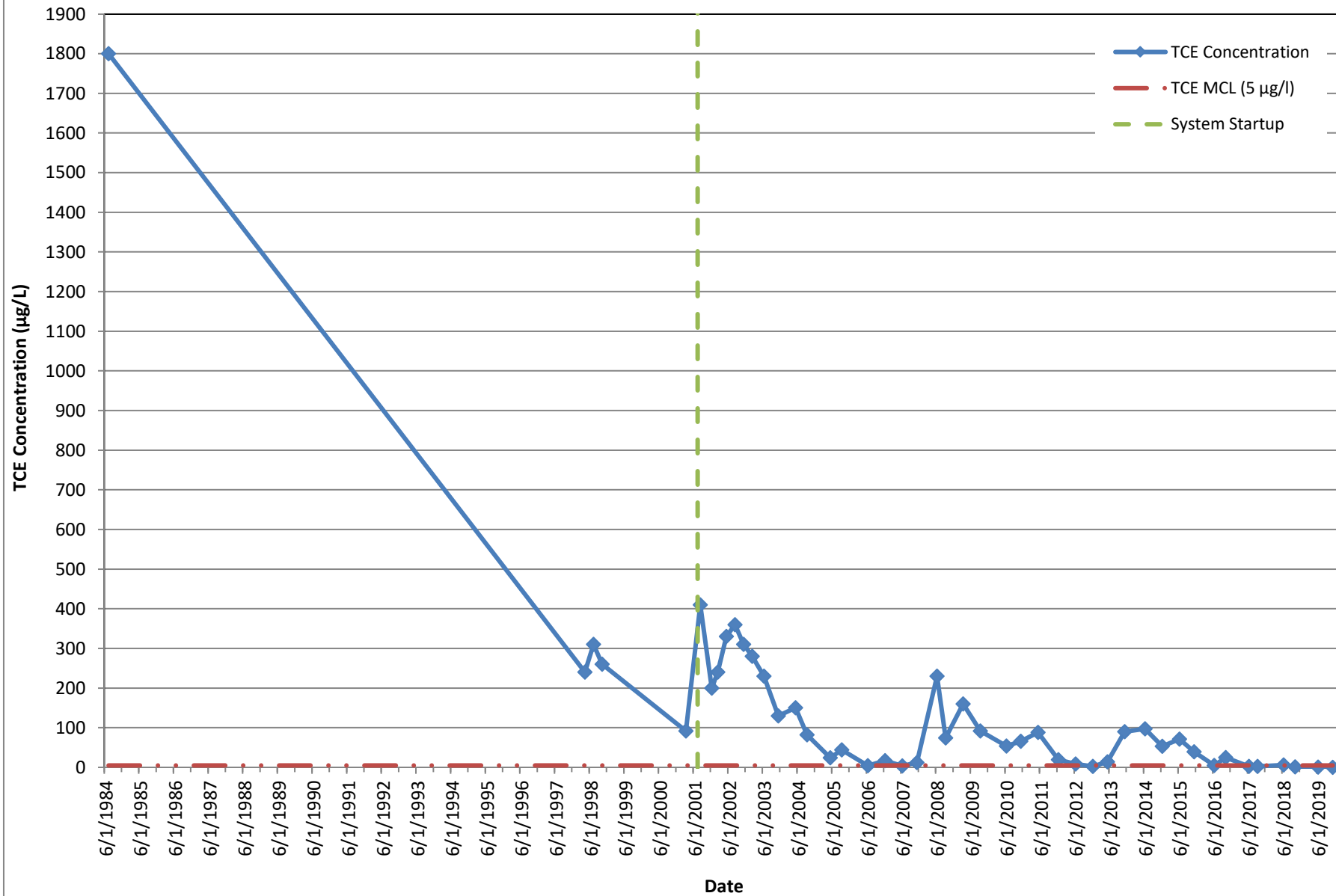
[illegible]

Appendix E
Time Trend Plots

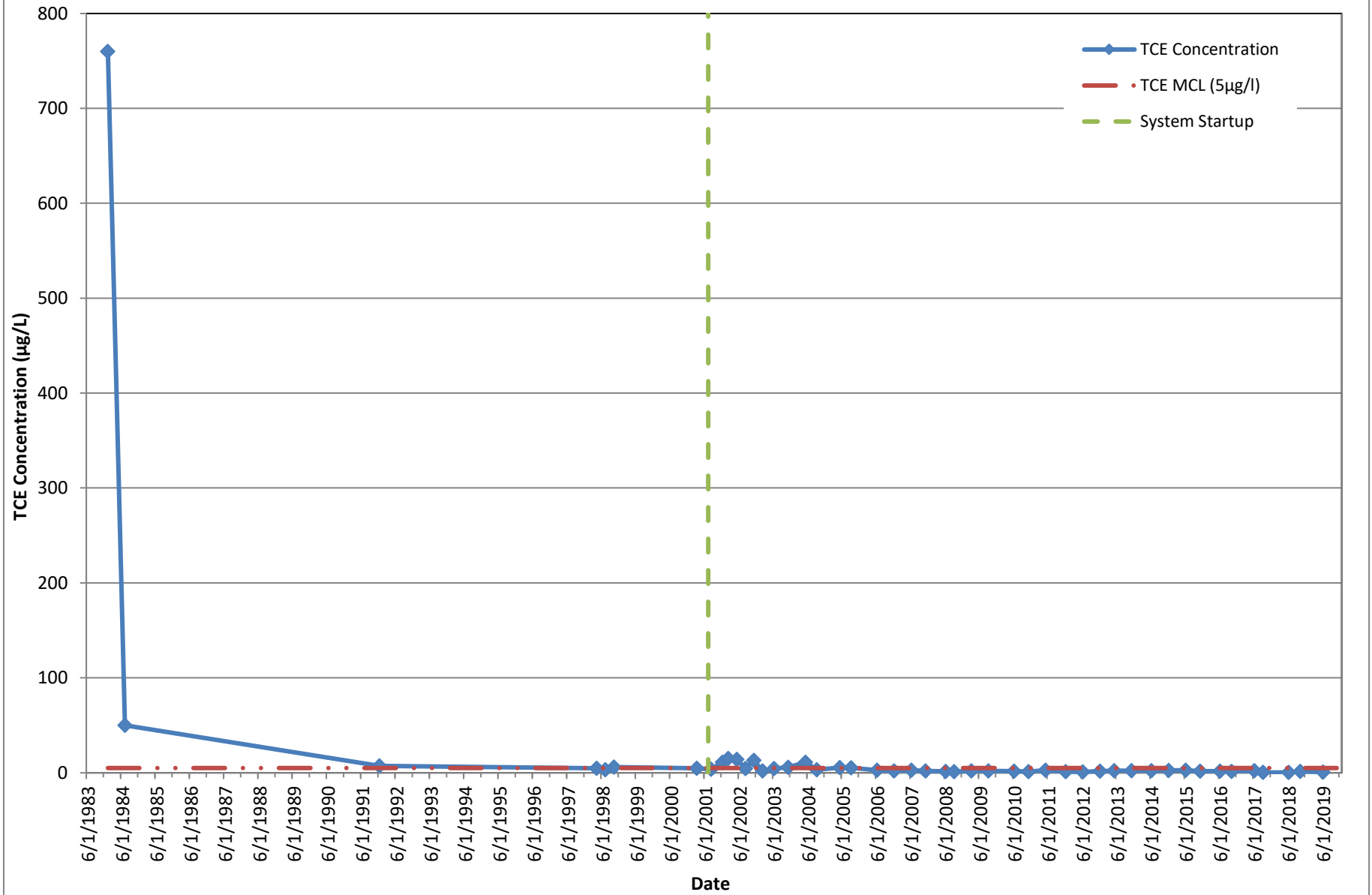
