

# FINAL 2016 COMPREHENSIVE SAMPLING REPORT

FEBRUARY 2017

United States Environmental Protection Agency  
Lawrence Aviation Industries Superfund Site  
Port Jefferson Station, Suffolk County, New York

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HDR

REMEDIAL ACTION CONTRACT (RAC) 2 PROGRAM

2016 COMPREHENSIVE SAMPLING EVENT REPORT

FEBRUARY 1, 2017

LAWRENCE AVIATION INDUSTRIES SUPERFUND SITE

LONG-TERM RESPONSE ACTION

PORT JEFFERSON STATION, NEW YORK

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## LIST OF ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
CVOCs	chlorinated volatile organic compounds
DCA	Dichloroethane
DCE	Dichloroethene
DO	dissolved oxygen
DQIs	data quality indicators
EPA	United States Environmental Protection Agency
ERT	Environmental Response Team
FS	feasibility study
GPM	Gallons per Minute
HASP	Health and Safety Plan
HP	Horse Power
HRS	hazard ranking system
ISCO	in-situ chemical oxidation
LAI	Lawrence Aviation Industries
LDPE	Low Density Polyethylene
LTRA	Long Term Remedial Action
mg/l	milligrams per liter
msl	mean sea level
mV	Millivolts
NPL	National Priorities List
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
O&M	Operations and Maintenance
OMP	Old Mill Pond
ORP	Oxidation/Reduction Potential
OSWER	Office of Solid Waste and Emergency Response
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethene
PDI	Pre-Design Investigation
PPE	Personal Protective Equipment
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RA	Remedial Action
RAC	Remedial Action Contract
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RD	remedial design
REAC	Response, Engineering and Analytical Contract
RI	remedial investigation
ROD	Record of Decision
SCWA	Suffolk County Water Authority
SMP	site management plan
TCA	Trichloroethane
TCE	Trichloroethene
TCL	target compound list
VC	Vinyl Chloride
VOC	volatile organic compounds
µg/l	micrograms per liter

## 1.0 INTRODUCTION

### 1.1 Purpose of this Report

This report for the Lawrence Aviation Industries (LAI) Superfund Site was prepared by Henningson, Durham & Richardson, Architecture and Engineering PC, in association with HDR Engineering, Inc. (HDR) under the United States Environmental Protection Agency (EPA) Region 2 Remedial Action Contract (RAC) 2 Contract No. EP-W-09-009 and EPA Work Assignment No. C01-LTRA-02NS in accordance with the EPA Close-Out Procedures for National Priorities List (NPL) Sites, Office of Solid Waste and Emergency Response (OSWER) Directive 9320.2-22, dated May 2011. The comprehensive sampling event report was prepared pursuant to Subtask 9.2 (Evaluate System Performance) of the November 2012 approved work plan. The purpose of this report is to present results of the June 2016 comprehensive sampling event, compare the results to the May 2008 baseline groundwater sampling results and subsequent groundwater sampling results, and confirm plume capture and monitor Chlorinated Volatile Organic Compounds (CVOCs) to track remediation system effectiveness. This report includes the following information:

- Introduction (**Section 1**) - Includes a brief description of the site environmental setting and historical operations, site investigations and remedial activities.
- Comprehensive Sampling Event and Results (**Section 2**) - Summarizes the June 2016 sampling event and area-wide groundwater plume contamination.
- Groundwater Contamination over Time (**Section 3**) - Provides a summary of changes in area-wide groundwater plume contamination from May 2008 through June 2016, including an evaluation of the effectiveness of the remedial action.
- References (**Section 4**) - Provides a list of documents relevant to the site activities.

### 1.2 Site Location and Description

The LAI Site (EPA identification number NYD002041531) is located in Port Jefferson Station, Suffolk County, New York (henceforth referred to as “Site”). A site location map is provided as **Figure 1**. The Site encompasses approximately 126 acres and consists of the LAI industrial facility and the LAI Outlying Parcels (the wooded areas located east and northeast of the LAI industrial facility). The LAI industrial facility, approximately 42 acres in size, was an active manufacturer of titanium sheeting for the aeronautics industry. It encompasses 10 buildings located in the southwestern portion of the property. An abandoned, unlined earthen lagoon, which formerly received liquid wastes, lies west of the buildings and was filled in by the property owner. A former drum crushing area is situated southeast of the buildings. The LAI Outlying Parcels property is mostly vacant and wooded, but contains a few small residential single family houses and three access roads. The Long Island Railroad and Sheep Pasture Road

form the northern border of the Site, to the east and west are various residential single family houses, and to the south is power utility right-of-way and a wooded area beyond which is a residential area with single family houses. The Village of Port Jefferson and Port Jefferson Harbor lie approximately one mile to the north. A mixed-use bicycle and pedestrian path and right-of-way were installed by the New York State Department of Transportation (NYSDOT) and runs through the LAI industrial facility property.

The remediation system is comprised of two groundwater pump and treat facilities. The first system exists at the LAI Site (near the source area) and the second is located downgradient at Old Mill Pond (OMP) near Port Jefferson Harbor. Both systems have multiple extraction wells, air strippers and vapor-phase granular activated carbon (GAC) units. The OMP system also has liquid-phase GAC units.

### **1.3 Historic Sources of Groundwater Contamination**

The LAI industrial facility was previously part of a turkey farm owned by LAI's corporate predecessor, Ledkote Products Co. (Ledkote) of New York. Established in Port Jefferson Station in 1951, Ledkote produced items including lead gutters and downspouts for roof drains. Since 1959, the 42-acre LAI industrial facility has manufactured products from titanium sheet metal, including golf clubs and products for the aeronautics industry, under the LAI name.

Past disposal practices have resulted in releases of various contaminants including trichloroethene (TCE), tetrachloroethene (PCE), acid wastes, oils, sludge, heavy metals, and other industrial plant wastes. Previous investigations in the vicinity of the Site suggest that releases of hazardous substances from the facility have affected Site soils and groundwater, surface water, and sediments downgradient of the Site. The Remedial Action (RA) is being conducted to hydraulically contain and to treat groundwater at the source area at the LAI Site and to prevent further migration of contaminated groundwater farther downgradient into OMP, Old Mill Creek and Port Jefferson Harbor.

Several investigations lead by Suffolk County and the New York State Department of Environmental Conservation (NYSDEC) concerning contamination of the LAI Site were conducted during the 1970s and 1980s. Fluoride, toluene, carbon tetrachloride and heavy metals were detected in samples collected from sumps, puddles, laboratory cesspools and surface water runoff at the LAI facility. Fluoride, nitrates, TCE, 1,1-dichloroethene (1,1-DCE), cis-1,2-DCE, PCE and heavy metals were detected in groundwater samples collected from adjacent residential wells. EPA provided bottled water to homes with private wells affected by contaminated groundwater and subsequently connected those homes to the public water supply as part of a removal action conducted in 1987. The NYSDEC, Region 1 Resource Conservation and Recovery Act (RCRA) Hazardous Substance Group oversaw a major drum removal action at the

Site in 1991. The Suffolk County Water Authority (SCWA), under contract with the NYSDEC, connected additional homes that were affected by groundwater contamination attributed to LAI to public water supplies throughout the 1990s. The NYSDEC conducted a limited Remedial Investigation (RI) in 1997; the results from this investigation revealed that CVOCs were detected in the groundwater and surface water. Based on the above investigations, the EPA prepared a hazard ranking system (HRS) report and proposed the Site for inclusion on the NPL on October 22, 1999. The Site was listed on the NPL on March 6, 2000.

In April 2003, NYSDEC performed a multi-media inspection of the LAI Site as a result of previous findings of contamination. The NYSDEC found violations of air, soil, solid waste, chemical bulk storage and hazardous waste regulations. LAI was ordered by the NYSDEC to cease production until all violations were resolved. Currently, the LAI industrial facility is not operating and most of the buildings are vacant and unused.

#### **1.4 Recent Site History and Progress**

EPA conducted an RI at the Site from August 2003 to May 2005 through the RAC program. The RI documented a CVOC plume and identified polychlorinated biphenyl (PCB)-contaminated soil at the Site. EPA personnel noted conditions at the Site, including, but not limited to, leaking vats and drums, that warranted removal action. EPA Region 2's Removal Action Branch addressed approximately 1,300 drums, containers and cylinders containing various flammable solids, acids, bases, gases and unknown compounds, and inventoried the laboratory area, identifying at least 390 containers. Most of the drums and containers were properly disposed off-site in October and November 2004. Approximately 13.5-tons of transformers and capacitors filled with suspected PCB liquid were removed from the Site and properly disposed as part of the removal action. During these actions, EPA personnel identified approximately 30 additional electrical transformers in several areas of the Site.

A Feasibility Study (FS) was completed in July 2006 by CDM Smith on behalf of the EPA and presented remedial alternatives for groundwater, soil, surface water and sediment. The Record of Decision (ROD) for the Site was signed on September 29, 2006 which addressed both soil and groundwater. The soil remedy has been addressed by another contract through excavation and removal of approximately 550 tons of contaminated soil from the Site in March 2011. The groundwater remedy included the installation of the two groundwater extraction and treatment systems at LAI and OMP, respectively.

The purpose of the selected groundwater remedy is to comply with the Remedial Action Objectives (RAOs) in the ROD, which are listed below:



- Prevent or minimize potential, current, and future human exposures including inhalation, ingestion and dermal contact with Volatile Organic Compound (VOC)-contaminated groundwater;
- Minimize the potential for off-site migration of VOC-contaminated groundwater;
- Restore groundwater to levels that meet NYS Groundwater and Drinking Water Quality Standards within a reasonable time frame; and
- Prevent or minimize VOC-contaminated groundwater from discharging into Port Jefferson Harbor.

**Section 2** of this report discusses the implementation of the groundwater remedy and more recent Site-related sampling events.

## **1.5 Groundwater Remedy**

TCE and PCE were detected at multiple depths in groundwater at concentrations exceeding the clean-up criteria, which are the NYSDEC Groundwater Quality Standards and New York State Department of Health (NYSDOH) Drinking Water Quality Standards. The groundwater remedy called for in the ROD specified plume / source containment and treatment of contaminated groundwater, which included:

- Construction of two groundwater extraction and treatment systems (one at the LAI facility and one within the downgradient plume area near OMP);
- In situ chemical oxidation (ISCO) application within the area of high TCE concentrations in groundwater at the LAI Site;
- Imposition of institutional controls;
- Development of a Site Management Plan (SMP);
- Long-term groundwater and surface water sampling to monitor changes in contaminant concentrations and distribution over time; and
- Investigation of vapor intrusion into structures within the plume area, and implementation of an appropriate remedy (such as sub-slab ventilation systems) based upon the investigation results.

The Remedial Design (RD) was completed by EPA for the LAI and OMP groundwater pump and treat systems and ISCO treatment at the LAI facility in April 2009. This was performed under the EPA Region 2 RAC 2 Contract No. 68-W-98-210, Work Assignment No. 173-RDRD-02PF. The goal of this design was to maintain hydraulic control of the source area by extracting and treating contaminated groundwater and to treat the area with the highest TCE concentrations (greater than 1 milligram per liter [mg/l]) with ISCO to reduce contaminant mass in groundwater.

In May 2009, EPA initiated the RA for the components specified in the RD under the Region 2 RAC 2 Contract No. EP-W-05-049, Work Assignment Nos. 234-RARA-02NS, 238-RARA-02NS and 338-RARA-02NS. Construction of the treatment facilities and ISCO injections were performed from December 2009 to September 2010. The groundwater pump and treat facility startup testing at LAI was performed in September 2010 and full operation and maintenance (O&M) activities for the on-site groundwater treatment system are ongoing.

The design and installation of the downgradient groundwater pump and treat facility at OMP was completed by the EPA Region 2 Removal Action Branch. Operations at the OMP facility started on August 22, 2011. In addition, indoor air testing at homes within the plume area and necessary mitigation measures were completed by EPA's Environmental Response Team (ERT) under the Response, Engineering and Analytical Contract (REAC).

Several recent upgrades were conducted at the downgradient OMP facility. A third extraction well was installed at the OMP facility (ERT-EW-6) and turned on in 2014. In April 2016, several components of the OMP treatment system, including all pipes, valves and fittings between the extraction wells and the start of the effluent discharge lines to the Old Mill Pond and Creek, were upgraded from three inch to six inch diameter parts. A 15 horsepower (HP) air stripper transfer pump (previously 7.5 HP) was installed to expand the capture zone of the distal end of the plume. The system flow capacity was increased from approximately 150 gallons per minute (gpm) to 225 gpm.

## **1.6 Hydrogeologic Setting**

To provide a framework for discussion of the sampling results in **Section 2** and **Section 3**, the following sections summarize the site-specific geology and hydrogeology. **Figure 2** shows monitoring well and surface water sample locations and Cross-section A-A'. Cross-section A-A' presents a north to south view of the lithology from the site to Port Jefferson Harbor. Cross-section A-A' was developed from the data generated from site borings and wells and includes potentiometric and groundwater analytical data (i.e. TCE concentration). **Figure 3** and **Figure 4** depict water levels, hydrogeology, lithology, and TCE data collected during groundwater sampling in May 2008 at the conclusion of the Pre-Design Investigation (PDI).

### **Geology**

Three aquifers are present beneath the LAI Site: the Upper Glacial Aquifer, the Magothy Aquifer, and the Lloyd Sand Member of the Raritan Formation (Koszalka 1984). The Magothy and underlying Lloyd Sand Aquifers are separated by the Raritan Clay member of the Raritan Formation. Consequently, water is interchanged much more readily between the Upper Glacial and Magothy Aquifers than between the Magothy and Lloyd Aquifers. The presence of the

Raritan Clay, directly underlying the Magothy Aquifer, is the lower boundary of the upper flow system. Investigations at the site have only focused on the Upper Glacial Aquifer and the top of the Magothy Aquifer.

### **Magothy Aquifer**

The Magothy Aquifer consists of Upper Cretaceous Magothy deposits to the top of the confining clay unit of the Raritan Formation. It consists of fine to medium sand with interbedded silts and clays. It extends between the bottom of the Upper Glacial Aquifer and the Raritan Clay. The aquifer has a fluvial-deltaic depositional origin, is wedge shaped, and thickens progressively towards the south and southeast. The Magothy deposits were unconformably overlain by a veneer of Pliocene and Pleistocene deposits, chiefly of glacial origin (Franke and McClymonds 1972). Deposition of the glacial deposits left the top of the Magothy Aquifer with discontinuous clay bodies in the deposits of the Pliocene-Pleistocene succession (Upper Glacial Aquifer), Smithtown Clay Unit, or Magothy Formation. This upper portion of the Magothy will be referred to as the reworked Magothy. As seen on Cross-section A-A' (**Figure 4**), the top of the Magothy Aquifer, which underlies the Upper Glacial Aquifer, was observed at a depth of 324 feet below ground surface (bgs) (99 feet below mean sea level [msl]) in stratigraphic boring ST-03. This unit was also observed in the boring for MPW-09 at a depth of 108 feet bgs (98.34 feet below msl).

### **Upper Glacial Aquifer**

The Site is directly underlain by the Pleistocene-age Harbor Hill moraine, a remnant of the most recent glaciation. The moraine is up to 70 feet thick and composed primarily of sand and gravel with occasional lenses of silty sand and silt. The moraine deposits thin to the south and to the north. Cross-section A-A' (**Figure 4**) shows the extent and lithology of the Upper Glacial Aquifer underlying the LAI industrial facility as compared to downgradient of the Site.

At the LAI industrial facility, the moraine deposits are underlain by well graded fine to medium grained sands and silts with occasional layers of silt and clay or sand and gravel. The clay-rich layers observed in this zone were thin and discontinuous, likely derived from Magothy formation materials (or Smithtown Clays), reworked and then re-deposited during the creation of the local moraine. The localized glacial activity at the Site has reworked the upper layers of the Magothy Formation and left very complex heterogeneous glacial deposits at the base of the Upper Glacial Aquifer; this material is not differentiated from the reworked Magothy material described above.

During the PDI, an aquifer test was performed on a test well in the area near well MPW-02. The upper 60 feet (180-240 feet bgs) of the aquifer was screened by the test well and piezometers

were also screened within the zone from 205 to 225 feet bgs. The lithology observed in the screened zone was predominantly a mixture of fine to medium grained sands with silt.

## **1.7 Hydrogeology**

### **Groundwater Flow**

The Upper Glacial Aquifer is generally under unconfined conditions and the upper limit is the water table. Synoptic groundwater elevation data collected in June 2016 was used to prepare a potentiometric surface map for the Upper Glacial Aquifer from the LAI Site to the Port Jefferson Harbor (**Figure 5**).

The potentiometric surface map shows that groundwater flow in the vicinity of the LAI industrial facility is to the north towards Port Jefferson Harbor. There is a downward gradient measured under the moraine, but moving to the north and off of the moraine towards Port Jefferson Harbor there is a significant upward hydraulic gradient driving groundwater towards the water table to discharge at Port Jefferson Harbor. The Upper Glacial Aquifer is under artesian conditions at MPW-09, which is near the OMP facility and Old Mill Pond.

### **Estimates of Hydraulic Conductivity and Transmissivity**

During the RI/FS, EPA performed a series of packer tests at the Site to estimate hydraulic conductivity and transmissivity of the aquifer. Packer tests are used to isolate vertical sections of the well with inflatable bladders to define the vertical distribution of water quality parameters and hydraulic conductivity. Tests were performed at well MPW-07, located at the LAI industrial facility; at well MPW-10 located approximately 1,700 feet downgradient of the LAI industrial facility; and at well MPW-09, near Port Jefferson Harbor. Hydraulic conductivity values were calculated to range from <0.02 feet/day to 89 feet/day, and transmissivity estimates ranged from 12 to 22,200 gallons per day/foot (or 2 to 3,000 feet<sup>2</sup>/day). Lithologic logs indicate that the saturated portion of the Upper Glacial and Magothy Aquifers at the Site, where the multi-port wells were screened, generally consisted of a layer of fine to medium sand overlying a silty sand layer. The aquifer test performed as part of the PDI near the LAI extraction wells estimated hydraulic conductivity ranging from 31 to 63 feet/day and transmissivity estimates ranged from 4,400 to 8,800 feet<sup>2</sup>/day.

The wide range of hydraulic conductivity values is not unexpected considering the heterogeneity of the glacially deposited material encountered in the borings. The results of the 48-hour constant rate test represent the mean hydraulic properties of the material between the pumping well and the piezometers used to measure drawdown. Therefore, the estimates derived from the 48-hour

constant rate test are considered to be more representative of the bulk hydraulic properties of the aquifer in that area.

## 1.8 Summary of Area-Wide Contamination in 2008

The TCE plume originates from the vicinity of wells MPW-02 and MPW-07 at the Site and moves downgradient to the northwest. In the vicinity of well MPW-10, approximately 1,000 feet from the western Site boundary, groundwater flow and the TCE plume bend to the north toward Port Jefferson Harbor. The hydraulic gradient near well MPW-09 indicates that groundwater is moving upward as it moves northward in the vicinity of this well. This upward gradient causes groundwater to discharge at the surface in the vicinity of OMP. The surface water sample results from OMP collected during the RI in October 2003 showed TCE concentrations ranging from 180 micrograms per liter ( $\mu\text{g/l}$ ) to 340  $\mu\text{g/l}$  and cis-1,2-DCE concentrations ranging from 9.2 to 17  $\mu\text{g/l}$ . Refer to **Figure 3** for plume location and isoconcentration contours, as interpreted based on data collected during the 2008 comprehensive sampling event.

The highest concentrations of TCE in 2008, approximately 1,100  $\mu\text{g/l}$ , were measured in the groundwater sampled at well MPW-07 from a depth of approximately 190 to 230 feet bgs. Residual subsurface soil contamination was assumed to still exist in low permeability zones serving as sources for groundwater contamination based on the following knowledge:

- High TCE concentrations in groundwater were detected at the Site more than 20 years after releases of the contaminants had stopped;
- Only a limited number of deep borings/monitoring wells had been advanced at the Site; and
- Residual soil contamination generally exists in sporadic, thin layers.

## **2.0 2016 COMPREHENSIVE SAMPLING EVENT AND RESULTS**

### **2.1 2016 Comprehensive Sampling Event Field Investigation Procedures**

Groundwater and surface water samples were collected to measure the performance of the two treatment systems. Analytical results are used to monitor contaminant levels over time and determine whether the capture zone is maintained by the extraction wells. Both groundwater quality and water level data were collected from the wells summarized in **Table 1**.

#### **2.1.1 Sampling Methodology**

HDR conducted the comprehensive annual sampling event from June 6 to 17, 2016. During this time, water quality parameters were measured including temperature, pH, oxidation reduction potential (ORP), specific conductance, turbidity and dissolved oxygen (DO) (refer to **Table 2**). A total of 71 groundwater samples were collected from 47 locations, including eight extraction wells, nine multiport wells, four piezometers, and 26 monitoring wells. Six surface water samples were collected from six locations within the Old Mill Pond and the Port Jefferson Harbor. A total of 29 quality assurance / quality control (QA/QC) samples were collected as part of the comprehensive annual sampling event. The performance of both groundwater treatment facilities is monitored routinely, which includes monthly system process water sampling for target compound list (TCL) VOCs and metals. Eleven groundwater samples were collected from the treatment systems as part of the June 2016 monthly sampling event and are presented in the attached tables for reference. A synoptic round of groundwater level measurements was collected on June 6, 2016 which included 81 readings. The data is presented in **Table 3** and was used to prepare a potentiometric surface map for the Upper Glacial Aquifer at the LAI Site and north of the Site to the Village of Port Jefferson (**Figure 5**).

##### **2.1.1.1 Monitoring Wells**

Sampling was conducted using EPA methods. Conventional wells were purged with a Grundfos Rediflow 2 submersible pump or a bladder pump and sampled according to EPA low-flow techniques, minimum drawdown groundwater sampling procedures. Multi-port wells were purged and sampled using Nitrogen-filled bladder pumps that are included as part of the Waterloo system in accordance with manufacturer instructions. Additionally, on-site field parameters were collected by a flow-through cell including DO, temperature, conductivity, pH, turbidity and ORP. Groundwater samples were analyzed for trace-level TCL VOCs and select wells were also analyzed for the semivolatile organic compound (SVOC) 1,4-dioxane by the EPA Contract Laboratory Program (CLP) by KAP of The Woodlands, Texas. Select wells and surface water sample locations are being analyzed for 1,4-dioxane on a biannual basis. Some of the wells were selected based on historical detections of 1,1,1-TCA (ERT-EW-1, -2, -3, ERT-MW-2B, and MPW-09) while others were to serve as a subset of network monitoring wells used to represent potential distribution of 1,4-dioxane contamination throughout the plume.

Analytical samples were shipped under proper management and Chain of Custody procedures to the laboratory. Sample handling and custody was performed according to the EPA OSWER 9240.0-44, CLP Guidance for Field Samplers (EPA-540-R-014-013, October 2014). Scribe was used for sample custody and sample management documentation.

#### **2.1.1.2 Surface Water**

Surface water samples were collected with stainless steel bailers at locations within the Old Mill Pond and at Port Jefferson Harbor (refer to **Figure 8**). The samples were also analyzed for TCL VOCs and 1,4-dioxane by KAP and handled, shipped and managed in the same manner as the groundwater samples, as discussed above. Water quality data was collected including DO, temperature, conductivity, pH, turbidity and ORP. These measurements are summarized in **Table 2**.

#### **2.1.2 Quality Control / Quality Assurance Samples**

Groundwater and surface water sampling followed standard operating procedures presented in the EPA-approved Quality Assurance Project Plan (QAPP) dated April 2016 (Revision 3). QA/QC samples collected included field duplicates (1 per 20 samples collected), trip blanks (daily, for VOCs only), equipment blanks (minimum 5% of samples collected) and field blanks (daily). A total of 32 QA/QC samples were collected for this event, including field duplicates, equipment blanks, field blanks and trip blanks, three of which were collected as part of the monthly compliance sampling.

#### **2.2 Decontamination and Investigation Derived Waste (IDW)**

Decontamination of personnel and equipment was conducted for all non-dedicated materials that came in contact with potentially hazardous materials to prevent cross-contamination of samples. Personnel decontamination procedures were implemented to prevent worker exposure to contaminants as explained in the site-specific Health and Safety Plan (HASP). Waste material generated during the annual sampling event included decontamination wash water, purged groundwater and personal protective equipment (PPE). Purge water and decontamination water were transported to the LAI and OMP groundwater treatment facilities in enclosed buckets or tubs. The water was treated through the air stripper and GAC vessels prior to discharge, in accordance with the Waste Management Plan for the Site. The PPE was disposed of as municipal waste.

#### **2.3 2016 Comprehensive Sampling Event Results**

Well construction information for all monitoring wells sampled is provided in **Table 1**. Groundwater and surface water sampling locations are shown on **Figure 2**. Analytical results from groundwater samples were compared to criteria from the NYSDOH Drinking Water

Quality standards (Part 5, Subpart 5.1, dated November 2011) and the NYSDEC for Class GA Groundwater (Technical & Operational Guidance Series (TOGS) 1.1.1, June 1998). VOC NYSDOH standards are the same as the NYSDEC Standards for class GA Groundwater, with the exception of chloroform. In this instance, the lower NYSDEC Standard for class GA Groundwater of 7 µg/l was used. For 1,4-dioxane, a standard of 0.78 µg/L was used per EPA Human Health Risk Assessment screening purposes for both groundwater and surface water results. **Table 4** and **Table 5** depict the groundwater and surface water analytical sampling results from the June 2016 event for site-related VOCs and 1,4-dioxane, respectively. Exceedances above screening criteria are highlighted in the tables.

## 2.4 Sample Results

The site-related VOCs are primarily TCE and PCE. The following VOCs are degradation products of TCE and PCE and have been detected site-wide at low concentrations historically: 1,1,1-trichloroethane (1,1,1-TCA), cis-1,2-DCE, 1,1-DCE, 1,1-dichloroethane (1,1-DCA), chloroform, and vinyl chloride (VC). Results for 1,4-dioxane are presented alongside the site-related VOCs in **Tables 4 and 5**.

Results for QA/QC samples are included in the Data Usability Report in **Appendix A**. Complete data tables for all VOCs, 1,4-dioxane and associated QA/QC sampling are included in **Appendix B**.

### 2.4.1 Groundwater Sample Results

Groundwater sampling results for site-related VOCs and 1,4-dioxane for the comprehensive sampling event are provided in **Table 4** and are discussed below:

- TCE was detected in 42 of the 82 groundwater samples with concentrations ranging from 0.8 µg/l to 470 µg/l. Concentrations of TCE in 32 of the samples collected exceeded the screening criteria of 5 µg/l. The large majority of these results were diluted samples and qualified “D”; two of the results were qualified “K” as proportional to the dilution factor and may be exaggerated. The highest concentration of TCE, 470 µg/l, was a diluted sample and detected in the groundwater sample collected from MW-ISCO-4.
- PCE was detected in 27 of the 82 groundwater samples with concentrations ranging from 0.37 µg/l, estimated below the quantitation limit, to 10 µg/l. Concentrations of PCE in seven of the samples collected were greater than or equal to the screening criteria of 5 µg/l. The highest concentration of PCE, 10 µg/l, was detected in the groundwater sample collected from MPW-10-A.



- The following compounds were detected in one or more samples but concentrations were less than their respective screening criteria: 1,1,1-TCA, 1,1-DCA, 1,1-DCE, chloroform, and cis-1,2-DCE.
- VC was not detected above the analytical reporting limit in any of the groundwater samples collected.
- 1,4-dioxane was detected in four of the 14 groundwater samples with concentrations ranging from 0.12 µg/l to 0.26 µg/l. All detections were below the screening criterion of 0.78 µg/l. The highest concentration of 1,4-dioxane, 0.26 µg/l, was detected in the groundwater sample collected from MW-ISCO-4.

Groundwater sample results for TCE from the comprehensive sampling event are presented in plan view with isoconcentration contours in **Figure 6**. The highest TCE concentration at each multi-port well location was used to create the isoconcentration contours. Cross-section A-A' in **Figure 7** includes the area from the LAI Site to Port Jefferson Harbor and the groundwater sample results for TCE from the 2016 comprehensive sampling event. Representative TCE, PCE, cis-1,2-DCE, and VC groundwater sample results are included in the cross-section. These wells were determined to be most representative of the approximated centerline of the plume. **Figure 7** was overlain with the May 2008 PDI sampling event for comparison and evaluation purposes. The groundwater sample results from the comprehensive sampling event were compared to results from the May 2008 PDI sampling event as well as the June 2015 comprehensive sampling event in **Section 3** of this report. Plots of total concentrations of site-related VOCs versus time (**Figures 9 through 12**) were prepared for select wells, MW-PD-12, MW-PD-14, MW-PD-16 and MPW-09 (wells along plume centerline), which are also discussed in **Section 3** of this report.

#### 2.4.2 Surface Water Sample Results

Six surface water samples were collected for VOCs and 1,4-dioxane, including four fresh water samples from Old Mill Pond and two salt water samples from Port Jefferson Harbor. The surface water sample results for the 2016 comprehensive sampling event are provided in **Table 5** and are discussed below:

- TCE was detected in five of six surface water samples with concentrations ranging from 0.94 µg/l to 19 µg/l. Concentrations of TCE in two of the samples collected exceeded the screening criteria of 5 µg/l. The highest concentration of TCE, 19 µg/l, was detected in the sample from SW-07.
- PCE was detected in one of six surface water samples with a concentration of 0.33 µg/l. This sample was collected at SW-07 (located within Old Mill Pond) and is below the screening criteria of 5 µg/l.
- Cis-1,2-DCE was detected in three of the six surface water samples with concentrations ranging from 0.53 µg/l to 36 µg/l. Concentrations detected in SW-06 (14 µg/l, estimated

below the quantitation limit and biased low) and SW-07 (36 µg/l, diluted) exceeded the screening criteria of 5 µg/l.

- VC was detected in two of the six surface water samples, SW-06 (2 µg/l) and SW-07 (3.10 µg/l). The concentration detected in the sample collected from SW-07 also exceeded the screening criteria of 2 µg/l.
- 1,1-DCA, 1,1-DCE, 1,1,1-TCA and chloroform were not detected above the analytical reporting limit in any of the surface water samples collected.
- 1,4-dioxane was detected in two of six surface water samples at concentrations of 0.22 µg/l and 0.29 µg/l in the samples collected from locations SW-08 and SW-05, respectively. These locations are located with the Old Mill Pond. All detections were below the screening criterion of 0.78 µg/l.

Surface water sample results for TCE from the comprehensive sampling event are presented in **Figure 8**.

## 2.5 Data Usability

A Data Usability Report was prepared to verify conformance with the data quality indicators (DQIs) specified in the EPA-approved QAPP, Revision 3 (HDR April 2016) and is provided in **Appendix A**. Sample data were evaluated for precision, accuracy, representativeness, comparability, sensitivity and completeness. Samples were analyzed through the CLP by KAP and validated by EPA Region 2 personnel.

The results provided by the CLP laboratory are considered definitive data and underwent a systematic data validation to provide assurance that the data were adequate for its intended use. The validation was performed based on an evaluation of project objectives, method-specific QA/QC information (such as holding times, calibration records, laboratory- and field-supplied blanks, duplicate precision, and surrogate and spike recovery), relevant sections of the EPA Region 2 Data Validation Standard Operating Procedures (SOPs) [HW-34 (Rev3) and HW-35 (Rev2) for VOA and SVOA, respectively], relevant sections of the EPA National Functional Guidelines for Organic Data Validation, and/or the best professional judgment of the validator. Validation was performed by EPA personnel with the appropriate training and/or experience in performing data validation for the analyses of interest associated with the project. Qualifiers (as appropriate) were added to the data based on the results of the validation.

Upon validation, several of the sample results were qualified “J” with a bias low or were qualified “U” due to contamination in the QC samples or inefficiencies with the laboratory. The data qualified was primarily low-level detections at or near the CRQL. Two results were qualified “K” indicating that the reported concentration value is proportional to the dilution factor and may be exaggerated. One result each for 1,1,2-trichloroethane, cis-1,3-dichloropropene and trans-1,3-dichloropropene were qualified “R” and are unusable due to the

quality of the data generated because certain criteria were not met. The analyte may or may not be present in the associated samples. These data are presented in the data tables in Appendix B for reference; however, their associated values were not used in calculations nor applied. These parameters are not critical to support decision making for the Site so the rejected data does not significantly impact the data set. No sample results were rejected for monthly performance and compliance sampling.

The Data Usability Report focused only on the samples included in the comprehensive sampling event. The data generated during the 2016 comprehensive sampling event are considered definitive data generated under an EPA-approved QAPP, following EPA methods and validated according to EPA Region 2 standard operating procedures. The results of the data usability report indicate that sufficient data were collected to obtain a complete and usable data set.

Fourteen of the 16 field and equipment blanks were contaminated with one or more low level concentrations of VOCs. Also, eight of the 10 trip blanks were contaminated with low level concentrations of VOCs including 2-butanone, acetone, bromomethane, toluene and / or TCE. In subsequent comprehensive annual sampling events, further precautions will be taken including preparation and storage of the de-ionized water used to prepare the blanks and the sample containers in a confirmed non-contaminated environment. New supplies of de-ionized water will be purchased in glass amber containers (instead of Low-Density Polyethylene [LDPE]) and the water selected will have the lowest TCE contamination certification available.

## **2.6 Water Quality Parameters**

Water quality parameters are summarized in **Table 2**. In 2016, the following measurements were collected:

- Area-wide DO levels ranged from 0.41 mg/l in sample MPW-09-C to 12.83 mg/l in sample PZ-06;
- Area-wide pH readings ranged from 5.18 in sample ERT-EW-3 to 8.12 in MPW-01-C;
- Area-wide ORP levels ranged from -60 millivolts (mV) in sample MPW-09-C to 295 mV in sample IW-ISCO-10 (at the source area). Most samples had positive ORP levels suggesting an oxidative environment.

### 3.0 GROUNDWATER AND SURFACE WATER CONTAMINATION OVER TIME

#### 3.1 Extent of TCE Groundwater Plume over Time

The extent of the contamination plume is separated in two regions, associated with the two ongoing groundwater pump and treat facilities. The one region is at the LAI facility where a treatment system is operating for source control. The second region includes the plume downgradient from the source (LAI Facility) and extends to Port Jefferson harbor. This region is associated with the Old Mill Pond (OMP) treatment system that was installed for hydraulic control. The contaminant plume was approximately 6,000 feet long and estimated to be about 1,000 feet wide at its widest point. The pre-remediation groundwater sampling data collected during the PDI is being used as a baseline for comparison to TCE concentrations in the plume over time and to monitor the efficiency of the treatment systems.

The extent of TCE contamination at the LAI Site was determined during the PDI sampling event completed in May 2008 which concluded that the TCE plume emanated from the vicinity of MPW-07 and MPW-02 at the LAI industrial facility and had migrated over time downgradient to the northwest (**Figure 3**). As contaminated groundwater moved laterally towards the northwest, it also moved vertically downward due to the hydraulic gradient evident at MPW-07, MPW-02, and MPW-04 (**Figure 4**). The plume continued northward toward Port Jefferson Harbor as shown in cross-section A-A' (**Figure 4** and **Figure 7**). Another area of concern in the plume is the area of MW-PD-16, which is located downgradient of the LAI facility. TCE concentrations in this area were higher and also approximately 100 feet deeper than at the source.

The TCE plume configuration defined by data from the 2016 comprehensive sampling event has changed since the previous annual sampling event. Due to the operations of the treatment systems, the current plume appears to have separated into the two regions discussed earlier. The LAI source area region has maximum TCE concentrations of 470 µg/l (in the groundwater sample collected from MW-ISCO-4). When compared with the 2008 results, the 2016 groundwater sampling results indicate that the area of high concentrations at this source area, near MPW-07 and MPW-02, has reduced in size; maximum area-wide TCE concentrations have decreased from 1,100 µg/l (MPW-07) in 2008 to 470 µg/l in 2016 (MW-ISCO-4).

The second region of the plume generally lies from the vicinity of MW-PD-12 towards Port Jefferson Harbor, near the OMP facility. TCE concentrations in groundwater samples collected at ERT-MW-2B (on the mid-western side of the plume) have decreased from 240 µg/l in 2015 to 120 µg/l in 2016. TCE concentrations in groundwater samples collected at ERT-MW-1B (on the mid-eastern side of the plume) have decreased from 21 µg/l in 2015 to 13 µg/l in 2016. TCE concentrations in groundwater samples collected farther west, in ERT-MW-3 and MPW-05, and farther east, in MPW-06-A and -B, MW-5A/B, MW-4A/B, were non-detect. These data suggests that the width of the plume has continued to narrow from 2008 to 2016, as shown in **Figure 6**. The reduction in concentrations of VOCs in groundwater samples collected near the OMP

facility is likely primarily due to the remediation of the source contamination, and assisted by the increased capacity of the treatment system and the installation of ERT-EW-6. Other minor changes in this portion of the study area can be attributed to the general slight western movement of the groundwater flow.

As a result of the addition of a third extraction well and increased pumping capacity of the OMP facility, the slug of TCE that was previously centered on MW-PD-16 (as shown in the 2012 and 2013 sampling events) appears to continue migrating north. Historic total VOC concentrations detected in groundwater samples collected from MW-PD-16 are shown in **Figure 11**, which shows a general decrease in contamination at this location. In 2016, the TCE concentration in the groundwater sample collected at this well was 200 µg/l.

Based on the 2008 findings, an upward hydraulic gradient has been measured near MPW-09, indicating that contaminated groundwater is moving upward as it moves northward in the vicinity of this well. This upward gradient causes groundwater to discharge at the surface near OMP.

Based on the findings from 2014 to 2016, operation of ERT-EW-6 appears to have some direct influence on the MPW-09 cluster. Overall, TCE concentrations in groundwater samples collected at MPW-09 have decreased from a maximum of 430 µg/l in 2015 to 260 µg/l in 2016. TCE concentrations in groundwater samples collected from MPW-09-A, -B, -C, -D and -E in 2015 were 17, 140, 430, 200 and 4.5 µg/l, respectively, and in 2016, TCE concentrations were 13, 260, 43, 210 and 2.4 µg/l, respectively, at these ports. In 2014, the groundwater gradient in ports MPW-09-C and MPW-09-D had reversed; in 2015, an upward hydraulic gradient was restored in MPW-09 and current data indicates a reversal of groundwater gradient in ports MPW-09-B and MPW-09-C. As shown in **Figure 12**, TCE concentrations in groundwater samples collected from all ports at MPW-09 have generally decreased since 2008. This is expected to be a result of the ongoing operation of OMP groundwater pump and treat systems.

Concentrations of TCE in both the LAI and OMP treatment system extraction wells have decreased overtime. Contaminant concentration reduction over time may be biased low due to dilution which occurs during extraction well pumping. Concentration trends in the extraction wells at both facilities are monitored on a monthly basis.

### **3.2 Changes in TCE Concentrations over Time**

TCE concentrations in surface water have decreased over time as well. In 2014, the highest TCE concentration from a surface water sample was 220 µg/l and was observed at SW-06. In 2016, the highest TCE concentration from a surface water sample was 19 µg/l and was observed at SW-07. Detectable concentrations of cis-1,2-DCE and VC were observed in multiple surface water samples from Old Mill Pond during both the 2014 and 2016 annual comprehensive sampling events and have also decreased in concentration over time. VOC concentrations

observed in surface water samples are expected to continue to decrease, primarily due to the increased flow capacity of the OMP treatment facility. The upgrades performed at OMP in April 2016 were calculated to extend the capture zone of the plume; therefore, less contamination is expected to reach Port Jefferson Harbor and Old Mill Pond. This is supported by the surface water sample analytical data collected during 2016. Five screening criteria exceedances of cis-1,2-DCE, TCE and VC were observed in surface water samples collected at Old Mill Pond and no exceedances of screening criteria were found in surface water samples collected at the Port Jefferson Harbor in June 2016.

Overall, total concentrations of site-related VOCs in groundwater have decreased from the PDI sampling event in May 2008 to the comprehensive sampling event in June 2016. Decreases in TCE concentrations accounted for most of the observed reduction in total VOCs (**Figure 3** and **Figure 6**). Degradation products of reductive dechlorination, such as cis-1,2-DCE and VC, have not changed significantly over time.

The TCE concentration detected in the groundwater sample collected from MW-ISCO-2, near the LAI industrial facility, during the 2016 sampling event was 440 µg/l which has decreased from 810 µg/l in 2015. This decline in TCE concentration is likely attributed to ongoing pump and treat operations.

TCE was detected in a groundwater sample collected in May 2008 was observed in MPW-07 (now defective) at a concentration of 1,100 µg/l (**Figure 3**). In contrast, the concentration of TCE at MW-ISCO-5 was 420 µg/l in 2016. These wells are both located at the source area of the plume within the LAI industrial facility, where ISCO was completed in August 2010 and pump and treat remedial activities are being conducted. Similarly at MPW-02, located just downgradient of MW-ISCO-5, concentrations of TCE in samples were non-detect in 2016 at all ports. The decrease in concentrations of total VOCs in wells MW-ISCO-5 and MPW-02 indicate that the ISCO treatment in this area combined with the pump and treat system have been effective at reducing concentrations of VOCs in groundwater.

The TCE concentrations detected at the LAI industrial facility indicate that the LAI extraction wells are capturing the source plume and splitting the plume into two parts as demonstrated by the 5 µg/l isoconcentration contour in **Figure 6**. The source contamination is being contained by the operation of the LAI extraction wells. A separate slug that is beyond the influence of these extraction wells is moving north, towards OMP and is captured by the OMP extraction wells. Plots of total site-related VOC concentrations over time (**Figures 9 to 12**) were prepared for select wells, MW-PD-12, MW-PD-14, MW-PD-16 and MPW-09 (wells along the plume centerline), respectively. The data set used to prepare these time-series graphs is included in **Appendix C**. Historical data and time-series graphs for all monitoring wells are presented in **Appendix D**.

Total concentrations of VOCs increase as groundwater flows to the north. (downgradient), as was initially observed at MW-PD-12 prior to ISCO treatment (August 2010). Since that time concentrations have decreased to approximately 96 µg/l in June 2016 (**Figure 9**). The peak concentration followed by a steady decrease may represent the movement of a mass of VOCs in groundwater past this well as groundwater flows downgradient from the LAI industrial facility. The concentration of total VOCs at MW-PD-14 decreased from 358 µg/l in June 2008 to approximately 102 µg/l in June 2016 (**Figure 10**). This result suggests that concentrations of total VOCs are decreasing slowly in the vicinity of this well due to the slug of VOC mass migrating past the well.

At the northern end of the plume, TCE concentrations also have decreased since 2008 (**Figure 3** and **Figure 6**). This can be seen in the results for MW-PD-16, where concentrations of total VOCs decreased from 1,933 µg/l in May 2008 to approximately 206 µg/l in June 2016 (**Figure 11**). This suggests that the mass of VOCs may have traveled downgradient toward the OMP extraction wells and MPW-09 since 2008. Concentrations of total VOCs at well MPW-09, located near OMP, have generally been decreasing at all ports over time and the hydraulic gradient has been in a slight upward direction.

### 3.3 Changes in 1,4-Dioxane Concentration Over Time

At the request of the USEPA, select groundwater and surface water samples are analyzed for 1,4-dioxane biannually in addition to TCL VOCs. During the June 2014 annual sampling event, the highest detected concentrations of 1,4-dioxane in groundwater and surface water were 1.3 µg/L in a sample collected from MPW-01-C, and 0.61 µg/L in a sample collected from Old Mill Pond at SW-07, respectively. During the June 2016 annual sampling event, the highest detected concentrations of 1,4-dioxane in groundwater and surface water were 0.26 µg/L in a sample collected from MW-ISCO-04, and 0.29 µg/L in a sample collected at SW-05, respectively. 1,4-Dioxane concentrations in both groundwater and surface water samples have overall decreased since the previous SVOC sampling event.

### 3.4 Groundwater Chemistry

If sufficient electron donors and suitable bacteria are present, chlorinated compounds such as PCE and TCE can be progressively dechlorinated via reductive dechlorination. In this process, the chlorine atoms are replaced by hydrogen, resulting in compounds with reduced carbon and less chlorine. Thus, PCE degrades to TCE which subsequently degrades to DCE, with the “cis” isomer (cis-1,2-DCE) predominant over the “trans” isomer (trans-1,2-DCE). As reductive dechlorination proceeds, VC is produced, and, ultimately, ethene and carbon dioxide as shown below (Chapelle 1993; Wiedemeier et al. 1998).



The relatively high DO levels and positive ORP levels observed in most groundwater samples collected during the comprehensive sampling event indicate an oxidative environment in the aquifer, which does not support active reductive dechlorination. In addition, low and/or non-detect concentrations of the degradation products of reductive dechlorination in groundwater, such as cis-1,2-DCE and VC, are consistent with limited reductive dechlorination. These conditions are consistent with those observed in groundwater during the RI, which also indicated limited reductive dechlorination of TCE. This suggests that decreases in contamination are primarily due to remedial activities performed at the Site, including source mass removal and operation of two groundwater pump and treat systems, as well as dilution and dispersion.



