2016 Second Quarter Groundwater Monitoring Report

April - June 2016

Claremont Polychemical Corporation Site

505 Winding Road
Old Bethpage, Nassau County, New York 11804
Contract/WA No. D007625-19; Site No. 130015

Prepared for:

New York State
Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233

July 29, 2016

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

This page is intentionally left blank

Contents

Tables

Figures

Attachments (following figures)

1 Introduction

This quarterly groundwater monitoring report prepared by Henningson, Durham & Richardson Architecture and Engineering, P.C. (HDR) presents groundwater sampling analytical results for the second quarter (April through June) of 2016 and supporting information on the history, groundwater extraction and treatment (GWET) system configuration and hydrogeologic conditions at the Claremont Polychemical Corporation Site; hereinafter referred to as CPC or the "Site" (Figure 1). The groundwater monitoring event and the preparation of this deliverable are part of the routine groundwater monitoring program being conducted at the Site. This report has been prepared for submittal to the New York State Department of Environmental Conservation (NYSDEC) and includes the following:

- Brief overview of historical Site activities;
- Discussion of the on-site GWET system including discharge monitoring;
- Hydrological data;
- Brief description of the field activities;
- Analytical results of monitoring well sampling, specifically those for chlorinated volatile organic compounds (VOCs) including trends and plume evaluation; and
- Conclusions and Recommendations.

2 Site Background

2.1 Site History

Claremont Polychemical Corporation, a former manufacturer of pigments for plastics and inks, coated metal flakes, and vinyl stabilizers, operated at the Site from 1966 to 1980. According to the "Second Five-Year Review Report for Claremont Polychemical Corporation" prepared by the EPA Region 2, dated March 2014, during its operation, CPC disposed of liquid waste in three leaching basins and deposited solid wastes and treatment sludges in drums or in aboveground metal tanks. The principal wastes generated were organic solvents, resins, and wash wastes (mineral spirits). A solvent recovery system (steam distillation), two pigment dust collectors and a sump were located inside the Process Building. Five concrete treatment basins, each with a capacity of 5,000 gallons which contained sediments and water, were to the west of the building. Six aboveground tanks, three of which contained wastes, were located east of the building. Other features included an underground tank farm, construction and demolition debris, dry wells and a water supply well (EPA 2014).

In 1979, the Nassau County Department of Health (NCDH) found 2,000 to 3,000 drums of inks, resins, and organic solvents throughout the Site during a series of inspections. Inspectors' identified releases associated with damaged or mishandled drums in several areas including one larger release located east of the Process Building (referred to as the "spill area"). CPC sorted and removed the drums in 1980 (EPA 2014). In October 1980, the NYSDEC ordered CPC to commence clean-up activities at the Site. CPC did not perform the clean-up activities required by NYSDEC and CPC ceased operations at the Site in 1980 (EPA 2014). The Environmental Protection Agency (EPA) proposed the Site for listing on the National Priorities List (NPL) in October 1984 (because of CPC's refusal to perform the clean-up). CPC was listed as a Superfund site in June 1986.

A Remedial Investigation Feasibility Study (RI/FS) was initiated in March 1988 under the oversight of the EPA. Surface and subsurface soil, groundwater, underground storage tanks, and the Process Building were sampled as part of the RI. The RI/FS reports were released to the public in August 1990. The RI/FS findings indicated that on-site soils contaminated with tetrachloroethylene (PCE), located in the former "spill area", constituted a potential threat to groundwater resources. The spill area is adjacent to and east of the former Process Building (Figure 2). Other VOCs including 2-butanone, toluene, xylene, 1,2-dichloroethene (DCE), trichloroethene (TCE), 1,1,1-trichloroethane (TCA), ethylbenzene, 1,2-dichloroethane (DCA), methylene chloride, and vinyl chloride were detected in groundwater at concentrations exceeding federal and state standards. EPA issued two Records of Decision (RODs) signed in September 1989 and September 1990 and two Explanations of Significant Differences (ESDs) signed in September 2000 and April 2003 since completion of the RI/FS. The operable units (OUs) addressed by the RODs and ESDs are described in Table 1.