TCE Concentration through November 2019 Monitoring Well A-1



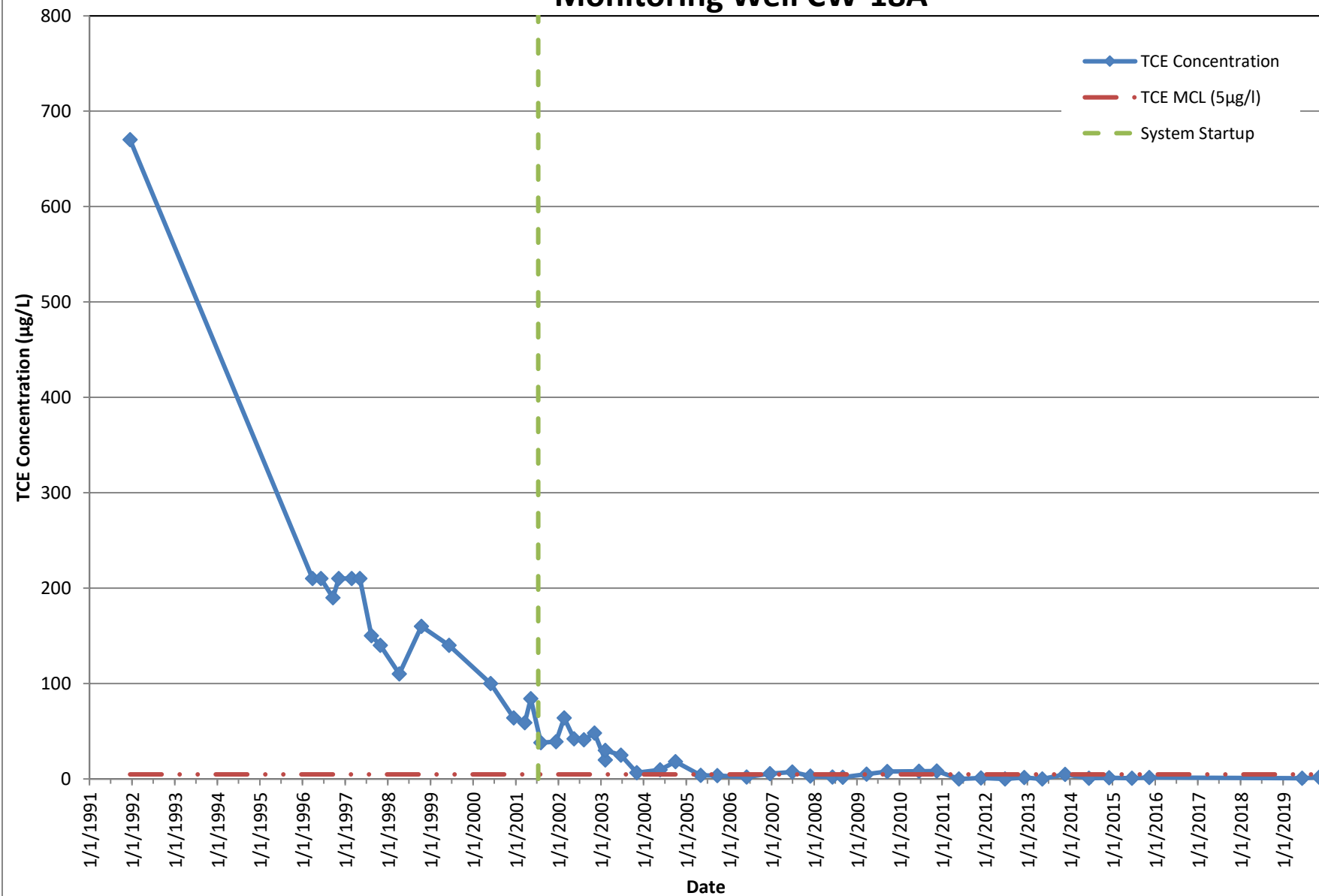
TCE Concentration through