#### 4.0 REFERENCES

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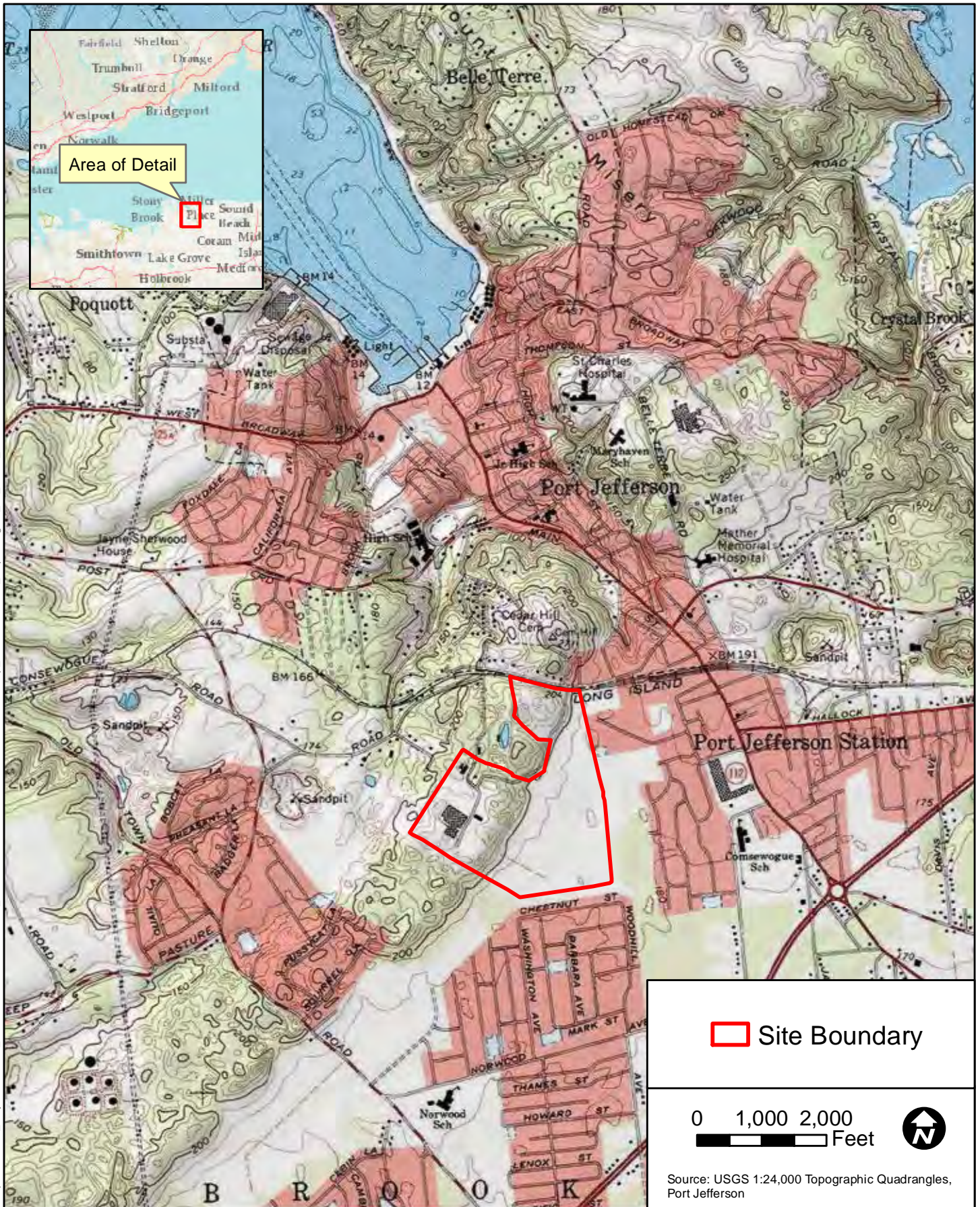
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## FIGURES

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LAWRENCE AVIATION INDUSTRIES SITE  
PORT JEFFERSON STATION, NY

Figure 1  
Site Location Map  
October 2016

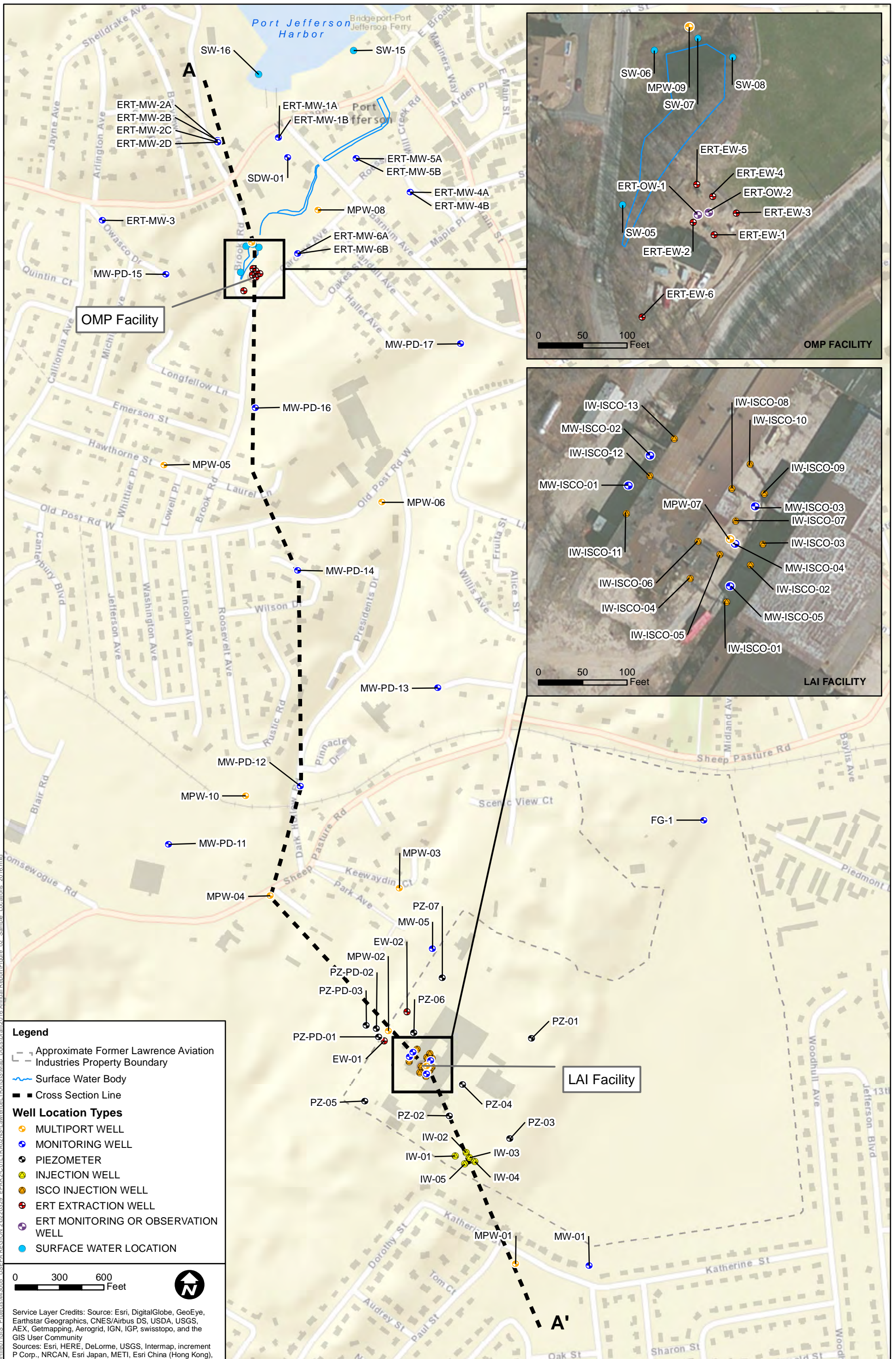
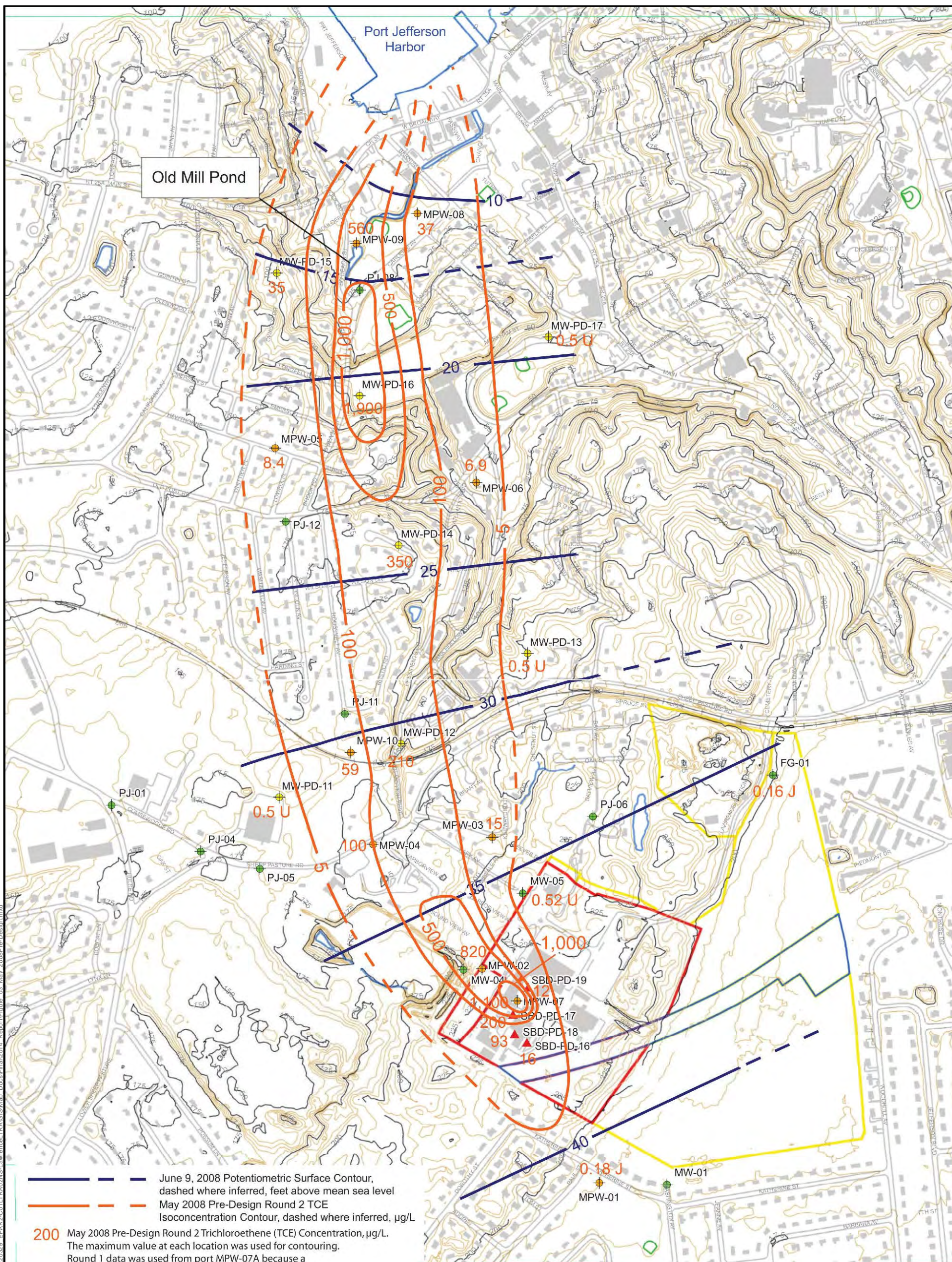


Figure 2  
Monitoring Well / Surface Water Sample Locations and Cross Section Location Map  
October, 2016

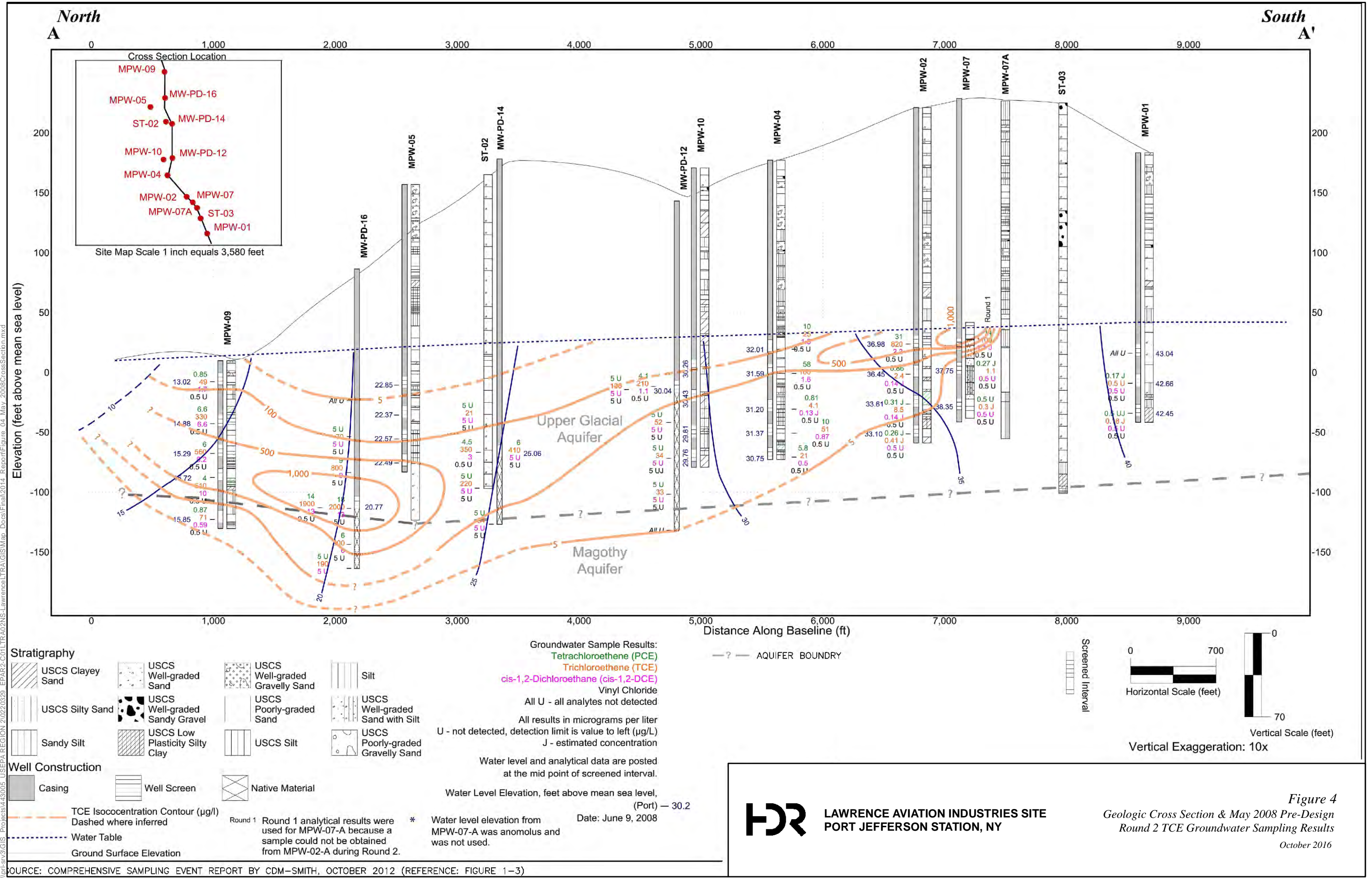


- - - - - June 9, 2008 Potentiometric Surface Contour, dashed where inferred, feet above mean sea level  
 - - - - - May 2008 Pre-Design Round 2 TCE Isoconcentration Contour, dashed where inferred, µg/L  
 200 May 2008 Pre-Design Round 2 Trichloroethene (TCE) Concentration, µg/L. The maximum value at each location was used for contouring. Round 1 data was used from port MPW-07A because a sample could be obtained from this port during Round 2 due to a pump malfunction.  
 U Not detected, value to left is detection limit  
 J Estimated Concentration  
 µg/L micrograms per liter

**Legend**  
**Remedial Design Locations**  
 ● Monitoring Well  
 ▲ Soil Boring  
**Remedial Investigation Locations**  
 ● Multipoint Well  
**Existing Locations**  
 ● Existing Well 2003  
 ■ LAI Facility  
 ■ Outlying Parcels  
 ■ NYDOT ROW  
 ■ Railroad  
 ■ Buildings  
 ■ 5 Foot Topographic Contour  
 ■ 25 Foot Topographic Contour  
 Note: Topographic elevation data is in Feet above Mean Sea Level (datum is NAVD88)

SOURCE: COMPREHENSIVE SAMPLING EVENT REPORT BY CDM-SMITH. OCTOBER 2012 (REFERENCE: FIGURE 1-4)





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- Stratigraphy**
- USCS Clayey Sand
  - USCS Silty Sand
  - Sandy Silt
  - USCS Well-graded Sand
  - USCS Well-graded Sandy Gravel
  - USCS Low Plasticity Silty Clay
  - USCS Well-graded Gravelly Sand
  - USCS Poorly-graded Sand
  - USCS Silt
  - USCS Well-graded Sand with Silt
  - USCS Poorly-graded Gravelly Sand
  - Silt
- Well Construction**
- Casing
  - Well Screen
  - Native Material
- Groundwater Sample Results:**  
 Tetrachloroethene (PCE)  
 Trichloroethene (TCE)  
 cis-1,2-Dichloroethane (cis-1,2-DCE)  
 Vinyl Chloride  
 All U - all analytes not detected  
 U - not detected, detection limit is value to left (µg/L)  
 J - estimated concentration
- Water level and analytical data are posted at the mid point of screened interval.
- Water Level Elevation, feet above mean sea level, (Port) — 30.2  
 Date: June 9, 2008
- Round 1 Round 1 analytical results were used for MPW-07-A because a sample could not be obtained from MPW-02-A during Round 2.
- \* Water level elevation from MPW-07-A was anomolus and was not used.

Groundwater Sample Results:  
 Tetrachloroethene (PCE)  
 Trichloroethene (TCE)  
 cis-1,2-Dichloroethane (cis-1,2-DCE)  
 Vinyl Chloride  
 All U - all analytes not detected  
 U - not detected, detection limit is value to left (µg/L)  
 J - estimated concentration

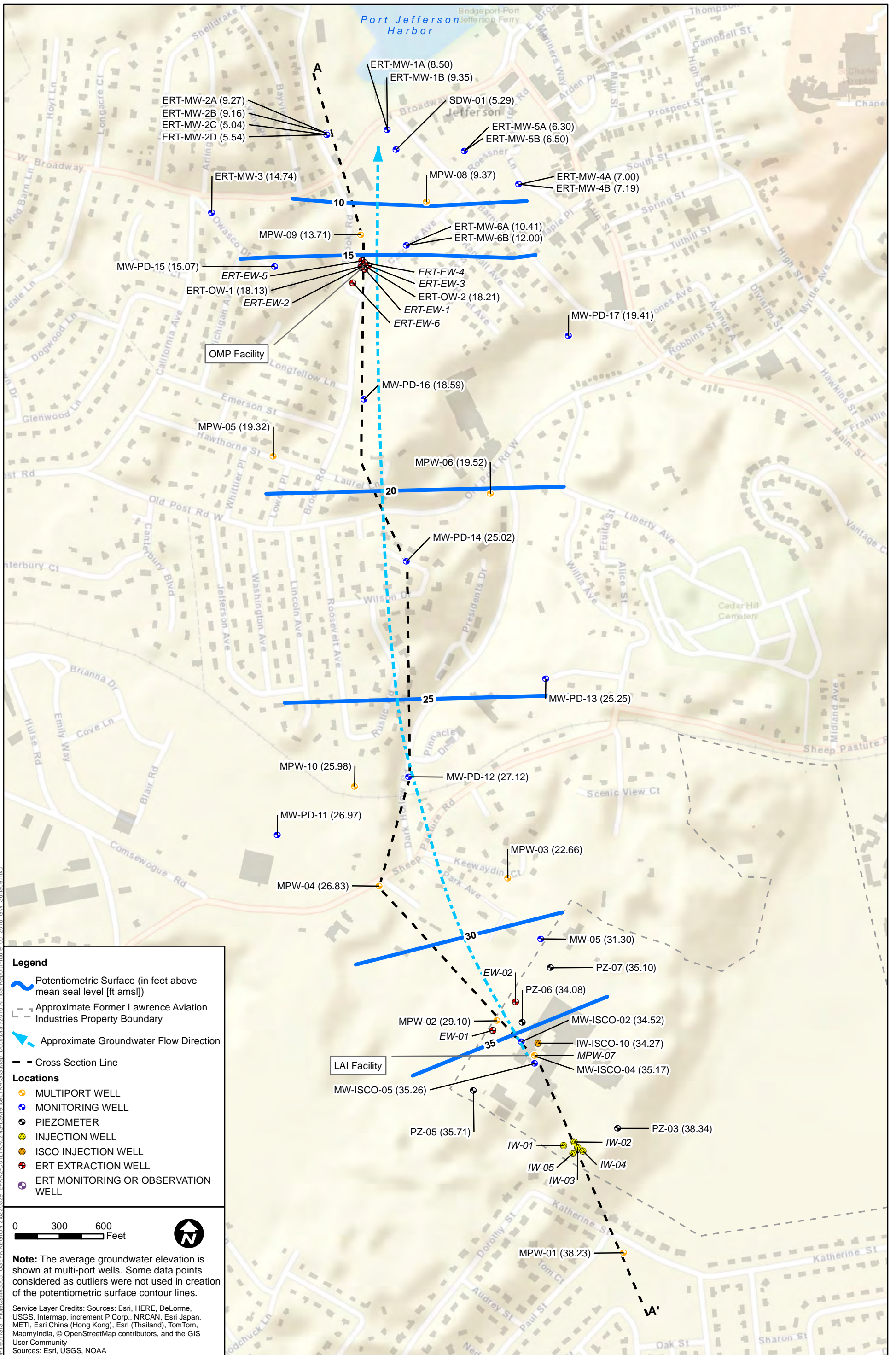
Water level and analytical data are posted at the mid point of screened interval.

Water Level Elevation, feet above mean sea level, (Port) — 30.2  
 Date: June 9, 2008

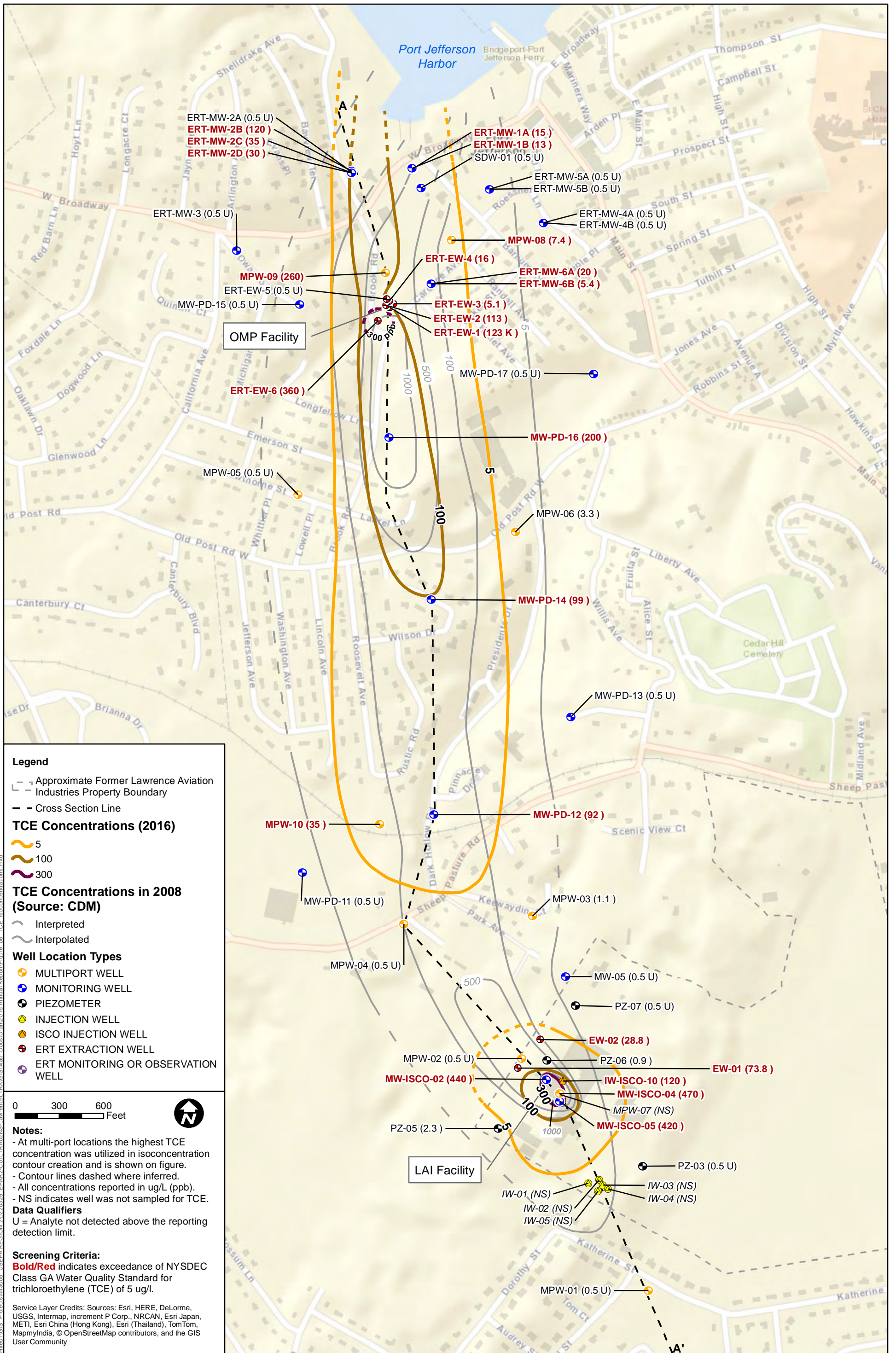
\* Water level elevation from MPW-07-A was anomolus and was not used.

**HR** LAWRENCE AVIATION INDUSTRIES SITE  
 PORT JEFFERSON STATION, NY

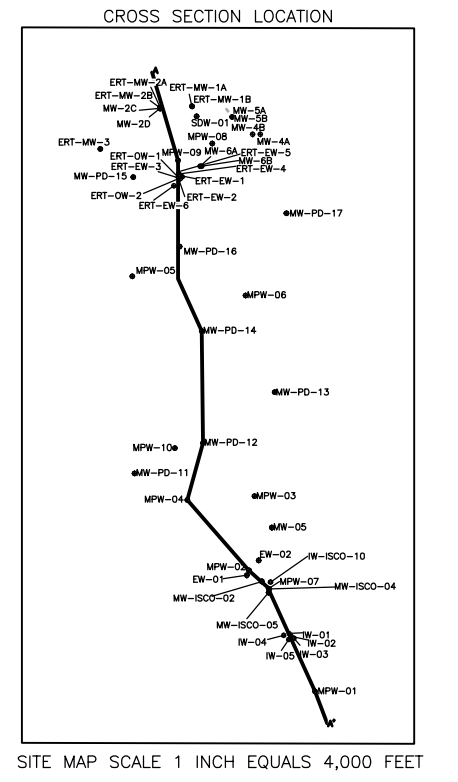
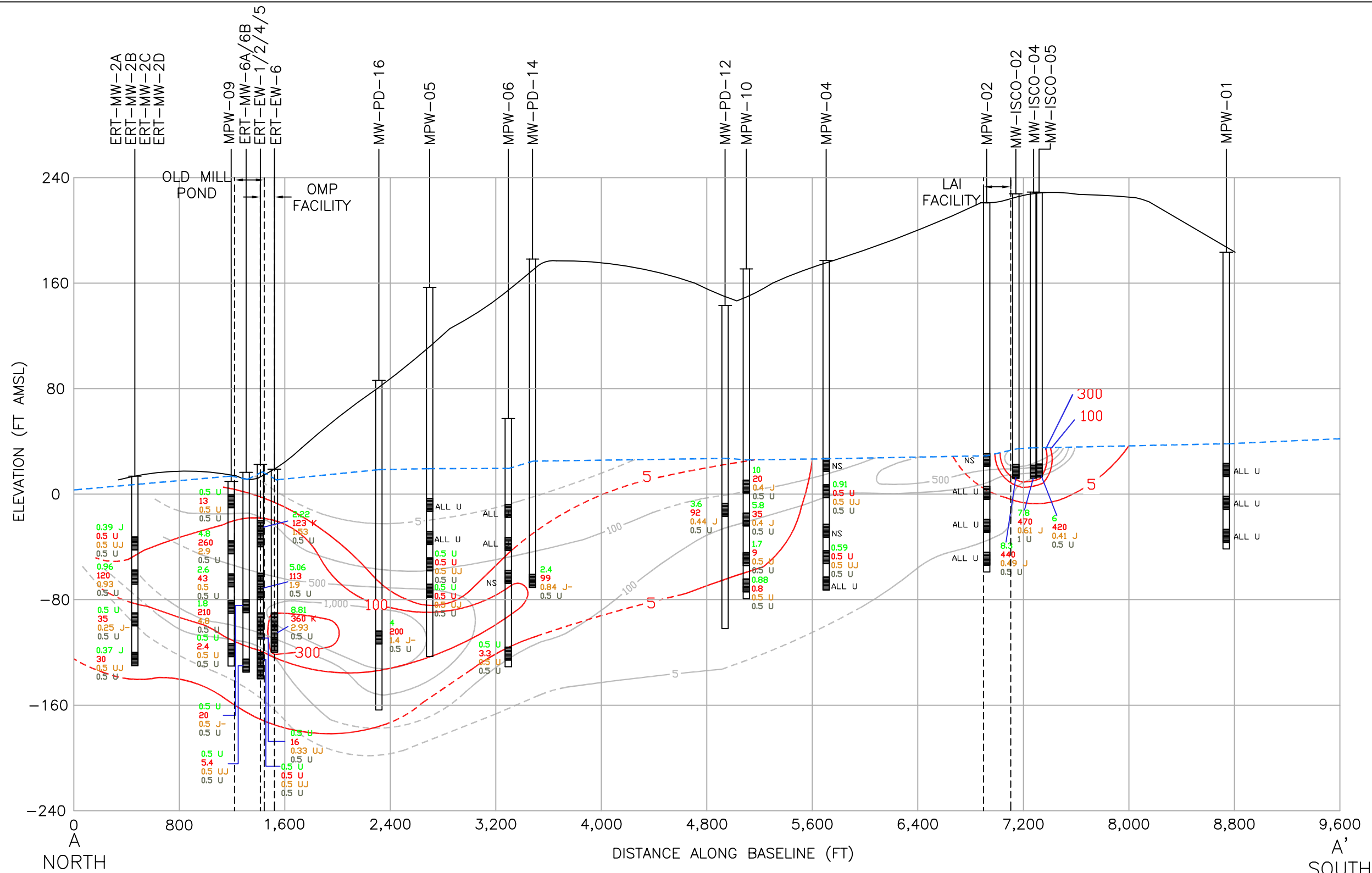
**Figure 4**  
 Geologic Cross Section & May 2008 Pre-Design  
 Round 2 TCE Groundwater Sampling Results  
 October 2016



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**LEGEND:**

- WATER TABLE, ESTIMATED
- GROUND SURFACE ELEVATION
- TCE ISOCONCENTRATION CONTOUR IN PPB FROM JUNE 2016 (DASHED WHERE INFERRED)
- TCE ISOCONCENTRATION CONTOUR IN PPB FROM MAY 2008 (DASHED WHERE INFERRED)

**GROUNDWATER SAMPLE RESULTS**

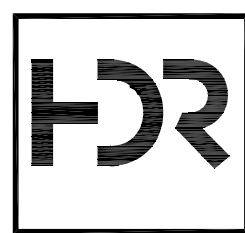
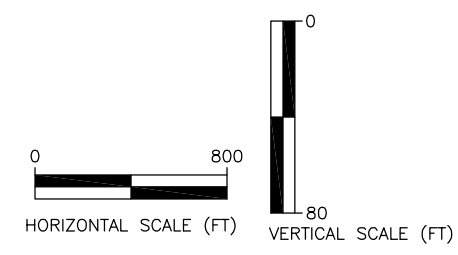
- 0.5 U TETRACHLOROETHENE(PCE)
- 3.2 TRICHLOROETHENE(TCE)
- 0.5 U CIS-1,2-DICHLOROETHENE(CIS-1,2-DCE)
- 0.5 U VINYL CHLORIDE

**NOTE:**

1. ALL RESULTS ARE SHOWN IN MICROGRAMS PER LITER.
2. AN AVERAGE WATER TABLE ELEVATION WAS USED FOR MPWS AND CLUSTERED WELLS.
3. GROUNDWATER GENERALLY TRENDS IN A NORTH - NORTHWESTERN DIRECTION FROM THE LAI FACILITY TO THE OMP FACILITY.
4. AT MULTI-PORT WELLS THE HIGHEST CONCENTRATIONS ARE SHOWN ON THIS FIGURE AND USED FOR TCE ISOCONCENTRATION CONTOUR CREATION.

**ACRONYMS:**

- ERT - EMERGENCY RESPONSE TEAM
- EW - EXTRACTION WELL
- FT AMSL - FEET ABOVE MEAN SEA LEVEL
- ISCO - IN-SITU CHEMICAL OXIDATION
- J - ESTIMATED VALUES (- INDICATE LIKELY DIRECTION OF BIAS)
- K - OFF-SCALE LOW
- MPW - MULTI-PORT WELL WITH PORT LETTER
- MW - MONITORING WELL
- NS - NOT SAMPLED
- PPB - PARTS PER BILLION
- PZ - PIEZOMETER
- UJ - ANALYZED BUT NOT DETECTED, ESTIMATED

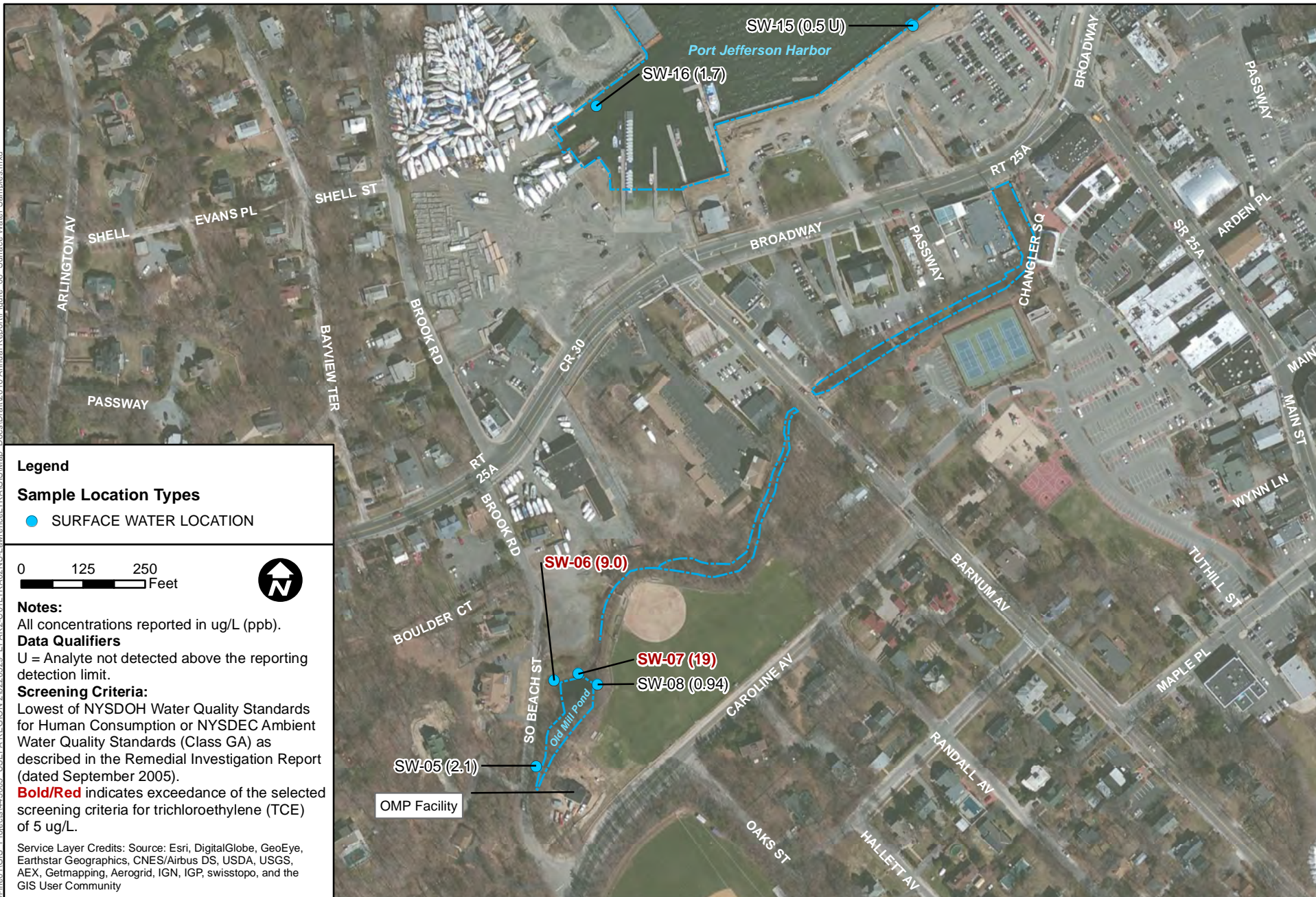


**CROSS SECTION A-A' AND JUNE 2016  
COMPREHENSIVE SAMPLING EVENT TCE  
GROUNDWATER SAMPLING RESULTS  
LAWRENCE AVIATION INDUSTRIES SITE  
PORT JEFFERSON STATION, NEW YORK**

DATE  
**OCTOBER 2016**

---

DRAWING SHEET  
**FIGURE 7**



**Legend**

**Sample Location Types**

- SURFACE WATER LOCATION

0 125 250  
Feet



**Notes:**

All concentrations reported in ug/L (ppb).

**Data Qualifiers**

U = Analyte not detected above the reporting detection limit.

**Screening Criteria:**

Lowest of NYSDOH Water Quality Standards for Human Consumption or NYSDEC Ambient Water Quality Standards (Class GA) as described in the Remedial Investigation Report (dated September 2005).

**Bold/Red** indicates exceedance of the selected screening criteria for trichloroethylene (TCE) of 5 ug/L.

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

SW-15 (0.5 U)  
Port Jefferson Harbor  
SW-16 (1.7)  
SW-06 (9.0)  
SW-07 (19)  
SW-08 (0.94)  
SW-05 (2.1)  
Old Mill Pond

OMP Facility

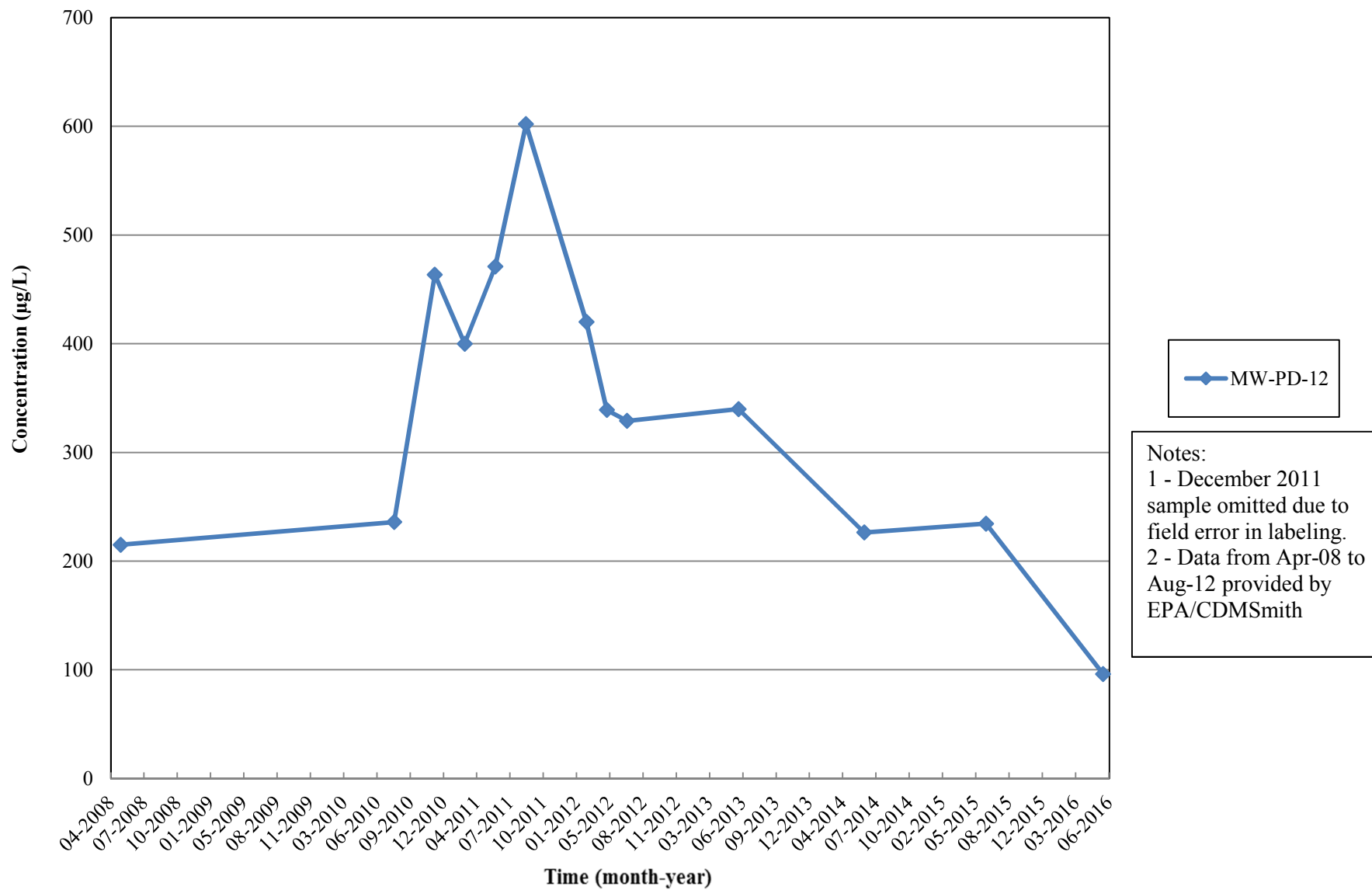


**2016 COMPREHENSIVE SAMPLING  
LAWRENCE AVIATION INDUSTRIES SITE  
PORT JEFFERSON STATION, NY**

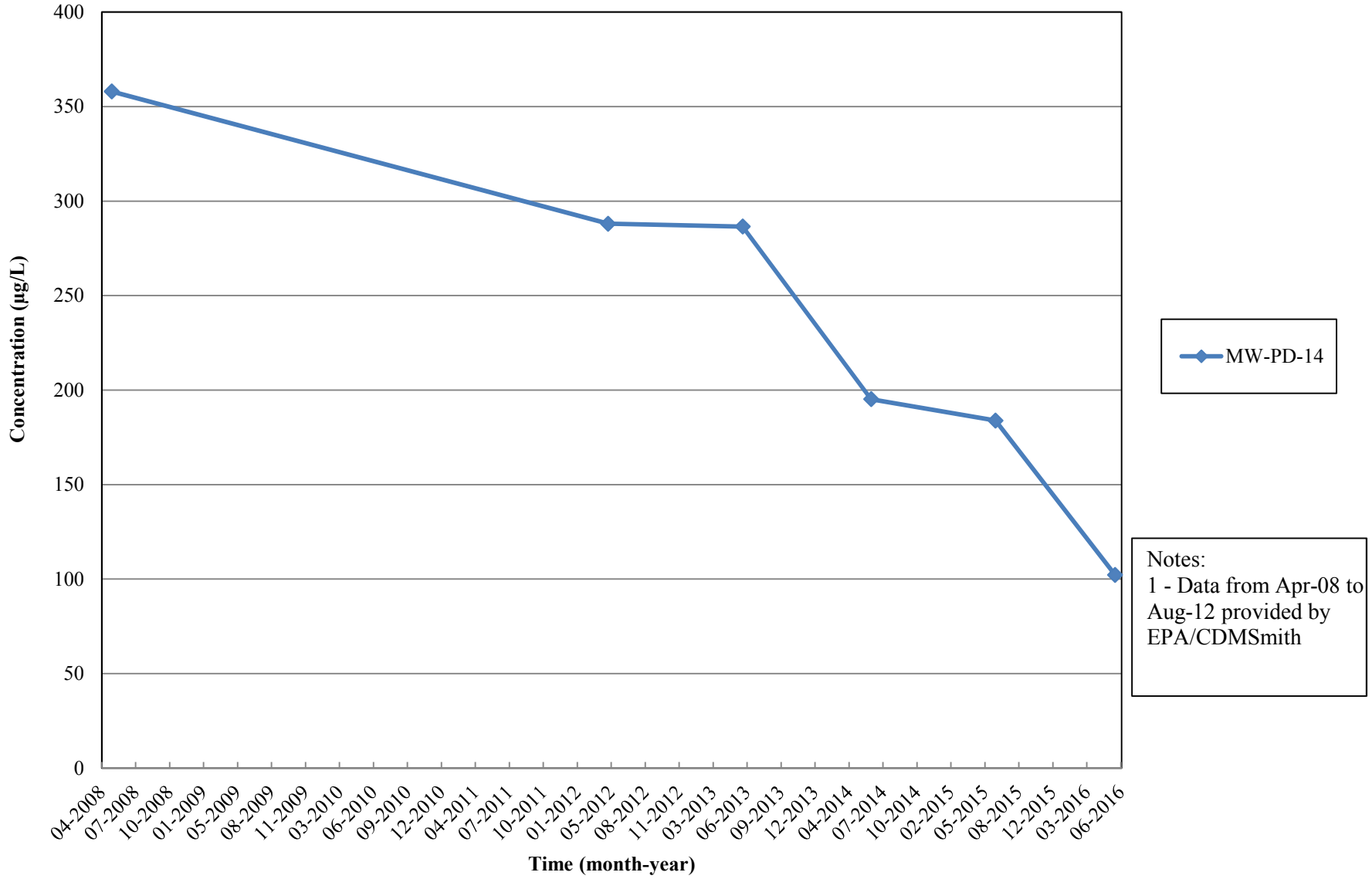
*Figure 8*

*June 2016 Comprehensive Sampling Surface Water Sample TCE Results  
October, 2016*

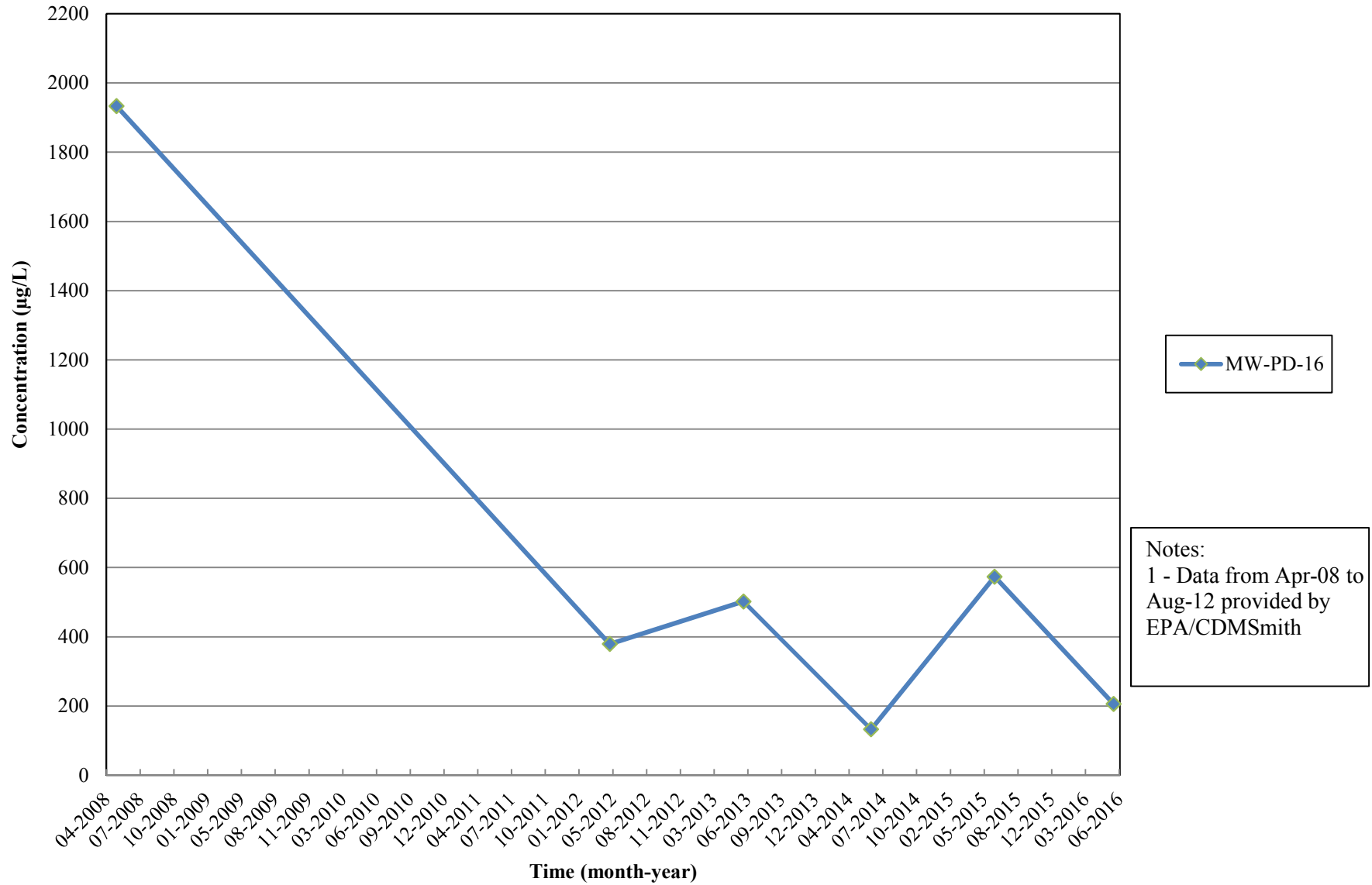
**Figure 9: Total VOC Concentration Trend - MW-PD-12**  
**June 2016**  
**Lawrence Aviation Industries Site**  
**Port Jefferson Station, New York**