Table 1 - CPC Operable Units

Operable Unit	Description	Status
OU 1	Treatment and removal of wastes in 14 underground storage tanks	14 USTs and contents removed. Achieved cleanup levels allowing for unlimited use and unrestricted exposure.
OU 2	Wastes stabilized during the Sept. 1988 removal action	Testing, consolidation, treatment and disposal of wastes in containers and basins performed. Achieved unlimited use and unrestricted exposure, later changed to commercial/light industrial because of remaining contamination below the building. 2003 ESD added additional remedial actions for OU 2 under the former Process Building including an SVE system and using the building's concrete slab as a cap for cadmium contaminated soil.
OU 3	Soil contaminated with PCE at the "spill area"	Approximately 8,800 tons of PCE contaminated soils excavated, treated and backfilled on Site. Achieved cleanup levels allowing for unlimited use and unrestricted exposure.
OU 4	Contaminated groundwater on the CPC property	Extraction and treatment of groundwater via metals precipitation, air stripping and carbon adsorption. On-site reinjection. The subject of this report.

Operable Unit	Description	Status
OU 5	Contaminated groundwater off of the CPC property.	Extraction and treatment of groundwater via air stripping and off-site reinjection using the Old Bethpage Landfill treatment system extraction wells south-southeast of the CPC Site.
OU 6	Decontamination of the former Process Building	Vacuuming and dusting surfaces, asbestos abatement, pressure washing walls and interior surfaces. Achieved cleanup levels allowing for unlimited use and unrestricted exposure.

A GWET system was installed on-site by the EPA and Army Corps of Engineers (ACOE) to hydraulically contain VOCs in groundwater as the OU 4 remedy. GWET system operation began in February 2000, reportedly pumping and treating over 400 gallons per day (gpd). SAIC Inc. operated and maintained the GWET system, collected plant effluent samples and performed quarterly groundwater sampling at 41 wells from 2000 to May 2011. In May 2011, the project was transferred from the ACOE/EPA to the NYSDEC. HRP Associates, Inc. performed the same scope of work as SAIC under contract to NYSDEC from May 2011 to August 2015. HDR, also under contract to NYSDEC, took over HRP's scope of work on September 1, 2015.

2.2 Location

CPC is located on a 9.5-acre parcel in an industrial section of Old Bethpage, Nassau County, New York (Figure 1). The former 35,000 square foot Process Building, demolished in 2012, was the only building historically on the property. The concrete slab from this building remains. The 5,200 square foot GWET system building was constructed as part of the OU 4 remedy.

The Site lies approximately 800 feet west of the border between Nassau and Suffolk Counties and is accessed via Winding Road on the property's western border. Adjacent properties include (Figure 2):

- South and Southeast - Bethpage State Park and golf course;
- East – State University of New York (SUNY) - Farmingdale Campus;
- West – Town of Oyster Bay Solid Waste Disposal Complex (OBSWDC); and
- North – Commercial and Light Industrial.

The OBSWDC includes the Old Bethpage Landfill Superfund Site with the Town of Oyster Bay as the responsible party. The Nassau County Fireman's Training Center (FTC), which has also contributed to soil and groundwater contamination in the area, is located approximately 500 feet south of the Old Bethpage Landfill portion of the OBSWDC. The OBSWDC and FTC also have GWET systems. FTC ceased operation of its GWET system in 2013 having achieved the cleanup objectives. The closest residences are approximately one-half mile from the Site, immediately west of the Old Bethpage Landfill. The nearest public supply well is located 3,500 feet northwest of the Site and nearly 47,000 people are drawing water from private-use wells located within three miles of the Site.

2.3 Site Hydrogeological Setting

The CPC site is underlain primarily by sand with interbedded, discontinuous silt and lignitic clay lenses. Upper glacial aquifer deposits are mostly absent in the area, rather the Magothy formation is the uppermost geologic unit with a thickness of approximately 750 feet. The Raritan clay below acts as a barrier between the Magothy and Lloyd aquifers. The average water elevation across the Site is 60 feet with regional groundwater flow to the south-southeast. Depths to groundwater in June 2016 ranged from 45.45 feet (well EW-14D) to 105.30 feet (well EW-11D) bgs.

The “Claremont Polychemical Superfund Site Long-Term Groundwater Monitoring Old Bethpage, New York” report dated December 2001 prepared by SAIC indicated historical gradients ranging from 0.001-0.002 feet/year and horizontal flow velocities of 0.43 feet/day or 157 feet/year (Ebasco, 1990).

Groundwater contour maps produced from the June 2016 water level measurements show groundwater flow direction in the water table wells to be south-southeast near the treatment plant; south-southwest at the SUNY Farmingdale property to the east of the plant; and south-southeast near Winding Road to the west of the plant (Figure 3). The contour map produced from wells screened in the Magothy aquifer depicts a southeast flow direction (Figure 4). The recent contour maps are consistent with previous maps produced from the CPC wells and from other investigations.