November 2019 Monitoring Well B-1



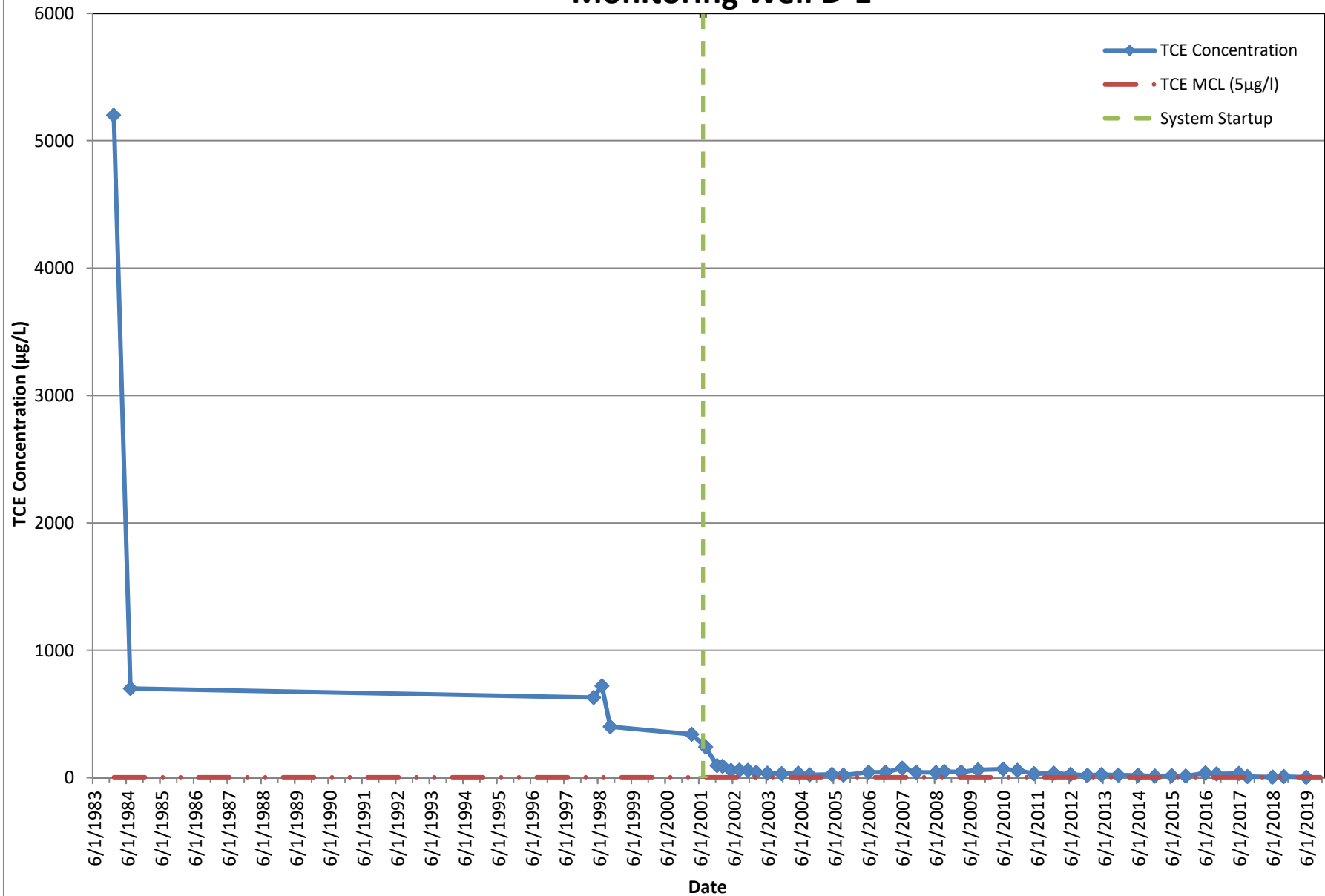
TCE Concentration through November 2019 Monitoring Well C-1