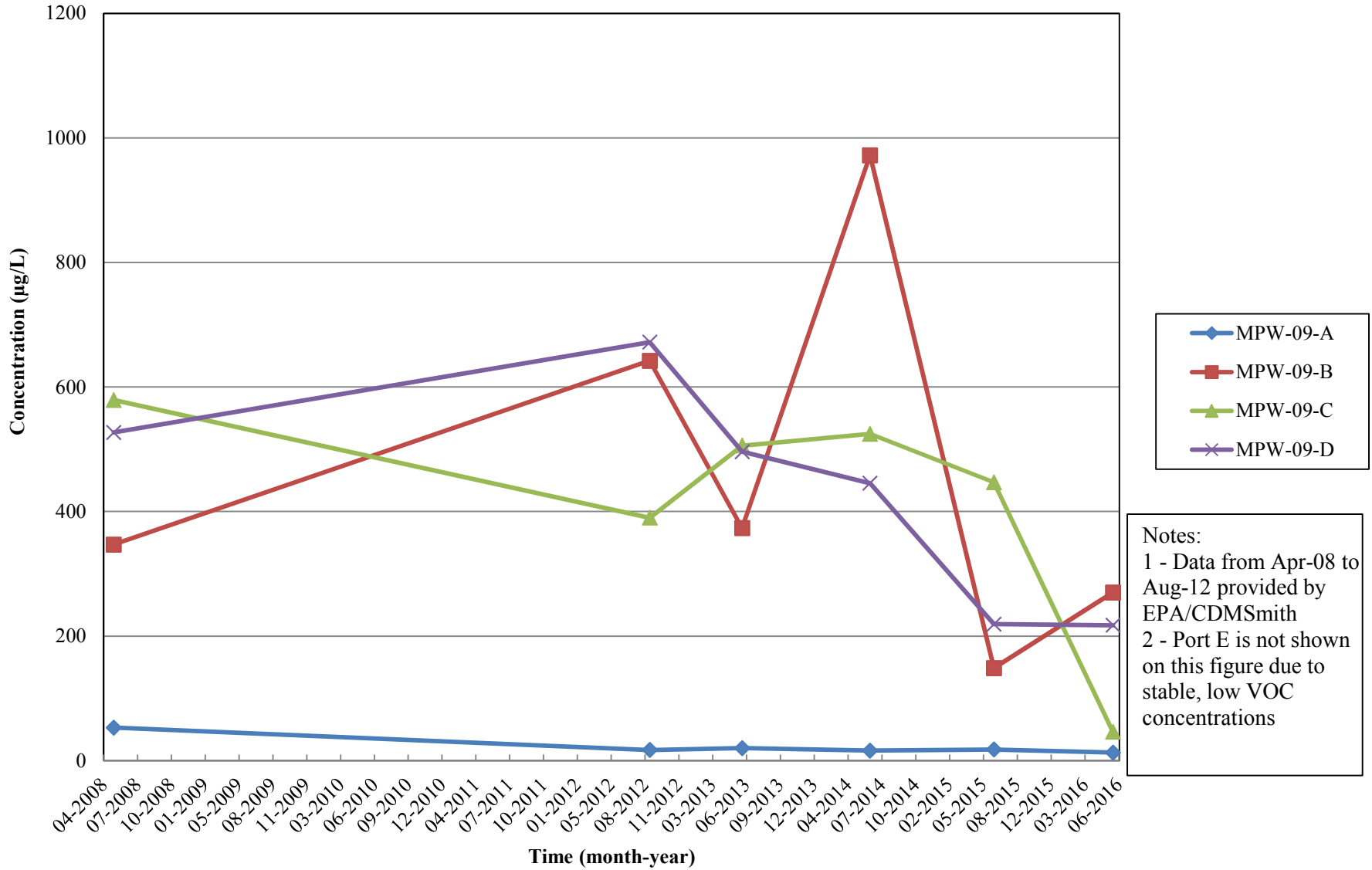
**Figure 10: Total VOC Concentration Trend - MW-PD-14**  
**June 2016**  
**Lawrence Aviation Industries Site**  
**Port Jefferson Station, New York**



**Figure 11: Total VOC Concentration Trend - MW-PD-16**  
**June 2016**  
**Lawrence Aviation Industries Site**  
**Port Jefferson Station, New York**



**Figure 12: Total VOC Concentration Trend - MPW-09**  
**June 2016**  
**Lawrence Aviation Industries Site**  
**Port Jefferson Station, New York**



Notes:  
 1 - Data from Apr-08 to Aug-12 provided by EPA/CDMSmith  
 2 - Port E is not shown on this figure due to stable, low VOC concentrations

## TABLES

Table 1  
Sample Location and Well Construction Information  
Lawrence Aviation Industries Site  
Port Jefferson Station, New York

Well ID	Port	Surface Elevation (ft amsl)	X Coordinate	Y Coordinate	Diameter of Well (inches)	Top of Screened Interval (ft bgs)	Bottom of Screened Interval (ft bgs)	Attempted for June 2016 Sampling Event	Sampled During June 2016 Event	Comment
ERT-EW-1*	NA	22.58	1240345.53	284149.95	6	120	140	x		Sampled as part of the Monthly Process Monitoring
ERT-EW-2*	NA	22.76	1240321.71	284149.95	6	90	110	x		Sampled as part of the Monthly Process Monitoring
ERT-EW-3*	NA	22.88	1240370.46	284174.31	6	90	110	x	x	
ERT-EW-4*	NA	22.56	1240343.76	284193.23	6	60	80	x	x	
ERT-EW-5*	NA	22.84	1240325.56	284206.51	4	20	40	x	x	
ERT-EW6	NA	18.97	1240263.916	284057.195	6	90	120	x		Sampled as part of the Monthly Process Monitoring
ERT-MW-1A	NA	11.33	1240501.82	285090.06	2	47	57	x	x	
ERT-MW-1B	NA	11.38	1240497.56	285093.63	2	72	82	x	x	
ERT-MW-2A	NA	13.53	1240083.17	285072.26	2	46	56	x	x	
ERT-MW-2B	NA	13.63	1240086.33	285075.08	2	71	81	x	x	
ERT-MW-2C	C	5.667	1240087.142	285062.176	2	90	100	x	x	
ERT-MW-2D	D	5.542	1240087.024	285062.4	2	120	130	x	x	
ERT-MW-3	NA	109.37	1239306.16	284533.89	2	223	233	x	x	
ERT-MW-4A	A	7.736	1241389.039	284724.897	2	70	80	x	x	
ERT-MW-4B	B	7.791	1241389.157	284725.116	2	120	130	x	x	
ERT-MW-5A	A	9.176	1241022.358	284951.901	2	90	100	x	x	
ERT-MW-5B	B	9.169	1241022.564	284952.129	2	120	130	x	x	
ERT-MW-6A	A	16.523	1240626.904	284309.368	2	80	90	x	x	
ERT-MW-6B	B	16.517	1240627.145	284309.238	2	125	135	x	x	
ERT-OW-1*	NA	22.65	1240326.9	284172.47	2	95	105	x		Observation Well
ERT-OW-2*	NA	22.73	1240339.27	284175.07	2	95	105	x		Observation Well
EW-01	NA	220.80	1241213.95	278985.42	10	182	248	x		Sampled as part of the Monthly Process Monitoring
EW-02	NA	224.10	1241367.23	279180.5	10	182	240	x		Sampled as part of the Monthly Process Monitoring
FG-01	NA	201.43	1243376.354	280474.705	2	170	180			Paved over - well is lost
IW-01	NA	226.30	1241693.86	278204.79	6	183	248	x		Injection Well
IW-02	NA	225.60	1241766.61	278227.33	6	183	248	x		Injection Well
IW-03	NA	225.30	1241790.03	278192.12	6	183	248	x		Injection Well
IW-04	NA	226.00	1241826.33	278167.07	6	183	248	x		Injection Well
IW-05	NA	224.80	1241758.26	278150.73	6	183	248	x		Injection Well
IW-ISCO-10	NA	229.00	1241521.28	278897.45	2	200	220	x	x	
IW-ISCO-5	NA	229.00	1241486.95	278795.69	2	200	220	x	x	
MPW-01-A	A	183.40	1242101.12	277475.448	4	160	170	x	x	
MPW-01-B	B	183.40	1242101.12	277475.448	4	185	195	x	x	
MPW-01-C	C	183.40	1242101.12	277475.448	4	210	220	x	x	
MPW-02-A	A	221.02	1241241.061	279049.859	4	190	200	x		
MPW-02-B	B	221.02	1241241.061	279049.859	4	215	225	x	x	
MPW-02-C	C	221.02	1241241.061	279049.859	4	240	250	x	x	
MPW-02-D	D	221.02	1241241.061	279049.859	4	265	275	x	x	
MPW-03-A	A	189.73	1241315.641	280017.573	4	175	185	x		
MPW-03-B	B	189.73	1241315.641	280017.573	4	195	205	x	x	
MPW-03-C	C	189.73	1241315.641	280017.573	4	215	225	x	x	
MPW-03-D	D	189.73	1241315.641	280017.573	4	235	245	x	x	Transducer not functioning as of 2016
MPW-04-A	A	177.23	1240440.958	279964.528	4	150	160	x		
MPW-04-B	B	177.23	1240440.958	279964.528	4	170	180	x	x	
MPW-04-C	C	177.23	1240440.958	279964.528	4	200	210	x		
MPW-04-D	D	177.23	1240440.958	279964.528	4	220	230	x	x	
MPW-04-E	E	177.23	1240440.958	279964.528	4	240	250	x	x	
MPW-05-A	A	156.80	1239723.031	282879.48	4	160	170	x	x	
MPW-05-B	B	156.80	1239723.031	282879.48	4	185	195	x	x	
MPW-05-C	C	156.80	1239723.031	282879.48	4	205	215	x	x	
MPW-05-D	D	156.80	1239723.031	282879.48	4	225	235	x	x	





Table 1  
Sample Location and Well Construction Information  
Lawrence Aviation Industries Site  
Port Jefferson Station, New York

Well ID	Port	Surface Elevation (ft amsl)	X Coordinate	Y Coordinate	Diameter of Well (inches)	Top of Screened Interval (ft bgs)	Bottom of Screened Interval (ft bgs)	Attempted for June 2016 Sampling Event	Sampled During June 2016 Event	Comment
MPW-06-A	A	57.29	1241197.553	282627.237	4	65	75	x	x	
MPW-06-B	B	57.29	1241197.553	282627.237	4	90	100	x	x	
MPW-06-C	C	57.29	1241197.553	282627.237	4	115	125	x		
MPW-06-D	D	57.29	1241197.553	282627.237	4	160	170	x	x	
MPW-07-A	A	229.11	1241498.444	278813.286	4	200	210	x		
MPW-07-B	B	229.11	1241498.444	278813.286	4	220	230	x		
MPW-07-C	C	229.11	1241498.444	278813.286	4	250	260	x		
MPW-08-A	A	17.08	1240764.773	284605.552	4	25	35	x	x	
MPW-08-B	B	17.08	1240764.773	284605.552	4	45	55	x	x	
MPW-08-C	C	17.08	1240764.773	284605.552	4	75	85	x	x	
MPW-08-D	D	17.08	1240764.773	284605.552	4	95	105	x	x	
MPW-08-E	E	17.08	1240764.773	284605.552	4	115	125	x	x	
MPW-09-A	A	9.66	1240317.248	284384.575	4	10	20	x	x	
MPW-09-B	B	9.66	1240317.248	284384.575	4	45	55	x	x	
MPW-09-C	C	9.66	1240317.248	284384.575	4	70	80	x	x	
MPW-09-D	D	9.66	1240317.248	284384.575	4	90	100	x	x	
MPW-09-E	E	9.66	1240317.248	284384.575	4	125	135	x	x	
MPW-10-A	A	170.73	1240276.043	280640.585	4	160	170	x	x	
MPW-10-B	B	170.73	1240276.043	280640.585	4	185	195	x	x	
MPW-10-C	C	170.73	1240276.043	280640.585	4	215	225	x	x	
MPW-10-D	D	170.73	1240276.043	280640.585	4	235	245	x	x	
MW-05	NA	220.00	1241539.108	279606.08	4	180	195	x	x	
MW-ISCO-02	NA	227.70	1241408.33	278907.54	2	205	215	x	x	
MW-ISCO-04	NA	229.10	1241504.14	278807.98	2	207	217	x	x	
MW-ISCO-05	NA	228.90	1241498.63	278760.26	4	206	216	x	x	
MW-PD-11	NA	164.42	1239752.51	280312.47	4	195	205	x	x	
MW-PD-12	NA	143.08	1240644.56	280706.4	4	150	160	x	x	
MW-PD-13	NA	177.30	1241574.79	281370.71	4	175	185	x	x	
MW-PD-14	NA	178.20	1240627.49	282166.23	4	239	249	x	x	
MW-PD-15	NA	95.54	1239734.72	284168.4	4	204	214	x	x	
MW-PD-16	NA	86.31	1240340.86	283265.25	4	190	200	x	x	
MW-PD-17	NA	25.49	1241728.59	283697.93	4	80	90	x	x	
PZ-01	NA	224.50	1242210.32	278999.38	2	198	208	x		
PZ-02	NA	227.50	1241653.38	278477.2	2	198	208	x		
PZ-03	NA	228.40	1242062.76	278320.85	2	198	208	x	x	
PZ-04	NA	225.10	1241742.8	278687.26	2	201	211	x		
PZ-05	NA	227.30	1241082	278576	2	196	206	x	x	
PZ-06	NA	230.70	1241414	279038	2	201.5	211.5	x	x	
PZ-07	NA	218.40	1241606	279410	2	190	200	x	x	
SDW-1	NA	11.33	1240558.67	284960.84	6	2	12	x	x	
SW-05	NA	NA	1240241.93	284183.55	NA	NA	NA	x	x	OMP Surface Water Sample
SW-06	NA	NA	1240278.21	284357.85	NA	NA	NA	x	x	OMP Surface Water Sample
SW-07	NA	NA	1240327.17	284371.39	NA	NA	NA	x	x	OMP Surface Water Sample
SW-08	NA	NA	1240366.23	284350.04	NA	NA	NA	x	x	OMP Surface Water Sample
SW-15	NA	NA	1241004.83	285682.85	NA	NA	NA	x	x	Port Jefferson Harbor Surface Water Sample
SW-16	NA	NA	1240364.29	285520.26	NA	NA	NA	x	x	Port Jefferson Harbor Surface Water Sample

**NOTES:**

Elevations for PZ-05 and PZ-07 are estimated

Coordinates are in New York State Plane - Long Island, Datum: NAD83, Units: feet

ft amsl - Feet above mean sea level

ft bgs - Feet below ground surface

NA - Not available

\* - Surface elevation not available, therefore, top of casing elevation used as surface elevation



Table 2  
June 2016 Water Quality Data  
Lawrence Aviation Industries Site  
Port Jefferson Station, New York

Location	HDR Field Sample ID	CLP Sample ID	Date Sampled	Time of Reading (24-hour)	Temperature (°C)	pH (s.u.)	Oxidation / Reduction Potential (mV)	Specific Conductance (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Flow Rate (mL/min)	Depth To Water Collected During Synoptic Round (ft btic)
ERT-EW-1	02-EW01-20160615	NA	2016-06-15	Sampled as part of the Monthly Process Monitoring - Depth to Water reading is based on PLC data								2.50
ERT-EW-2	02-EW02-20160615	NA	2016-06-15	Sampled as part of the Monthly Process Monitoring - Depth to Water reading is based on PLC data								4.60
ERT-EW-3	ERT-EW-3-N-HDR-R4-06102016	BDH15	2016-06-10	1345	13.08	5.18	232	0.225	7	6.96	300	8.36
ERT-EW-4	ERT-EW-4-N-HDR-R4-06132016	BDH23	2016-06-13	1440	12.77	5.5	232	0.315	1.2	6.07	200	7.61
ERT-EW-5	ERT-EW-5-N-HDR-R4-06132016	BDH24	2016-06-13	1610	13.02	5.37	251	0.338	1.9	6.25	300	8.13
ERT-EW-6	02-EW06-20160615	NA	2016-06-15	Sampled as part of the Monthly Process Monitoring - Depth to Water reading is based on PLC data								38.2
ERT-MW-1A	ERT-MW-1-A-N-HDR-R4-06102016	BDH10	2016-06-10	840	13.48	6.24	179	0.196	0	5.62	300	2.83
ERT-MW-1B	ERT-MW-1-B-N-HDR-R4-06102016	BDH12	2016-06-10	936	11	6.51	155	0.179	0	5.16	400	2.03
ERT-MW-2A	ERT-MW-2-A-N-HDR-R4-06082016	BDGZ1	2016-06-08	1810	13.43	5.39	245	0.368	5.1	7.8	250	4.26
ERT-MW-2B	ERT-MW-2-B-N-HDR-R4-06082016	BDGY7	2016-06-08	1645	12.59	5.67	210	0.213	0.2	5.78	275	4.47
ERT-MW-2C	ERT-MW-2-C-N-HDR-R4-06082016	BDGY2	2016-06-08	1030	14.75	5.84	191	0.13	13.3	5.5	150	0.63
ERT-MW-2D	ERT-MW-2-D-N-HDR-R4-06082016	BDGY4	2016-06-08	1155	12.71	6.26	177	0.194	4	7.17	350	0
ERT-MW-3	ERT-MW-3-N-HDR-R4-06162016	BDH68	2016-06-16	1928	13.19	5.85	0	0.338	20.8	1	400	94.63
ERT-MW-4A	ERT-MW-4-A-N-HDR-R4-06092016	BDH03	2016-06-09	1555	15.26	5.93	209	0.172	0	6.81	350	0.74
ERT-MW-4B	ERT-MW-4-B-N-HDR-R4-06092016	BDH05	2016-06-09	1726	15.75	5.94	199	0.167	3.5	6.41	300	0.6
ERT-MW-5A	ERT-MW-5-A-N-HDR-R4-06092016	BDGZ6	2016-06-09	950	11.48	5.87	208	0.185	5.2	7.22	300	2.88
ERT-MW-5B	ERT-MW-5-B-N-HDR-R4-06092016	BDGZ8	2016-06-09	1145	13.48	6.1	186	0.215	6.2	6.48	200	2.67
ERT-MW-6A	ERT-MW-6-A-N-HDR-R4-06072016	BDGW6	2016-06-07	1020	14.79	6.66	189	224	0	5.2	250	6.11
ERT-MW-6B	ERT-MW-6-B-N-HDR-R4-06072016	BDGX1	2016-06-07	1300	14.01	6.91	151	0.186	0	4.22	350	4.52
EW-01	01-EW01-20160614	NA	2016-06-14	Sampled as part of the Monthly Process Monitoring - Depth to Water reading is based on PLC data								263.82
EW-02	01-EW02-20160614	NA	2016-06-14	Sampled as part of the Monthly Process Monitoring - Depth to Water reading is based on PLC data								259.02
IW-ISCO-10	IW-ISCO-10-N-HDR-R4-06162016	BDH59	2016-06-16	1017	15.74	5.85	295	0.275	1	10.19	100	194.73
MPW-01-A	MPW-01-A-N-HDR-R4-06082016	BDGY6	2016-06-08	1435	12.46	5.53	87	0.349	0	1.48	76	144.67
MPW-01-B	MPW-01-B-N-HDR-R4-06082016	BDGZ0	2016-06-08	1735	11.63	5.59	139	0.366	26.4	2.01	130	145.45
MPW-01-C	MPW-01-C-N-HDR-R4-06082016	BDGY9	2016-06-08	1710	11.59	8.82	35	0.375	1	1.64	92	145.40
MPW-02-B	MPW-02-B-N-HDR-R4-06092016	BDGZ5	2016-06-09	955	14.23	5.8	237	0.273	0	7.77	110	190.57
MPW-02-C	MPW-02-C-N-HDR-R4-06092016	BDGZ7	2016-06-09	1110	15.2	5.81	-7	0.352	0	2.54	60	192.29
MPW-02-D	MPW-02-D-N-HDR-R4-06092016	BDGZ9	2016-06-09	1220	17.04	5.96	65	0.36	0	3.81	72	192.91
MPW-03-B	MPW-03-B-N-HDR-R4-06092016	BDH01	2016-06-09	1405	13.66	6.12	79	0.181	0	0.89	130	163.07
MPW-03-C	MPW-03-C-N-HDR-R4-06092016	BDH02	2016-06-09	1545	16.04	6.44	93	0.297	0	1.53	40	163.07
MPW-03-D	MPW-03-D-N-HDR-R4-06092016	BDH04	2016-06-09	1700	14.17	6.17	88	0.251	0.8	0.77	74	175.06
MPW-04-B	MPW-04-B-N-HDR-R4-06132016	BDH19	2016-06-13	1100	14.83	5.87	131	0.392	0	5.29	208	150.04
MPW-04-D	MPW-04-D-N-HDR-R4-06132016	BDH21	2016-06-13	1242	19.61	5.84	155	0.374	0	4.43	62	150.32
MPW-04-E	MPW-04-E-N-HDR-R4-06132016	BDH22	2016-06-13	1410	23.52	6.21	159	0.402	0	3.67	36	150.85
MPW-05-A	MPW-05-A-N-HDR-R4-06102016	BDH09	2016-06-10	805	12.51	5.48	73	0.302	0.3	0.97	66	137.23



Table 2  
 June 2016 Water Quality Data  
 Lawrence Aviation Industries Site  
 Port Jefferson Station, New York

Location	HDR Field Sample ID	CLP Sample ID	Date Sampled	Time of Reading (24-hour)	Temperature (°C)	pH (s.u.)	Oxidation / Reduction Potential (mV)	Specific Conductance (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Flow Rate (mL/min)	Depth To Water Collected During Synoptic Round (ft btic)
MPW-05-B	MPW-05-B-N-HDR-R4-06102016	BDH11	2016-06-10	845	12.2	5.44	183	0.323	0	0.77	240	137.58
MPW-05-C	MPW-05-C-N-HDR-R4-06102016	BDH13	2016-06-10	945	12.29	5.66	193	0.273	6.6	4.3	212	137.49
MPW-05-D	MPW-05-D-N-HDR-R4-06102016	BDH14	2016-06-10	1045	12.55	5.81	154	0.303	1	3.74	226	137.62
MPW-06-A	MPW-6-A-N-HDR-R4-06142016	BDH33	2016-06-14	1140	15.01	6.93	121	0.499	0.1	3.87	940	37.82
MPW-06-B	MPW-6-B-N-HDR-R4-06142016	BDH35	2016-06-14	1220	16.31	5.84	9	0.135	0	0.61	102	38.20
MPW-06-D	MPW-6-D-N-HDR-R4-06142016	BDH36	2016-06-14	1330	16.53	7.7	70	0.191	0	3.61	80	37.28
MPW-08-A	MPW-08-A-N-HDR-R4-06072016	BDGX4	2016-06-07	1810	15.18	5.21	243	0.275	0	7.42	105	7.79
MPW-08-B	MPW-08-B-N-HDR-R4-06082016	BDGX9	2016-06-08	910	14.09	5.36	279	0.245	0.1	6.87	128	7.55
MPW-08-C	MPW-08-C-N-HDR-R4-06082016	BDGY0	2016-06-08	1000	13.52	5.82	227	0.221	0	7.59	215	7.33
MPW-08-D	MPW-08-D-N-HDR-R4-06082016	BDGY1	2016-06-08	1100	13.92	6.18	179	0.19	0	7.26	220	8.15
MPW-08-E	MPW-08-E-N-HDR-R4-06082016	BDGY3	2016-06-08	1150	15.2	6.81	131	0.153	0	3.85	148	7.72
MPW-09-A	MPW-9-A-N-HDR-R4-06142016	BDH40	2016-06-14	1515	18.5	5.86	178	0.183	0	5.14	72	-1.52
MPW-09-B	MPW-9-B-N-HDR-R4-06142016	BDH41	2016-06-14	1620	14.98	7.06	162	0.386	0	4.89	180	-2.42
MPW-09-C	MPW-9-C-N-HDR-R4-06142016	BDH42	2016-06-14	1655	17.75	7.07	-60	0.379	0	0.41	64	-2.87
MPW-09-D	MPW-9-D-N-HDR-R4-06142016	BDH43	2016-06-14	1740	17.31	6.32	89	0.22	0	1.86	90	-2.99
MPW-09-E	MPW-9-E-N-HDR-R4-06152016	BDH47	2016-06-15	922	13.92	6.18	150	0.145	0	2.78	80	-3.02
MPW-10-A	MPW-10-A-N-HDR-R4-06132016	BDH25	2016-06-13	1633	15.57	5.45	185	0.452	0	0.96	69	144.51
MPW-10-B	MPW-10-B-N-HDR-R4-06132016	BDH26	2016-06-13	1751	14.51	5.59	157	0.41	0	2.61	74	144.50
MPW-10-C	MPW-10-C-N-HDR-R4-06132016	BDH28	2016-06-13	1951	15.36	5.95	144	0.422	0	5.34	19	144.86
MPW-10-D	MPW-10-D-N-HDR-R4-06142016	BDH32	2016-06-14	945	14.77	5.86	133	0.371	0	5.36	800	145.13
MW-05	MW-5-N-HDR-R4-06162016	BDH62	2016-06-16	1300	15.38	5.87	261	0.123	0	8.47	150	188.7
MW-ISCO-02	MW-ISCO-2-N-HDR-R4-06152016	BDH54	2016-06-15	1725	15.19	5.96	216	0.244	1195	1.27	100	193.18
MW-ISCO-04	MW-ISCO-4-N-HDR-R4-06152016	BDH48	2016-06-15	1042	20.69	5.8	170	0.333	1.1	5.86	350	193.93
MW-ISCO-05	MW-ISCO-5-N-HDR-R4-06152016	BDH49	2016-06-15	1212	14.05	5.71	248	0.364	0	7	140	193.64
MW-PD-11	MW-PD-11-N-HDR-R4-06162016	BDH67	2016-06-16	1915	15.76	5.37	189	0.262	9.2	1.71	500	137.45
MW-PD-12	MW-PD-12-N-HDR-R4-06152016	BDH50	2016-06-15	1332	16.41	5.48	204	0.345	9.2	6.31	350	115.96
MW-PD-13	MW-PD-13-N-HDR-R4-06162016	BDH65	2016-06-16	1535	18.5	5.94	197	0.268	7.1	8.06	100	152.05
MW-PD-14	MW-PD-14-N-HDR-R4-06162016	BDH63	2016-06-16	1315	13	5.48	179	0.675	9.2	2.25	200	153.18
MW-PD-15	MW-PD-15-N-HDR-R4-06162016	BDH66	2016-06-16	1646	14.48	6.39	138	0.439	33.6	3.57	400	80.47
MW-PD-16	MW-PD-16-N-HDR-R4-06132016	BDH27	2016-06-13	1820	12.51	5.52	217	0.34	38.4	8.23	200	67.72
MW-PD-17	MW-PD-17-N-HDR-R4-06132016	BDH20	2016-06-13	1215	12.91	6.41	167	0.24	10.6	4.88	315	6.08
PZ-03	PZ-3-N-HDR-R4-06142016	BDH39	2016-06-14	1820	20.85	5.31	211	0.466	208	6.23	500	190.06
PZ-05	PZ-5-N-HDR-R4-06142016	BDH34	2016-06-14	1126	17.7	5.45	241	0.184	6.1	5.25	300	191.59
PZ-06	PZ-6-N-HDR-R4-06162016	BDH61	2016-06-16	1000	19.44	5.64	243	0.293	6.5	12.83	450	196.62
PZ-07	PZ-7-N-HDR-R4-06152016	BDH55	2016-06-15	1915	22.17	5.46	200	0.219	54.2	6.71	900	183.3
SDW-01	SDW-01-N-HDR-R4-06072016	BDGW5	2016-06-07	840	19.51	6.86	-55	0.531	177	1.58	0	6.04



Table 2  
 June 2016 Water Quality Data  
 Lawrence Aviation Industries Site  
 Port Jefferson Station, New York

Location	HDR Field Sample ID	CLP Sample ID	Date Sampled	Time of Reading (24-hour)	Temperature (°C)	pH (s.u.)	Oxidation / Reduction Potential (mV)	Specific Conductance (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Flow Rate (mL/min)	Depth To Water Collected During Synoptic Round (ft btic)
SW-05	SW-05-N-HDR-R4-06072016	BDGW7	2016-06-07	1020	17.75	7.78	95	0.286	0.6	8.27	NA	NA
SW-06	SW-06-N-HDR-R4-06072016	BDGW8	2016-06-07	1215	26.84	6.52	30	0.415	127	1.24	NA	NA
SW-07	SW-07-N-HDR-R4-06072016	BDGW9	2016-06-07	1140	21.17	6.42	-8	0.328	127	1.95	NA	NA
SW-08	SW-08-N-HDR-R4-06072016	BDGX0	2016-06-07	1120	20.67	7.36	117	0.284	106	7.56	NA	NA
SW-15	SW-15-N-HDR-R4-06072016	BDGX3	2016-06-07	1400	24.16	7.79	119	32.7	0.1	4.22	NA	NA
SW-16	SW-16-N-HDR-R4-06072016	BDGX2	2016-06-07	1340	23.29	7.68	125	34.6	0	4.81	NA	NA

**NOTES:**

Table shows water quality parameters collected after stabilization was attained but just before the sample was collected.

\* - Indicates measurement taken from initial reading, not after stabilization was attained.

°C - degrees in Celcius.

ft btic - depth to water measured in feet below the top of the inner well casing.

mg/L - milligrams per liter

mL/min - milliliters per minute

mS/cm - millisiemens per centimeter

mV - millivolts

NA - Not applicable.

NTU - Nephelometric Turbidity Unit

PLC - Programmable Logic Controller

s.u. - standardized pH units

SW - Surface Water sample



Table 3  
 June 2016 Groundwater Elevations  
 Lawrence Aviation Industries Site  
 Port Jefferson Station, New York

Well ID	June 2016 Groundwater Elevation Data (ft. amsl)
ERT-EW-1 *	20.08
ERT-EW-2 *	18.16
ERT-EW-3	14.52
ERT-EW-4	14.95
ERT-EW-5	14.71
ERT-EW-6 *	10.84
ERT-MW-1A	8.50
ERT-MW-1B	9.35
ERT-MW-2A	9.27
ERT-MW-2B	9.16
ERT-MW-2C	5.04
ERT-MW-2D	5.54
ERT-MW-3	14.74
ERT-MW-4A	7.00
ERT-MW-4B	7.19
ERT-MW-5A	6.30
ERT-MW-5B	6.50
ERT-MW-6A	10.41
ERT-MW-6B	12.00
ERT-OW-1	18.13
ERT-OW-2	18.21
EW-01 *	43.21
EW-02 *	35.72
IW-ISCO-10	34.27
MPW-01-A	38.73
MPW-01-B	37.95
MPW-01-C	38.00
MPW-02-A	NC
MPW-02-B	30.45
MPW-02-C	28.73
MPW-02-D	28.11
MPW-03-A	NC
MPW-03-B	26.66
MPW-03-C	26.66
MPW-03-D	14.67
MPW-04-A	NC
MPW-04-B	27.19
MPW-04-C	NC
MPW-04-D	26.91
MPW-04-E	26.38
MPW-05-A	19.57
MPW-05-B	19.22
MPW-05-C	19.31
MPW-05-D	19.18



Table 3  
 June 2016 Groundwater Elevations  
 Lawrence Aviation Industries Site  
 Port Jefferson Station, New York

Well ID	June 2016 Groundwater Elevation Data (ft. amsl)
MPW-06-A	19.47
MPW-06-B	19.09
MPW-06-C	NC
MPW-06-D	20.01
MPW-07-A	NC
MPW-07-B	NC
MPW-07-C	NC
MPW-08-A	9.29
MPW-08-B	9.53
MPW-08-C	9.75
MPW-08-D	8.93
MPW-08-E	9.36
MPW-09-A	11.18
MPW-09-B	12.08
MPW-09-C	12.53
MPW-09-D	12.65
MPW-09-E	12.68
MPW-10-A	26.22
MPW-10-B	26.23
MPW-10-C	25.87
MPW-10-D	25.60
MW-05	31.3
MW-ISCO-02	34.52
MW-ISCO-04	35.17
MW-ISCO-05	35.26
MW-PD-11	26.97
MW-PD-12	27.12
MW-PD-13	25.25
MW-PD-14	25.02
MW-PD-15	15.07
MW-PD-16	18.59
MW-PD-17	19.41
PZ-03	38.34
PZ-05	35.71
PZ-06	34.08
PZ-07	35.10
SDW-01	5.29

**NOTES:**

ft amsl - Feet above mean sea level

NC - Not collected

\* Groundwater elevation reading taken from PLC









**Table 5**  
**Surface Water Sampling Results - Key COCs June 2016**  
**Lawrence Aviation Industries Site**  
**Port Jefferson Station, New York**

chemical_name Screening Criteria					1,1,1-TCA 5		1,1-DCA 5		1,1-DCE 5		Chloroform 7		cis-1,2-DCE 5		PCE 5		TCE 5		VC 2		1,4-Dioxane 0.78	
Location	HDR Sample ID	CLP ID	Matrix	Date Sampled	Results (ug/l)	Q	Results (ug/l)	Q	Results (ug/l)	Q	Results (ug/l)	Q	Results (ug/l)	Q	Results (ug/l)	Q	Results (ug/l)	Q	Results (ug/l)	Q	Results (ug/l)	Q
SW-05	SW-05-N-HDR-R4-06072016	BDGW7	WS	2016-06-07	0.5	U	0.5	U	0.5	U	0.50	U	0.50	U	0.50	U	2.10		0.50	U	0.29	
SW-06	SW-06-N-HDR-R4-06072016	BDGW8	WS	2016-06-07	0.5	U	0.5	U	0.5	UJ	0.50	U	14.00	J-	0.50	U	9.00		2.00		0.2	U
SW-07	SW-07-N-HDR-R4-06072016	BDGW9	WS	2016-06-07	0.5	U	0.5	U	0.5	UJ	0.50	U	36.00	D	0.33	J	19.00		3.10		0.2	U
SW-08	SW-08-N-HDR-R4-06072016	BDGX0	WS	2016-06-07	0.5	U	0.5	U	0.5	U	0.50	U	0.53		0.50	U	0.94		0.50	U	0.22	
SW-15	SW-15-N-HDR-R4-06072016	BDGX3	WS	2016-06-07	0.5	U	0.5	U	0.5	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.2	U
SW-16	SW-16-N-HDR-R4-06072016	BDGX2	WS	2016-06-07	0.5	U	0.5	U	0.5	U	0.50	U	0.50	U	0.50	U	1.70		0.50	U	0.2	U

**Acronyms:**

ug/l - micrograms per Liter  
DCA - dichloroethane  
DCE - dichloroethene  
ID - identification  
ISCO - in situ chemical oxidation  
J - Estimated values (- indicates likely biased low)

MPW - multi-port well  
MW - monitoring well  
NS - not sampled  
PCE - tetrachloroethene  
PZ - Piezometer  
Q - qualifier

TCA - trichloroethane  
TCE - trichloroethene  
U - not detected  
VC - Vinyl Chloride  
VOC - volatile organic compound  
WG - groundwater

D - Diluted sample

(1). Surface water screening criteria: are compiled from the New York State Department of Health Water Quality Standards for Human Consumption, and the New York State Department of Environmental Conservation Class GA Standards, as described in the Remedial Investigation Report (dated September 2005). (The lower of the two standards were used.) Results highlighted in yellow represent exceedances of the screening criteria.

APPENDIX A  
DATA USABILITY REPORT AND  
TABLES

**DATA USABILITY ANALYSIS**  
**LAWRENCE AVIATION INDUSTRIES SITE**

To meet the primary objectives of the Long-Term Response Action (LTRA) program at the Lawrence Aviation Industries (LAI) Site, in August 2012 the United States Environmental Protection Agency (EPA), Region 2 issued a work assignment to Henningson, Durham & Richardson, Architecture and Engineering PC, in association with HDR Engineering, Inc. (HDR) for the operation and maintenance (O&M) of the groundwater treatment systems at the LAI Site. The system at the LAI facility was completed on September 28, 2010 and is currently in its 5<sup>th</sup> year of LTRA. Construction of the Old Mill Pond (OMP) treatment facility was completed in August 2011 and is currently in its 4<sup>th</sup> year of LTRA. This data usability analysis is for aqueous samples collected in June 2016 as part of the annual sampling program at the Site. Eighty-eight groundwater samples were collected from well locations at the LAI and OMP facilities. In addition, quality assurance/quality control (QA/QC) samples were collected including field duplicates (six), equipment blanks (eight), field blanks (eight), and trip blanks (10) as well as 18 laboratory blanks for a total of 138 samples. A sample summary is presented as **Table A1**. Note that summary tables include samples analyzed as part of the monthly sampling at LAI as well for comparison purposes; however, this data has been evaluated separately for usability. All aqueous analytical sample results from samples collected as part of the annual sampling were generated by the EPA Contract Laboratory Program (CLP) (KAP Technologies, Inc.) for the following analyses and methods:

<b>Analysis</b>	<b>Method</b>
TVOA	CLP SOW SOM02.3
BNA-SIM	CLP SOW SOM02.3 MA 2475.3

Note: BNA-SIM = Base Neutral Acid-Selective Ion Monitoring; MA = Modified Analysis; SOW = Statement of Work; TVOA = Trace-level Volatile Organic Analysis

The results provided by the CLP laboratory are considered definitive data and underwent a systematic data validation to provide assurance that the data were adequate for its intended use. The validation was performed based on an evaluation of project objectives, method-specific QA/QC information (such as holding times, calibration records, laboratory- and field-supplied blanks, duplicate precision, and surrogate and spike recovery), relevant sections of the EPA Region 2 Data Validation Standard Operating Procedures (SOPs), relevant sections of the EPA National Functional Guidelines for Organic Data Validation, and/or the best professional judgment of the validator. Validation was performed by EPA personnel with the appropriate training and/or experience in performing data validation for the analyses of interest associated with the project. Qualifiers (as appropriate) were added to the data based on the results of the validation.

Note that since this project is in the LTRA phase, the focus was placed on site-specific contaminants of concern with regard to the VOAs: 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene (1,1-DCE), chloroform, cis-1,2-dichloroethene (cis-1,2-DCE), trichloroethene (TCE), tetrachloroethene (PCE), and vinyl chloride (VC) with regard to evaluation of the results. The attached results tables that summarize the QA/QC data (i.e., **Table A2** and **Table A4**) provide the full list as well as the sample number, sample location, sample collection date, and the result and qualifiers for these constituents.

As part of the data assessment by the CLP laboratory, data qualifiers are presented along with the analytical results. Qualifiers used with regard to the assessment of the 2016 annual (aqueous) samples collected are

highlighted in bold for clarity.

- **U - The analyte analyzed for, but was not detected at a level greater than or equal to the level of the adjusted CRQL for sample and method.**
- **J - The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).**
- J+ - The result is an estimated quantity, but the result may be biased high.
- **J- - The result is an estimated quantity, but the result may be biased low.**
- **UJ- The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.**
- **K – Reported concentration value is proportional to the dilution factor and may be exaggerated.**
- **R- The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.**
- N- The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.
- NJ- The analysis indicated the presence of an analyte that has been “tentatively identified” and the associated numerical value represent its approximate concentration.

The data assessment for organic aqueous samples was performed for the following criteria per the EPA SOW: holding time, deuterated monitoring compounds (DMCs), blank contamination, mass spectrometer tuning, calibration, internal standards performance GC/MS, field duplicates, compound identification, contract problems - non-compliance, field documentation, other problems, and dilutions, re-extractions & reanalysis. Six sample delivery groups (SDGs) were received for the samples analyzed during the annual sampling event in June 2016. The following issues were identified in the EPA narratives for the aqueous samples collected for trace-level VOCs. There were no issues identified in the EPA narratives with regard to BNA-SIM.

A major finding indicates a level of uncertainty exists. A bias is likely present in the results. Data has been qualified “J” estimated. “J+” and “J-” represent likely direction of the bias. All six SDGs included this major finding. Note that three of the results were rejected. Rejected results are not useable; however, the remaining results are useable as qualified. The reasons for these qualifications are explained further below.

All samples are spiked with DMC compounds prior to sample preparation to evaluate laboratory overall laboratory performance and efficiency of the analytical technique. In all six SDGs, one or more DMC compounds was reported to be either over and/or under their respective recovery limit criteria and therefore associated detectable sample results were qualified “J+” or “J-”, respectively. When the lower limit was not met but the expanded lower limit was met, non-detects were qualified “UJ”. When the expanded lower limit was not met, non-detects were qualified “R”. In instances where the upper limit was exceeded, non-detects were not qualified. The analytes where qualifications were applied include the COCs 1,1-DCA, chloroform, vinyl chloride, 1,1,1-TCA, 1,1-DCE, cis-1,2'-DCE, and trans-1,2'-DCE.

QA blanks (method, field, rinse, and trip blanks) are prepared to identify contamination that may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory

contamination. In one of the six SDGs, method blank contamination was noted with regard to the analyte bromomethane. Three sample results were impacted and qualified accordingly. Bromomethane is not a COC for the project.

Field and rinseate (equipment) blanks measure cross-contamination of samples during field operations. Fourteen of the 16 field and equipment blanks were contaminated with one or more low level VOCs. Three of the six SDGs included a narrative on how the contamination affected associated samples and thus how the data was qualified. Concentrations of acetone in field samples are likely associated with laboratory contamination and are likely not representative of field conditions. In addition, concentrations of TCE were found in six of the field blanks and seven of the equipment blanks. Concentrations of TCE in the field samples and associated rinse blanks were below the CRQL. Sample concentrations were reported at the CRQL; detectable concentrations were qualified "U" and non-detected compounds were not qualified. These include TCE in BDGZ7, BDGX9, and BDH62. In comparison to the levels of TCE detected in the field samples, the concentrations found in the blanks are in most case orders of magnitude less; therefore, the field samples would only be biased very slightly high.

Trip blanks measure cross-contamination of samples during shipment. Eight of the 10 trip blanks were contaminated with low level VOCs including 2-butanone, acetone, bromomethane, toluene, and/or TCE. Concentrations of 2-butanone and/or acetone are likely not representative of field conditions and likely can be contributed to laboratory contamination. The presence of bromomethane was due to method blank contamination as discussed above. Concentrations of toluene and TCE are likely present due to field contamination. Sample concentrations were reported at the CRQL; detectable concentrations were qualified "U" and non-detected compounds were not qualified. These include TCE in BDGZ1, BDH01, BDH13, BDH14, BDH19, BDH21, BDH24, BDGW5, and BDH62. In comparison to the levels of TCE detected in the field samples, the concentrations found in the blanks are in most case orders of magnitude less; therefore, the field sample results would only be biased very slightly high.

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance. Percent Relative Standard Deviation (RSD) is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of continuing calibration check to the mean response factor from the initial calibration. Percent RSD and Percent D must be less than or equal to 30 percent for all TCL analytes, respectively. A value outside of these limits indicates potential detection and quantitation errors. For this reason, all positive results are qualified "J" and non-detects are qualified "UJ" for %D values outside criteria only. If %RSD exceeds QC criteria, detects may be qualified as "J" and use professional judgment of the data validator to qualify non-detects. Select samples were associated with either a Percent RSD or Percent D outside of the limits with regard to 1,2,4-trichlorobenzene, cis-1,3-dichloropropene, o-xylene, or bromomethane; detects were qualified "J" and non-detects were not qualified.

In one of the field duplicates, chloroform was detected in one sample but not detected in the other. The detectable concentrations were comparable to the detection limit and therefore the relative percent difference would be very low. This is discussed further below in the section on precision.

Select samples were reanalyzed after dilution, re-extraction, or for other QC reasons. In these cases, the best result values are consolidated into one report and the other report is invalidated and not reportable. These are summarized in the data tables attached to the report.

The following sections provide an evaluation of the usability of the data for the Site, as compared to the site-specific QA/QC requirements outlined in the EPA-approved Final QAPP (EPA, 2014).

#### *Precision*

Precision is the measurement of agreement in repeated tests of the same or identical samples, under prescribed conditions. Precision data indicate how consistent and reproducible the field sampling or analytical procedures have been. For the Site data, precision was determined through replicate measurements of the same or identical samples, i.e., a field duplicate sample. The acceptance criterion for the duplicate is a relative percent difference (RPD) of less than 25 percent. The RPD was not calculated for any set of sample pairs where concentrations were not detected in one or both of the data sets; agreement between the original sample and the duplicate can be inferred when both of the results are non-detects. The remainder of the sample pairs contained detections in both of the data sets and were within the RPD limits prescribed. The field duplicate data is summarized on **Table A2**. All of the RPD results were less than or equal to 25% and therefore indicate the sampling program achieved overall good reproducibility.

#### *Accuracy*

Accuracy is the degree of agreement of a measured sample result or average of results with an accepted reference or true value. It is the quantitative measurement of the bias of a system, and is expressed in terms of percent recovery (%R). Accuracy of the data can be determined through the use of surrogate compounds, internal standard compounds, matrix spike samples, and laboratory control spike samples. Aside from the issues described above, all of the results provided by the CLP laboratory were within QC limits. Based on the information provided and available results, the laboratories achieved a good degree of accuracy.

#### *Representativeness*

Representativeness is the degree to which the results of the analyses accurately and precisely represent a characteristic of a population, a process condition, or an environmental condition. In this case, representativeness is the degree to which the data reflect the contaminants present and their concentration magnitudes in the sampled site areas. Representativeness of data occurs through the selection of appropriate sampling locations and the implementation of approved sampling procedures. The sampling locations for this round of sampling consisted solely of fixed sample locations in the instance of the groundwater monitoring wells. In addition, field personnel followed the procedures outlined in the EPA-approved QAPP (EPA, 2014) for the Site.

#### *Comparability*

To increase the degree of comparability between data results and between past, present and future sampling events, standard environmental analytical methods were employed by the off-site laboratory. Routine Analytical Service (RAS) sample analyses available through the EPA CLP were utilized for the VOCs and BNA-SIM as specified in the CLP SOWs.

### *Completeness*

Completeness is determined by the percentage of samples that meet or exceed all of the criteria objective levels (i.e., the number of usable sample results for the data set). All of the sample results were determined to be usable. See **Table A3**.