3 Groundwater Extraction and Treatment System

A description of the GWET system and a review of its effectiveness of contamination recovery and hydraulic control are provided below.

3.1 Groundwater Extraction and Treatment System Description

The GWET system was originally designed to capture and treat metals, organic contaminants, and provide final pH adjustment. The system consists of an extraction system, above-ground treatment, and a reinjection system. Each of the system components are discussed below.

<u>GWET System Extraction Wells</u>

The groundwater collection system consists of three extraction wells - EX-1, EX-2, and EX-3 (also referred to as EXT-1, EXT-2 and EXT-3) - installed approximately 150 feet apart, south of the Site oriented in a southwest-northeast line (Figure 2). Table 2 provides extraction well screen and total depths.

Table 2 - Extraction Well Construction

Well	Total Depth	Top of 1st Screen (bgs)	Bottom of 1st Screen (bgs)	Top of 2nd Screen (bgs)	Bottom of 2nd Screen (bgs)
EX-1 (aka EXT-1)	175 ft.	75 ft.	110 ft. Packer at 115 ft. (2013)	125 ft. Not Used (2013)	175 ft.
EX-2 (aka EXT-2)	190 ft.	95 ft.	120 ft. Packer at 125 ft. (2013)	135 ft. Not used (2013)	190 ft.
EX-3 (aka EXT-3)	194 ft.	94 ft.	194 ft.	NA	NA

Clay layers located in EX-1 between 110 ft. and 125 ft. bgs, and in EX-2 between 120 ft. and 135 ft. bgs is the reason for the two screen intervals in those extraction wells. The 10 horsepower pumps in each extraction well are capable of pumping up to 200 gallons per minute (gpm). However, historically EX-1, EX-2, and EX-3 extracted 190 gpm, 188 gpm, and 175 gpm, respectively, for a total of approximately 553 gpm.[1] Based on a step-down test completed in June 2013, the pumping rates of EX-1 and EX-2 were reduced to 110 gpm and 120 gpm, respectively. The average flow rate over the course of a month after June 2013 was approximately 350 to 390 gpm. This average pumping rate equals approximately 500,000 to 560,000 gallons per day (gpd).

Packers were installed in EX-1 and EX-2 in 2013 to isolate the upper screen interval after depth discrete sampling in the wells indicated groundwater at the lower screen interval did not contain VOCs at concentrations above the NYSDEC Part 703 Class GA groundwater criteria.

In August 2014 at the direction of NYSDEC, EX-2 was taken off line and the flow from EX-1 was decreased to approximately 60 gpm. This average pumping rate as of August 24, 2014 equaled approximately 330,000 to 360,000 gpd.

On August 27, 2015, water ponding at the surface around infiltration gallery 3 (IG-3) necessitated a further reduction in flow rate. On that date, the average flow rate for the plant was 146 gpm. The plant supervisor later determined the ponding condition resulted from leaking pipe caps, not clogged laterals as was first thought and the flow rate was gradually increased. As of June 2016, the average flow rate was 160 gpm equaling approximately 230,000 gpd (refer to the June 2016 O&M report for the most recent data).

<u>GWET System Path of Remediation</u>

Groundwater is pumped from the extraction wells which contain level transducers set to control the pump on time and the water level of the wells. Upon extraction, water enters a 60,000-gallon equalization tank adjacent to the GWET system building. Water from the equalization

[1] The plant supervisor is not aware of rates exceeding 400 gpm.

tank flows through two parallel metals-removal trains that are each rated for 250 gpm. Each train includes a reaction tank, a flocculation tank, a clarifier, and a filter followed by air-stripper feed tanks. In 2001, after the first nine months of operation, the addition of oxidizing chemicals (potassium permanganate) to the metals removal system was discontinued as the influent metals analytical concentrations to the plant met EPA discharge standards for metals. Water continues to flow through the metals portion of the treatment system.

The feed tanks divert the water through a single packed tower air stripper rated at an average rate of 500 gpm, where the water is collected and then pumped directly to the treated water tanks. The air emission from the air stripper is treated with vapor phase carbon and is monitored weekly by the plant operator using a photoionization detector.

The treated water is then stored in two 42,000-gallon vessels prior to reinjection to the subsurface via four injection wells and/or two infiltration galleries located on the adjacent SUNY Farmingdale campus.