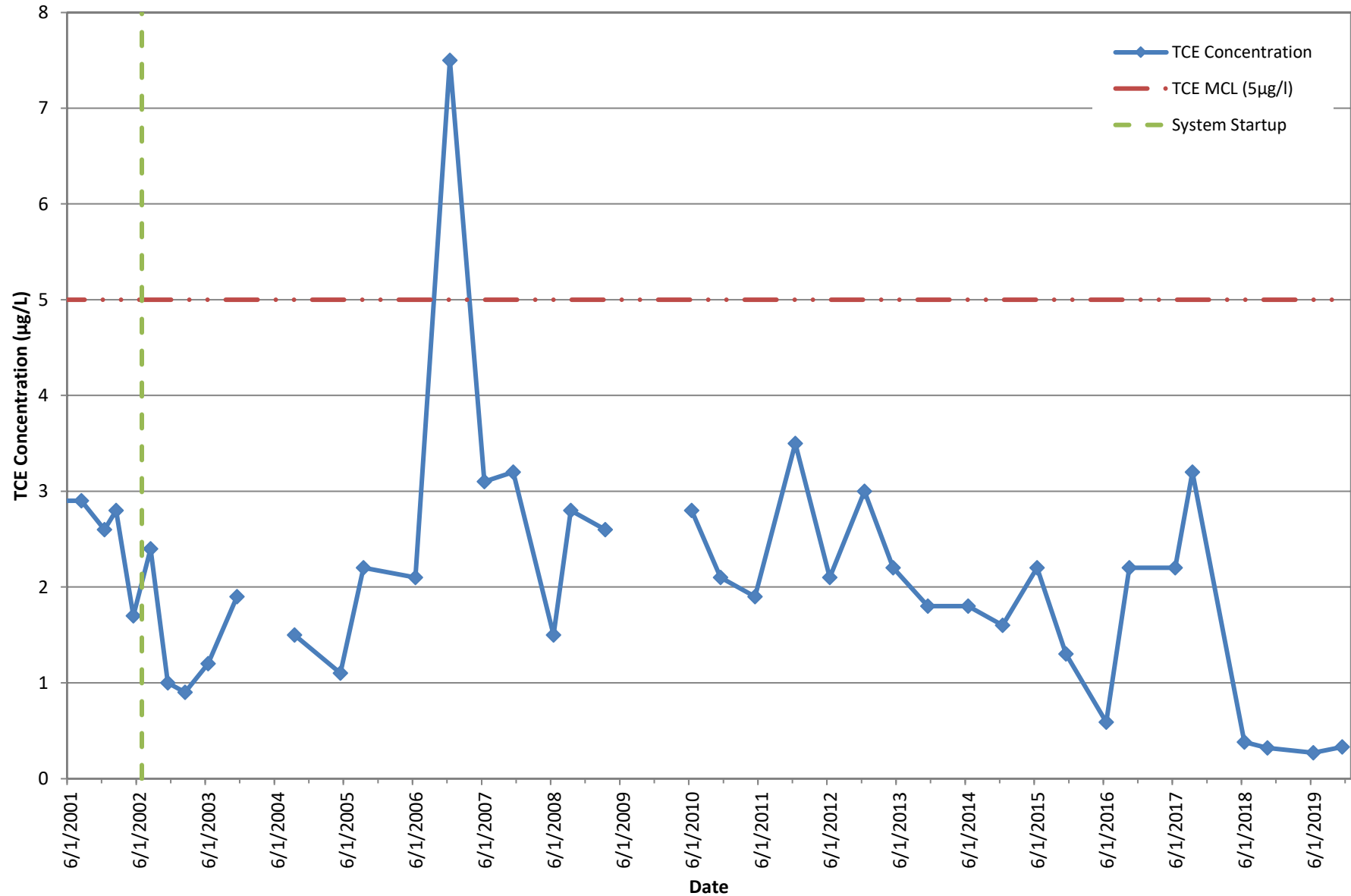
TCE Concentration through November 2019 Monitoring Well CW-18A