### *Sensitivity*

Sensitivity is the ability of the analytical method or instrument to detect a target analyte at the level of interest. The method detection limit (MDL) is a statistically-derived value that represents a 99 percent confidence level that the reported instrument signal is different from a blank sample. The quantitation limit (QL) is the minimum concentration of an analyte that can be routinely identified by the laboratory, and is generally between three and ten times the MDL. Analytical methods are matrix-, moisture-and dilution-dependent. The sample quantitation limit (SQL) actually determined for a constituent for a specific sample may be higher than the QL due to these issues. The laboratory was able to achieve the standard reporting limits for each analyte requested for trace level VOCs and BNA-SIM. Note however, select DMCs as discussed above were reported above and/or below limits which resulted in qualifying sample results for COCs as “J” qualified and biased high or low accordingly.

### *Blank Contamination Elimination*

Blanks were prepared to identify any contamination that may have been introduced into the samples. Validation determines the need for qualification of sampling analytical results based on blank contamination. Field, equipment, and trip blank samples were prepared by the field crew and submitted with the aqueous samples for the June 2016 annual sampling event. The results are provided in **Table A4**. In addition method blank samples were prepared by the laboratory. As summarized above, field, equipment and/or trip related blanks contained low-level contamination including concentrations of TCE, a Site COC. Although none of the results were rejected due to this, the results were qualified in accordance with EPA SOPs for data validation and low level concentrations were reported as not detected.

### *Usability Summary*

Upon validation, several of the sample results were qualified “J” with a bias high or low or were qualified “U” due to contamination in the QC samples or inefficiencies with the laboratory. The data qualified was primarily low-level detections at or near the CRQL. The definitive data for the LTRA annual sampling event conducted in June 2016 fulfilled the site-specific QA/QC requirements. Overall, the data met the project DQOs, and are appropriate to characterize the levels of contamination in the aqueous samples collected from the Site.

### *References*

EPA, 2014. Uniform Federal Policy of Quality Assurance Project Plans, Region 2 Architect-Engineering Services Contract, Contract #EP-W-09-009, Project-Specific UFP-QAPP, Lawrence Aviation Industries Long-Term Response Action. Revised June 2014.

**Appendix A Table A1 - Sample Summary (June 2016)**  
**2016 Comprehensive Sampling Event Report**  
**Lawrence Aviation Industries Site**  
**Port Jefferson Station, New York**

HDR Field Sample ID	CLP ID	Well ID	Sample Type	Parent Sample ID	Laboratory Name	Sample Collected By	Sample Date	Matrix	VOCs by EPA Method E524.2		SVOCs (1,4-Dioxane) by EPA Method E625	
									INITIAL	DILUTION1	INITIAL	REANALYSIS
									Number of Analytes		Number of Analytes	
01-AS-20160614	NA	01-AS	N		DESA	HDR	2016-06-14	WG	51			
01-INF-20160614	NA	01-CINF	N		DESA	HDR	2016-06-14	WG	51			
01-EFF-20160614	NA	01-EFF	N		DESA	HDR	2016-06-14	WG	51			
01-EW01-20160614	NA	01-EW01	N		DESA	HDR	2016-06-14	WG	51			
11-EW01-20160614	NA	01-EW01	FD	01-EW01-20160614	DESA	HDR	2016-06-14	WG	51			
01-EW02-20160614	NA	01-EW02	N		DESA	HDR	2016-06-14	WG	51			
02-AS-20160615	NA	02-AS	N		DESA	HDR	2016-06-15	WG	51			
02-EFF-20160615	NA	02-EFF	N		DESA	HDR	2016-06-15	WG	51			
02-EW01-20160615	NA	02-EW01	N		DESA	HDR	2016-06-15	WG	51			
02-EW02-20160615	NA	02-EW02	N		DESA	HDR	2016-06-15	WG	51			
02-EW06-20160615	NA	02-EW06	N		DESA	HDR	2016-06-15	WG	51			
02-GAC-20160615	NA	02-GAC	N		DESA	HDR	2016-06-15	WG	51			
LAI-EB-HDR-R4-06132016	BDH17	Equipment Blank	EB		KAP	HDR	2016-06-13	W	51		1	
LAI-EB-HDR-R4-06142016	BDH31	Equipment Blank	EB		KAP	HDR	2016-06-14	W	51		1	
LAI-EB-HDR-R4-06072016	BDGX5	Equipment Blank	EB		KAP	HDR	2016-06-07	W	51			
LAI-EB-HDR-R4-06082016	BDGY5	Equipment Blank	EB		KAP	HDR	2016-06-08	W	51			
LAI-EB-HDR-R4-06092016	BDGZ4	Equipment Blank	EB		KAP	HDR	2016-06-09	W	51		1	
LAI-EB-HDR-R4-06102016	BDH07	Equipment Blank	EB		KAP	HDR	2016-06-10	W	51		1	
LAI-EB-HDR-R4-06152016	BDH46	Equipment Blank	EB		KAP	HDR	2016-06-15	W	51		1	
LAI-EB-HDR-R4-06162016	BDH58	Equipment Blank	EB		KAP	HDR	2016-06-16	W	51			
ERT-EW-01-N-HDR-R4-06152016	BDH51	ERT-EW-1	N		KAP	HDR	2016-06-15	WG			1	
ERT-EW-02-N-HDR-R4-06152016	BDH52	ERT-EW-2	N		KAP	HDR	2016-06-15	WG			1	
ERT-EW-3-N-HDR-R4-06102016	BDH15	ERT-EW-3	N		KAP	HDR	2016-06-10	WG	51			
ERT-EW4-N-HDR-R4-06132016	BDH23	ERT-EW-4	N		KAP	HDR	2016-06-13	WG	51			
ERT-EW5-N-HDR-R4-06132016	BDH24	ERT-EW-5	N		KAP	HDR	2016-06-13	WG	51			
ERT-EW-06-N-HDR-R4-06152016	BDH53	ERT-EW-6	N		KAP	HDR	2016-06-15	WG			1	
ERT-MW-1-A-N-HDR-R4-06102016	BDH10	ERT-MW-1A	N		KAP	HDR	2016-06-10	WG	51			
ERT-MW-1-B-N-HDR-R4-06102016	BDH12	ERT-MW-1B	N		KAP	HDR	2016-06-10	WG	51			
ERT-MW-2-A-N-HDR-R4-06082016	BDGZ1	ERT-MW-2A	N		KAP	HDR	2016-06-08	WG	51			
ERT-MW-2-B-N-HDR-R4-06082016	BDGY7	ERT-MW-2B	N		KAP	HDR	2016-06-08	WG	50	1	1	
LAI-FD-HDR-R4-06082016	BDGY8	ERT-MW-2B	FD	ERT-MW-2-B-N-HDR-R4-06082016	KAP	HDR	2016-06-08	WG	50	1	1	
ERT-MW-2-C-N-HDR-R4-06082016	BDGY2	ERT-MW-2C	N		KAP	HDR	2016-06-08	WG	50	1		
ERT-MW-2-D-N-HDR-R4-06082016	BDGY4	ERT-MW-2D	N		KAP	HDR	2016-06-08	WG	50	1		
ERT-MW-3-N-HDR-R4-06162016	BDH68	ERT-MW-3	N		KAP	HDR	2016-06-16	WG	51			
ERT-MW-4-A-N-HDR-R4-06092016	BDH03	ERT-MW-4A	N		KAP	HDR	2016-06-09	WG	51			
ERT-MW-4-B-N-HDR-R4-06092016	BDH05	ERT-MW-4B	N		KAP	HDR	2016-06-09	WG	51			
ERT-MW-5-A-N-HDR-R4-06092016	BDGZ6	ERT-MW-5A	N		KAP	HDR	2016-06-09	WG	51			
ERT-MW-5-B-N-HDR-R4-06092016	BDGZ8	ERT-MW-5B	N		KAP	HDR	2016-06-09	WG	51			
ERT-MW-6-A-N-HDR-R4-06072016	BDGW6	ERT-MW-6A	N		KAP	HDR	2016-06-07	WG	50	1		
ERT-MW-6-B-N-HDR-R4-06072016	BDGX1	ERT-MW-6B	N		KAP	HDR	2016-06-07	WG	51			
EW-01-N-HDR-R4-06142016	BDH38	EW-01	N		KAP	HDR	2016-06-14	WG			1	
EW-02-N-HDR-R4-06142016	BDH37	EW-02	N		KAP	HDR	2016-06-14	WG			1	
LAI-FB-HDR-R4-06132016	BDH18	Field Blank	FB		KAP	HDR	2016-06-13	W	51		1	
LAI-FB-HDR-R4-06142016	BDH30	Field Blank	FB		KAP	HDR	2016-06-14	W	51		1	
LAI-FB-HDR-R4-06072016	BDGW4	Field Blank	FB		KAP	HDR	2016-06-07	W	51			
LAI-FB-HDR-R4-06082016	BDGX8	Field Blank	FB		KAP	HDR	2016-06-08	W	51			
LAI-FB-HDR-R4-06092016	BDGZ3	Field Blank	FB		KAP	HDR	2016-06-09	W	51		1	
LAI-FB-HDR-R4-06102016	BDH08	Field Blank	FB		KAP	HDR	2016-06-10	W	51		1	



**Appendix A Table A1 - Sample Summary (June 2016)**  
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**Lawrence Aviation Industries Site**  
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HDR Field Sample ID	CLP ID	Well ID	Sample Type	Parent Sample ID	Laboratory Name	Sample Collected By	Sample Date	Matrix	VOCs by EPA Method E524.2		SVOCs (1,4-Dioxane) by EPA Method E625	
									INITIAL	DILUTION1	INITIAL	REANALYSIS
									Number of Analytes		Number of Analytes	
LAI-FB-HDR-R4-06152016	BDH45	Field Blank	FB		KAP	HDR	2016-06-15	W	51		1	
LAI-FB-HDR-R4-06162016	BDH57	Field Blank	FB		KAP	HDR	2016-06-16	W	51			
IW-ISCO-10-N-HDR-R4-06162016	BDH59	IW-ISCO-10	N		KAP	HDR	2016-06-16	WG	50	1		
LAI-FD-HDR-R4-06162016	BDH60	IW-ISCO-10	FD	IW-ISCO-10-N-HDR-R4-06162016	KAP	HDR	2016-06-16	WG	50	1		
SBLK87	SBLK87	Lab Blank	LB		KAP	HDR	2016-06-23	W			1	
SBLK89	SBLK89	Lab Blank	LB		KAP	HDR	2016-06-23	W			1	
VBLK80	VBLK80	Lab Blank	LB		KAP	HDR	2016-06-24	W	51			
VBLK82	VBLK82	Lab Blank	LB		KAP	HDR	2016-06-25	W	51			
VBLK84	VBLK84	Lab Blank	LB		KAP	HDR	2016-06-26	W	51			
VBLK86	VBLK86	Lab Blank	LB		KAP	HDR	2016-06-27	W	51			
VBLKSV	VBLKSV	Lab Blank	LB		KAP	HDR	2016-06-09	W	51			
VBLKSX	VBLKSX	Lab Blank	LB		KAP	HDR	2016-06-10	W	51			
VBLKTA	VBLKTA	Lab Blank	LB		KAP	HDR	2016-06-11	W	51			
VBLKTC	VBLKTC	Lab Blank	LB		KAP	HDR	2016-06-12	W	51			
VBLKTF	VBLKTF	Lab Blank	LB		KAP	HDR	2016-06-13	W	51			
VBLKTH	VBLKTH	Lab Blank	LB		KAP	HDR	2016-06-14	W	51			
VBLKTK	VBLKTK	Lab Blank	LB		KAP	HDR	2016-06-15	W	51			
VBLKTM	VBLKTM	Lab Blank	LB		KAP	HDR	2016-06-16	W	51			
VBLKUD	VBLKUD	Lab Blank	LB		KAP	HDR	2016-06-25	W	51			
VBLKUF	VBLKUF	Lab Blank	LB		KAP	HDR	2016-06-25	W	51			
VBLKUH	VBLKUH	Lab Blank	LB		KAP	HDR	2016-06-26	W	51			
VBLKUK	VBLKUK	Lab Blank	LB		KAP	HDR	2016-06-27	W	51			
MPW-01-A-N-HDR-R4-06082016	BDGY6	MPW-01-A	N		KAP	HDR	2016-06-08	WG	51			
MPW-01-B-N-HDR-R4-06082016	BDGZ0	MPW-01-B	N		KAP	HDR	2016-06-08	WG	51			
MPW-01-C-N-HDR-R4-06082016	BDGY9	MPW-01-C	N		KAP	HDR	2016-06-08	WG	51			
MPW-02-B-N-HDR-R4-06092016	BDGZ5	MPW-02-B	N		KAP	HDR	2016-06-09	WG	51			
MPW-02-C-N-HDR-R4-06092016	BDGZ7	MPW-02-C	N		KAP	HDR	2016-06-09	WG	51			
LAI-FD-HDR-R4-06092016	BDH00	MPW-02-D	FD	MPW-02-D-N-HDR-R4-06092016	KAP	HDR	2016-06-09	WG	51			
MPW-02-D-N-HDR-R4-06092016	BDGZ9	MPW-02-D	N		KAP	HDR	2016-06-09	WG	51			
MPW-03-B-N-HDR-R4-06092016	BDH01	MPW-03-B	N		KAP	HDR	2016-06-09	WG	51			
MPW-03-C-N-HDR-R4-06092016	BDH02	MPW-03-C	N		KAP	HDR	2016-06-09	WG	51			
MPW-03-D-N-HDR-R4-06092016	BDH04	MPW-03-D	N		KAP	HDR	2016-06-09	WG	51			
MPW-04-B-N-HDR-R4-06132016	BDH19	MPW-04-B	N		KAP	HDR	2016-06-13	WG	51			
MPW-04-D-N-HDR-R4-06132016	BDH21	MPW-04-D	N		KAP	HDR	2016-06-13	WG	51			
MPW-04-E-N-HDR-R4-06132016	BDH22	MPW-04-E	N		KAP	HDR	2016-06-13	WG	51			
MPW-05-A-N-HDR-R4-06102016	BDH09	MPW-05-A	N		KAP	HDR	2016-06-10	WG	51			
MPW-05-B-N-HDR-R4-06102016	BDH11	MPW-05-B	N		KAP	HDR	2016-06-10	WG	51			
MPW-05-C-N-HDR-R4-06102016	BDH13	MPW-05-C	N		KAP	HDR	2016-06-10	WG	51			
MPW-05-D-N-HDR-R4-06102016	BDH14	MPW-05-D	N		KAP	HDR	2016-06-10	WG	51			
MPW-06-A-N-HDR-06142016	BDH33	MPW-06-A	N		KAP	HDR	2016-06-14	WG	51			
MPW-06-B-N-HDR-06142016	BDH35	MPW-06-B	N		KAP	HDR	2016-06-14	WG	51			
MPW-06-D-N-HDR-06142016	BDH36	MPW-06-D	N		KAP	HDR	2016-06-14	WG	51			
MPW-08-A-N-HDR-R4-06072016	BDGX4	MPW-08-A	N		KAP	HDR	2016-06-07	WG	51			
MPW-08-B-N-HDR-R4-06082016	BDGX9	MPW-08-B	N		KAP	HDR	2016-06-08	WG	51			
MPW-08-C-N-HDR-R4-06082016	BDGY0	MPW-08-C	N		KAP	HDR	2016-06-08	WG	51			
MPW-08-D-N-HDR-R4-06082016	BDGY1	MPW-08-D	N		KAP	HDR	2016-06-08	WG	51			
MPW-08-E-N-HDR-R4-06082016	BDGY3	MPW-08-E	N		KAP	HDR	2016-06-08	WG	51			
MPW-09-A-N-HDR-R4-06142016	BDH40	MPW-09-A	N		KAP	HDR	2016-06-14	WG	51		1	

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HDR Field Sample ID	CLP ID	Well ID	Sample Type	Parent Sample ID	Laboratory Name	Sample Collected By	Sample Date	Matrix	VOCs by EPA Method E524.2		SVOCs (1,4-Dioxane) by EPA Method E625	
									INITIAL	DILUTION1	INITIAL	REANALYSIS
									Number of Analytes		Number of Analytes	
MPW-09-B-N-HDR-R4-06142016	BDH41	MPW-09-B	N		KAP	HDR	2016-06-14	WG	50	1	1	
MPW-09-C-N-HDR-R4-06142016	BDH42	MPW-09-C	N		KAP	HDR	2016-06-14	WG	50	1		
MPW-09-D-N-HDR-R4-06142016	BDH43	MPW-09-D	N		KAP	HDR	2016-06-14	WG	50	1	1	
MPW-09-E-N-HDR-R4-06152016	BDH47	MPW-09-E	N		KAP	HDR	2016-06-15	WG	51		1	
MPW-10-A-N-HDR-R4-06132016	BDH25	MPW-10-A	N		KAP	HDR	2016-06-13	WG	50	1		
MPW-10-B-N-HDR-R4-06132016	BDH26	MPW-10-B	N		KAP	HDR	2016-06-13	WG	50	1		
MPW-10-C-N-HDR-R4-06132016	BDH28	MPW-10-C	N		KAP	HDR	2016-06-13	WG	51			
MPW-10-D-N-HDR-R4-06142016	BDH32	MPW-10-D	N		KAP	HDR	2016-06-14	WG	51			
MW-5-N-HDR-R4-06162016	BDH62	MW-05	N		KAP	HDR	2016-06-16	WG	51			
MW-ISCO-2-N-HDR-R4-06152016	BDH54	MW-ISCO-02	N		KAP	HDR	2016-06-15	WG	50	1		
MW-ISCO-4-N-HDR-R4-06152016	BDH48	MW-ISCO-04	N		KAP	HDR	2016-06-15	WG	50	1	1	
MW-ISCO-5-N-HDR-R4-06152016	BDH49	MW-ISCO-05	N		KAP	HDR	2016-06-15	WG	50	1		
MW-PD-11-N-HDR-R4-06162016	BDH67	MW-PD-11	N		KAP	HDR	2016-06-16	WG	51			
MW-PD-12-N-HDR-R4-06152016	BDH50	MW-PD-12	N		KAP	HDR	2016-06-15	WG	50	1	1	
MW-PD-13-N-HDR-R4-06162016	BDH65	MW-PD-13	N		KAP	HDR	2016-06-16	WG	51			
LAI-FD-2-HDR-R4-06162016	BDH64	MW-PD-14	FD	MW-PD-14-N-HDR-R4-06162016	KAP	HDR	2016-06-16	WG	50	1		
MW-PD-14-N-HDR-R4-06162016	BDH63	MW-PD-14	N		KAP	HDR	2016-06-16	WG	50	1		
MW-PD-15-N-HDR-R4-06162016	BDH66	MW-PD-15	N		KAP	HDR	2016-06-16	WG	51			
MW-PD-16-N-HDR-R4-06132016	BDH27	MW-PD-16	N		KAP	HDR	2016-06-13	WG	50	1	1	
MW-PD-17-N-HDR-R4-06132016	BDH20	MW-PD-17	N		KAP	HDR	2016-06-13	WG	51			
PZ-3-N-HDR-R4-06142016	BDH39	PZ-30	N		KAP	HDR	2016-06-14	WG	51			
PZ-5-N-HDR-R4-06142016	BDH34	PZ-05	N		KAP	HDR	2016-06-14	WG	51			
PZ-6-N-HDR-R4-06162016	BDH61	PZ-06	N		KAP	HDR	2016-06-16	WG	51			
PZ-7-N-HDR-R4-06152016	BDH55	PZ-07	N		KAP	HDR	2016-06-15	WG	51			
SDW-01-N-HDR-R4-06072016	BDGW5	SDW-01	N		KAP	HDR	2016-06-07	WG	51			
SW-05-N-HDR-R4-06072016	BDGW7	SW-05	N		KAP	HDR	2016-06-07	WS	51		1	
SW-06-N-HDR-R4-06072016	BDGW8	SW-06	N		KAP	HDR	2016-06-07	WS	51		1	
LAI-FD-HDR-R4-06072016	BDGX6	SW-07	FD	SW-07-N-HDR-R4-06072016	KAP	HDR	2016-06-07	WS	49	2	1	
SW-07-N-HDR-R4-06072016	BDGW9	SW-07	N		KAP	HDR	2016-06-07	WS	50	1	1	
SW-08-N-HDR-R4-06072016	BDGX0	SW-08	N		KAP	HDR	2016-06-07	WS	51		1	
SW-15-N-HDR-R4-06072016	BDGX3	SW-15	N		KAP	HDR	2016-06-07	WS	51		1	
SW-16-N-HDR-R4-06072016	BDGX2	SW-16	N		KAP	HDR	2016-06-07	WS	51		1	
01-TB-20160614	NA	Trip Blank	TB		DESA	HDR	2016-06-14	W	51			
02-TB-20160615	NA	Trip Blank	TB		DESA	HDR	2016-06-15	W	51			
LAI-TB-HDR-R4-06072016	BDGW3	Trip Blank	TB		KAP	HDR	2016-06-07	W	51			
LAI-TB-HDR-R4-06082016	BDGX7	Trip Blank	TB		KAP	HDR	2016-06-08	W	51			
LAI-TB-HDR-R4-06092016	BDGZ2	Trip Blank	TB		KAP	HDR	2016-06-09	W	51			
LAI-TB-HDR-R4-06102016	BDH06	Trip Blank	TB		KAP	HDR	2016-06-10	W	51			
LAI-TB-HDR-R4-06152016	BDH44	Trip Blank	TB		KAP	HDR	2016-06-15	W	51			
LAI-TB-HDR-R4-06162016	BDH56	Trip Blank	TB		KAP	HDR	2016-06-16	W	51			
LAI-TB-HDR-R4-06132016	BDH16	Trip Blank	TB		KAP	HDR	2016-06-13	W	51			
LAI-TB-HDR-R4-06142016	BDH29	Trip Blank	TB		KAP	HDR	2016-06-14	W	51			

**Appendix A Table A1 - Sample Summary (June 2016)**  
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HDR Field Sample ID	CLP ID	Well ID	Sample Type	Parent Sample ID	Laboratory Name	Sample Collected By	Sample Date	Matrix	VOCs by EPA Method E524.2		SVOCs (1,4-Dioxane) by EPA Method E625	
									INITIAL	DILUTION1	INITIAL	REANALYSIS
									Number of Analytes		Number of Analytes	

**Notes:**  
Numbers in the VOCs/SVOCs column represent the number of VOCs/SVOCs analytes reported for each sample.  
The methods listed for VOCs/SVOCs included in the electronic data deliverables from the laboratories and is based on standard operating procedures (SOPs) consistent with the quality assurance project plan requested methods.

**Abbreviations:**

- EB = equipment blank
- FB = field blank
- FD = field duplicate
- HDR = Henningson, Durham & Richardson, Architecture and Engineering PC, in association with HDR Engineering, Inc.
- LB = laboratory blank
- N = normal sample
- NA = Not Applicable
- SVOC = semi-volatile organic compounds
- TB = trip blank
- USEPA = United States Environmental Protection Agency
- VOC = volatile organic compounds
- W = blank water
- WG = groundwater
- WS = surface water

**Appendix A Table A2 - Groundwater VOCs/SVOCs Field Duplicate Analytical Sampling Results**  
**2016 Comprehensive Sampling Event Report**  
**Lawrence Aviation Industries Site**  
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					01-EW01		01-EW01		RPD	ABS	ERT-MW-2B		ERT-MW-2B		RPD	ABS
					11-EW01-20160614		01-EW01-20160614				LAI-FD-HDR-R4-06082016		ERT-MW-2-B-N-HDR-R4-06082016			
					11-EW01-20160614		BDH38				BDGY8		BDGY7			
					2016-06-14		2016-06-14				2016-06-08		2016-06-08			
	Cas No.	Units	NYSDEC Class GA Standards	5 x CRQL	Results (ug/l)	Qual.	Results	Qual.			Results (ug/l)	Qual.	Results	Qual.		
<b>Volatile Organic Compounds (VOCs)</b>																
1,1,1-Trichloroethane	71-55-6	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,1,2,2-Tetrachloroethane	79-34-5	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,1,2-Trichloro-1,2,2-	76-13-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,1,2-Trichloroethane	79-00-5	ug/l	1	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,1-Dichloroethane	75-34-3	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.38	J	0.39	J	3%	0.01
1,1-Dichloroethene	75-35-4	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,2,3-Trichlorobenzene	87-61-6	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,2,4-Trichlorobenzene	120-82-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,2-Dibromo-3-Chloropropane	96-12-8	ug/l	0.04	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,2-Dibromoethane	106-93-4	ug/l	0.0006	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,2-Dichlorobenzene	95-50-1	ug/l	3	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,2-Dichloroethane	107-06-2	ug/l	0.6	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,2-Dichloropropane	78-87-5	ug/l	1	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,3-Dichlorobenzene	541-73-1	ug/l	3	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,4-Dichlorobenzene	106-46-7	ug/l	3	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
2-Butanone	78-93-3	ug/l	NA	25	5	U	5	U	-	-	5	U	5	U	-	-
2-Hexanone	591-78-6	ug/l	NA	25	5	U	5	U	-	-	5	U	5	U	-	-
4-Methyl-2-Pentanone	108-10-1	ug/l	NA	25	5	U	5	U	-	-	5	U	5	U	-	-
Acetone	67-64-1	ug/l	NA	25	5	U	5	U	-	-	5	U	5	U	-	-
Benzene	71-43-2	ug/l	1	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Bromochloromethane	74-97-5	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Bromodichloromethane	75-27-4	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Bromoform	75-25-2	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Bromomethane	74-83-9	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Carbon Disulfide	75-15-0	ug/l	60	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Carbon Tetrachloride	56-23-5	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Chlorobenzene	108-90-7	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Chloroethane	75-00-3	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Chloroform	67-66-3	ug/l	7	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Chloromethane	74-87-3	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
cis-1,2-Dichloroethylene	156-59-2	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.92		0.93		1%	0.01
cis-1,3-Dichloropropene	10061-01-5	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Cyclohexane	110-82-7	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Dibromochloromethane	124-48-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-

**Appendix A Table A2 - Groundwater VOCs/SVOCs Field Duplicate Analytical Sampling Results  
2016 Comprehensive Sampling Event Report  
Lawrence Aviation Industries Site  
Port Jefferson Station, New York**

					01-EW01		01-EW01		RPD	ABS	ERT-MW-2B		ERT-MW-2B		RPD	ABS
					11-EW01-20160614		01-EW01-20160614				LAI-FD-HDR-R4-06082016		ERT-MW-2-B-N-HDR-R4-06082016			
					11-EW01-20160614		BDH38				BDGY8		BDGY7			
					2016-06-14		2016-06-14				2016-06-08		2016-06-08			
	Cas No.	Units	NYSDEC Class GA Standards	5 x CRQL	Results (ug/l)	Qual.	Results	Qual.			Results (ug/l)	Qual.	Results	Qual.		
Dichlorodifluoromethane	75-71-8	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Ethylbenzene	100-41-4	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Isopropylbenzene	98-82-8	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
M, P Xylenes	179601-23-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Methyl Acetate	79-20-9	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Methyl tert-Butyl Ether	1634-04-4	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Methylcyclohexane	108-87-2	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Methylene Chloride	75-09-2	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
o-Xylene (1,2-Dimethylbenzene)	95-47-6	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Styrene	100-42-5	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Tetrachloroethylene(PCE)	127-18-4	ug/l	5	2.5	2.33		2.19		6%	0.14	0.92		0.96		4%	0.04
Toluene	108-88-3	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
trans-1,2-Dichloroethene	156-60-5	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
trans-1,3-Dichloropropene	10061-02-6	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Trichloroethylene (TCE)	79-01-6	ug/l	5	2.5	86.4		73.8		16%	12.6	120		120		0%	0
Trichlorofluoromethane	75-69-4	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Vinyl Chloride	75-01-4	ug/l	2	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
<b>Semi-Volatile Organic Compounds (SVOCs)</b>																
1,4-Dioxane (P-Dioxane)	123-91-1	ug/l	NA	10	NA		0.12	J	-	-	0.2	U	0.2	U	-	-

**Notes:**

U: Non-Detect Value

J: Estimated values (- indicates likely biased low)

NA: Not Available

ug/l: microgram per liter

RPD: Relative Percent Difference

CRQL: Contract Required Quantitation Limit

-: RPD and ABS values can not be calculated as one or both results are U qualified.

**Appendix A Table A2 - Groundwater VOCs/SVOCs Field Duplicate Analytical Sampling Results**  
**2016 Comprehensive Sampling Event Report**  
**Lawrence Aviation Industries Site**  
**Port Jefferson Station, New York**

					IW-ISCO-10		IW-ISCO-10		RPD	ABS	MPW-02-D		MPW-02-D		RPD	ABS
					LAI-FD-HDR-R4-06162016		IW-ISCO-10-N-HDR-R4-06162016				LAI-FD-HDR-R4-06092016		MPW-02-D-N-HDR-R4-06092016			
					BDH60		BDH59				BDH00		BDGZ9			
					2016-06-16		2016-06-16				2016-06-09		2016-06-09			
	Cas No.	Units	NYSDEC Class GA Standards	5 x CRQL	Results (ug/l)	Qual.	Results	Qual.			Results (ug/l)	Qual.	Results	Qual.		
<b>Volatile Organic Compounds (VOCs)</b>																
1,1,1-Trichloroethane	71-55-6	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,1,2,2-Tetrachloroethane	79-34-5	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,1,2-Trichloro-1,2,2-	76-13-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,1,2-Trichloroethane	79-00-5	ug/l	1	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,1-Dichloroethane	75-34-3	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,1-Dichloroethene	75-35-4	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,2,3-Trichlorobenzene	87-61-6	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,2,4-Trichlorobenzene	120-82-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,2-Dibromo-3-Chloropropane	96-12-8	ug/l	0.04	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,2-Dibromoethane	106-93-4	ug/l	0.0006	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,2-Dichlorobenzene	95-50-1	ug/l	3	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,2-Dichloroethane	107-06-2	ug/l	0.6	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,2-Dichloropropane	78-87-5	ug/l	1	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,3-Dichlorobenzene	541-73-1	ug/l	3	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
1,4-Dichlorobenzene	106-46-7	ug/l	3	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
2-Butanone	78-93-3	ug/l	NA	25	5	U	5	U	-	-	5	U	5	U	-	-
2-Hexanone	591-78-6	ug/l	NA	25	5	U	5	U	-	-	5	U	5	U	-	-
4-Methyl-2-Pentanone	108-10-1	ug/l	NA	25	5	U	5	U	-	-	5	U	5	U	-	-
Acetone	67-64-1	ug/l	NA	25	5	U	5	U	-	-	5	U	5	U	-	-
Benzene	71-43-2	ug/l	1	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Bromochloromethane	74-97-5	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Bromodichloromethane	75-27-4	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Bromoform	75-25-2	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Bromomethane	74-83-9	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Carbon Disulfide	75-15-0	ug/l	60	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Carbon Tetrachloride	56-23-5	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Chlorobenzene	108-90-7	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Chloroethane	75-00-3	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Chloroform	67-66-3	ug/l	7	2.5	0.5	U	0.5	U	-	-	0.73	U	0.5	U	-	-
Chloromethane	74-87-3	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
cis-1,2-Dichloroethylene	156-59-2	ug/l	5	2.5	0.41	J	0.32	J	25%	0.09	0.5	U	0.5	U	-	-
cis-1,3-Dichloropropene	10061-01-5	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Cyclohexane	110-82-7	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Dibromochloromethane	124-48-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-

**Appendix A Table A2 - Groundwater VOCs/SVOCs Field Duplicate Analytical Sampling Results  
2016 Comprehensive Sampling Event Report  
Lawrence Aviation Industries Site  
Port Jefferson Station, New York**

					IW-ISCO-10		IW-ISCO-10		RPD	ABS	MPW-02-D		MPW-02-D		RPD	ABS
					LAI-FD-HDR-R4-06162016		IW-ISCO-10-N-HDR-R4-06162016				LAI-FD-HDR-R4-06092016		MPW-02-D-N-HDR-R4-06092016			
					BDH60		BDH59				BDH00		BDGZ9			
					2016-06-16		2016-06-16				2016-06-09		2016-06-09			
	Cas No.	Units	NYSDEC Class GA Standards	5 x CRQL	Results (ug/l)	Qual.	Results	Qual.			Results (ug/l)	Qual.	Results	Qual.		
Dichlorodifluoromethane	75-71-8	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Ethylbenzene	100-41-4	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Isopropylbenzene	98-82-8	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
M, P Xylenes	179601-23-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Methyl Acetate	79-20-9	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Methyl tert-Butyl Ether	1634-04-4	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.59		0.57		3%	0.02
Methylcyclohexane	108-87-2	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Methylene Chloride	75-09-2	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
o-Xylene (1,2-Dimethylbenzene)	95-47-6	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Styrene	100-42-5	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Tetrachloroethylene(PCE)	127-18-4	ug/l	5	2.5	3.7		3.7		0%	0	0.5	U	0.5	U	-	-
Toluene	108-88-3	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
trans-1,2-Dichloroethene	156-60-5	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
trans-1,3-Dichloropropene	10061-02-6	ug/l	NA	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Trichloroethylene (TCE)	79-01-6	ug/l	5	2.5	130		120		8%	10	0.5	U	0.5	U	-	-
Trichlorofluoromethane	75-69-4	ug/l	5	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
Vinyl Chloride	75-01-4	ug/l	2	2.5	0.5	U	0.5	U	-	-	0.5	U	0.5	U	-	-
<b>Semi-Volatile Organic Compounds (SVOCs)</b>																
1,4-Dioxane (P-Dioxane)	123-91-1	ug/l	NA	10	NA		NA		-	-	NA		NA		-	-

**Notes:**

U: Non-Detect Value

J: Estimated values (- indicates likely biased low)

NA: Not Available

ug/l: microgram per liter

RPD: Relative Percent Difference

CRQL: Contract Required Quantitation Limit

-: RPD and ABS values can not be calculated as one or both results are U qualified.

**Appendix A Table A2 - Groundwater VOCs/SVOCs Field Duplicate Analytical Sampling Results  
2016 Comprehensive Sampling Event Report  
Lawrence Aviation Industries Site  
Port Jefferson Station, New York**

					MW-PD-14		MW-PD-14		RPD	ABS
					LAI-FD-2-HDR-R4-06162016		MW-PD-14-N-HDR-R4-06162016			
					BDH64		BDH63			
					2016-06-16		2016-06-16			
	Cas No.	Units	NYSDEC Class GA Standards	5 x CRQL	Results (ug/l)	Qual.	Results	Qual.		
<b>Volatile Organic Compounds (VOCs)</b>										
1,1,1-Trichloroethane	71-55-6	ug/l	5	2.5	0.5	U	0.5	U	-	-
1,1,2,2-Tetrachloroethane	79-34-5	ug/l	5	2.5	0.5	U	0.5	U	-	-
1,1,2-Trichloro-1,2,2-	76-13-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-
1,1,2-Trichloroethane	79-00-5	ug/l	1	2.5	0.5	U	0.5	U	-	-
1,1-Dichloroethane	75-34-3	ug/l	5	2.5	0.5	U	0.5	U	-	-
1,1-Dichloroethene	75-35-4	ug/l	5	2.5	0.5	UJ	0.5	UJ	0%	0
1,2,3-Trichlorobenzene	87-61-6	ug/l	NA	2.5	0.5	U	0.5	U	-	-
1,2,4-Trichlorobenzene	120-82-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-
1,2-Dibromo-3-Chloropropane	96-12-8	ug/l	0.04	2.5	0.5	U	0.5	U	-	-
1,2-Dibromoethane	106-93-4	ug/l	0.0006	2.5	0.5	U	0.5	U	-	-
1,2-Dichlorobenzene	95-50-1	ug/l	3	2.5	0.5	U	0.5	U	-	-
1,2-Dichloroethane	107-06-2	ug/l	0.6	2.5	0.5	U	0.5	U	-	-
1,2-Dichloropropane	78-87-5	ug/l	1	2.5	0.5	U	0.5	U	-	-
1,3-Dichlorobenzene	541-73-1	ug/l	3	2.5	0.5	U	0.5	U	-	-
1,4-Dichlorobenzene	106-46-7	ug/l	3	2.5	0.5	U	0.5	U	-	-
2-Butanone	78-93-3	ug/l	NA	25	5	U	5	U	-	-
2-Hexanone	591-78-6	ug/l	NA	25	5	U	5	U	-	-
4-Methyl-2-Pentanone	108-10-1	ug/l	NA	25	5	U	5	U	-	-
Acetone	67-64-1	ug/l	NA	25	5	U	5	U	-	-
Benzene	71-43-2	ug/l	1	2.5	0.5	U	0.5	U	-	-
Bromochloromethane	74-97-5	ug/l	5	2.5	0.5	U	0.5	U	-	-
Bromodichloromethane	75-27-4	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Bromoform	75-25-2	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Bromomethane	74-83-9	ug/l	5	2.5	0.5	U	0.5	U	-	-
Carbon Disulfide	75-15-0	ug/l	60	2.5	0.5	U	0.5	U	-	-
Carbon Tetrachloride	56-23-5	ug/l	5	2.5	0.5	U	0.5	U	-	-
Chlorobenzene	108-90-7	ug/l	5	2.5	0.5	U	0.5	U	-	-
Chloroethane	75-00-3	ug/l	5	2.5	0.5	U	0.5	U	-	-
Chloroform	67-66-3	ug/l	7	2.5	0.5	U	0.5	U	-	-
Chloromethane	74-87-3	ug/l	5	2.5	0.5	U	0.5	U	-	-
cis-1,2-Dichloroethylene	156-59-2	ug/l	5	2.5	0.99	J-	0.84	J-	16%	0.15
cis-1,3-Dichloropropene	10061-01-5	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Cyclohexane	110-82-7	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Dibromochloromethane	124-48-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-



**Appendix A Table A2 - Groundwater VOCs/SVOCs Field Duplicate Analytical Sampling Results  
2016 Comprehensive Sampling Event Report  
Lawrence Aviation Industries Site  
Port Jefferson Station, New York**

					MW-PD-14		MW-PD-14		RPD	ABS
					LAI-FD-2-HDR-R4-06162016		MW-PD-14-N-HDR-R4-06162016			
					BDH64		BDH63			
					2016-06-16		2016-06-16			
	Cas No.	Units	NYSDEC Class GA Standards	5 x CRQL	Results (ug/l)	Qual.	Results	Qual.		
Dichlorodifluoromethane	75-71-8	ug/l	5	2.5	0.5	U	0.5	U	-	-
Ethylbenzene	100-41-4	ug/l	5	2.5	0.5	U	0.5	U	-	-
Isopropylbenzene	98-82-8	ug/l	5	2.5	0.5	U	0.5	U	-	-
M, P Xylenes	179601-23-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Methyl Acetate	79-20-9	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Methyl tert-Butyl Ether	1634-04-4	ug/l	NA	2.5	0.58	J+	0.39	J	39%	0.19
Methylcyclohexane	108-87-2	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Methylene Chloride	75-09-2	ug/l	5	2.5	0.5	U	0.5	U	-	-
o-Xylene (1,2-Dimethylbenzene)	95-47-6	ug/l	5	2.5	0.5	U	0.5	U	-	-
Styrene	100-42-5	ug/l	5	2.5	0.5	U	0.5	U	-	-
Tetrachloroethylene(PCE)	127-18-4	ug/l	5	2.5	2		2.4		18%	0.4
Toluene	108-88-3	ug/l	5	2.5	0.5	U	0.5	U	-	-
trans-1,2-Dichloroethene	156-60-5	ug/l	5	2.5	0.5	UJ	0.5	UJ	0%	0
trans-1,3-Dichloropropene	10061-02-6	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Trichloroethylene (TCE)	79-01-6	ug/l	5	2.5	110		99		11%	11
Trichlorofluoromethane	75-69-4	ug/l	5	2.5	0.5	U	0.5	U	-	-
Vinyl Chloride	75-01-4	ug/l	2	2.5	0.5	U	0.5	U	-	-
<b>Semi-Volatile Organic Compounds (SVOCs)</b>										
1,4-Dioxane (P-Dioxane)	123-91-1	ug/l	NA	10	NA		NA		-	-

**Notes:**

U: Non-Detect Value

J: Estimated values (- indicates likely biased low)

NA: Not Available

ug/l: microgram per liter

RPD: Relative Percent Difference

CRQL: Contract Required Quantitation Limit

-: RPD and ABS values can not be calculated as one or both results are U qualified.

**Appendix A Table A3 - Surface Water VOCs/SVOCs Field Duplicate Analytical Sampling Results  
2016 Comprehensive Sampling Event Report  
Lawrence Aviation Industries Site  
Port Jefferson Station, New York**

					SW-07		SW-07		RPD	ABS
					LAI-FD-HDR-R4-06072016		SW-07-N-HDR-R4-06072016			
					BDGX6		BDGW9			
					2016-06-07		2016-06-07			
	Cas No.	Units	Screening Criteria (1)	5 x CRQL	Results	Qual	Results	Qual		
<b>Volatile Organic Compounds (VOCs)</b>										
1,1,1-Trichloroethane	71-55-6	ug/l	5	2.5	0.5	U	0.5	U	-	-
1,1,2,2-Tetrachloroethane	79-34-5	ug/l	5	2.5	0.5	U	0.5	U	-	-
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-
1,1,2-Trichloroethane	79-00-5	ug/l	1	2.5	0.5	U	0.5	U	-	-
1,1-Dichloroethane	75-34-3	ug/l	5	2.5	0.5	U	0.5	U	-	-
1,1-Dichloroethene	75-35-4	ug/l	5	2.5	0.5	UJ	0.5	UJ	0%	0
1,2,3-Trichlorobenzene	87-61-6	ug/l	NA	2.5	0.5	U	0.5	U	-	-
1,2,4-Trichlorobenzene	120-82-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-
1,2-Dibromo-3-Chloropropane	96-12-8	ug/l	0.04	2.5	0.5	U	0.5	U	-	-
1,2-Dibromoethane	106-93-4	ug/l	0.0006	2.5	0.5	U	0.5	U	-	-
1,2-Dichlorobenzene	95-50-1	ug/l	3	2.5	0.5	U	0.5	U	-	-
1,2-Dichloroethane	107-06-2	ug/l	0.6	2.5	0.5	U	0.5	U	-	-
1,2-Dichloropropane	78-87-5	ug/l	1	2.5	0.5	U	0.5	U	-	-
1,3-Dichlorobenzene	541-73-1	ug/l	3	2.5	0.5	U	0.5	U	-	-
1,4-Dichlorobenzene	106-46-7	ug/l	3	2.5	0.5	U	0.5	U	-	-
2-Butanone	78-93-3	ug/l	NA	25	5	U	5	U	-	-
2-Hexanone	591-78-6	ug/l	NA	25	5	U	5	U	-	-
4-Methyl-2-Pentanone	108-10-1	ug/l	NA	25	5	U	5	U	-	-
Acetone	67-64-1	ug/l	NA	25	5	U	5	U	-	-
Benzene	71-43-2	ug/l	1	2.5	0.5	U	0.5	U	-	-
Bromochloromethane	74-97-5	ug/l	5	2.5	0.5	U	0.5	U	-	-
Bromodichloromethane	75-27-4	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Bromoform	75-25-2	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Bromomethane	74-83-9	ug/l	5	2.5	0.5	U	0.5	U	-	-
Carbon Disulfide	75-15-0	ug/l	60	2.5	0.5	U	0.5	U	-	-
Carbon Tetrachloride	56-23-5	ug/l	5	2.5	0.5	U	0.5	U	-	-
Chlorobenzene	108-90-7	ug/l	5	2.5	0.5	U	0.5	U	-	-
Chloroethane	75-00-3	ug/l	5	2.5	0.5	U	0.5	U	-	-
Chloroform	67-66-3	ug/l	7	2.5	0.5	U	0.5	U	-	-

**Appendix A Table A3 - Surface Water VOCs/SVOCs Field Duplicate Analytical Sampling Results  
2016 Comprehensive Sampling Event Report  
Lawrence Aviation Industries Site  
Port Jefferson Station, New York**

					SW-07		SW-07		RPD	ABS
					LAI-FD-HDR-R4-06072016		SW-07-N-HDR-R4-06072016			
					BDGX6		BDGW9			
					2016-06-07		2016-06-07			
	Cas No.	Units	Screening Criteria (1)	5 x CRQL	Results	Qual	Results	Qual		
Chloromethane	74-87-3	ug/l	5	2.5	0.5	U	0.5	U	-	-
cis-1,2-Dichloroethylene	156-59-2	ug/l	5	2.5	39	J-	36		8%	3
cis-1,3-Dichloropropene	10061-01-5	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Cyclohexane	110-82-7	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Dibromochloromethane	124-48-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Dichlorodifluoromethane	75-71-8	ug/l	5	2.5	0.5	U	0.5	U	-	-
Ethylbenzene	100-41-4	ug/l	5	2.5	0.5	U	0.5	U	-	-
Isopropylbenzene	98-82-8	ug/l	5	2.5	0.5	U	0.5	U	-	-
M, P Xylenes	179601-23-1	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Methyl Acetate	79-20-9	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Methyl tert-Butyl Ether	1634-04-4	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Methylcyclohexane	108-87-2	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Methylene Chloride	75-09-2	ug/l	5	2.5	0.5	U	0.5	U	-	-
o-Xylene (1,2-Dimethylbenzene)	95-47-6	ug/l	5	2.5	0.5	UJ	0.5	U	-	-
Styrene	100-42-5	ug/l	5	2.5	0.5	U	0.5	U	-	-
Tetrachloroethylene(PCE)	127-18-4	ug/l	5	2.5	0.37	J	0.33	J	11%	0.04
Toluene	108-88-3	ug/l	5	2.5	1.8		1.7		6%	0.1
trans-1,2-Dichloroethene	156-60-5	ug/l	5	2.5	0.5	UJ	0.5	UJ	0%	0
trans-1,3-Dichloropropene	10061-02-6	ug/l	NA	2.5	0.5	U	0.5	U	-	-
Trichloroethylene (TCE)	79-01-6	ug/l	5	2.5	19		19		0%	0
Trichlorofluoromethane	75-69-4	ug/l	5	2.5	0.5	U	0.5	U	-	-
Vinyl Chloride	75-01-4	ug/l	2	2.5	3.4		3.1		9%	0.3
<b>Semi-Volatile Organic Compounds (SVOCs)</b>										
1,4-Dioxane (P-Dioxane)	123-91-1	ug/l	NA	10	0.2	U	0.2	U	-	-

**Notes:**

U: Non-Detect Value

J: Estimated values (- indicates likely biased low)

NA: Not Available

ug/l: microgram per liter

RPD: Relative Percent Difference

CRQL: Contract Required Quantitation Limit

-: RPD and ABS values can not be calculated as one or both results are U qualified.

(1). Screening Criteria: the lower of the following two sets of criteria were used as screening criteria. Sample results equal to or exceeding screening criteria are highlighted in yellow.

Surface water criteria are compiled from the New York State Department of Health Water Quality Standards for Human Consumption, and the New York State Department of Environmental Conservation Class GA Standards, as described in the Remedial Investigation Report (dated September 2005). (The lower of the two standards were used.)