The GWET system is manned by two operators working 40-hour weeks, and an autodialer (telemetry unit) is installed to contact the operators in case of plant alarms. The operators typically respond to alarms within 30 minutes. The plant operator can monitor the plant remotely from the Citect SCADA control system and make adjustments to the system operations.

<u>GWET System Operating Permits</u>

Water Permit

The plant was issued a water discharge permit dated January 1, 1998, which was renewed on March 4, 2015. A permit renewal application was submitted to and approved by the NYSDEC Bureau of Water Permits. The completed permit reauthorization expires on December 31, 2025.

Effluent Limitations and Monitoring Requirements outlined in the permit are enforced by the NYSDEC Division of Environmental Remediation, Remedial Bureau E.

Air Permit

An air permit is not required for the GWET system operation. In particular, NYSDEC regulation 6 NYCRR Part 375-1.7 states that “no permit is required when the substantive compliance is achieved as indicated by the NYSDEC approval of the workplan”. Based on a review of the information pertaining to the GWET system, VOCs air emissions from the GWET system historically have been negligible and are compliant with air guideline concentrations. The system remains in place and operational because it is impractical to remove it.

3.2 Groundwater Extraction and Treatment System Performance Evaluation

3.2.1 Flow Rate

Since startup, the system has treated more than 2.27 billion gallons of groundwater. During the second quarter of 2016 (April – June), the treatment system processed 19.8 million gallons of water. Daily flow readings are provided in the O&M reports submitted monthly to NYSDEC (refer to the June 2016 O&M report for the most recent data).

The volume of treated water discharged by the GWET system to the injection well field is determined daily from readings of the magnetic flow meter on the plant effluent line. The injection system was designed for a 500 gpm flow rate, although the maximum operating flow rate since system start-up was 400 gpm.[2] Currently, the injection rate is approximately 140 gpm. The plant's effluent discharge is limited by the condition of the injection wells. Currently depth to water in the injection wells is as shallow as 2.0 feet bgs.

3.2.2 Groundwater Extraction and Treatment System Contaminant Removal

To evaluate the treatment system's contaminant influent removal rate, HDR reviewed available GWET system influent and effluent analytical results from monthly operation and maintenance records. Approximately 943 kilograms (2,079 pounds) of VOCs have been removed to date. Mass removal peaked in 2003 at 289 kilograms and in 2015 was 16 kilograms. Cumulatively, most of the mass removed has been TCE (746 kilograms) and PCE (169 kilograms). A plot of historic mass removal rates and cumulative PCE and TCE mass removal is presented as Figure 5.

3.2.3 Groundwater Extraction and Treatment System Discharge Monitoring

Groundwater samples of the effluent collected monthly are analyzed for VOCs, semivolatile organic compounds (SVOCs), metals, total organic carbon (TOC), total suspended solids (TSS), total dissolved solids (TDS), total Kjehldahl nitrogen (TKN), and anions. Effluent data for select VOC compounds (PCE, TCE, and 1,1-DCE) and metals (iron and manganese) are analyzed to evaluate compliance with effluent discharge limits. Figure 6 shows that effluent concentrations for the main contaminants, PCE and TCE, have remained below permissible discharge limit levels of 5 μg/L. Figure 7 shows that the concentrations of iron and manganese were under the permissible levels of 600 μg/L for the second quarter 2016 sampling results. Refer to the monthly O&M and the Significant Events reports for additional information on remediation system performance and daily operations.

4 Groundwater Monitoring Program

In a January 5, 2016 memo to the NYSDEC, HDR recommended a reduction of the number of wells usually sampled from 44 to 27, with rationale for the recommendation. The NYSDEC, in a January 15, 2016 email, agreed with the recommendation with few exceptions, and reduced the number of wells sampled from 44 to 31. The HDR memo and the NYSDEC's response are attached (Attachments A-1 and A-2) to this report for reference.

On June 20 through 21, 2016 HDR sampled a total of 31 on-site and off-site monitoring wells. On-site monitoring wells included DW-1, DW-2, EW-5, EW-7C, EW-7D, and SW-1. In addition, the three extraction wells, EX-1, EX-2, and EX-3, were sampled. Off-site wells included BP-3A, BP-3B, BP-3C, EW-1A, EW-1B, EW-1C, EW-2A, EW-2B, EW-2C, EW-2D, EW-4A, EW-4B, EW-4C, EW-

[2] According to the plant supervisor.