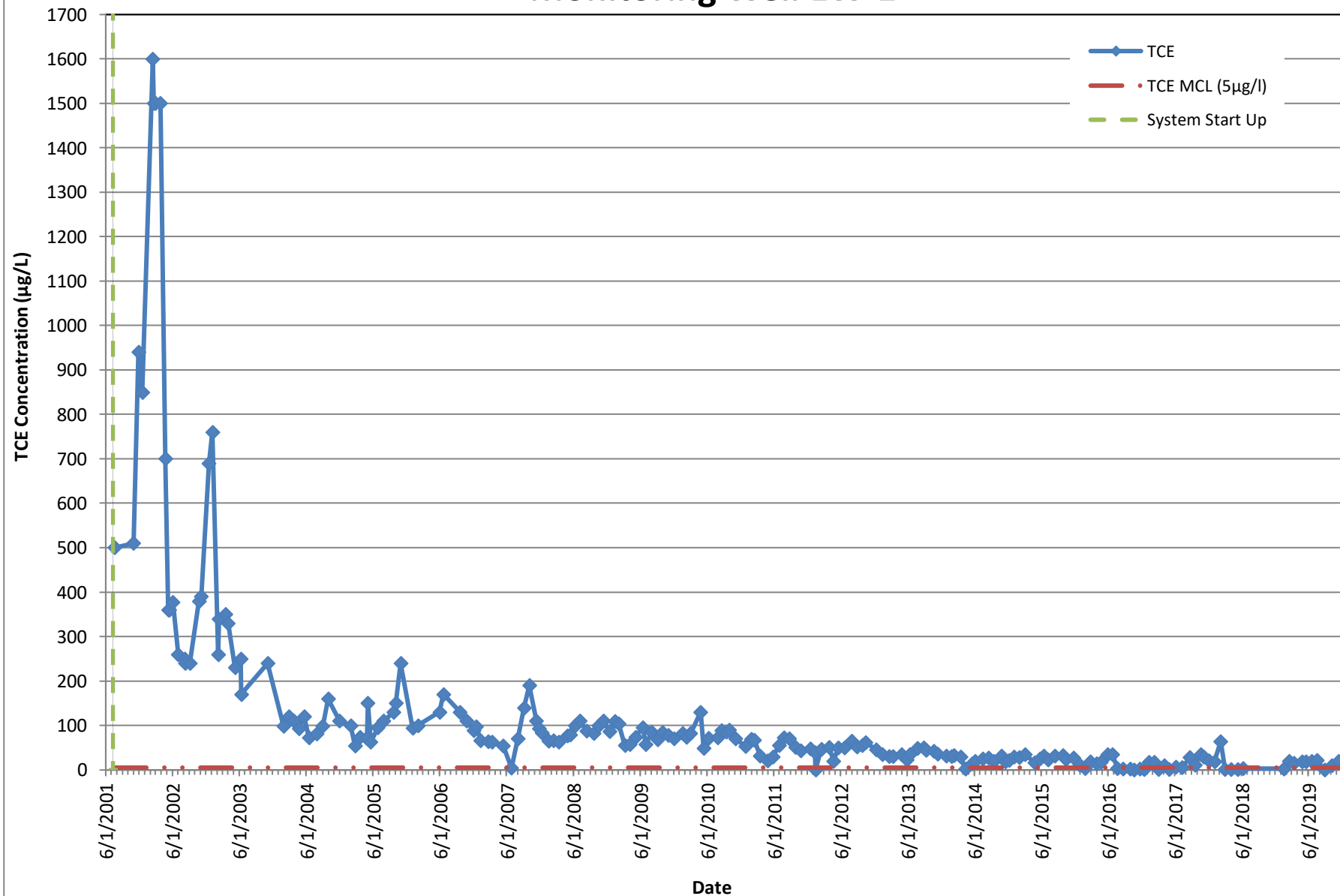
TCE Concentration through November 2019 Monitoring Well D-1



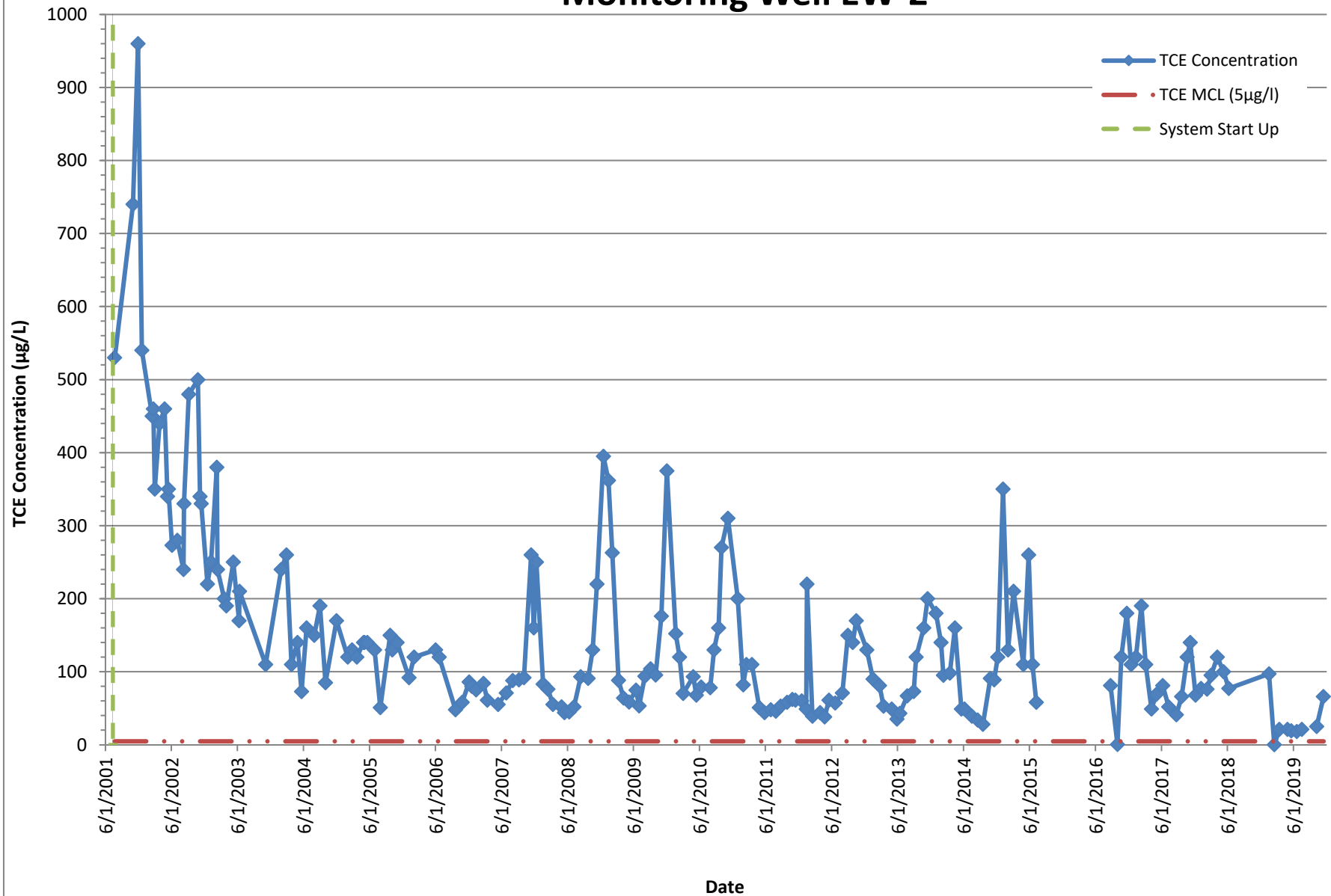