**Appendix A Table A4 - Groundwater Surface Water Sample Results Completeness  
2016 Comprehensive Sampling Event Report  
Lawrence Aviation Industries Site  
Port Jefferson Station, New York**

<b>Groundwater Results</b>	<b>VOCs</b>	<b>SVOCs</b>
	<b>Total Numbers</b>	<b>Total Numbers</b>
Non-Detects	3989	11
No. of Detects	131	2
No. of Estimated Hits (with Qualifier J, J-, J+ and NJ)	59	2
No. of Rejects	3	0
<b>Total</b>	<b>4182</b>	<b>15</b>

Percent Rejected	0.072%	0%
Percent Estimated Hits	1.41%	13.33%
<b>Total Completeness</b>	<b>100%</b>	<b>100%</b>

<b>Surface Water Results</b>	<b>VOCs</b>	<b>SVOCs</b>
	<b>Total Numbers</b>	<b>Total Numbers</b>
Non-Detects	336	5
No. of Detects	17	2
No. of Estimated Hits (with Qualifier J)	4	0
No. of Rejects	0	0
<b>Total</b>	<b>357</b>	<b>7</b>

Percent Rejected	0%	0%
Percent Estimated Hits	1.12%	0.00%
<b>Total Completeness</b>	<b>100%</b>	<b>100%</b>

**Notes:**

The counts and calculations above do not include field, equipment or trip blank samples, only environmental samples (including field duplicate and MS/MSD samples)











APPENDIX B  
2016 COMPREHENSIVE SAMPLING  
EVENT ANALYTICAL DATA TABLES



















**Appendix B**  
**Table B2 - Surface Water VOCs and SVOCs Analytical Sampling Results (June 2016)**  
**Lawrence Aviation Industries Site**  
**Port Jefferson Station, New York**

Location				SW-05		SW-06		SW-07		SW-08		SW-15		SW-16	
Sample ID				SW-05-N-HDR-R4-06072016		SW-06-N-HDR-R4-06072016		SW-07-N-HDR-R4-06072016		SW-08-N-HDR-R4-06072016		SW-15-N-HDR-R4-06072016		SW-16-N-HDR-R4-06072016	
CLP ID				BDGW7		BDGW8		BDGW9		BDGX0		BDGX3		BDGX2	
Sample Date				2016-06-07		2016-06-07		2016-06-07		2016-06-07		2016-06-07		2016-06-07	
Analyte	Cas No.	Units	Screening Criteria (ug/l) (1)	Results (ug/l)	Qual	Results (ug/l)	Qual	Results (ug/l)	Qual	Results (ug/l)	Qual	Results (ug/l)	Qual	Results (ug/l)	Qual
<b>Volatile Organic Compounds (VOCs)</b>															
1,1,1-Trichloroethane	71-55-6	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	79-34-5	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	ug/l		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	79-00-5	ug/l	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	75-34-3	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	75-35-4	ug/l	5	0.5	U	0.5	UJ	0.5	UJ	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	87-61-6	ug/l		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	120-82-1	ug/l		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromo-3-Chloropropane	96-12-8	ug/l	0.04	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromoethane	106-93-4	ug/l	0.0006	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	95-50-1	ug/l	3	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	107-06-2	ug/l	0.6	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	78-87-5	ug/l	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	541-73-1	ug/l	3	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	106-46-7	ug/l	3	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Butanone	78-93-3	ug/l		5	U	5	U	5	U	5	U	5	U	5	U
2-Hexanone	591-78-6	ug/l		5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-Pentanone	108-10-1	ug/l		5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	ug/l		5	U	9.5		5	U	5	U	5	U	5	U
Benzene	71-43-2	ug/l	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	74-97-5	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	75-27-4	ug/l		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	75-25-2	ug/l		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromomethane	74-83-9	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon Disulfide	75-15-0	ug/l	60	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon Tetrachloride	56-23-5	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	108-90-7	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	75-00-3	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	67-66-3	ug/l	7	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloromethane	74-87-3	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,2-Dichloroethylene	156-59-2	ug/l	<u>5</u>	0.5	U	<b>14</b>	J-	<b>36</b>	D	0.53		0.5	U	0.5	U
cis-1,3-Dichloropropene	10061-01-5	ug/l		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cyclohexane	110-82-7	ug/l		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

**Appendix B**  
**Table B2 - Surface Water VOCs and SVOCs Analytical Sampling Results (June 2016)**  
**Lawrence Aviation Industries Site**  
**Port Jefferson Station, New York**

Location				SW-05		SW-06		SW-07		SW-08		SW-15		SW-16	
Sample ID				SW-05-N-HDR-R4-06072016		SW-06-N-HDR-R4-06072016		SW-07-N-HDR-R4-06072016		SW-08-N-HDR-R4-06072016		SW-15-N-HDR-R4-06072016		SW-16-N-HDR-R4-06072016	
CLP ID				BDGW7		BDGW8		BDGW9		BDGX0		BDGX3		BDGX2	
Sample Date				2016-06-07		2016-06-07		2016-06-07		2016-06-07		2016-06-07		2016-06-07	
Analyte	Cas No.	Units	Screening Criteria (ug/l) (1)	Results (ug/l)	Qual	Results (ug/l)	Qual	Results (ug/l)	Qual	Results (ug/l)	Qual	Results (ug/l)	Qual	Results (ug/l)	Qual
Dibromochloromethane	124-48-1	ug/l		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	75-71-8	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	100-41-4	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Isopropylbenzene	98-82-8	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
M, P Xylenes	179601-23-1	ug/l		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.67	
Methyl Acetate	79-20-9	ug/l		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl tert-Butyl Ether	1634-04-4	ug/l		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylcyclohexane	108-87-2	ug/l		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene Chloride	75-09-2	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene (1,2-Dimethylbenzene)	95-47-6	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	100-42-5	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethylene(PCE)	127-18-4	ug/l	5	0.5	U	0.5	U	0.33	J	0.5	U	0.5	U	0.5	U
Toluene	108-88-3	ug/l	5	0.5	U	3.3		1.7		0.5	U	0.5	U	1.1	
trans-1,2-Dichloroethene	156-60-5	ug/l	5	0.5	U	0.5	UJ	0.5	UJ	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	10061-02-6	ug/l		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethylene (TCE)	79-01-6	ug/l	<u>5</u>	2.1		<u>2</u>		<u>19</u>		0.94		0.5	U	1.7	
Trichlorofluoromethane	75-69-4	ug/l	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl Chloride	75-01-4	ug/l	<u>2</u>	0.5	U	2		<u>3.1</u>		0.5	U	0.5	U	0.5	U
<b>Semi-Volatile Organic Compounds (SVOCs)</b>															
1,4-Dioxane (P-Dioxane)	123-91-1	ug/l		0.29		0.2	U	0.2	U	0.22		0.2	U	0.2	U

Notes:

D - Diluted sample

J - Estimated values (- indicates likely biased low)

NA - Not Available

U - Non-Detect Value

ug/l - microgram per liter

Values that are **bold and highlighted** exceed Screening Criteria

(1). Screening Criteria: the lower of the following two sets of criteria were used as screening criteria. Sample results equal to or exceeding screening criteria are highlighted in yellow.

Surface water criteria are compiled from the New York State Department of Health Water Quality Standards for Human Consumption, and the New York State Department of Environmental Conservation Class GA Standards, as described in the Remedial Investigation Report (dated September 2005). (The lower of the two standards were used.)

APPENDIX C  
TOTAL VOCS TIME SERIES  
CONCENTRATION DATA

**Appendix C**  
**Total VOC Concentration Data Used in Time Series Graphs**  
**Lawrence Aviation Industries Site**  
**Port Jefferson Station, New York**

Well ID	RI March 2005	RI May 2005	Pre-Design Round 2 May - June 2008	August 2010 (Baseline)	December 2010	March 2011	June 2011	September 2011	December 2011	March 2012	May 2012	July 2012	September 2012	June 2013	June 2014	June 2015	June 2016
MPW-09-A	157	71	53	NS	NS	NS	NS	NS	NS	NS	NS	NS	17	20	16	18	13
MPW-09-B	377	573	347	NS	NS	NS	NS	NS	NS	NS	NS	NS	642	373	972	149	270
MPW-09-C	597	786	579	NS	NS	NS	NS	NS	NS	NS	NS	NS	390	506	525	447	46
MPW-09-D	399	888	527	NS	NS	NS	NS	NS	NS	NS	NS	NS	672	496	446	219	217
MW-PD-12	NI	NI	215	236	463.6	400	471	602	NS	420	339	329	NU	340	226	234	96
MW-PD-14	NI	NI	358	NS	NS	NS	NS	NS	NS	NS	288	NS	NS	287	195	184	102
MW-PD-16	NI	NI	1933	NS	NS	NS	NS	NS	NS	NS	379	NS	NS	502	133	574	206

**Notes:**

All results in micrograms per liter  
 DP - Defective port  
 ND - Not Detected  
 NI - Not Installed  
 NS - Not Sampled  
 NU - Not Used  
 RI - Remedial Investigation  
 VOC - Volatile Organic Compound

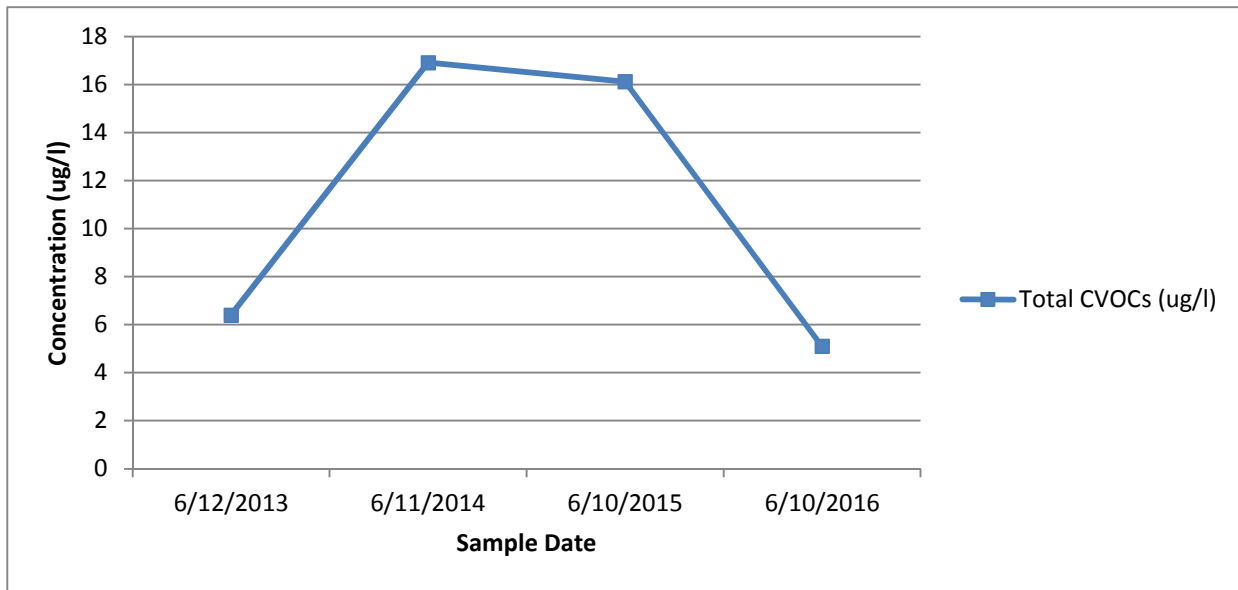
Total VOC Concentration values equal sum of the following compounds, not detect values are not included in the total:

Trichloroethene  
 1,1,1-Trichloroethane  
 1,1-Dichloroethane  
 1,1-Dichloroethene  
 Chloroform  
 cis-1,2-Dichloroethene  
 Tetrachloroethene  
 Vinyl Chloride

APPENDIX D  
HISTORICAL DATA AND TIME SERIES CONCENTRATION DATA

# ERT-EW-3

Sample Date			6/12/2013		6/11/2014		6/10/2015		6/10/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U	0.11	J	0.11	J		U
1,1-Dichloroethane	75-34-3	ug/l		U		U	0.11	J		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		UJ
Chloroform	67-66-3	ug/l		U		U		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U	0.41	J	0.45	J		UJ
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.39	J	0.45	J		U
Trichloroethene (TCE)	79-01-6	ug/l	6.4		16		15	J	5.1	
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>6.4</b>		<b>16.91</b>		<b>16.12</b>		<b>5.1</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

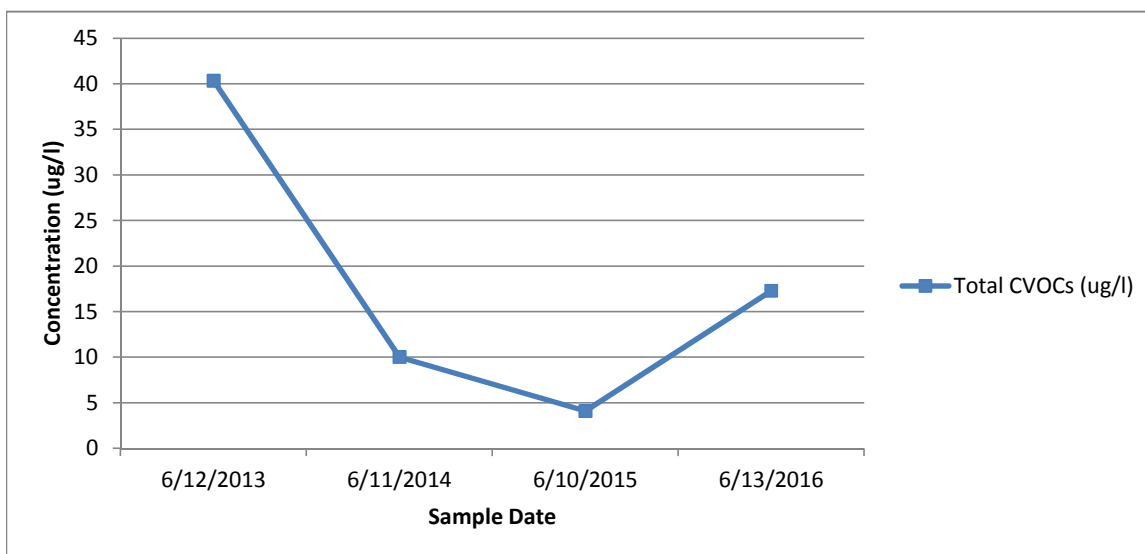
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# ERT-EW-4

Sample Date			6/12/2013		6/11/2014		6/10/2015		6/13/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l		U	0.11	J		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	1.6		0.2	J		U	0.33	J
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.75		0.31	J	0.22	J	0.96	
Trichloroethene (TCE)	79-01-6	ug/l	38		9.4		3.9	J	16	
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>40.35</b>		<b>10.02</b>		<b>4.12</b>		<b>17.29</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

3. NS = Not Sampled

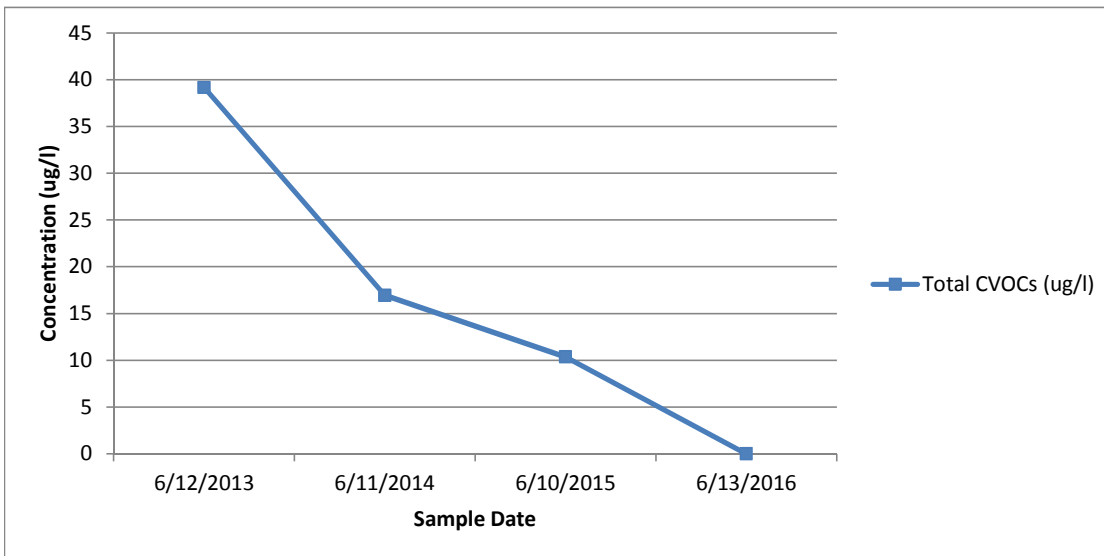
4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value



# ERT-EW-5

Sample Date			6/12/2013		6/11/2014		6/10/2015		6/13/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		UJ
Chloroform	67-66-3	ug/l		U	0.22	J	0.4	J		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U	0.22	J	0.14	J		UJ
Tetrachloroethylene(PCE)	127-18-4	ug/l	1.2		0.52		0.43	J		U
Trichloroethene (TCE)	79-01-6	ug/l	38		16		9.4	J		U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>39.2</b>		<b>16.96</b>		<b>10.37</b>		<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

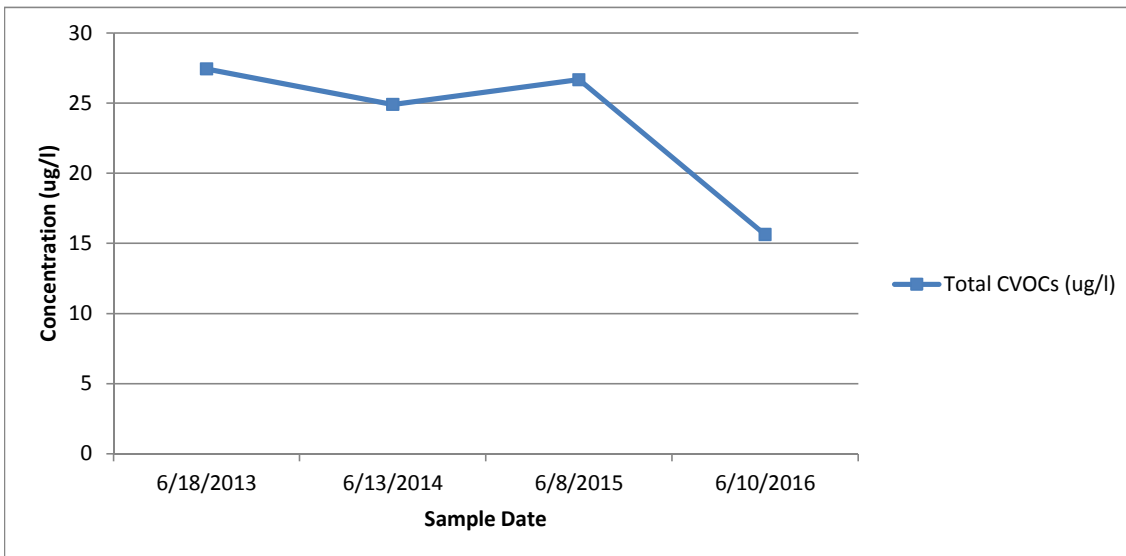
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# ERT-MW-1A

Sample Date			6/18/2013		6/13/2014		6/8/2015		6/10/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U	0.4	J	0.36	J		U
1,1-Dichloroethane	75-34-3	ug/l	0.62		0.73	J	0.75		0.34	J
1,1-Dichloroethene	75-35-4	ug/l		U	0.2	J		U		UJ
Chloroform	67-66-3	ug/l		U	0.38	J	0.41	J		U
Chloromethane	74-87-3	ug/l		U		UJ		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	0.82		0.9	J	0.82		0.29	J
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.3	J	0.34	J		U
Trichloroethene (TCE)	79-01-6	ug/l	26		22	J	24		15	
Vinyl Chloride	75-01-4	ug/l		U		UJ		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>27.44</b>		<b>24.91</b>		<b>26.68</b>		<b>15.63</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

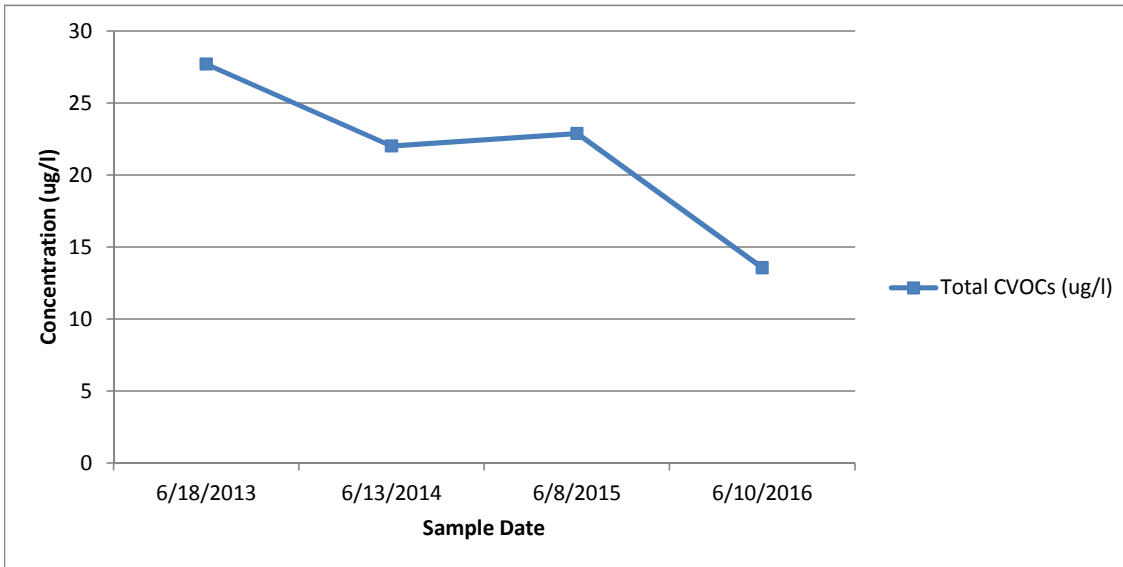
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# ERT-MW-1B

Sample Date			6/18/2013		6/13/2014		6/8/2015		6/10/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U	0.21	J	0.29	J		U
1,1-Dichloroethane	75-34-3	ug/l		U	0.48	J	0.63		0.3	J
1,1-Dichloroethene	75-35-4	ug/l		U	0.14	J		U		U
Chloroform	67-66-3	ug/l		U	0.37	J		U		U
Chloromethane	74-87-3	ug/l		U		UJ		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	0.72		0.67	J+	0.72		0.26	J
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.16	J	0.26	J		U
Trichloroethene (TCE)	79-01-6	ug/l	27		20	J	21		13	
Vinyl Chloride	75-01-4	ug/l		U		UJ		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>27.72</b>		<b>22.03</b>		<b>22.9</b>		<b>13.56</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

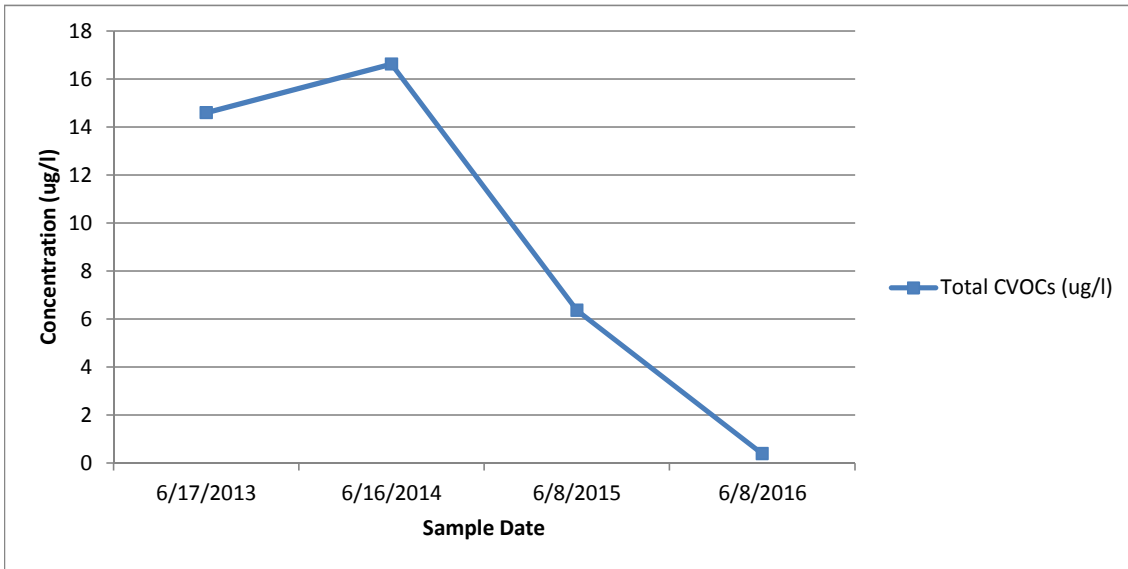
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# ERT-MW-2A

Sample Date			6/17/2013		6/16/2014		6/8/2015		6/8/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U	0.16	J	0.13	J		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		UJ
Chloroform	67-66-3	ug/l		U	0.49	J	0.53			U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U	0.28	J+		U		UJ
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.6		1.7		1.4		0.39	J
Trichloroethene (TCE)	79-01-6	ug/l	14		14		4.3			U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>14.6</b>		<b>16.63</b>		<b>6.36</b>		<b>0.39</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

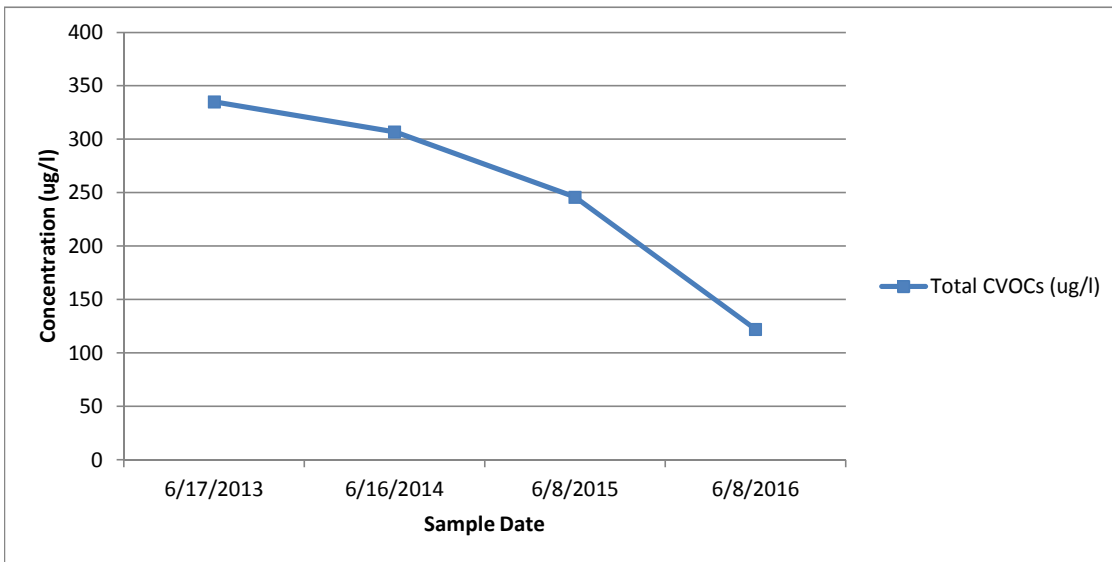
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# ERT-MW-2B

Sample Date			6/17/2013		6/16/2014		6/8/2015		6/8/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U	0.35	J	0.39	J		U
1,1-Dichloroethane	75-34-3	ug/l	0.58		0.82		0.85		0.39	J
1,1-Dichloroethene	75-35-4	ug/l		U	0.24	J+		U		U
Chloroform	67-66-3	ug/l		U	0.48	J	0.42	J		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	2.9		3.2	J+	2.4		0.93	
Tetrachloroethylene(PCE)	127-18-4	ug/l	1.6		1.9		1.9		0.96	
Trichloroethene (TCE)	79-01-6	ug/l	330		300		240		120	D
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>335.08</b>	<b>U</b>	<b>307</b>		<b>246</b>		<b>122.3</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

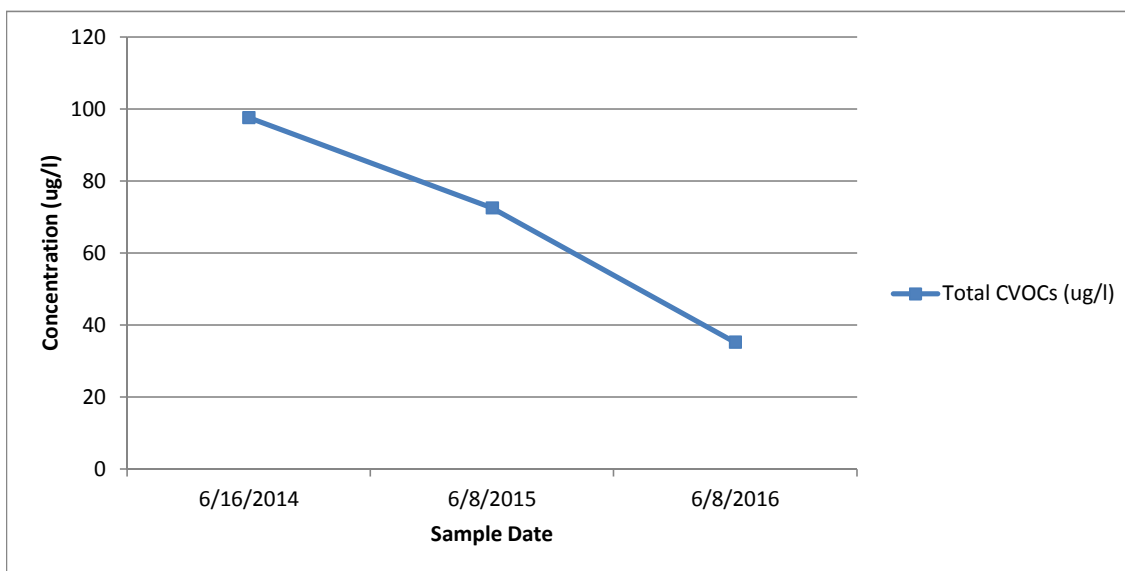
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# ERT-MW-2C

Sample Date			6/16/2014		6/8/2015		6/8/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	0.16	J	0.22	J		U
1,1-Dichloroethane	75-34-3	ug/l	0.33	J	0.47	J		U
1,1-Dichloroethene	75-35-4	ug/l	0.12	J+		U		UJ
Chloroform	67-66-3	ug/l	0.32	J	0.38	J		U
Chloromethane	74-87-3	ug/l		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	1.2	J+	0.9		0.25	J-
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.48	J	0.59			U
Trichloroethene (TCE)	79-01-6	ug/l	95		70		35	D
Vinyl Chloride	75-01-4	ug/l		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>97.61</b>		<b>72.56</b>		<b>35.25</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

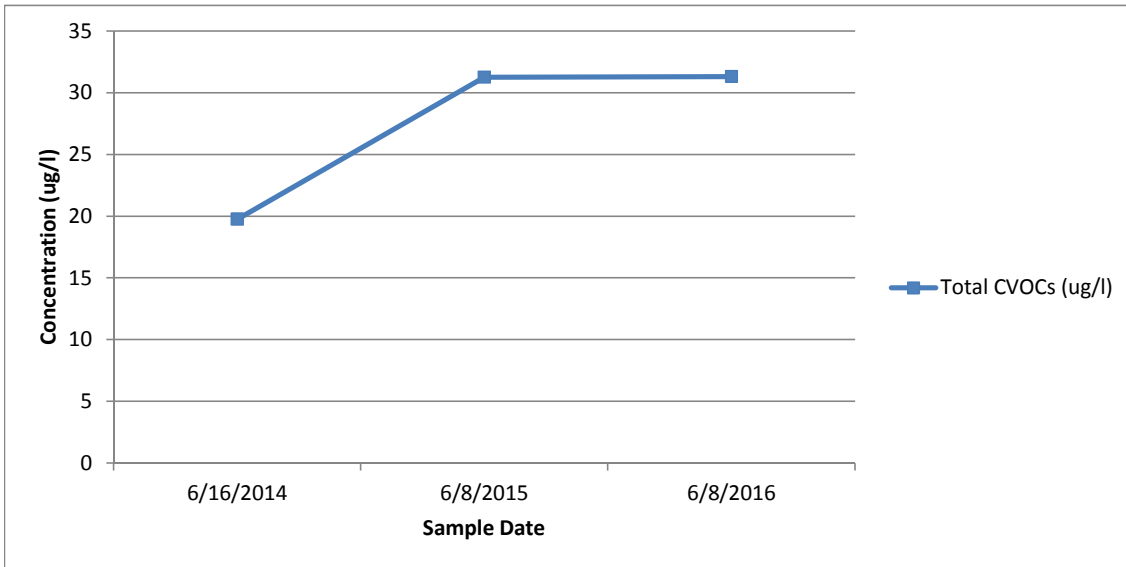
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# ERT-MW-2D

Sample Date			6/16/2014		6/8/2015		6/8/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	0.29	J	0.55		0.36	J
1,1-Dichloroethane	75-34-3	ug/l	0.54		1.2		0.6	
1,1-Dichloroethene	75-35-4	ug/l	0.16	J+		U		UJ
Chloroform	67-66-3	ug/l	0.27	J	0.49	J		U
Chloromethane	74-87-3	ug/l		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	0.23	J+	0.46	J		UJ
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.27	J	0.57		0.37	J
Trichloroethene (TCE)	79-01-6	ug/l	18		28		30	D
Vinyl Chloride	75-01-4	ug/l		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>19.76</b>		<b>31.27</b>		<b>31.33</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

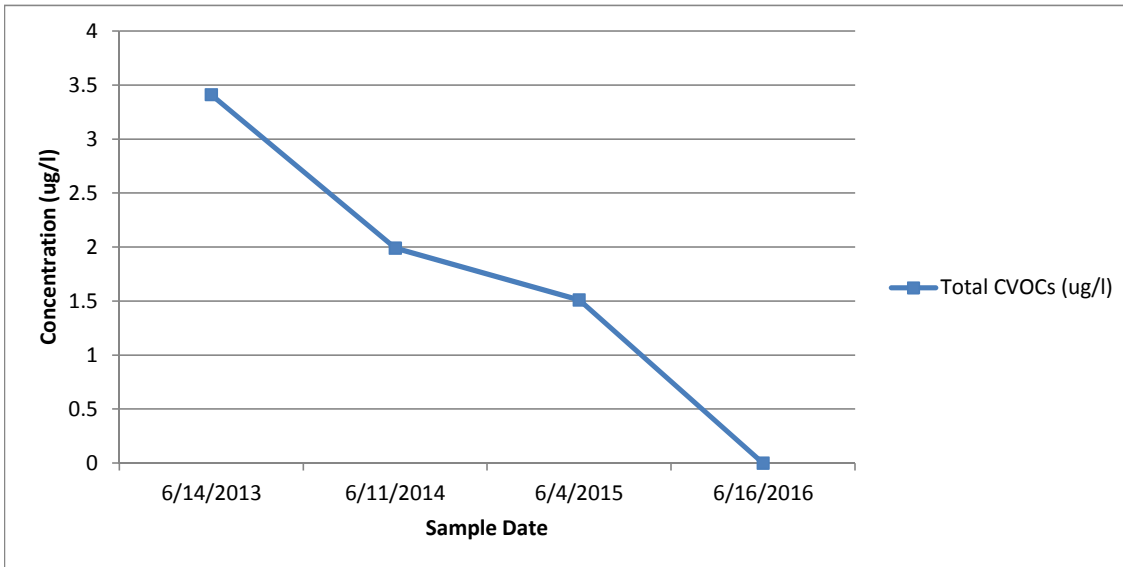
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# ERT-MW-3

Sample Date			6/14/2013		6/11/2014		6/4/2015		6/16/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	0.85		0.47	J	0.54	J		U
1,1-Dichloroethane	75-34-3	ug/l	0.86		0.46	J	0.51	J		U
1,1-Dichloroethene	75-35-4	ug/l		U	0.2	J		U		U
Chloroform	67-66-3	ug/l	0.55		0.44	J		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.65		0.42	J	0.46	J		U
Trichloroethene (TCE)	79-01-6	ug/l	0.5			U		U		U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>3.41</b>	<b>U</b>	<b>1.99</b>		<b>1.51</b>		<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

3. NS = Not Sampled

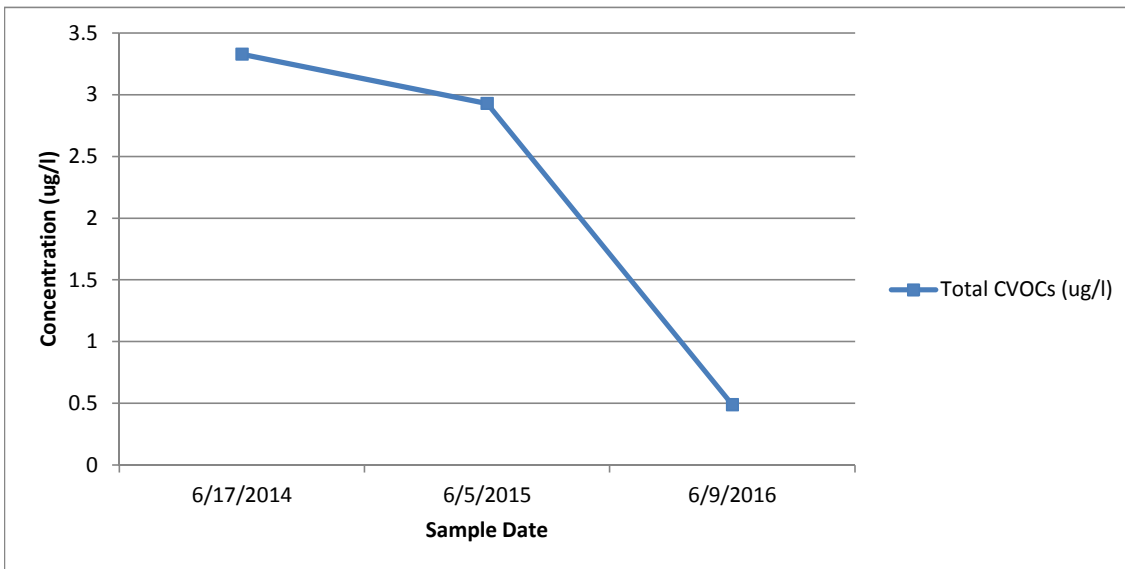
4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value



# ERT-MW-4A

Sample Date			6/17/2014		6/5/2015		6/9/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	0.39	J	0.46	J		U
1,1-Dichloroethane	75-34-3	ug/l	0.63		0.73	J	0.49	J
1,1-Dichloroethene	75-35-4	ug/l	0.21	J		U		U
Chloroform	67-66-3	ug/l	0.37	J		U		U
Chloromethane	74-87-3	ug/l		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	0.39	J	0.35	J		U
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.24	J	0.29	J		U
Trichloroethene (TCE)	79-01-6	ug/l	1.1		1.1	J		U
Vinyl Chloride	75-01-4	ug/l		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>3.33</b>		<b>2.93</b>		<b>0.49</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

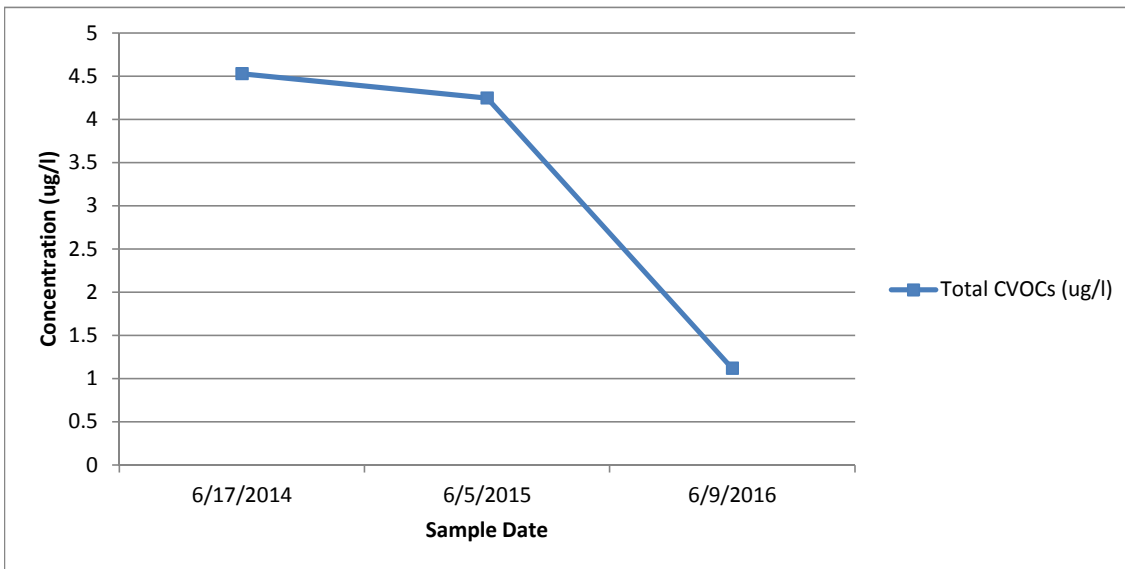
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# ERT-MW-4B

Sample Date			6/17/2014		6/5/2015		6/9/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	0.61		0.62	J	0.37	J
1,1-Dichloroethane	75-34-3	ug/l	1		0.91	J	0.75	
1,1-Dichloroethene	75-35-4	ug/l	0.27	J	0.5	UJ		U
Chloroform	67-66-3	ug/l	0.47	J	0.37	J		U
Chloromethane	74-87-3	ug/l		U	0.5	UJ		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	0.53	J+	0.42	J		U
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.35	J	0.29	J		U
Trichloroethene (TCE)	79-01-6	ug/l	1.3		0.64	J		U
Vinyl Chloride	75-01-4	ug/l		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>4.53</b>		<b>4.25</b>		<b>1.12</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

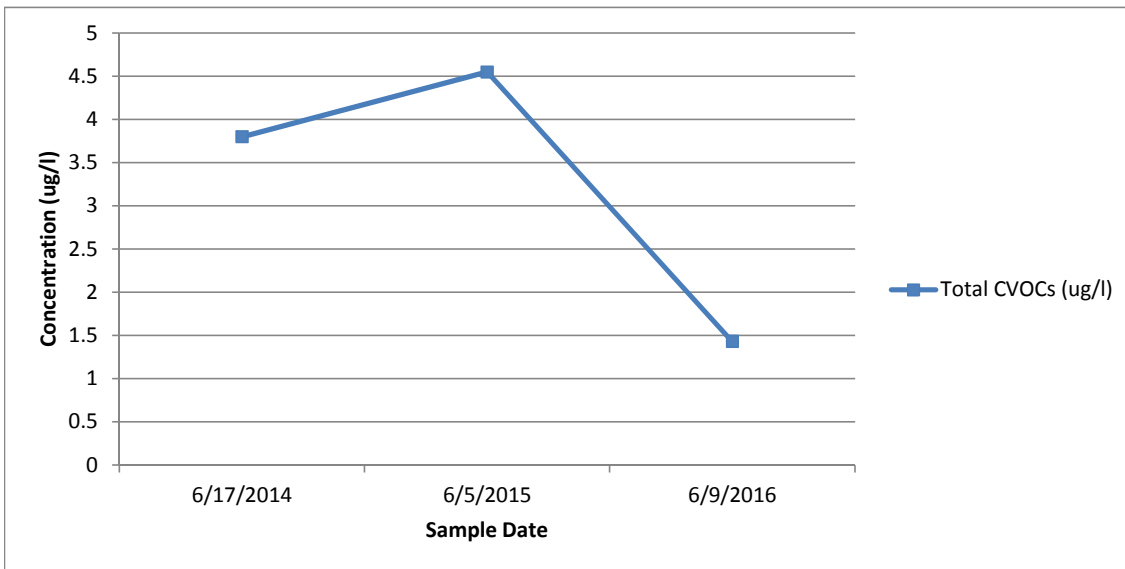
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# ERT-MW-5A

Sample Date			6/17/2014		6/5/2015		6/9/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	0.84		0.88	J	0.38	J
1,1-Dichloroethane	75-34-3	ug/l	1.3		1.4	J	0.79	
1,1-Dichloroethene	75-35-4	ug/l	0.31	J+		U		U
Chloroform	67-66-3	ug/l	0.52		0.57	J		U
Chloromethane	74-87-3	ug/l		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	0.53	J+	0.59	J	0.26	J
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.3	J	0.38	J		U
Trichloroethene (TCE)	79-01-6	ug/l		U	0.73	J		U
Vinyl Chloride	75-01-4	ug/l		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>3.8</b>		<b>4.55</b>		<b>1.43</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

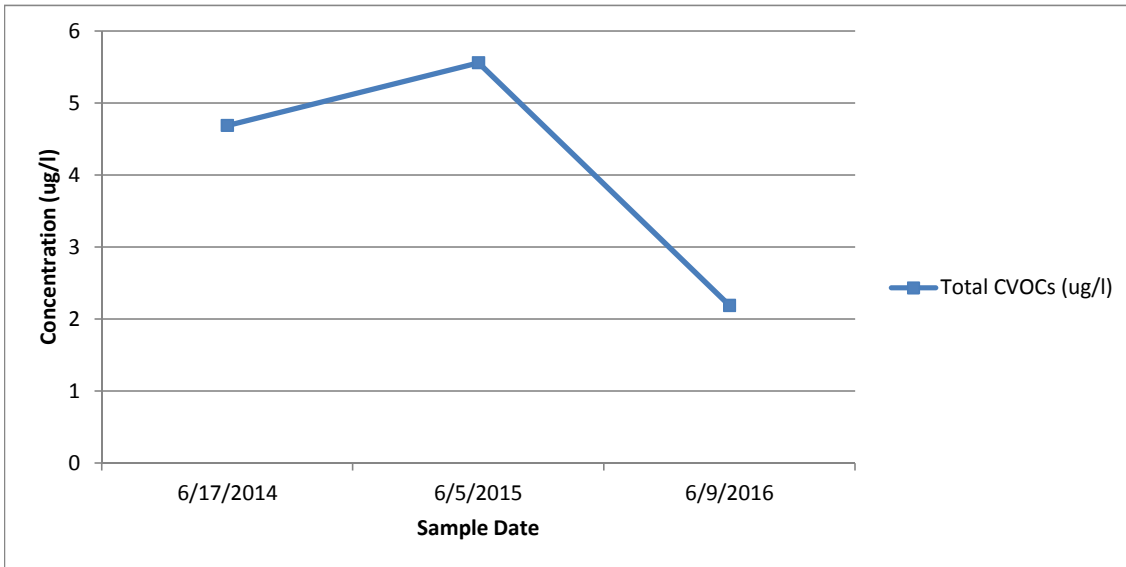
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# ERT-MW-5B

Sample Date			6/17/2014		6/5/2015		6/9/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	1.2		1.3	J	0.64	
1,1-Dichloroethane	75-34-3	ug/l	1.7		1.9	J	1.3	
1,1-Dichloroethene	75-35-4	ug/l	0.35	J+		U		UJ
Chloroform	67-66-3	ug/l	0.53		0.57	J		U
Chloromethane	74-87-3	ug/l		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	0.55	J+	0.57	J	0.25	J
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.36	J	0.44	J		U
Trichloroethene (TCE)	79-01-6	ug/l		U	0.78	J		U
Vinyl Chloride	75-01-4	ug/l		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>4.69</b>		<b>5.56</b>		<b>2.19</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

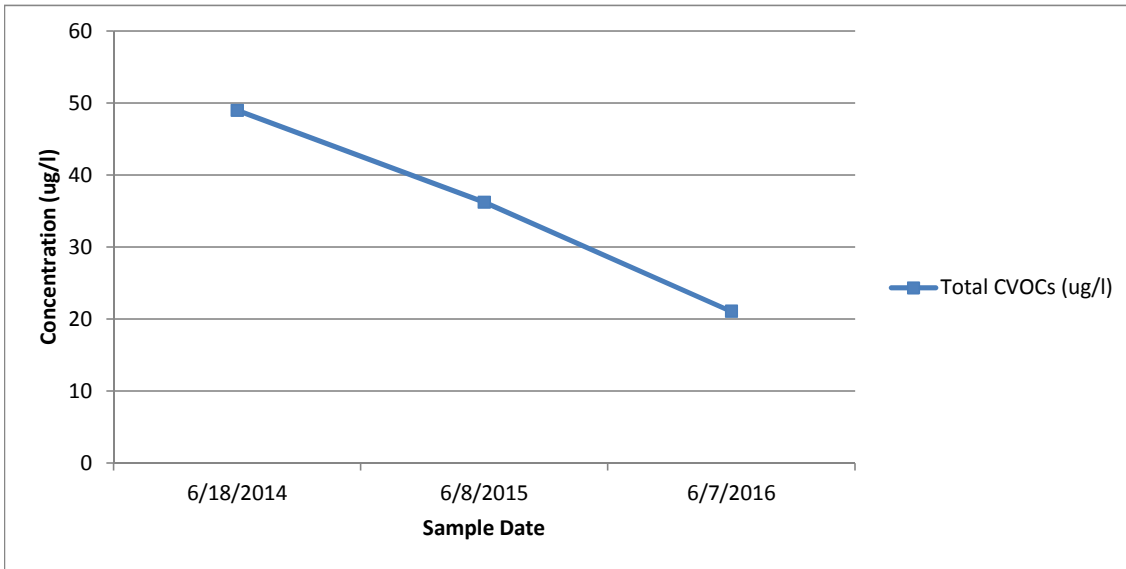
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# ERT-MW-6A

Sample Date			6/18/2014		6/8/2015		6/7/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	0.81		0.62			U
1,1-Dichloroethane	75-34-3	ug/l	1.4		1.2		0.57	
1,1-Dichloroethene	75-35-4	ug/l	0.4	J		U		UJ
Chloroform	67-66-3	ug/l	0.51		0.48	J		U
Chloromethane	74-87-3	ug/l		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	1.2	J+	1.3		0.5	J-
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.68		0.64			U
Trichloroethene (TCE)	79-01-6	ug/l	44		32		20	D
Vinyl Chloride	75-01-4	ug/l		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>49</b>		<b>36.24</b>		<b>21.07</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

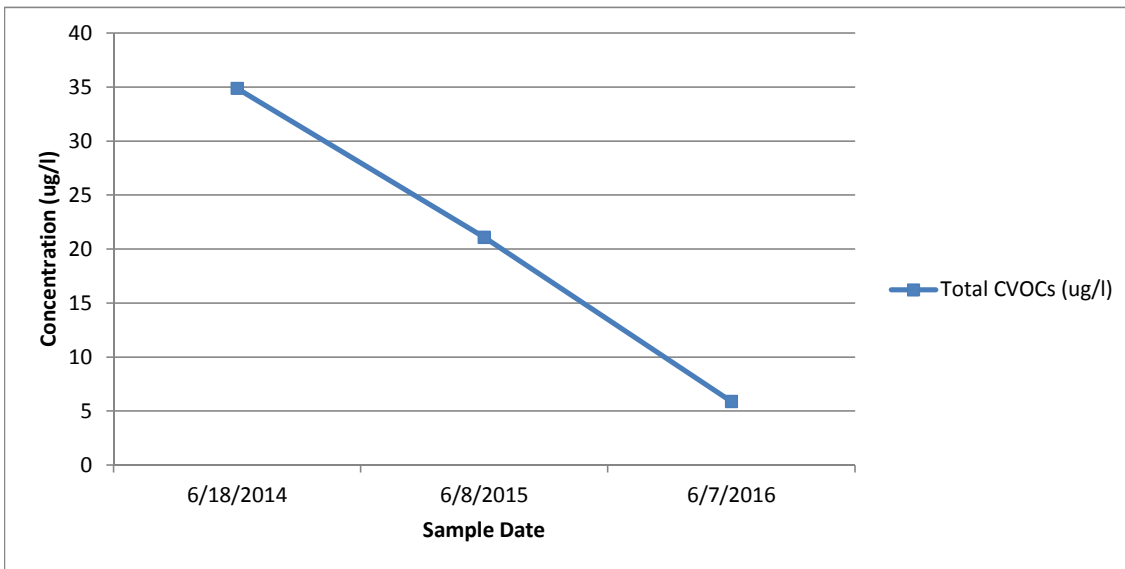
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# ERT-MW-6B

CVOc	CAS RN	Units	Sample Date		6/18/2014		6/8/2015		6/7/2016	
			Result	Qual	Result	Qual	Result	Qual		
1,1,1-Trichloroethane	71-55-6	ug/l	0.7		0.58					U
1,1-Dichloroethane	75-34-3	ug/l	1.1		1.1				0.49	J
1,1-Dichloroethene	75-35-4	ug/l	0.32	J			U			UJ
Chloroform	67-66-3	ug/l	0.46	J	0.46	J				U
Chloromethane	74-87-3	ug/l		U			U			U
cis-1,2-Dichloroethylene	156-59-2	ug/l	0.78	J+	0.58					UJ
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.52		0.37	J				U
Trichloroethene (TCE)	79-01-6	ug/l	31		18				5.4	
Vinyl Chloride	75-01-4	ug/l		U			U			U
<b>Total CVOcs</b>		<b>ug/l</b>	<b>34.88</b>		<b>21.09</b>				<b>5.89</b>	



**Notes:**

1. Total CVOcs were calculated by adding the concentrations of the following VOcs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

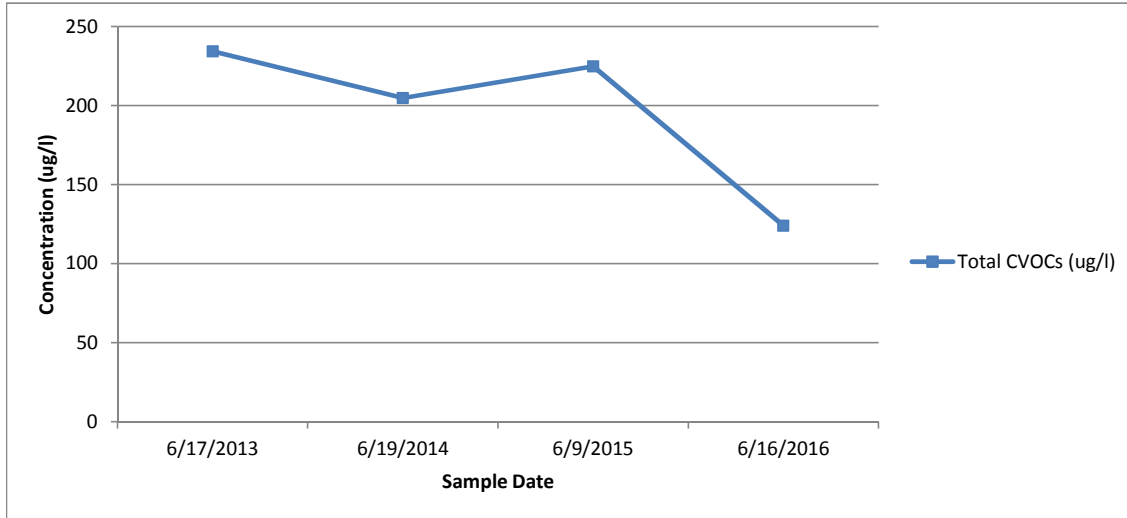
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# IW-ISCO-10

CVOC	CAS RN	Units	Sample Date		6/17/2013		6/19/2014		6/9/2015		6/16/2016	
			Result	Qual	Result	Qual	Result	Qual	Result	Qual		
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U		U
Chloroform	67-66-3	ug/l		U		U		U		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		0.25 J		0.33 J		0.32 J		0.32 J
Tetrachloroethylene(PCE)	127-18-4	ug/l		4.4		4.5		4.5		3.7		3.7
Trichloroethene (TCE)	79-01-6	ug/l		230		200		220		120		120 D
Vinyl Chloride	75-01-4	ug/l		U		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>		<b>234.4</b>		<b>204.75</b>		<b>224.83</b>		<b>124.02</b>		<b>124.02</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

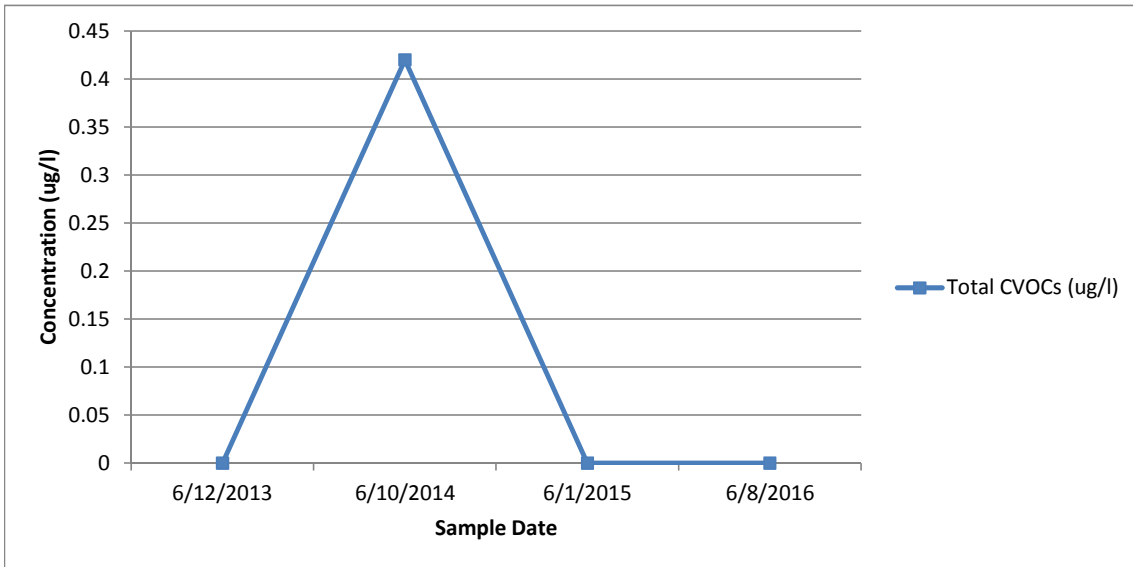
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-01-A

Sample Date			6/12/2013		6/10/2014		6/1/2015		6/8/2016		
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U	
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U	
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U	
Chloroform	67-66-3	ug/l		U	0.3	J		U		U	
Chloromethane	74-87-3	ug/l		U		U		U		U	
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U	
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.12	J		U		U	
Trichloroethene (TCE)	79-01-6	ug/l		U		U		U		U	
Vinyl Chloride	75-01-4	ug/l		U		U		U		U	
<b>Total CVOCs</b>		<b>ug/l</b>	<b>0</b>	<b>U</b>	<b>0.42</b>			<b>0</b>	<b>U</b>	<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

3. NS = Not Sampled

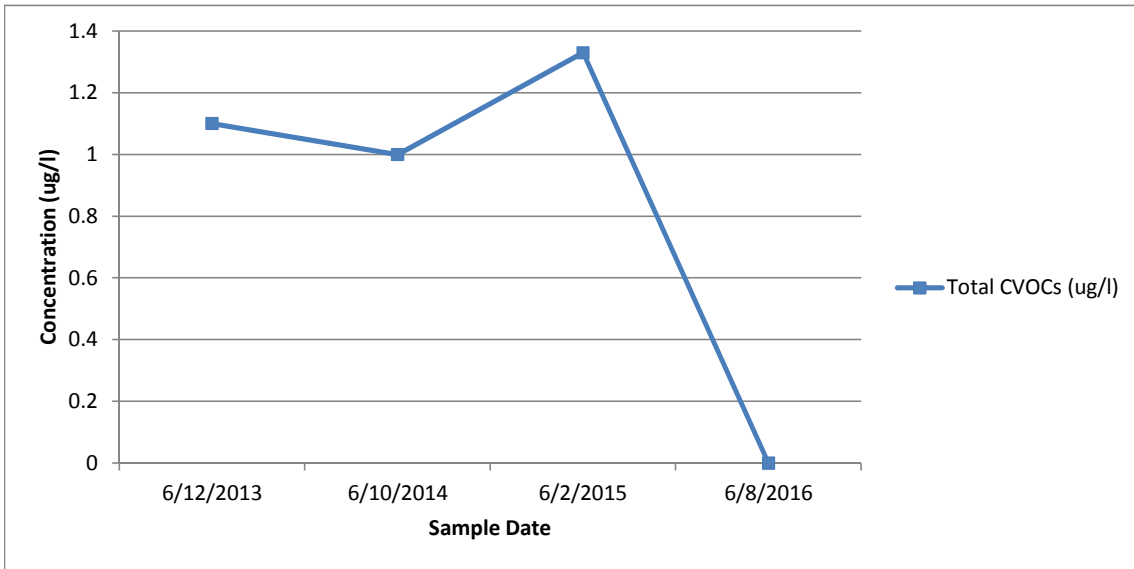
4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value



# MPW-01-B

Sample Date			6/12/2013		6/10/2014		6/2/2015		6/8/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		UJ		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l	1.1		0.82		1.1			U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.18	J	0.23	J		U
Trichloroethene (TCE)	79-01-6	ug/l		U		U		U		U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>1.1</b>	<b>U</b>	<b>1</b>		<b>1.33</b>		<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

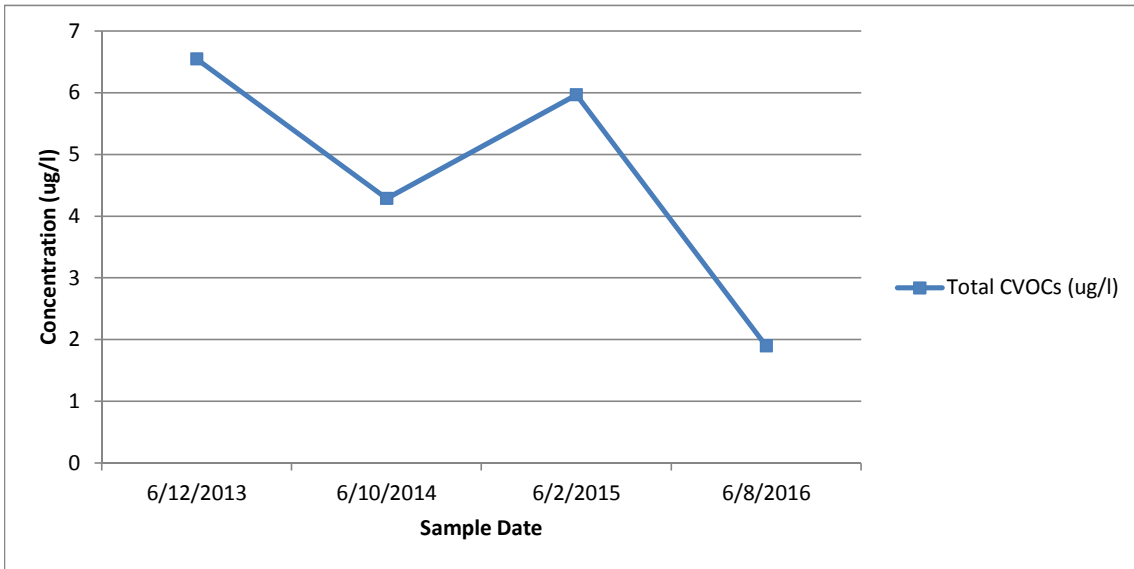
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-01-C

Sample Date			6/12/2013		6/10/2014		6/2/2015		6/8/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	1.5		1		1.1		0.5	
1,1-Dichloroethane	75-34-3	ug/l	3		2.2		2.8		1.4	
1,1-Dichloroethene	75-35-4	ug/l	0.63		0.4	J	0.62			U
Chloroform	67-66-3	ug/l	0.66		0.56		0.68			U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.13	J	0.19	J		U
Trichloroethene (TCE)	79-01-6	ug/l	0.76			U	0.58			U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>6.55</b>	<b>U</b>	<b>4.29</b>		<b>5.97</b>		<b>1.9</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

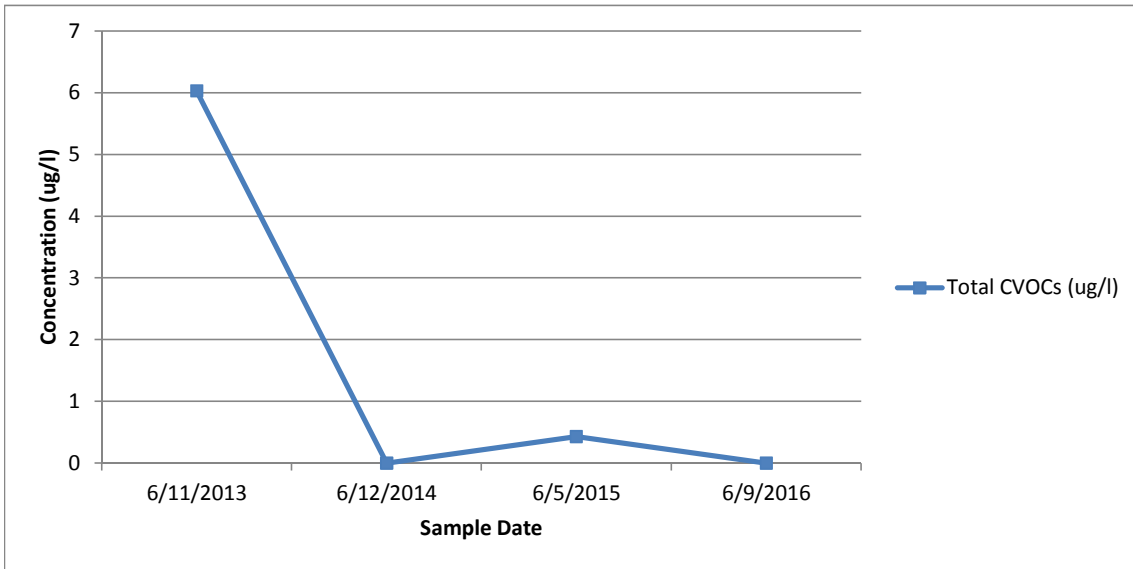
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-02-B

Sample Date			6/11/2013		6/12/2014		6/5/2015		6/9/2016		
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	
1,1,1-Trichloroethane	71-55-6	ug/l	0.57			UJ		U		U	
1,1-Dichloroethane	75-34-3	ug/l	0.79			UJ		U		U	
1,1-Dichloroethene	75-35-4	ug/l		U		UJ		U		U	
Chloroform	67-66-3	ug/l	0.5			UJ		U		U	
Chloromethane	74-87-3	ug/l		U		UJ		U		U	
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		UJ		U		U	
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.57			UJ		U		U	
Trichloroethene (TCE)	79-01-6	ug/l	3.6			UJ	0.43	J		U	
Vinyl Chloride	75-01-4	ug/l		U		UJ		U		U	
<b>Total CVOCs</b>		<b>ug/l</b>	<b>6.03</b>	<b>U</b>		<b>0</b>	<b>U</b>	<b>0.43</b>		<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

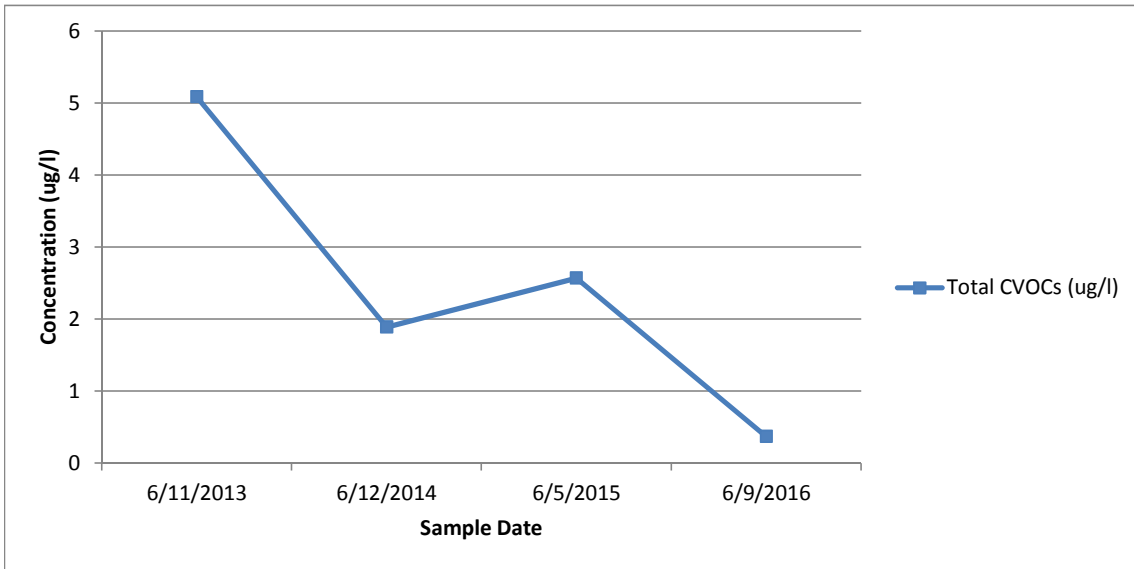
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-02-C

Sample Date			6/11/2013		6/12/2014		6/5/2015		6/9/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	0.7		0.31	J	0.27	J		U
1,1-Dichloroethane	75-34-3	ug/l	0.99		0.37	J	0.34	J	0.37	J
1,1-Dichloroethene	75-35-4	ug/l		U	0.17	J		U		U
Chloroform	67-66-3	ug/l	1.3		0.93	J	1			U
Chloromethane	74-87-3	ug/l		U		UJ		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		UJ		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.11	J	0.13	J		U
Trichloroethene (TCE)	79-01-6	ug/l	2.1			UJ	0.83			U
Vinyl Chloride	75-01-4	ug/l		U		UJ		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>5.09</b>		<b>1.89</b>		<b>2.57</b>		<b>0.37</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

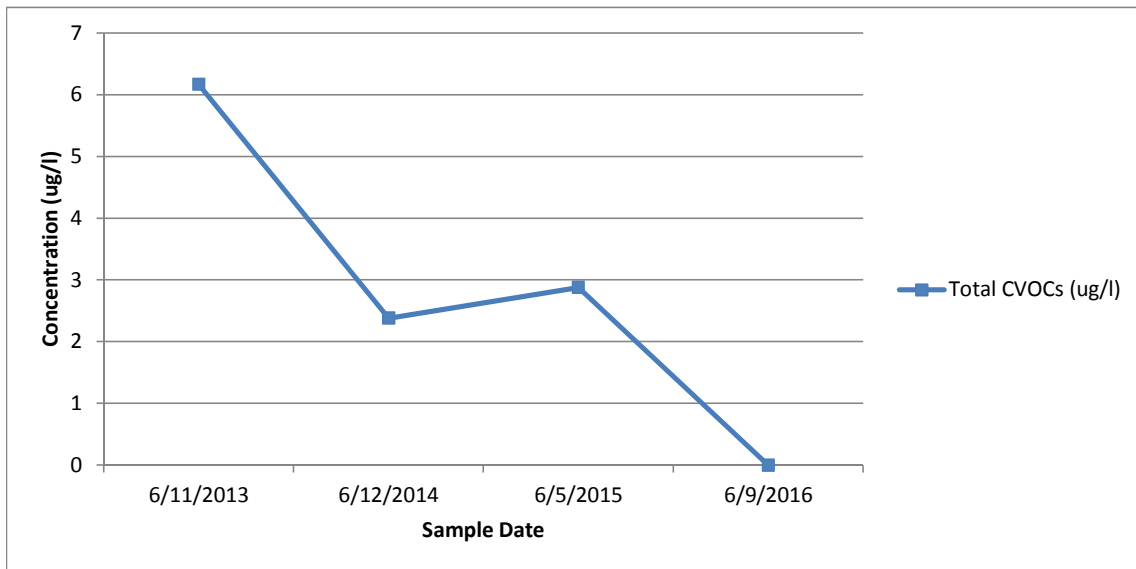
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-02-D

Sample Date			6/11/2013		6/12/2014		6/5/2015		6/9/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	1.3		0.35	J	0.38	J		U
1,1-Dichloroethane	75-34-3	ug/l	1.7		0.42	J	0.49	J		U
1,1-Dichloroethene	75-35-4	ug/l	0.57		0.22	J		U		U
Chloroform	67-66-3	ug/l	1.2		1.2	J	1.2			U
Chloromethane	74-87-3	ug/l		U		UJ		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		UJ		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.19	J	0.23	J		U
Trichloroethene (TCE)	79-01-6	ug/l	1.4			UJ	0.58			U
Vinyl Chloride	75-01-4	ug/l		U		UJ		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>6.17</b>	<b>U</b>	<b>2.38</b>		<b>2.88</b>		<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

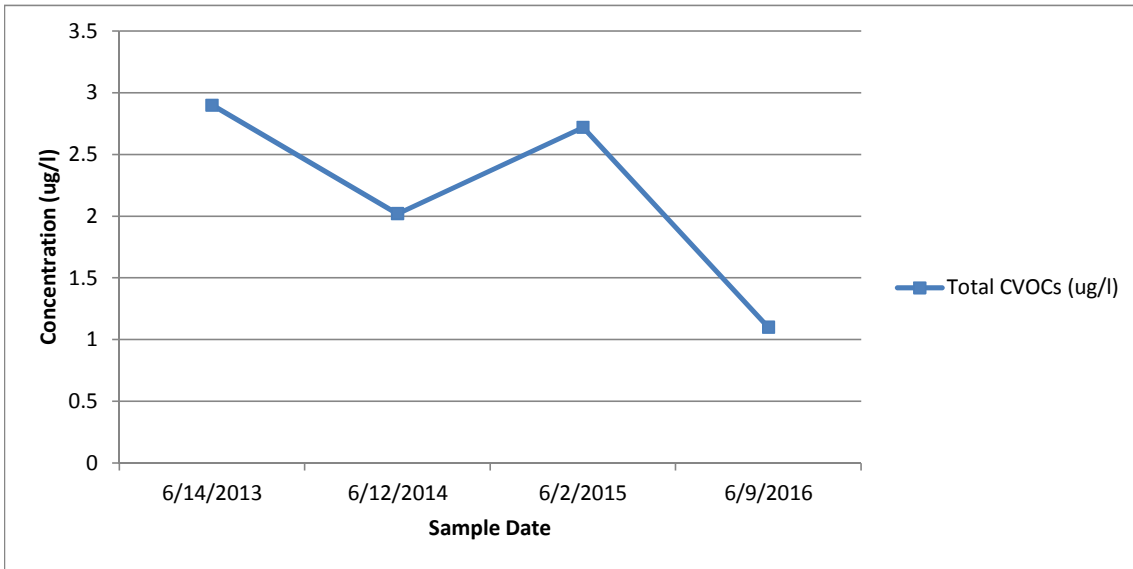
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-03-B

Sample Date			6/14/2013		6/12/2014		6/2/2015		6/9/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		UJ		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		UJ		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		UJ		U		U
Chloroform	67-66-3	ug/l		U		UJ		U		U
Chloromethane	74-87-3	ug/l		U		UJ		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		UJ		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.22	J	0.32	J		U
Trichloroethene (TCE)	79-01-6	ug/l	2.9		1.8	J	2.4	J	1.1	
Vinyl Chloride	75-01-4	ug/l		U		UJ		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>2.9</b>	<b>U</b>	<b>2.02</b>		<b>2.72</b>		<b>1.1</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

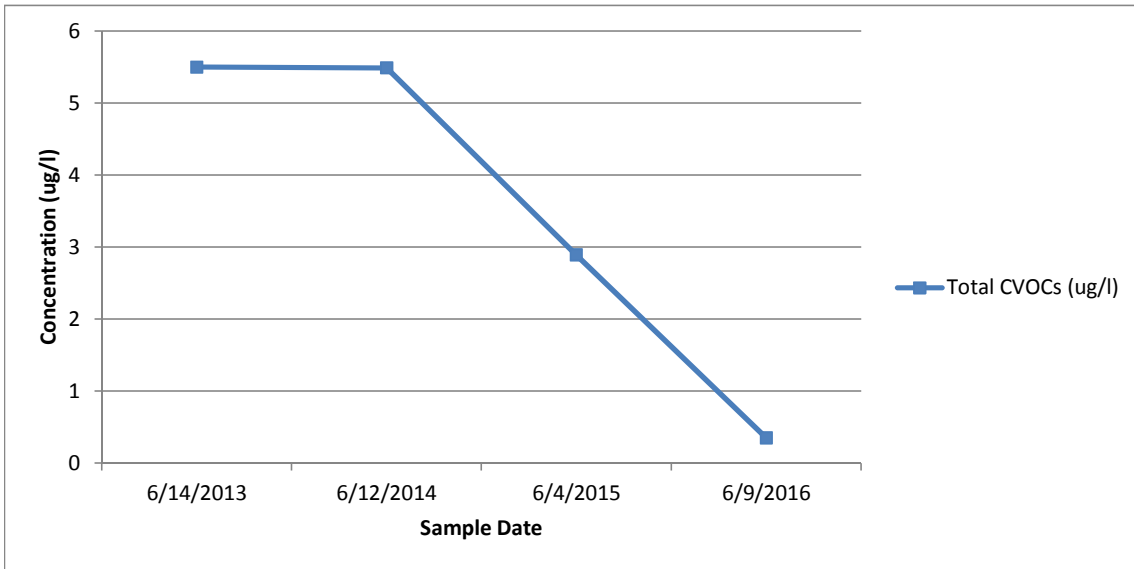
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-03-C

Sample Date			6/14/2013		6/12/2014		6/4/2015		6/9/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U	0.36	J	0.45	J		U
1,1-Dichloroethane	75-34-3	ug/l		U	0.5	J	0.65	J+	0.35	J
1,1-Dichloroethene	75-35-4	ug/l		U	0.17	J		U		U
Chloroform	67-66-3	ug/l		U	0.38	J		U		U
Chloromethane	74-87-3	ug/l		U		UJ		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		UJ		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.38	J	0.19	J		U
Trichloroethene (TCE)	79-01-6	ug/l	5.5		3.7	J	1.6			U
Vinyl Chloride	75-01-4	ug/l		U		UJ		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>5.5</b>	<b>U</b>	<b>5.49</b>		<b>2.89</b>		<b>0.35</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

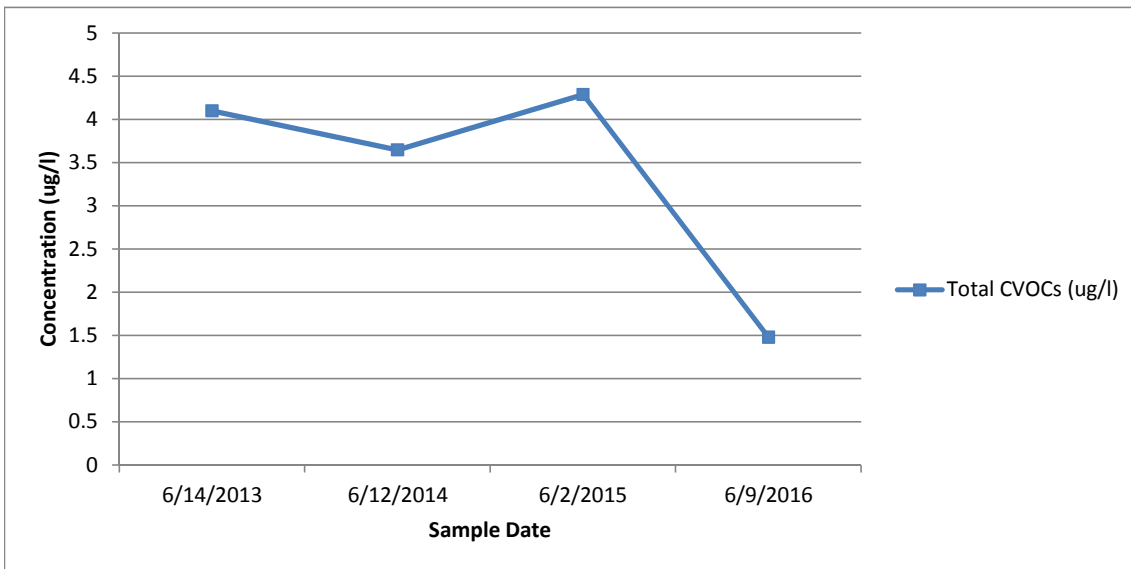
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-03-D

Sample Date			6/14/2013		6/12/2014		6/2/2015		6/9/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U	0.2	J	0.32	J		U
1,1-Dichloroethane	75-34-3	ug/l	1.2		0.95	J	1		0.48	J
1,1-Dichloroethene	75-35-4	ug/l		U		UJ		U		U
Chloroform	67-66-3	ug/l		U		UJ		U		U
Chloromethane	74-87-3	ug/l		U		UJ		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U	0.11	J		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.29	J	0.37	J		U
Trichloroethene (TCE)	79-01-6	ug/l	2.9		2.1	J	2.6		1	
Vinyl Chloride	75-01-4	ug/l		U		UJ		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>4.1</b>		<b>3.65</b>		<b>4.29</b>		<b>1.48</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

3. NS = Not Sampled

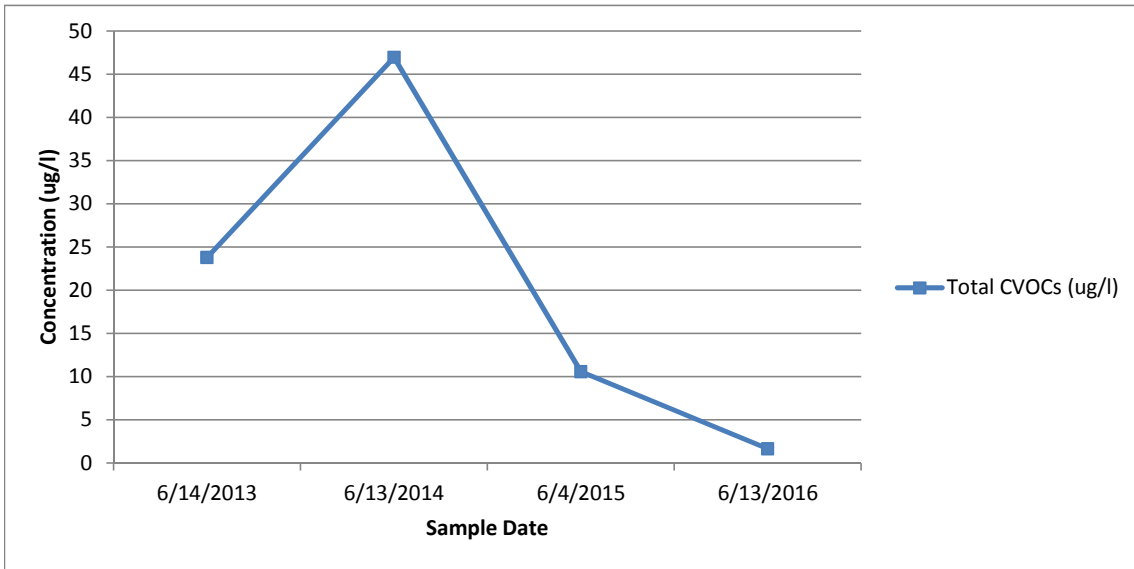
4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value



# MPW-04-B

Sample Date			6/14/2013		6/13/2014		6/4/2015		6/13/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U	0.11	J		U
1,1-Dichloroethane	75-34-3	ug/l		U		U	0.16	J		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		UJ
Chloroform	67-66-3	ug/l		U	0.42	J	0.72	J	0.75	
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U	0.55	J+		U		UJ
Tetrachloroethylene(PCE)	127-18-4	ug/l	8.8		14		3.3	J	0.91	
Trichloroethene (TCE)	79-01-6	ug/l	15		32		6.3	J		U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>23.8</b>	<b>U</b>	<b>46.97</b>		<b>10.59</b>		<b>1.66</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

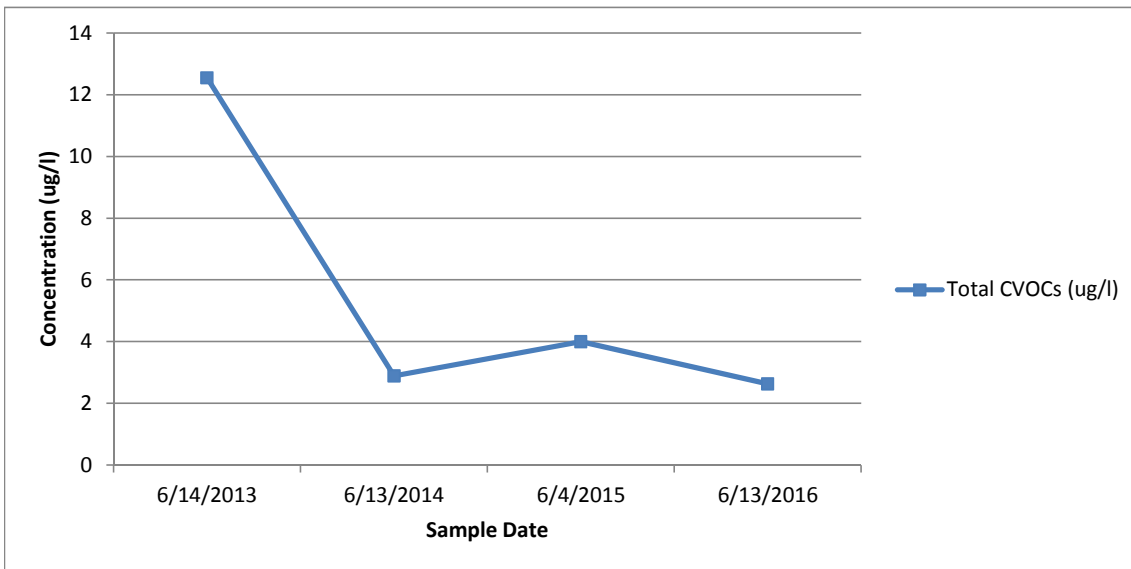
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-04-D

Sample Date			6/14/2013		6/13/2014		6/4/2015		6/13/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U	0.6		0.91		0.84	
1,1-Dichloroethane	75-34-3	ug/l		U	0.9		1.3		1.2	
1,1-Dichloroethene	75-35-4	ug/l		U	0.27	J		U		UJ
Chloroform	67-66-3	ug/l	0.55		0.7		0.77			U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		UJ
Tetrachloroethylene(PCE)	127-18-4	ug/l	2		0.42	J	0.56		0.59	
Trichloroethene (TCE)	79-01-6	ug/l	10			U	0.46	J		U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>12.55</b>	<b>U</b>	<b>2.89</b>		<b>4</b>		<b>2.63</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

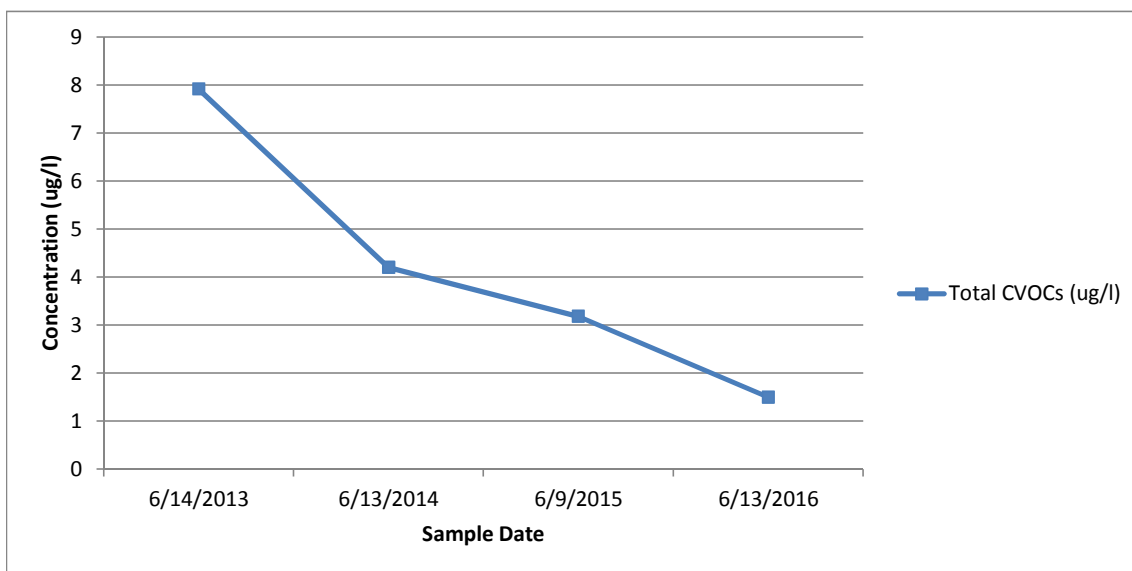
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-04-E

Sample Date			6/14/2013		6/13/2014		6/9/2015		6/13/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	2.2		0.91		0.73		0.39	J
1,1-Dichloroethane	75-34-3	ug/l	2.6		1.6		0.96		0.58	
1,1-Dichloroethene	75-35-4	ug/l	0.74		0.52	J+		U		U
Chloroform	67-66-3	ug/l	0.8		0.76		0.65		0.53	
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.7		0.41	J	0.38	J		U
Trichloroethene (TCE)	79-01-6	ug/l	0.88			U	0.46	J		U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>7.92</b>		<b>4.2</b>		<b>3.18</b>		<b>1.5</b>	



## Notes:

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

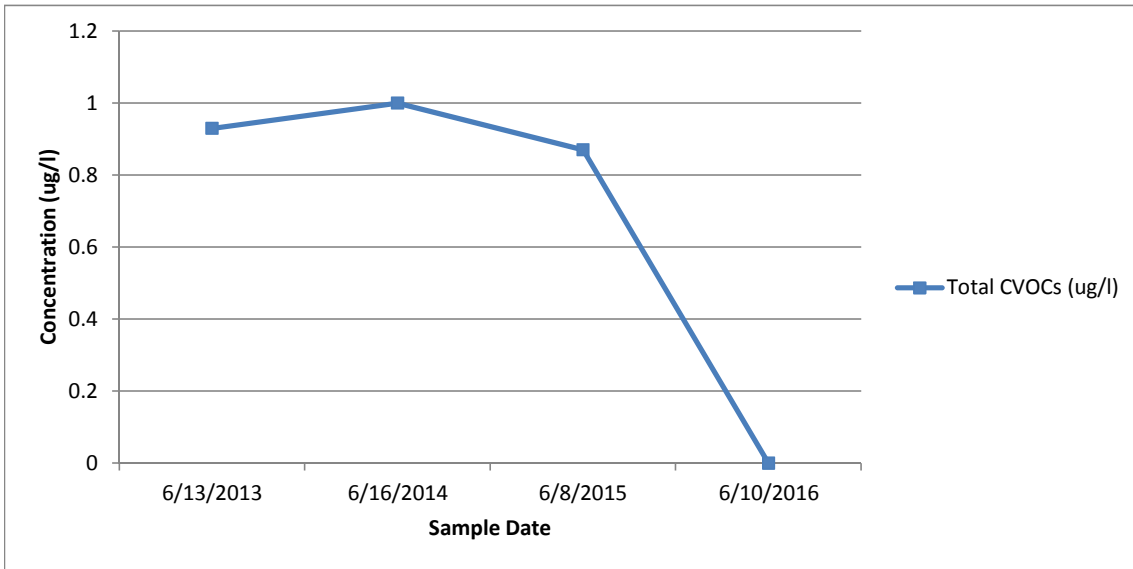
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-05-A

Sample Date			6/13/2013		6/16/2014		6/8/2015		6/10/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l	0.93		1		0.87	J		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U		U		U		U
Trichloroethene (TCE)	79-01-6	ug/l		U		U		U		U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>0.93</b>	<b>U</b>	<b>1</b>		<b>0.87</b>		<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

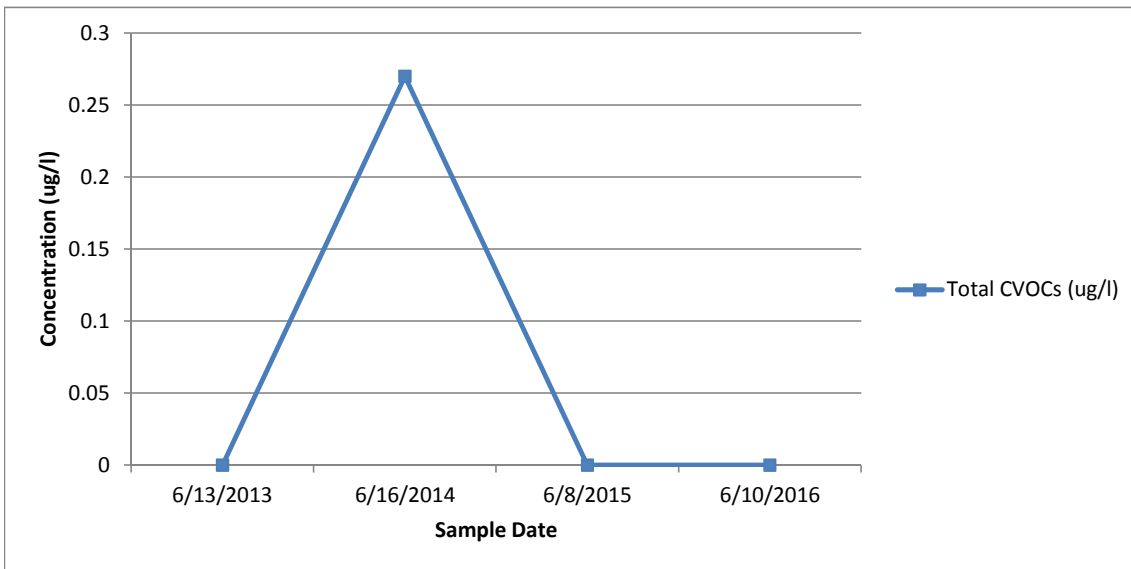
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-05-B

Sample Date			6/13/2013		6/16/2014		6/8/2015		6/10/2016		
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U	
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U	
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U	
Chloroform	67-66-3	ug/l		U	0.27	J		U		U	
Chloromethane	74-87-3	ug/l		U		U		U		U	
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U	
Tetrachloroethylene(PCE)	127-18-4	ug/l		U		U		U		U	
Trichloroethene (TCE)	79-01-6	ug/l		U		U		U		U	
Vinyl Chloride	75-01-4	ug/l		U		U		U		U	
<b>Total CVOCs</b>		<b>ug/l</b>	<b>0</b>	<b>U</b>	<b>0.27</b>			<b>0</b>	<b>U</b>	<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