TCE Concentration through November 2019 Monitoring Well D-2



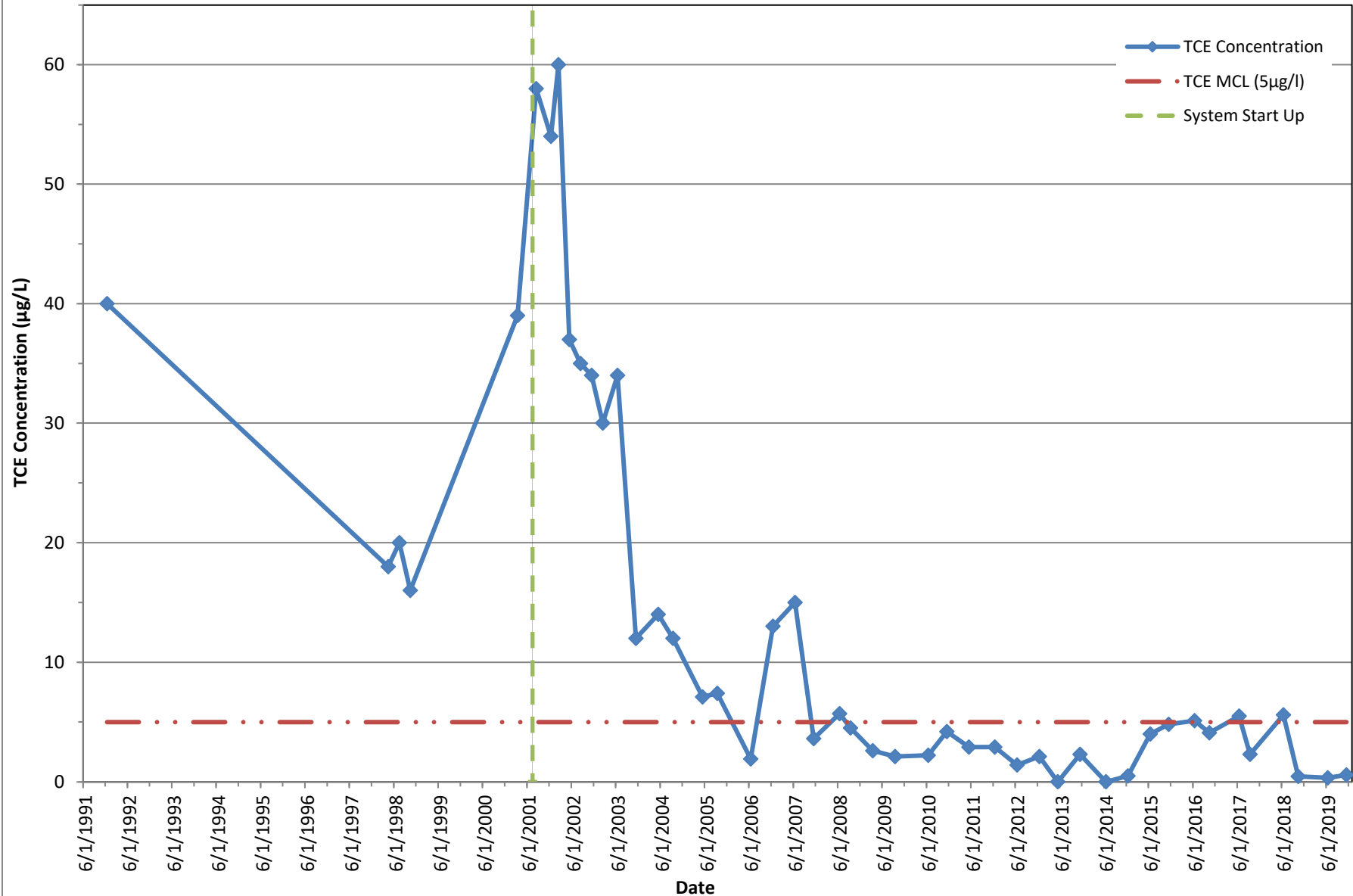
TCE Concentration through November 2019 Monitoring Well EW-1



TCE Concentration through November 2019 Monitoring Well EW-2



TCE Concentration through November 2019 Monitoring Well EW-3



TCE Concentration through November 2019 Monitoring Well G-1