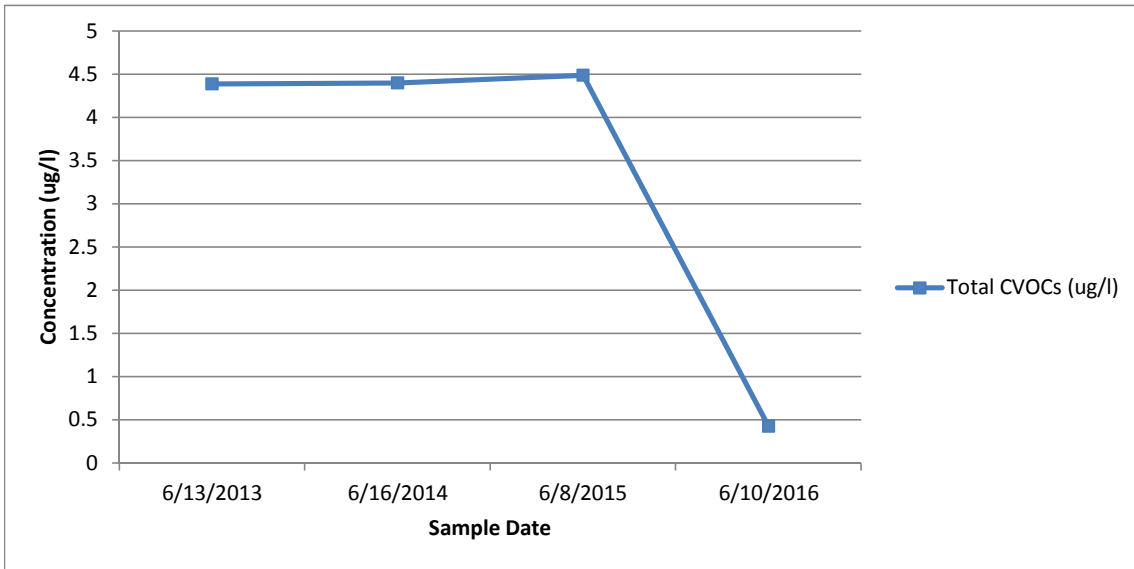
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-05-C

Sample Date			6/13/2013		6/16/2014		6/8/2015		6/10/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	0.69		0.64		0.71			U
1,1-Dichloroethane	75-34-3	ug/l	0.7		0.66		0.77		0.43	J
1,1-Dichloroethene	75-35-4	ug/l		U	0.19	J+		U		UJ
Chloroform	67-66-3	ug/l		U	0.44	J	0.48	J		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		UJ
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.27	J	0.33	J		U
Trichloroethene (TCE)	79-01-6	ug/l	3		2.2		1.7			U
Vinyl Chloride	75-01-4	ug/l		U		U	0.5	UJ		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>4.39</b>		<b>4.4</b>		<b>4.49</b>		<b>0.43</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

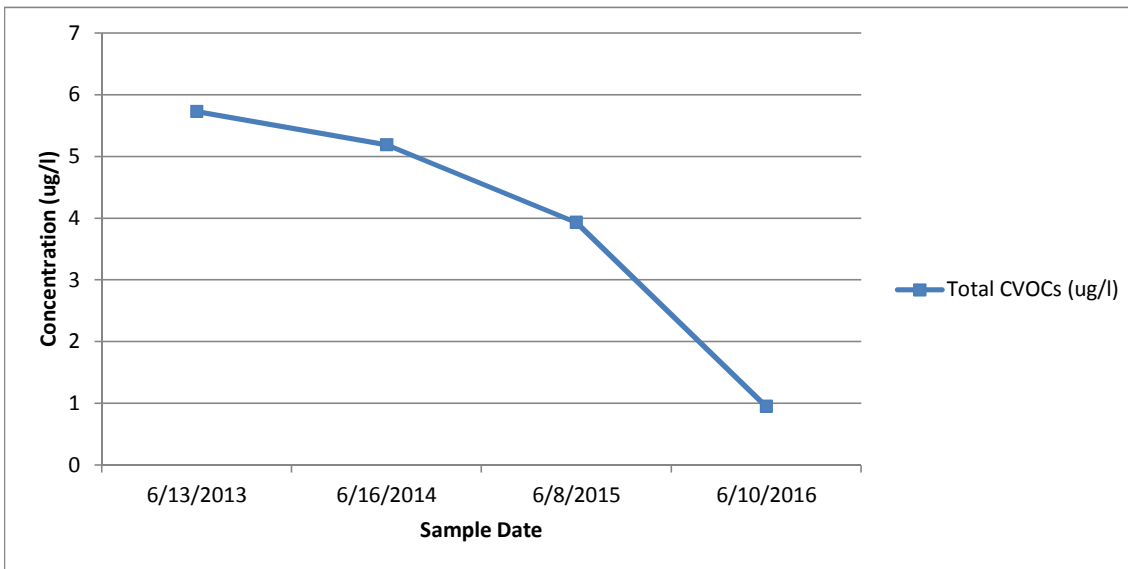
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-05-D

Sample Date			6/13/2013		6/16/2014		6/8/2015		6/10/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	0.78		0.71		0.65		0.41	J
1,1-Dichloroethane	75-34-3	ug/l	0.85		0.89		0.76		0.54	
1,1-Dichloroethene	75-35-4	ug/l		U	0.23	J+		U		UJ
Chloroform	67-66-3	ug/l		U	0.36	J		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		UJ
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.3	J	0.32	J		U
Trichloroethene (TCE)	79-01-6	ug/l	4.1		2.7		2.2			U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>5.73</b>		<b>5.19</b>		<b>3.93</b>		<b>0.95</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

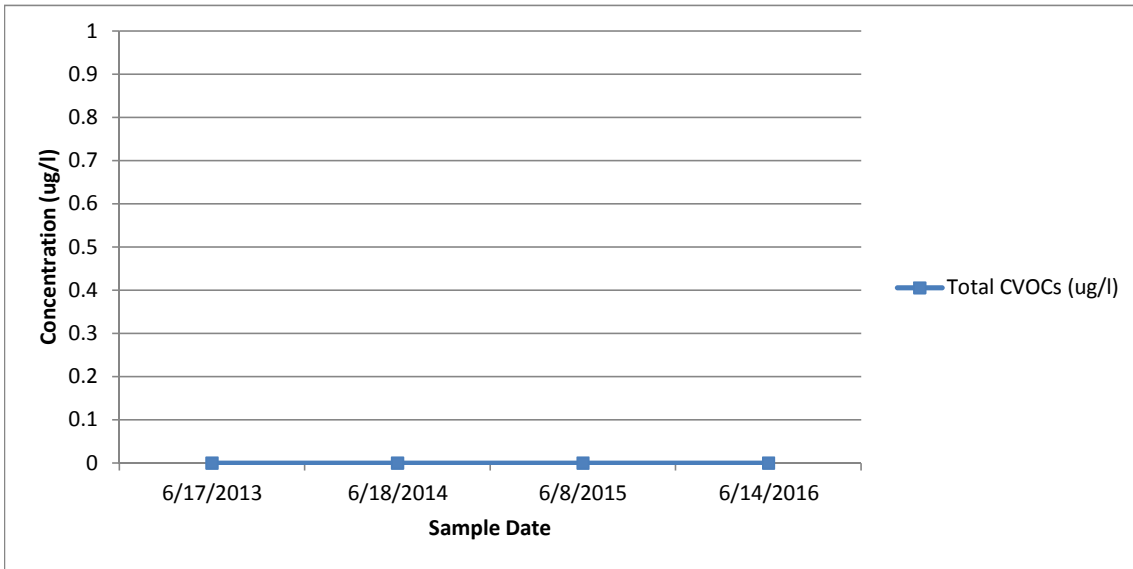
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-06-A

Sample Date			6/17/2013		6/18/2014		6/8/2015		6/14/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l		U		U		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U		U		U		U
Trichloroethene (TCE)	79-01-6	ug/l		U		U		U		U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>0</b>	<b>U</b>	<b>0</b>	<b>U</b>	<b>0</b>	<b>U</b>	<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

3. NS = Not Sampled

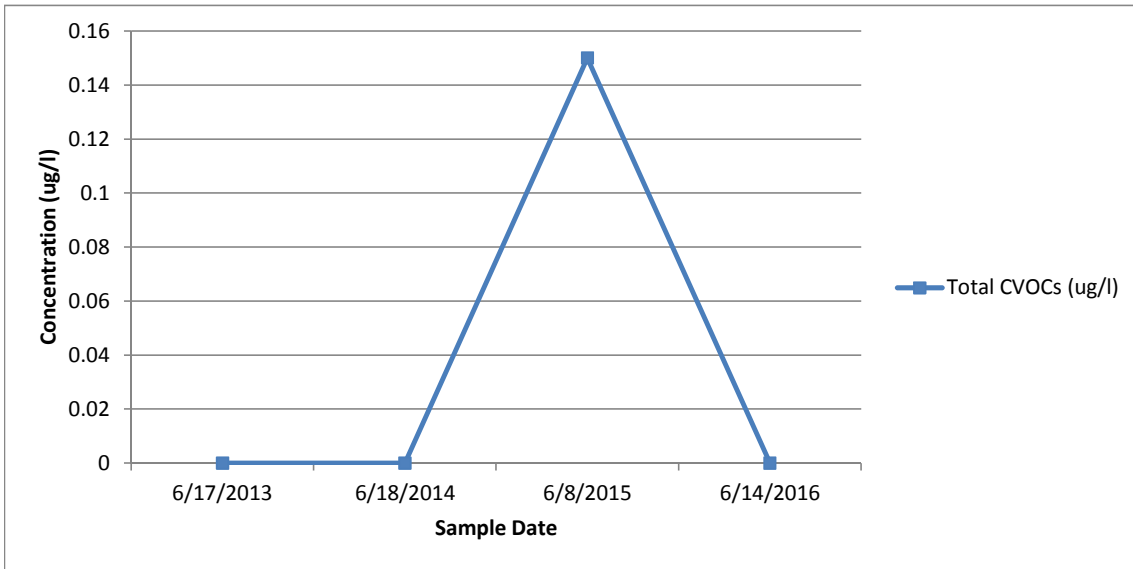
4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value



# MPW-06-B

Sample Date			6/17/2013		6/18/2014		6/8/2015		6/14/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l		U		U		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U		U		U		U
Trichloroethene (TCE)	79-01-6	ug/l		U		U	0.15	J		U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>		<b>0 U</b>		<b>0 U</b>	<b>0.15</b>			<b>0 U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

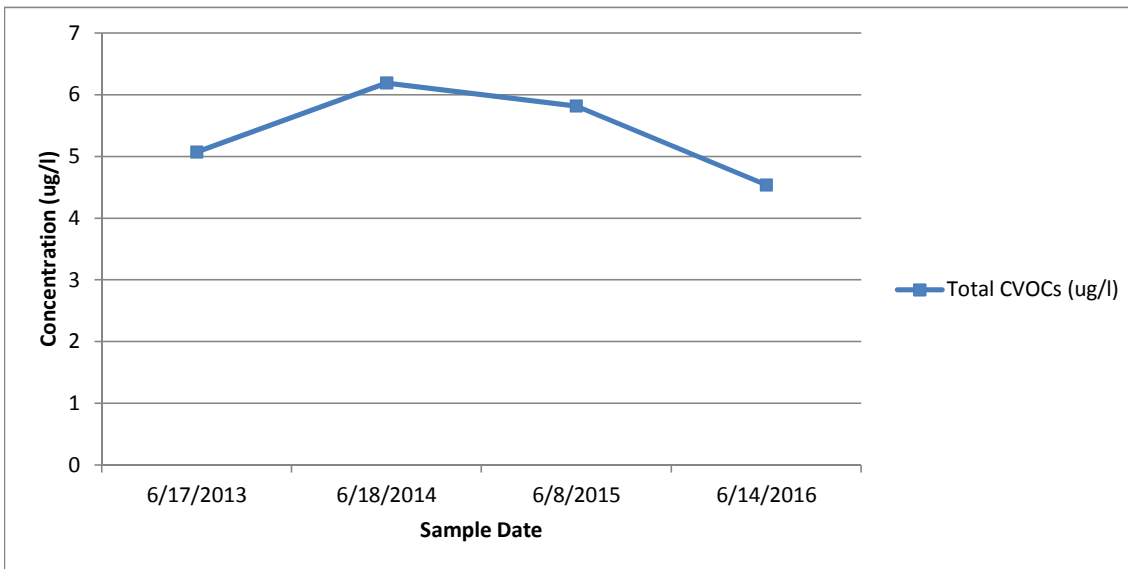
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-06-D

Sample Date			6/17/2013		6/18/2014		6/8/2015		6/14/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U	0.4	J	0.47	J	0.4	J
1,1-Dichloroethane	75-34-3	ug/l	0.77		0.8		1		0.84	
1,1-Dichloroethene	75-35-4	ug/l		U	0.25	J		U		U
Chloroform	67-66-3	ug/l		U	0.53		0.54			U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U	0.11	J		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U		U	0.11	J		U
Trichloroethene (TCE)	79-01-6	ug/l	4.3		4.1		3.7		3.3	
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>5.07</b>	<b>U</b>	<b>6.19</b>		<b>5.82</b>		<b>4.54</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

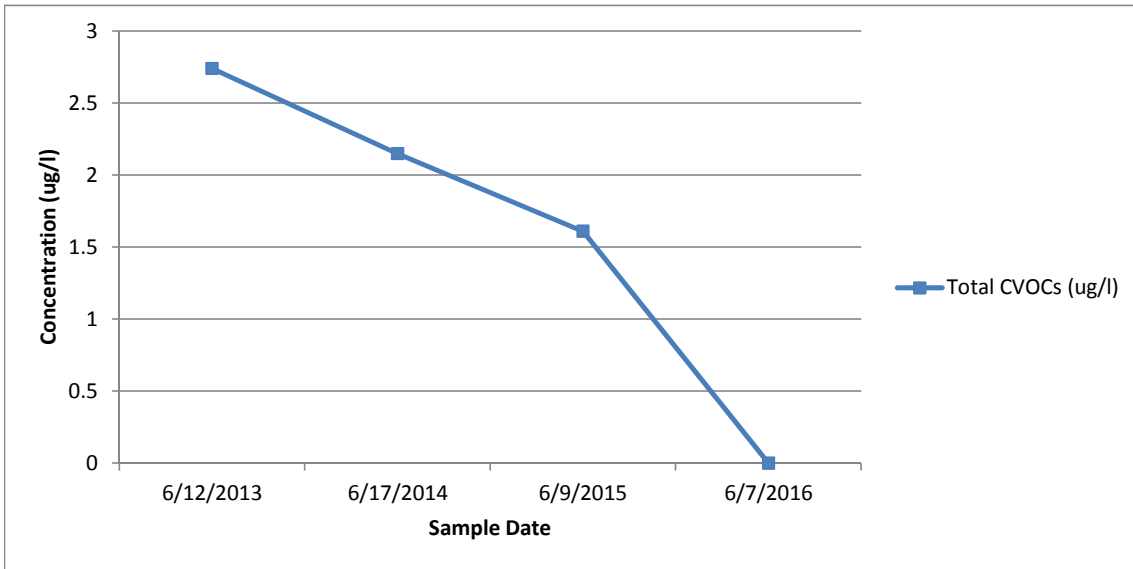
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-08-A

Sample Date			6/12/2013		6/17/2014		6/9/2015		6/7/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l	0.84		0.85		0.85			U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U		U		U		U
Trichloroethene (TCE)	79-01-6	ug/l	1.9		1.3		0.76			U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>2.74</b>	<b>U</b>	<b>2.15</b>		<b>1.61</b>		<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

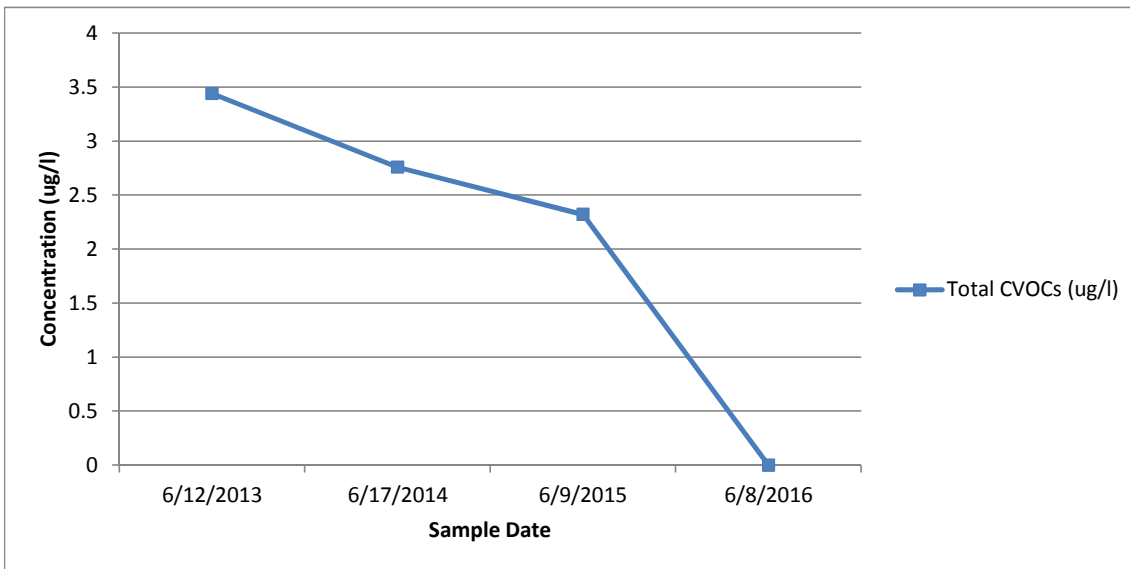
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-08-B

Sample Date			6/12/2013		6/17/2014		6/9/2015		6/8/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l	0.54		0.64		0.72			U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.12	J	0.1	J		U
Trichloroethene (TCE)	79-01-6	ug/l	2.9		2		1.5			U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>3.44</b>	<b>U</b>	<b>2.76</b>		<b>2.32</b>		<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

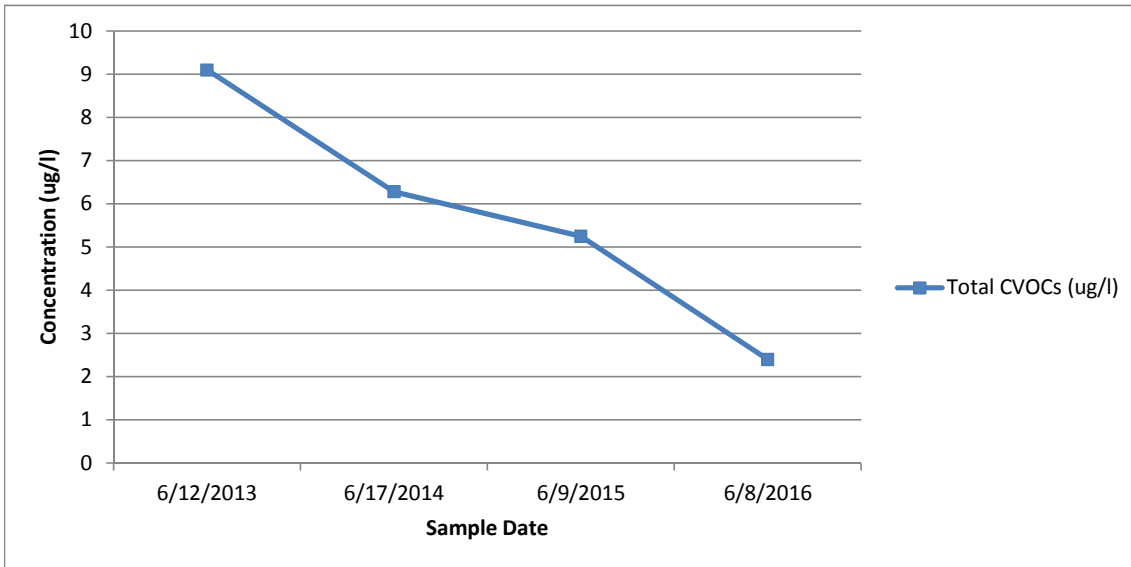
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-08-C

Sample Date			6/12/2013		6/17/2014		6/9/2015		6/8/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U	0.13	J	0.15	J		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l		U	0.44	J	0.4	J		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.11	J		U		U
Trichloroethene (TCE)	79-01-6	ug/l	9.1		5.6		4.7		2.4	
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>9.1</b>	<b>U</b>	<b>6.28</b>		<b>5.25</b>		<b>2.4</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

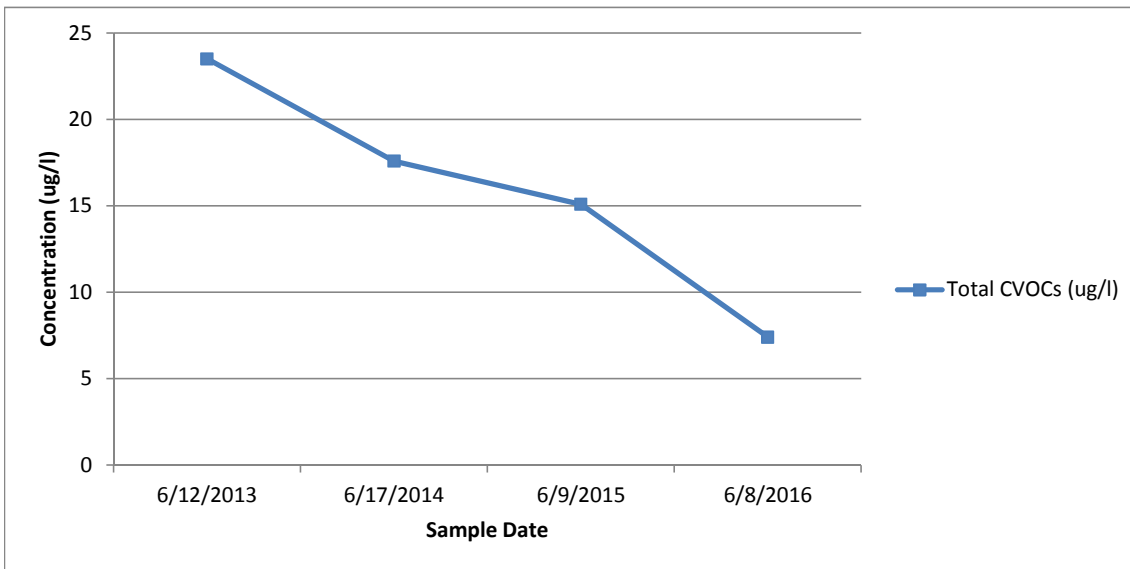
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-08-D

Sample Date			6/12/2013		6/17/2014		6/9/2015		6/8/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U	0.21	J	0.2	J		U
1,1-Dichloroethane	75-34-3	ug/l		U	0.37	J	0.39	J		U
1,1-Dichloroethene	75-35-4	ug/l		U	0.15	J		U		UJ
Chloroform	67-66-3	ug/l		U	0.29	J		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	0.51		0.37	J	0.3	J		UJ
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.2	J	0.21	J		U
Trichloroethene (TCE)	79-01-6	ug/l	23		16		14		7.4	
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>23.51</b>	<b>U</b>	<b>17.59</b>		<b>15.1</b>		<b>7.4</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

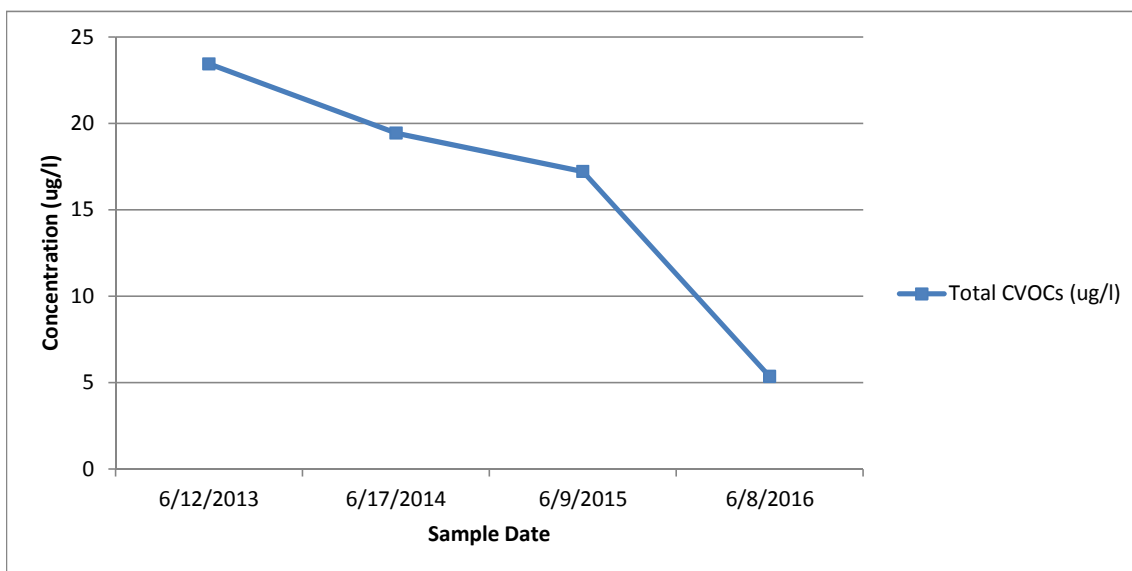
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-08-E

Sample Date			6/12/2013		6/17/2014		6/9/2015		6/8/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	0.59		0.42	J	0.41	J		U
1,1-Dichloroethane	75-34-3	ug/l	0.85		0.69		0.75		0.36	J
1,1-Dichloroethene	75-35-4	ug/l		U	0.23	J		U		U
Chloroform	67-66-3	ug/l		U	0.4	J	0.39	J		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U	0.46	J	0.46	J		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.25	J	0.21	J		U
Trichloroethene (TCE)	79-01-6	ug/l	22		17		15		5	
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>23.44</b>	<b>U</b>	<b>19.45</b>		<b>17.22</b>		<b>5.36</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

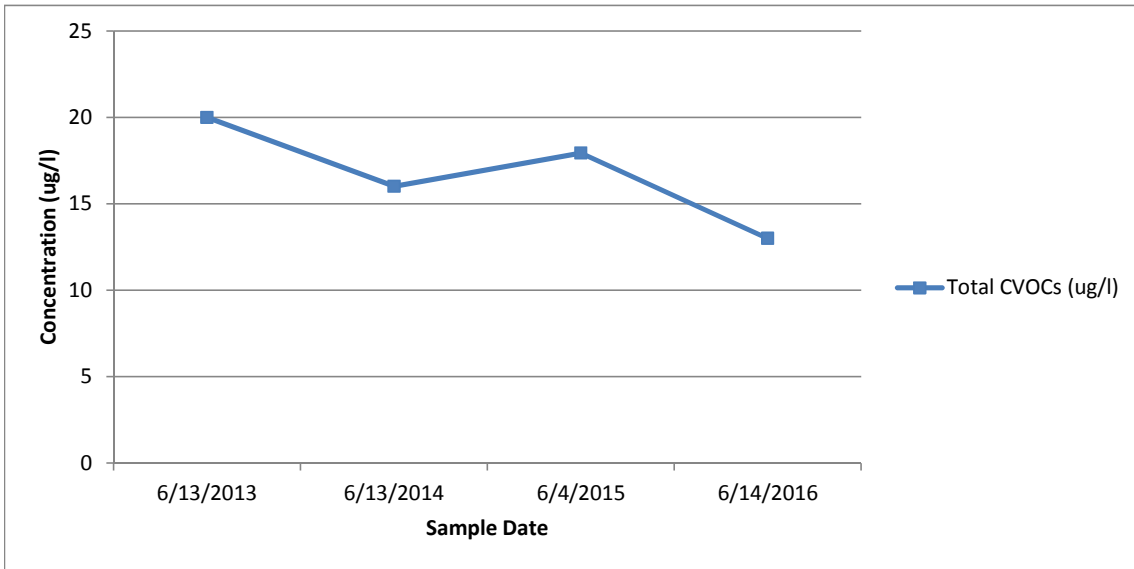
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-09-A

Sample Date			6/13/2013		6/13/2014		6/4/2015		6/14/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U	0.13	J	0.17	J		U
1,1-Dichloroethane	75-34-3	ug/l		U	0.14	J	0.17	J		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l		U	0.2	J		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U	0.22	J	0.24	J		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U	0.33	J	0.37	J		U
Trichloroethene (TCE)	79-01-6	ug/l	20		15		17	J	13	
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>20</b>	<b>U</b>	<b>16.02</b>		<b>17.95</b>		<b>13</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

3. NS = Not Sampled

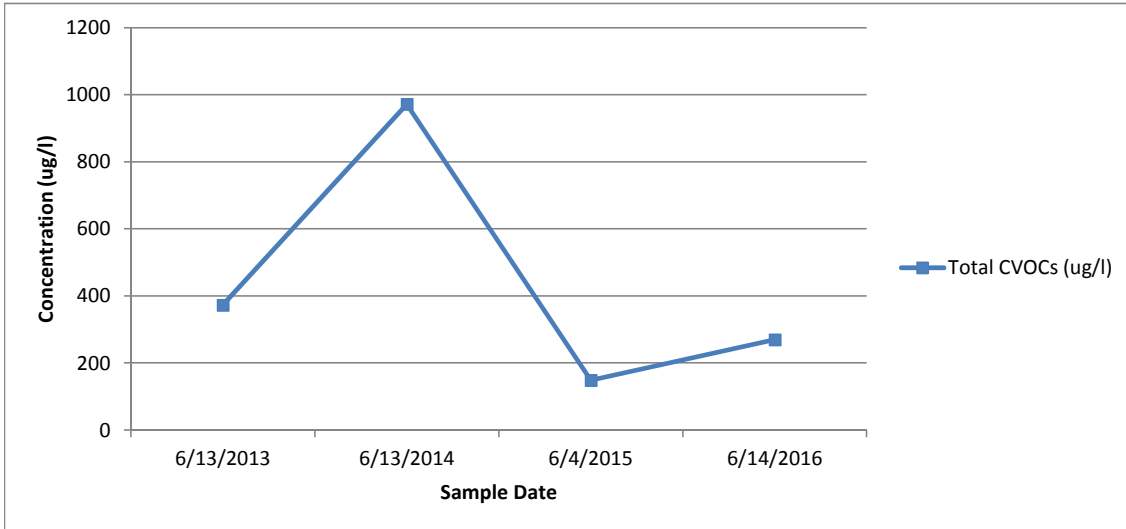
4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value



# MPW-09-B

Sample Date			6/13/2013		6/13/2014		6/4/2015		6/14/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	0.88		0.77		0.13	J	0.73	
1,1-Dichloroethane	75-34-3	ug/l	1.2		1.4		0.19	J	1.2	
1,1-Dichloroethene	75-35-4	ug/l		U	0.56	J+		U	0.37	J
Chloroform	67-66-3	ug/l		U	0.42	J	1.3			U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	5.7		8.8	J+	1.3		2.9	
Tetrachloroethylene(PCE)	127-18-4	ug/l	5.5		10		5.7		4.8	
Trichloroethene (TCE)	79-01-6	ug/l	360		950		140		260	D
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>373.28</b>	<b>U</b>	<b>971.95</b>		<b>148.62</b>		<b>270</b>	

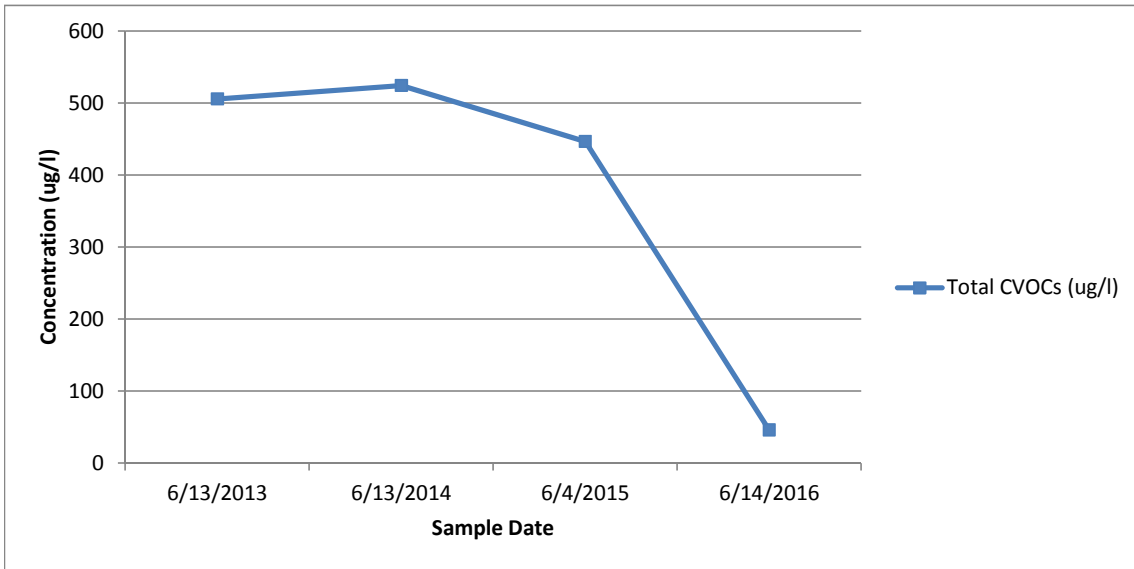


**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:
  - 1,1,1-Trichloroethane
  - 1,1-Dichloroethane
  - 1,1-Dichloroethene
  - Chloroform
  - Chloromethane
  - cis-1,2-Dichloroethene
  - Tetrachloroethene
  - Trichloroethene
  - Vinyl Chloride
2. For non-detect (U qualified) results, a value of 0 was used.
3. NS = Not Sampled
4. Qualifiers were defined as follows:
  - J - Estimated values (- indicates likely biased low, + indicates likely biased high)
  - U - Non-Detect Value

# MPW-09-C

Sample Date			6/13/2013		6/13/2014		6/4/2015		6/14/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	1.5		1.4		1.2			U
1,1-Dichloroethane	75-34-3	ug/l	2.8		2.7		1.8			U
1,1-Dichloroethene	75-35-4	ug/l	0.71		0.66	J+		U		U
Chloroform	67-66-3	ug/l	0.54		0.59		0.94			U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	4.8		4.1	J+	4.9		0.5	
Tetrachloroethylene(PCE)	127-18-4	ug/l	5.4		5.1		8		2.6	
Trichloroethene (TCE)	79-01-6	ug/l	490		510		430		43	D
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>505.8</b>	<b>U</b>	<b>524.6</b>		<b>446.8</b>		<b>46.1</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

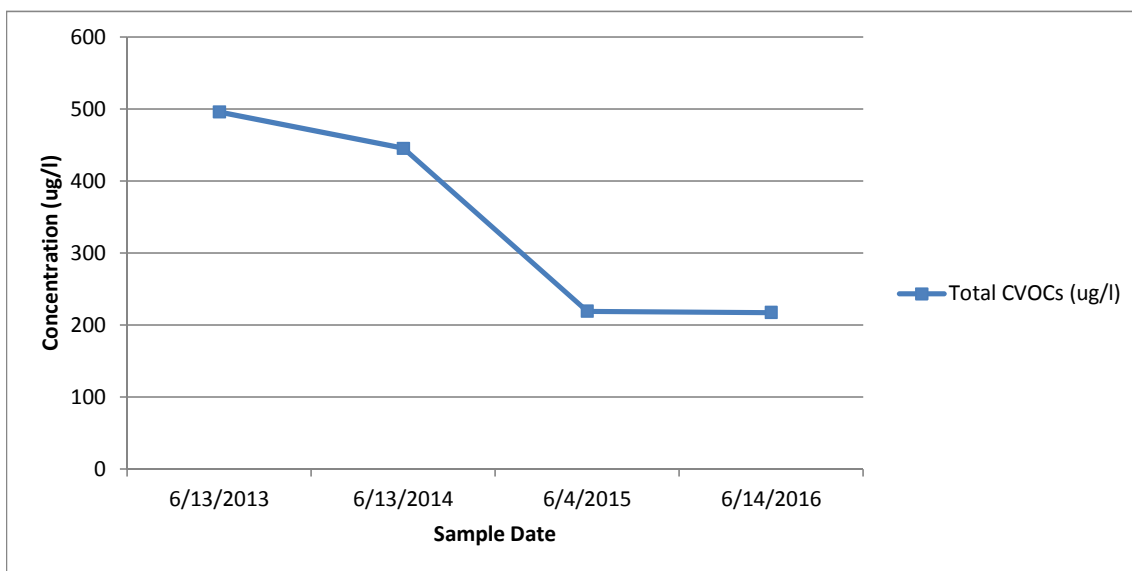
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-09-D

Sample Date			6/13/2013		6/13/2014		6/4/2015		6/14/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	1.2		1.2		0.95			U
1,1-Dichloroethane	75-34-3	ug/l	2.1		2.1		1.3		0.88	
1,1-Dichloroethene	75-35-4	ug/l	0.6		0.69	J+		U		U
Chloroform	67-66-3	ug/l	0.53		0.5		1.1			U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	6.9		5.8	J+	3.9		4.8	
Tetrachloroethylene(PCE)	127-18-4	ug/l	4.7		5.3		12		1.8	
Trichloroethene (TCE)	79-01-6	ug/l	480		430		200		210	D
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>496</b>	<b>U</b>	<b>445.6</b>		<b>219.3</b>		<b>217.5</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

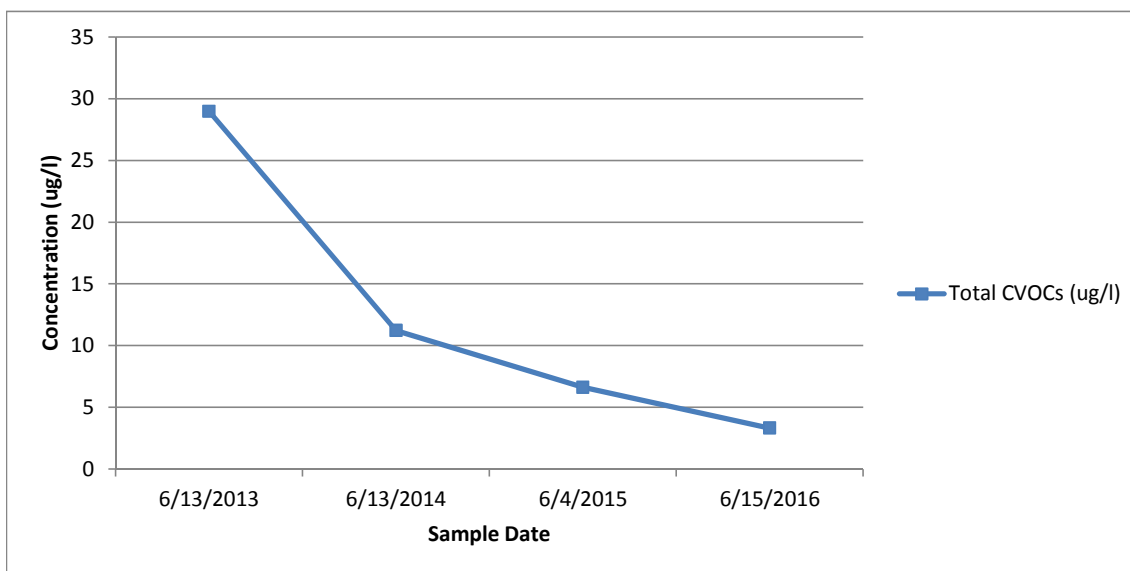
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-09-E

Sample Date			6/13/2013		6/13/2014		6/4/2015		6/15/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	1.2		0.78		0.72		0.37	J
1,1-Dichloroethane	75-34-3	ug/l	1.5		1.2		1.1		0.56	
1,1-Dichloroethene	75-35-4	ug/l		U	0.34	J		U		U
Chloroform	67-66-3	ug/l	0.55		0.5			U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.73		0.41	J	0.31	J		U
Trichloroethene (TCE)	79-01-6	ug/l	25		8		4.5		2.4	
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>28.98</b>	<b>U</b>	<b>11.23</b>		<b>6.63</b>		<b>3.33</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

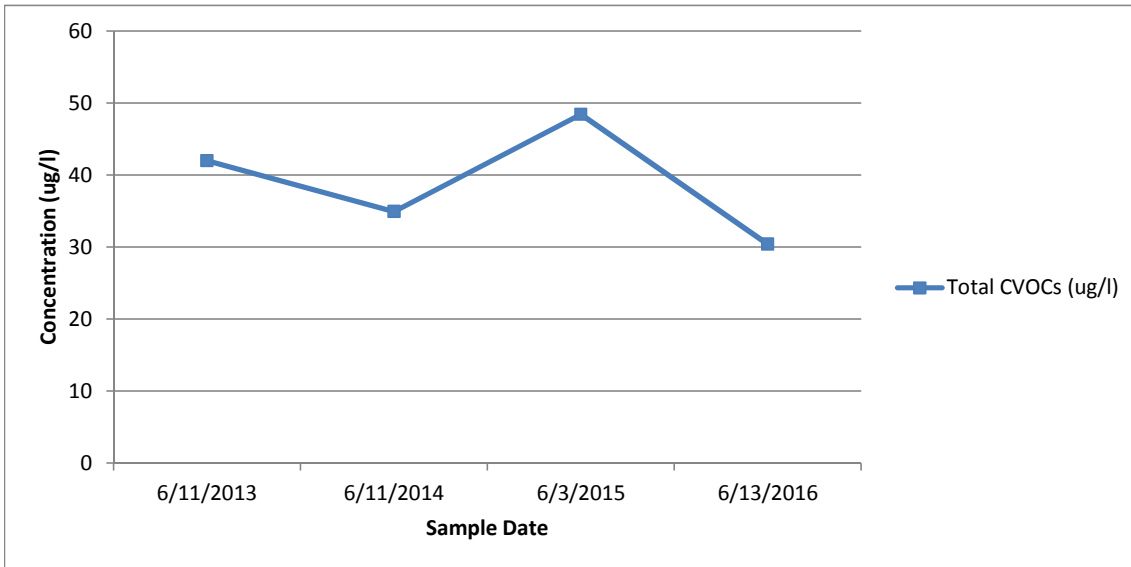
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-10-A

Sample Date			6/11/2013		6/11/2014		6/3/2015		6/13/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U	0.14	J		U		U
1,1-Dichloroethane	75-34-3	ug/l		U	0.14	J		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		UJ
Chloroform	67-66-3	ug/l	0.5		0.38	J		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U	0.29	J	0.45	J	0.4	J
Tetrachloroethylene(PCE)	127-18-4	ug/l	7.5		8		16	J	10	
Trichloroethene (TCE)	79-01-6	ug/l	34		26		32	J	20	D
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>42</b>	<b>U</b>	<b>34.95</b>		<b>48.45</b>		<b>30.4</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

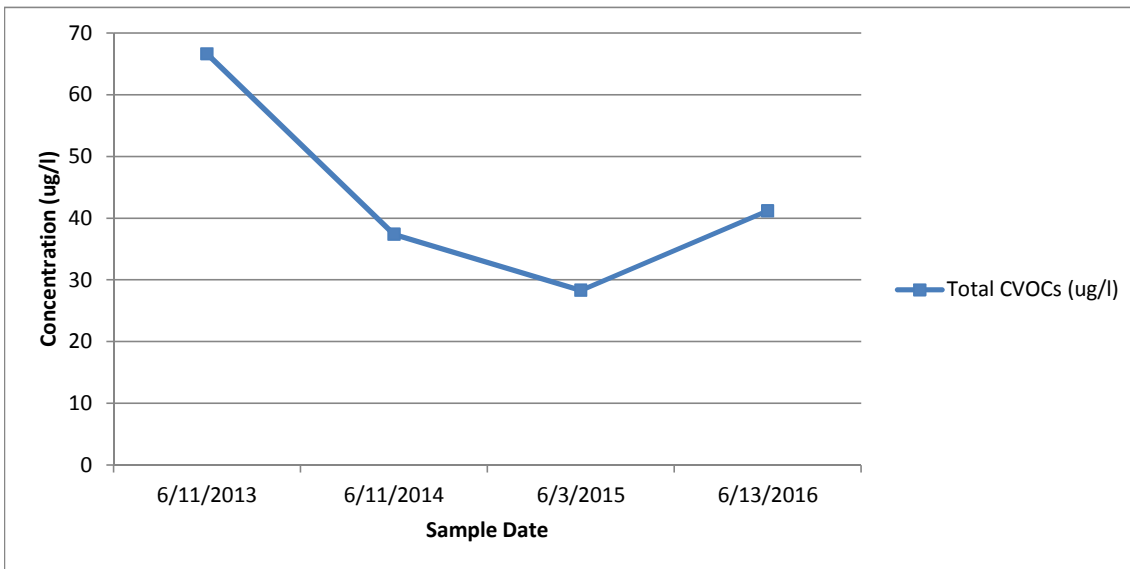
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-10-B

			Sample Date		6/11/2013		6/11/2014		6/3/2015		6/13/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U	0.12	J		U				U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U				U
1,1-Dichloroethene	75-35-4	ug/l		U	0.1	J		U				U
Chloroform	67-66-3	ug/l		U	0.38	J		0.59				U
Chloromethane	74-87-3	ug/l		U		U		U				U
cis-1,2-Dichloroethylene	156-59-2	ug/l	0.61		0.31	J		0.45	J		0.4	J
Tetrachloroethylene(PCE)	127-18-4	ug/l	13		8.5			7.3			5.8	
Trichloroethene (TCE)	79-01-6	ug/l	53		28			20			35	D
Vinyl Chloride	75-01-4	ug/l		U		U		U				U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>66.61</b>	<b>U</b>	<b>37.41</b>			<b>28.34</b>			<b>41.2</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

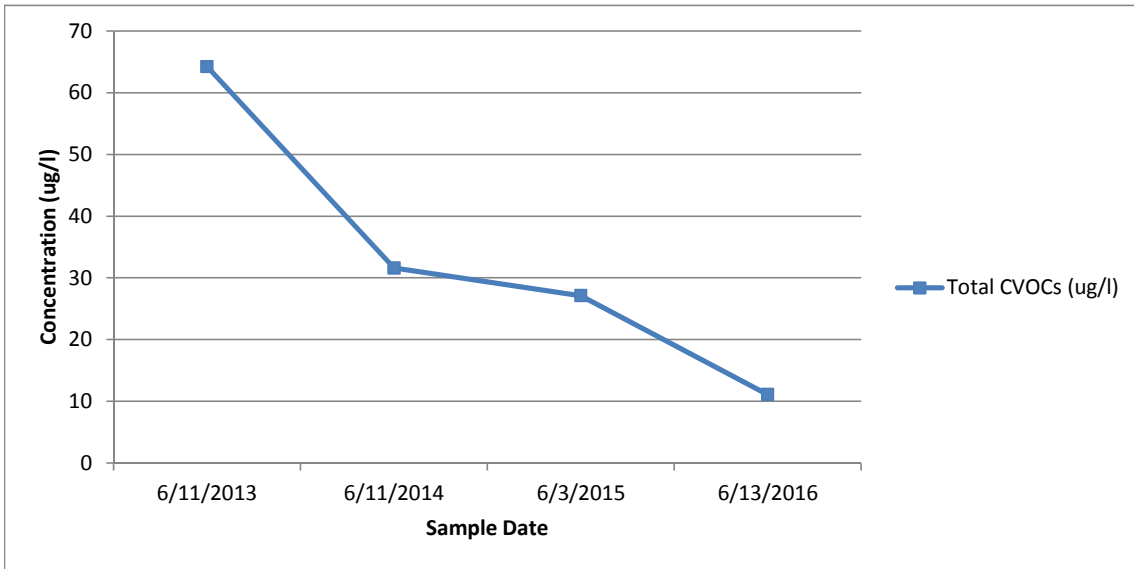
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-10-C

Sample Date			6/11/2013		6/11/2014		6/3/2015		6/13/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U	0.31	J	0.28	J		U
1,1-Dichloroethane	75-34-3	ug/l		U	0.32	J	0.3	J	0.41	J
1,1-Dichloroethene	75-35-4	ug/l		U	0.17	J		U		U
Chloroform	67-66-3	ug/l	0.5		0.41	J	0.51			U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	0.73		0.31	J	0.35	J		U
Tetrachloroethylene(PCE)	127-18-4	ug/l	12		6.1		3.7		1.7	
Trichloroethene (TCE)	79-01-6	ug/l	51		24		22		9	
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>64.23</b>	<b>U</b>	<b>31.62</b>		<b>27.14</b>		<b>11.11</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

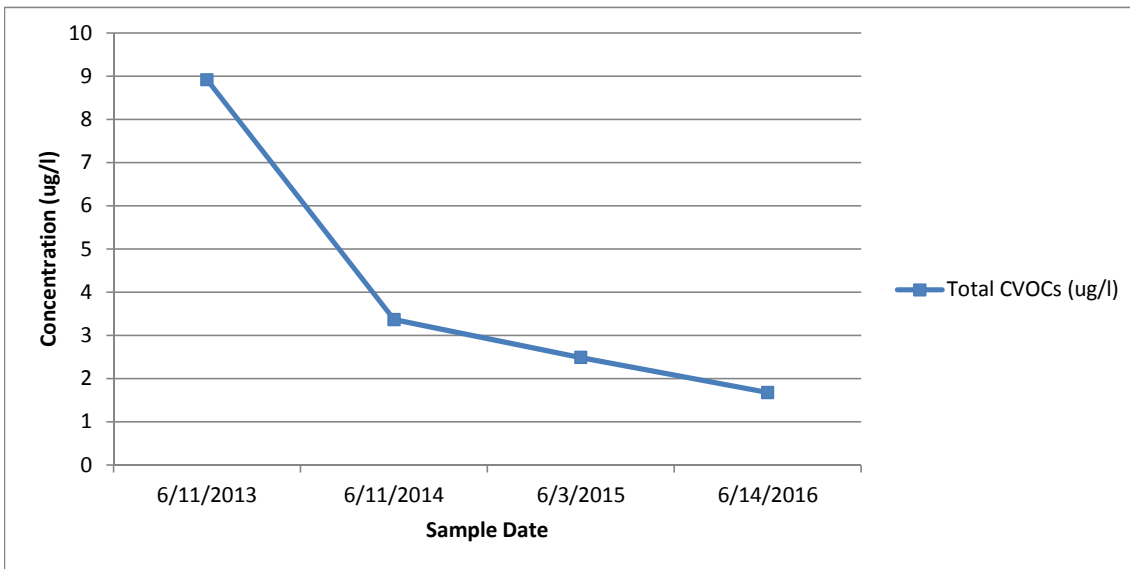
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MPW-10-D

Sample Date			6/11/2013		6/11/2014		6/3/2015		6/14/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	1		0.53		0.41	J		U
1,1-Dichloroethane	75-34-3	ug/l	1.2		0.62		0.42	J		U
1,1-Dichloroethene	75-35-4	ug/l		U	0.28	J		U		U
Chloroform	67-66-3	ug/l	0.62		0.54		0.68			U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l	3.7		1.4		0.98		0.88	
Trichloroethene (TCE)	79-01-6	ug/l	2.4			U			0.8	
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>8.92</b>	<b>U</b>	<b>3.37</b>		<b>2.49</b>		<b>1.68</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

3. NS = Not Sampled

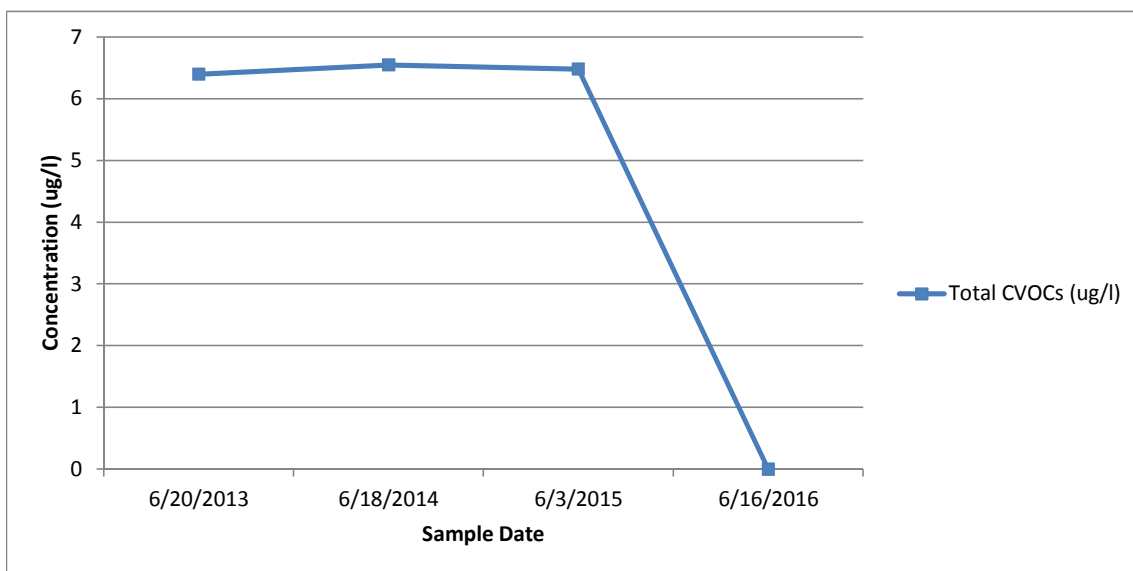
4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value



# MW-05

Sample Date			6/20/2013		6/18/2014		6/3/2015		6/16/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		UJ
Chloroform	67-66-3	ug/l		U	0.25	J	0.91	J		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		UJ
Tetrachloroethylene(PCE)	127-18-4	ug/l	0.5		0.5		0.47	J		U
Trichloroethene (TCE)	79-01-6	ug/l	5.9		5.8		5.1	J		U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>6.4</b>	<b>U</b>	<b>6.55</b>		<b>6.48</b>		<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

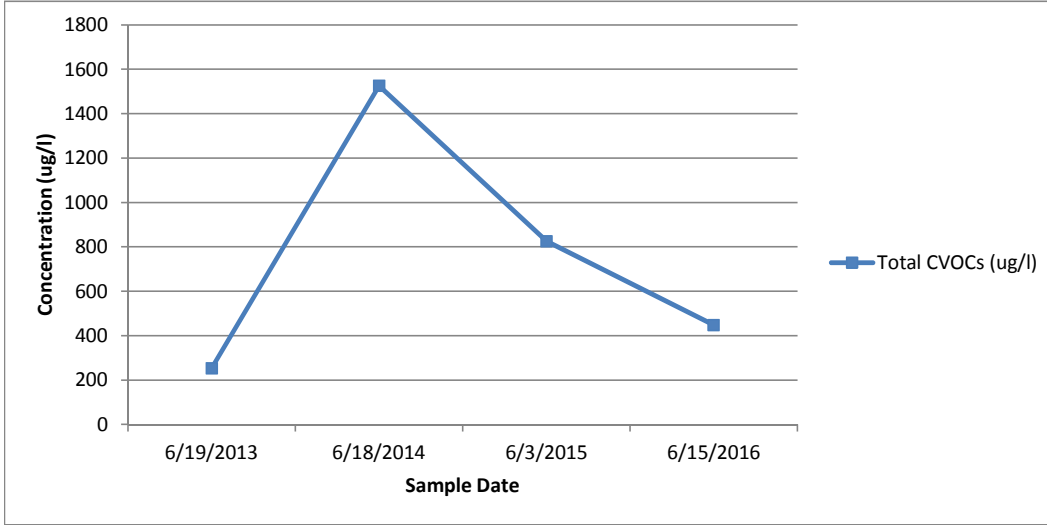
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MW-ISCO-02

Sample Date			6/19/2013		6/18/2014		6/3/2015		6/15/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l		U		U		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U	1.3	J+		U	0.49	J
Tetrachloroethylene(PCE)	127-18-4	ug/l	4.4		25		17		8.3	
Trichloroethene (TCE)	79-01-6	ug/l	250		1500		810		440	D
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>254.4</b>	<b>U</b>	<b>1526.3</b>		<b>827</b>		<b>448.79</b>	

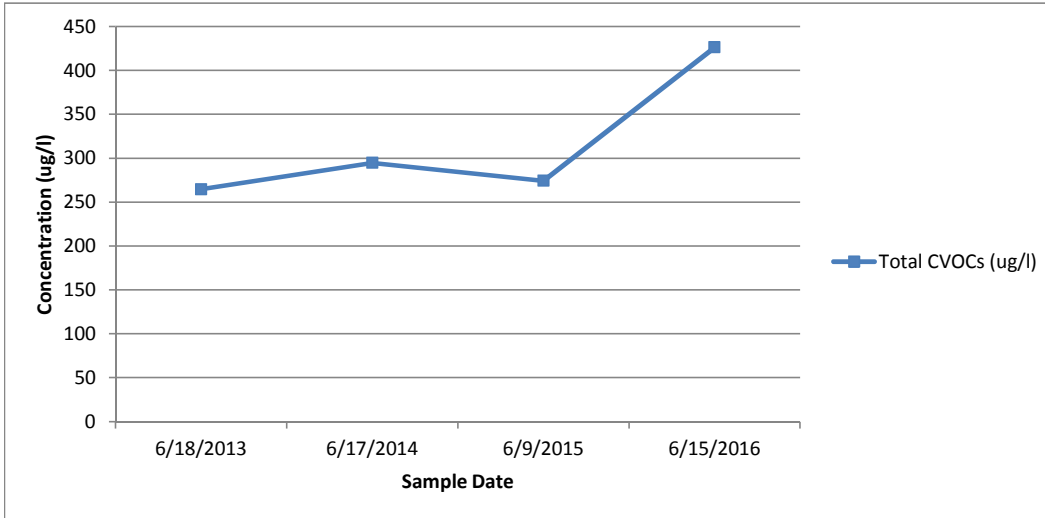


**Notes:**

- Total CVOCs were calculated by adding the concentrations of the following VOCs:
  - 1,1,1-Trichloroethane
  - 1,1-Dichloroethane
  - 1,1-Dichloroethene
  - Chloroform
  - Chloromethane
  - cis-1,2-Dichloroethene
  - Tetrachloroethene
  - Trichloroethene
  - Vinyl Chloride
- For non-detect (U qualified) results, a value of 0 was used.
- NS = Not Sampled
- Qualifiers were defined as follows:
  - J - Estimated values (- indicates likely biased low, + indicates likely biased high)
  - U - Non-Detect Value

# MW-ISCO-05

Sample Date			6/18/2013		6/17/2014		6/9/2015		6/15/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l		U		U		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U	0.31	J	0.3	J	0.41	J
Tetrachloroethylene(PCE)	127-18-4	ug/l	4.7		4.6		4.1		6	
Trichloroethene (TCE)	79-01-6	ug/l	260		290		270		420	D
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>264.7</b>	<b>U</b>	<b>294.91</b>		<b>274.4</b>		<b>426.41</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

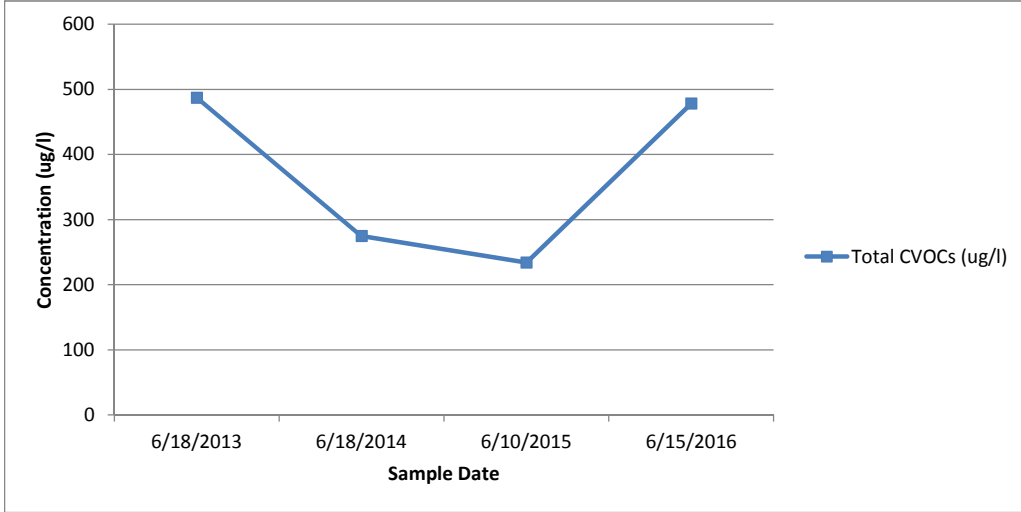
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MW-ISCO-4

Sample Date			6/18/2013		6/18/2014		6/10/2015		6/15/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l		U		U		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U	0.25	J	0.25	J	0.61	J
Tetrachloroethylene(PCE)	127-18-4	ug/l	7.5		4.7		4	J	7.8	
Trichloroethene (TCE)	79-01-6	ug/l	480		270		230	J	470	D
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>487.5</b>	<b>U</b>	<b>274.95</b>		<b>234.25</b>		<b>478.41</b>	

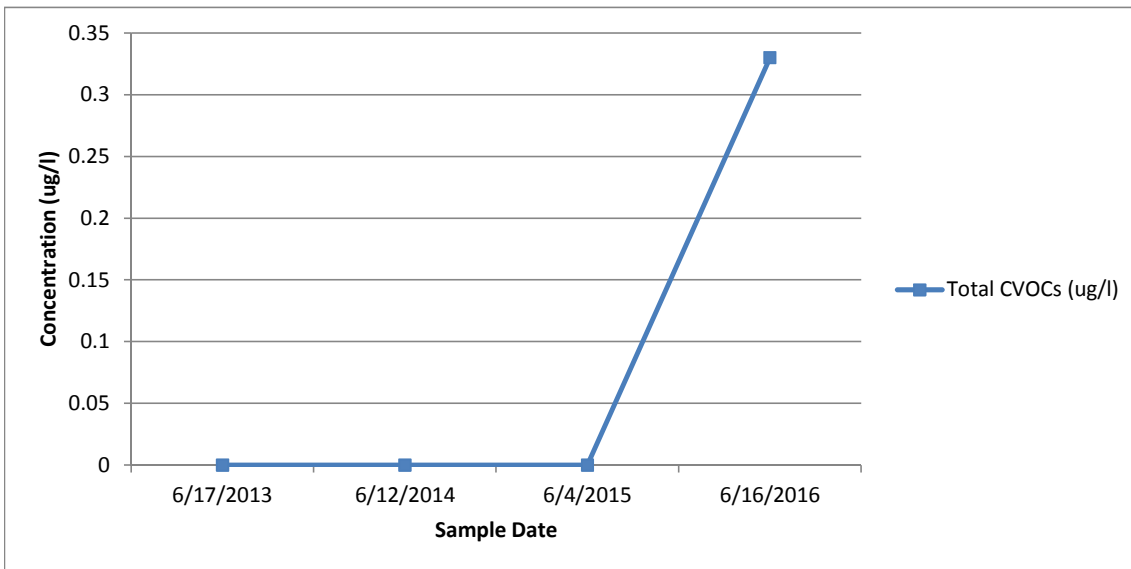


**Notes:**

- Total CVOCs were calculated by adding the concentrations of the following VOCs:
  - 1,1,1-Trichloroethane
  - 1,1-Dichloroethane
  - 1,1-Dichloroethene
  - Chloroform
  - Chloromethane
  - cis-1,2-Dichloroethene
  - Tetrachloroethene
  - Trichloroethene
  - Vinyl Chloride
- For non-detect (U qualified) results, a value of 0 was used.
- NS = Not Sampled
- Qualifiers were defined as follows:
  - J - Estimated values (- indicates likely biased low, + indicates likely biased high)
  - U - Non-Detect Value

# MW-PD-11

Sample Date			6/17/2013		6/12/2014		6/4/2015		6/16/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U	0.33	J
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l		U		U		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U		U		U		U
Trichloroethene (TCE)	79-01-6	ug/l		U		U		U		U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>0</b>	<b>U</b>	<b>0</b>	<b>U</b>	<b>0</b>	<b>U</b>	<b>0.33</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

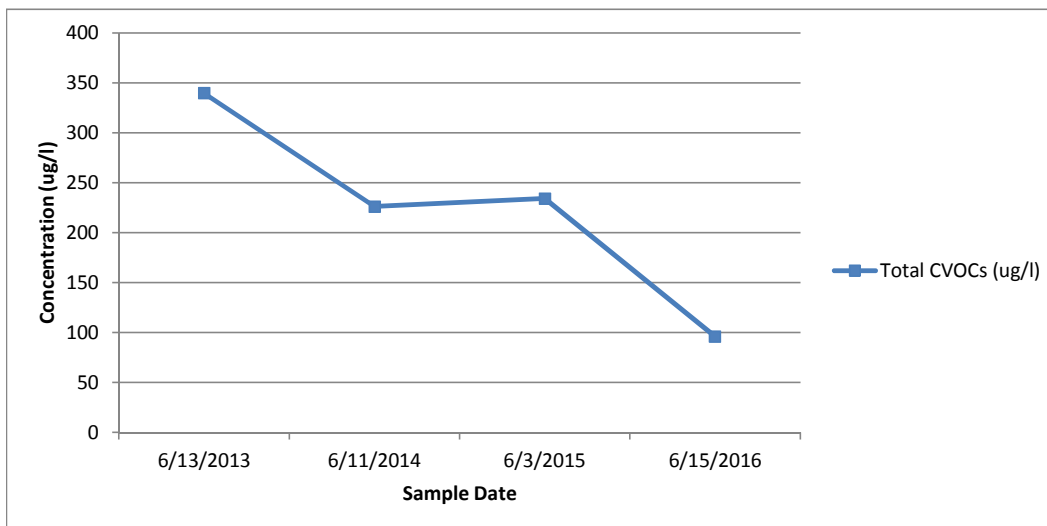
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

## MW-PD-12

Sample Date			6/13/2013		6/11/2014		6/3/2015		6/15/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U	0.12	J		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l		U	0.32	J		U		U
Chloromethane	74-87-3	ug/l		U		U		U	0.27	J
cis-1,2-Dichloroethylene	156-59-2	ug/l	1.2		0.58	J+		U	0.44	J
Tetrachloroethylene(PCE)	127-18-4	ug/l	8.6		5.4		4.3	J	3.6	
Trichloroethene (TCE)	79-01-6	ug/l	330		220		230	J	92	D
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>339.8</b>	<b>U</b>	<b>226.3</b>		<b>234.3</b>		<b>96.31</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

3. NS = Not Sampled

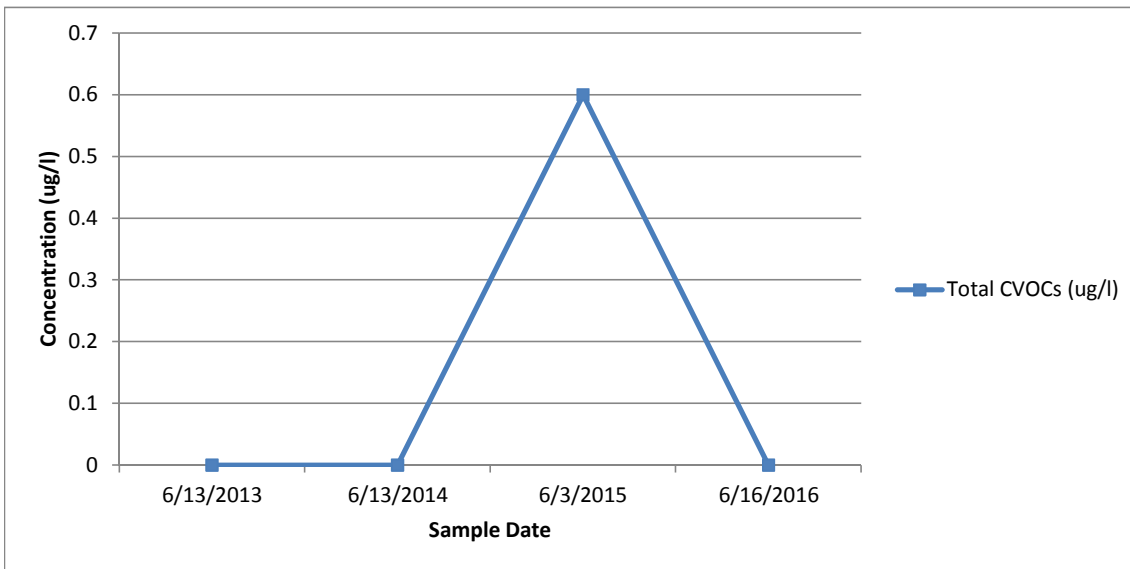
4. Qualifiers were defined as follows:

J - Estimated values (- indicates likely biased low, + indicates likely biased high)

U - Non-Detect Value

# MW-PD-13

Sample Date			6/13/2013		6/13/2014		6/3/2015		6/16/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		UJ		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		UJ		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		UJ		U		U
Chloroform	67-66-3	ug/l		U		UJ	0.6	J		U
Chloromethane	74-87-3	ug/l		U		UJ		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		UJ		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U		UJ		U		U
Trichloroethene (TCE)	79-01-6	ug/l		U		UJ		U		U
Vinyl Chloride	75-01-4	ug/l		U		UJ		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>0</b>	<b>U</b>	<b>0</b>	<b>U</b>	<b>0.6</b>		<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

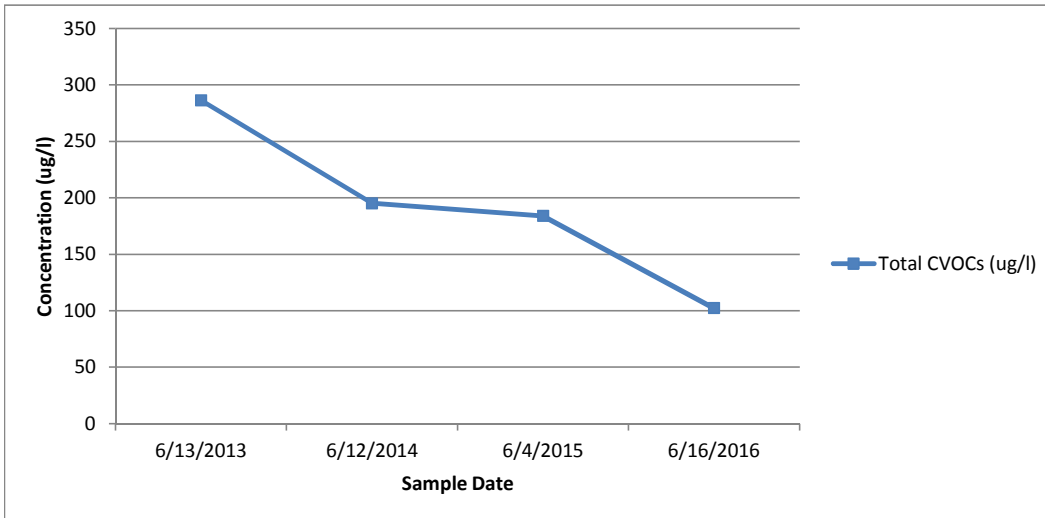
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MW-PD-14

Sample Date			6/13/2013		6/12/2014		6/4/2015		6/16/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U	0.1	J	0.11	J		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		UJ
Chloroform	67-66-3	ug/l		U	0.17	J		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	1.8		1.2		1.2	J	0.84	J-
Tetrachloroethylene(PCE)	127-18-4	ug/l	4.7		3.7		2.6	J	2.4	
Trichloroethene (TCE)	79-01-6	ug/l	280		190		180	J	99	D
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>286.5</b>	<b>U</b>	<b>195.17</b>		<b>183.91</b>		<b>102.24</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

3. NS = Not Sampled

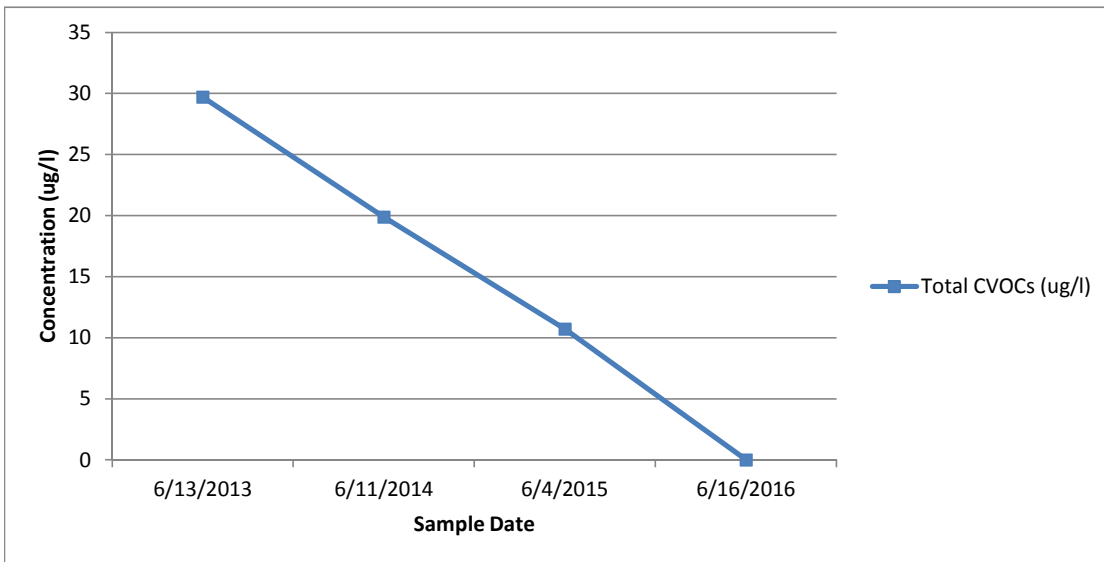
4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value



# MW-PD-15

CVOC	CAS RN	Units	Sample Date		6/13/2013		6/11/2014		6/4/2015		6/16/2016	
			Result	Qual	Result	Qual	Result	Qual	Result	Qual		
1,1,1-Trichloroethane	71-55-6	ug/l	1.1		0.58		0.45	J				U
1,1-Dichloroethane	75-34-3	ug/l	1.5		0.89		0.52	J				U
1,1-Dichloroethene	75-35-4	ug/l		U	0.23	J		U				U
Chloroform	67-66-3	ug/l		U	0.36	J		U				U
Chloromethane	74-87-3	ug/l		U		U		U				U
cis-1,2-Dichloroethylene	156-59-2	ug/l	1.2		0.73	J+	0.45	J				U
Tetrachloroethylene(PCE)	127-18-4	ug/l	1.9		1.1		1.1	J				U
Trichloroethene (TCE)	79-01-6	ug/l	24		16		8.2	J				U
Vinyl Chloride	75-01-4	ug/l		U		U		U				U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>29.7</b>	<b>U</b>	<b>19.89</b>		<b>10.72</b>					<b>0</b> <b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

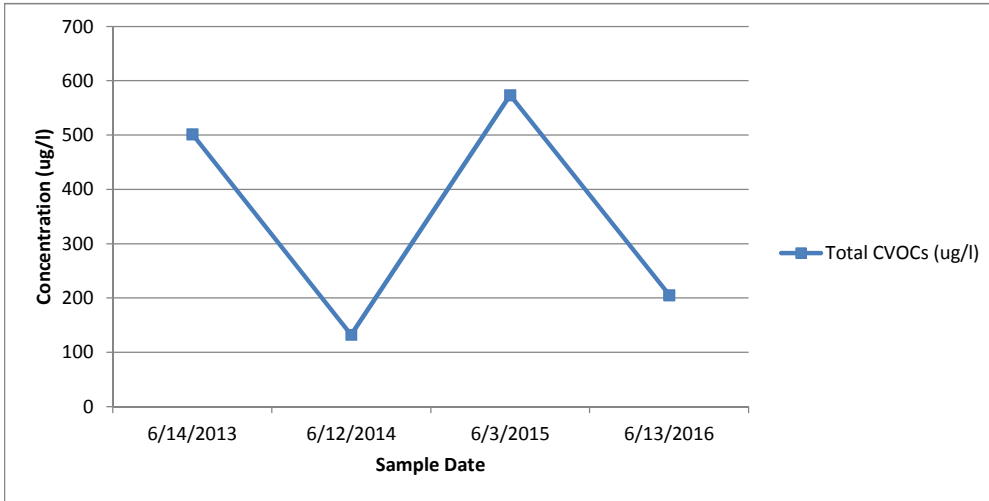
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# MW-PD-16

Sample Date			6/14/2013		6/12/2014		6/3/2015		6/13/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	0.64			U	0.82	J		U
1,1-Dichloroethane	75-34-3	ug/l	0.97			U	1.5	J	0.55	J-
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		UJ
Chloroform	67-66-3	ug/l		U		U	0.89	J		UJ
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l	3.5		0.56	J+	3.2	J	1.4	J-
Tetrachloroethylene(PCE)	127-18-4	ug/l	6.7		2.1		7.2	J	4	
Trichloroethene (TCE)	79-01-6	ug/l	490		130		560	J	200	D
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>501.8</b>	<b>U</b>	<b>132.66</b>		<b>573.61</b>		<b>205.95</b>	

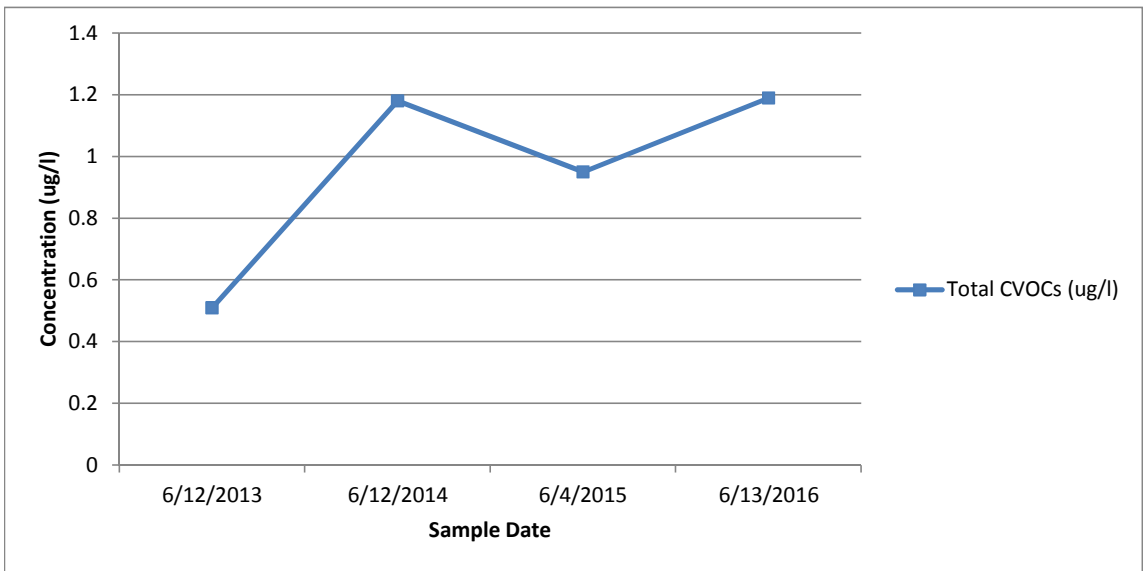


**Notes:**

- Total CVOCs were calculated by adding the concentrations of the following VOCs:
  - 1,1,1-Trichloroethane
  - 1,1-Dichloroethane
  - 1,1-Dichloroethene
  - Chloroform
  - Chloromethane
  - cis-1,2-Dichloroethene
  - Tetrachloroethene
  - Trichloroethene
  - Vinyl Chloride
- For non-detect (U qualified) results, a value of 0 was used.
- NS = Not Sampled
- Qualifiers were defined as follows:
  - J - Estimated values (- indicates likely biased low, + indicates likely biased high)
  - U - Non-Detect Value

# MW-PD-17

Sample Date			6/12/2013		6/12/2014		6/4/2015		6/13/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l	0.51		0.52	J	0.65	J	0.89	
1,1-Dichloroethane	75-34-3	ug/l		U	0.29	J	0.3	J	0.3	J
1,1-Dichloroethene	75-35-4	ug/l		U	0.16	J		U		U
Chloroform	67-66-3	ug/l		U	0.21	J		U		U
Chloromethane	74-87-3	ug/l		U		UJ		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		UJ		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U		UJ		U		U
Trichloroethene (TCE)	79-01-6	ug/l		U		UJ		U		U
Vinyl Chloride	75-01-4	ug/l		U		UJ		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>0.51</b>	<b>U</b>	<b>1.18</b>		<b>0.95</b>		<b>1.19</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

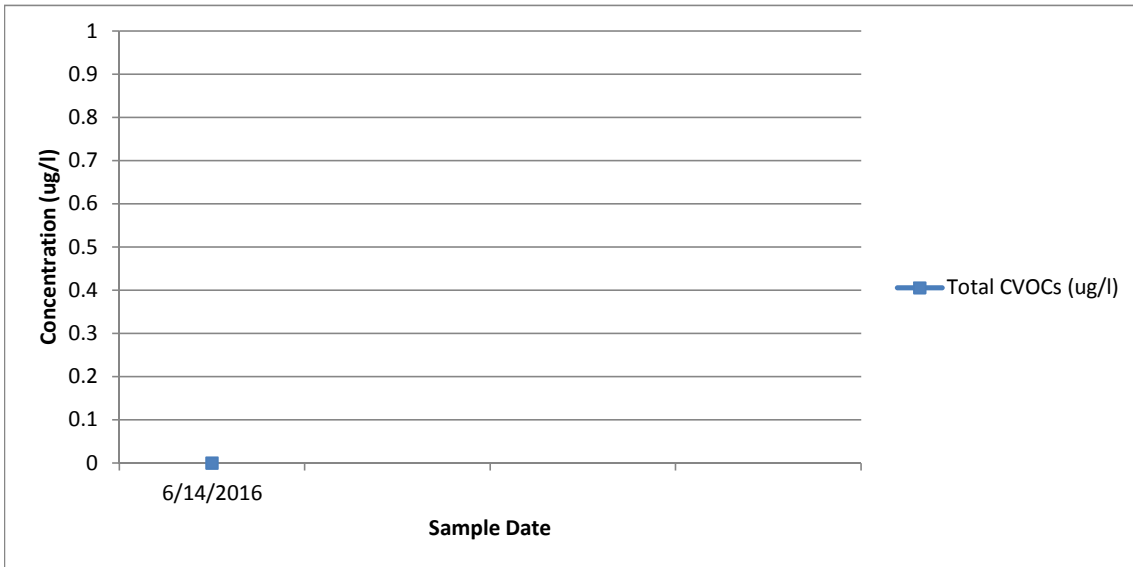
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# PZ-03

Sample Date			6/14/2016	
CVOC	CAS RN	Units	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U
1,1-Dichloroethane	75-34-3	ug/l		U
1,1-Dichloroethene	75-35-4	ug/l		U
Chloroform	67-66-3	ug/l		U
Chloromethane	74-87-3	ug/l		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U
Trichloroethene (TCE)	79-01-6	ug/l		U
Vinyl Chloride	75-01-4	ug/l		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

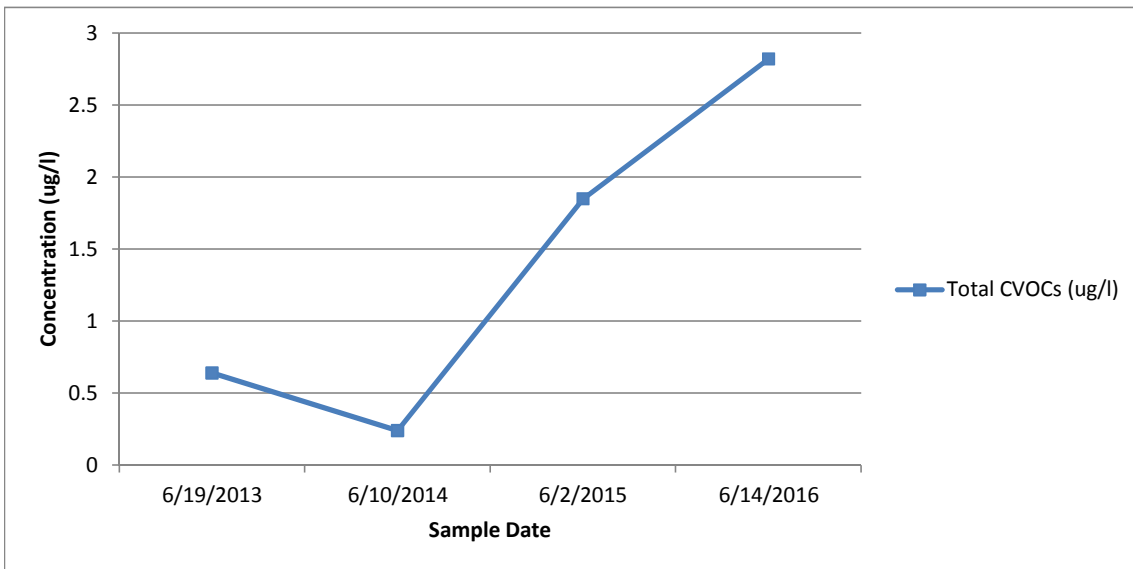
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# PZ-05

Sample Date			6/19/2013		6/10/2014		6/2/2015		6/14/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l	0.64		0.24	J		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U		U	0.45	J	0.52	
Trichloroethene (TCE)	79-01-6	ug/l		U		U	1.4	J	2.3	
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>0.64</b>	<b>U</b>	<b>0.24</b>		<b>1.85</b>		<b>2.82</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

3. NS = Not Sampled

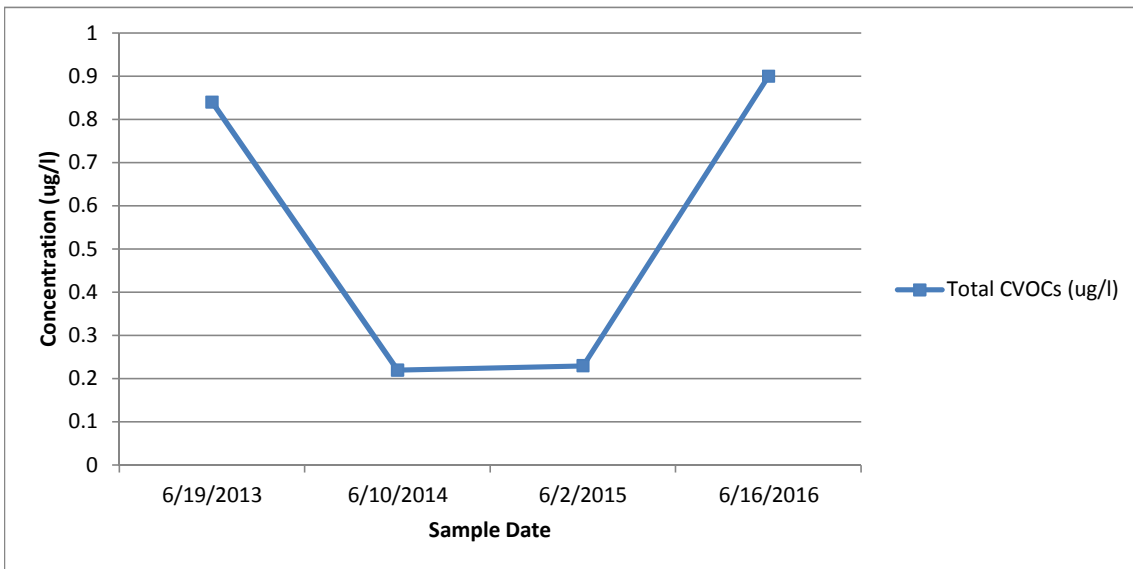
4. Qualifiers were defined as follows:

J - Estimated values (- indicates likely biased low, + indicates likely biased high)

U - Non-Detect Value

# PZ-06

Sample Date			6/19/2013		6/10/2014		6/2/2015		6/16/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		UJ
Chloroform	67-66-3	ug/l		U	0.22	J		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		UJ
Tetrachloroethylene(PCE)	127-18-4	ug/l		U		U		U		U
Trichloroethene (TCE)	79-01-6	ug/l	0.84			U	0.23	J	0.9	
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>0.84</b>	<b>U</b>	<b>0.22</b>		<b>0.23</b>		<b>0.9</b>	



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

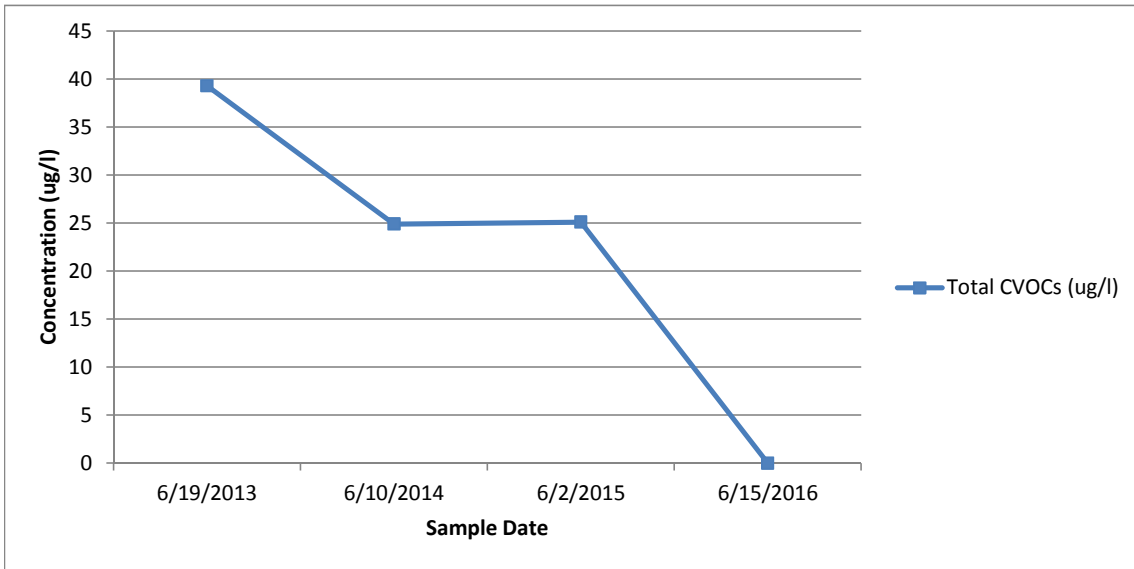
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# PZ-07

Sample Date			6/19/2013		6/10/2014		6/2/2015		6/15/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		UJ
Chloroform	67-66-3	ug/l		U		U		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U	0.1	J		UJ
Tetrachloroethylene(PCE)	127-18-4	ug/l	2.3		1.9		2	J		U
Trichloroethene (TCE)	79-01-6	ug/l	37		23		23	J		U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>39.3</b>	<b>U</b>	<b>24.9</b>		<b>25.1</b>		<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

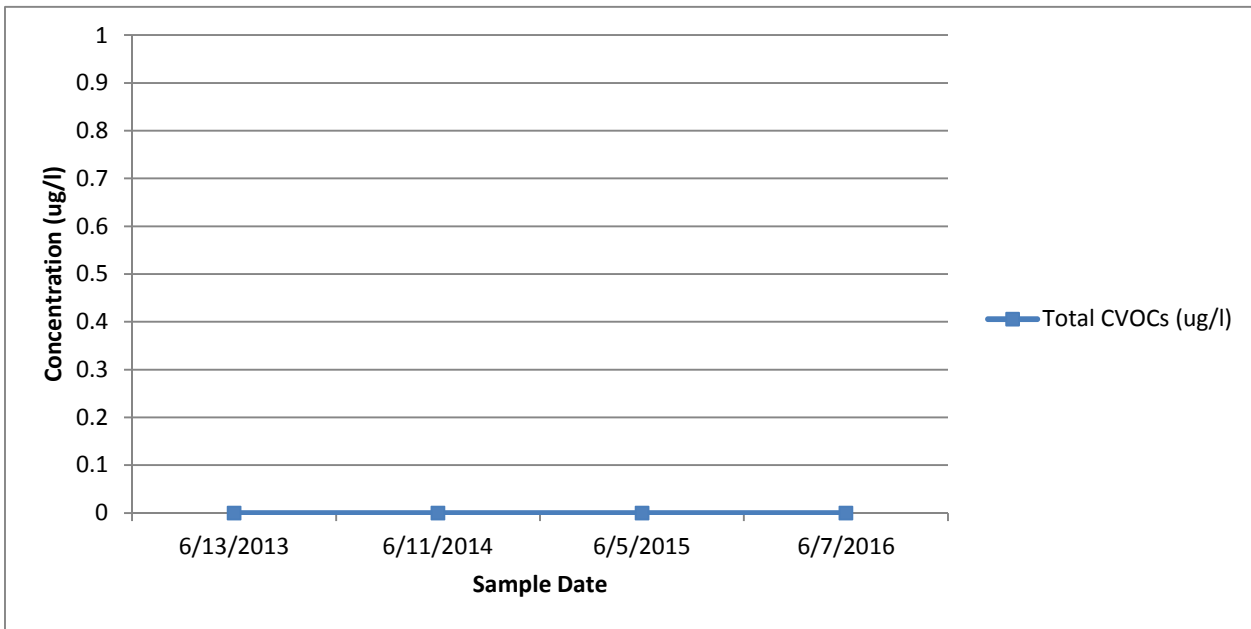
3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value

# SDW-01

Sample Date			6/13/2013		6/11/2014		6/5/2015		6/7/2016	
CVOC	CAS RN	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1-Trichloroethane	71-55-6	ug/l		U		U		U		U
1,1-Dichloroethane	75-34-3	ug/l		U		U		U		U
1,1-Dichloroethene	75-35-4	ug/l		U		U		U		U
Chloroform	67-66-3	ug/l		U		U		U		U
Chloromethane	74-87-3	ug/l		U		U		U		U
cis-1,2-Dichloroethylene	156-59-2	ug/l		U		U		U		U
Tetrachloroethylene(PCE)	127-18-4	ug/l		U		U		U		U
Trichloroethene (TCE)	79-01-6	ug/l		U		U		U		U
Vinyl Chloride	75-01-4	ug/l		U		U		U		U
<b>Total CVOCs</b>		<b>ug/l</b>	<b>0</b>	<b>U</b>	<b>0</b>	<b>U</b>	<b>0</b>	<b>U</b>	<b>0</b>	<b>U</b>



**Notes:**

1. Total CVOCs were calculated by adding the concentrations of the following VOCs:

- 1,1,1-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethene
- Chloroform
- Chloromethane
- cis-1,2-Dichloroethene
- Tetrachloroethene
- Trichloroethene
- Vinyl Chloride

2. For non-detect (U qualified) results, a value of 0 was used.

3. NS = Not Sampled

4. Qualifiers were defined as follows:

- J - Estimated values (- indicates likely biased low, + indicates likely biased high)
- U - Non-Detect Value