4D, EW-11D, EW-12D, EW-14D, MW-8A, MW-8B, MW-8C, MW-10D, and WT-01. The monitoring well locations are depicted on Figure 2. A description of the groundwater sampling event is provided below.

4.1 Hydrological Data

A synoptic round of groundwater levels was measured in 44 groundwater wells on June 17, 2016. Depth to groundwater during this event ranged from 45.45 feet (well EW-14D) to 105.30 feet (well EW-11D) bgs. Water level elevations were calculated by subtracting the depth to water from each measurement from the top of casing elevation. HDR plotted the water levels and drew the configurations of the water table and potentiometric surface in the Magothy aquifer depicting the groundwater flow directions. These data show the groundwater flow direction is south-southeast and south-southwest at the water table (Figure 3) and southeast in the Magothy (Figure 4). The effect on the aquifer from pumping of the CPC extraction wells is evident from bends in otherwise straight potentiometric surface contours nearest the extraction wells. Overall, groundwater elevations and inferred groundwater flow direction based on groundwater elevation contours were consistent with previous data.

4.2 Groundwater Sample Collection

The monitoring well groundwater samples were collected on June 20 and 21, 2016 and the extraction well samples were collected May 17, 2016. The groundwater samples were collected using PDBs inserted at mid-point in the screens in each monitoring well.[3] Each PDB bag was retrieved, pierced with a decontaminated sharp object and the water inside was collected in VOC vials with septum caps, and preserved with hydrochloric acid (HCl). The VOC vials are labeled, recorded on a chain of custody, and placed in a cooler with ice. New PDBs were installed at the mid point of the screens of each monitoring well for the next sampling event.

A total of 31 (and three duplicate) samples were submitted to Test America Laboratory, of Edison, New Jersey, an NYSDOH ELAP-approved laboratory, to be analyzed for VOCs via EPA Method 8260. A list of wells sampled and analytical results are presented in Table 5 and Attachment B. Groundwater sampling for metals was discontinued by the NYSDEC following the July 2011 sampling event after metals concentrations met groundwater quality standards.

4.3 Groundwater Analytical Results

Groundwater sampling results are summarized on Table 3 and shown on the trend chart figures (Figures 8 through 24). Of note, acetone was detected in 29 samples and two duplicates but did not exceed the criterion for any of the samples in which it was detected. It is likely a laboratory contaminant and not present in groundwater.

---

[3] PDBs were first used for the May 2012 sampling event.

Table 3 - Monitoring and Extraction Wells with VOC Exceedances – 2st Quarter 2016

Well	TCA	1,1-DCA	1,2-DCA	DCE	C DCE	PCE	TCE
SW-1	ND	ND	ND	ND	**5.5**	**100**	**10**
BP-3B	*0.89 J*	**12**	*0.59 J*	*0.45 J*	**61**	**130**	**11**
BP-3C	*0.41 J*	1.2	ND	*0.40 J*	**55**	**150**	**10**
EW-4A	ND	ND	ND	ND	**9**	**8.7**	1.5
EW-4C	4.2	4	ND	1.5	1.4	**29**	**30**
EW-4D	ND	ND	ND	ND	ND	**9.6**	**14**
EW-7C	*0.62 J*	*0.38 J*	ND	*0.37 J*	3.7	**13**	**220**
EW-12D	4	*0.73 J*	ND	**7.2**	2.6	4.8	**22**
EW-14D	**11**	ND	**2.7**	**11**	*0.84 J*	2.6	**110**
MW-8A	ND	ND	ND	ND	ND	**5**	*0.41 J*
EX-1	ND	ND	ND	ND	3.6 (3.7)	2.9 (3.2)	4.9 (**5**)
EX-3	*0.77 J*	*0.26 J*	ND	1.1	2.9	**7.7**	**38**

Results units are µg/L. Bold, underlined, italicized results are exceedances of the NYSDEC Part 703 Class GA criteria; duplicate sample results in parenthesis. See Table 5 for complete analytical results and comparison criteria. Cumene – Isopropylbenzene; TCE – trichloroethylene; C DCE – cis-1,2-dichloroethylene; 1,1-DCA – 1,1-dichloroethane; 1,2-DCA – 1,2-dichloroethane; DCE – 1,1-dichloroethene; PCE – tetrachloroethylene; PDB – 1,4-Dichlorobenzene; TCA – 1,1,1-trichloroethane, Dichlorodifluoromethane; ND – not detected; J – estimated value.

4.3.1 Plume Evaluation

The groundwater contamination distribution was evaluated by creating sample location figures with iso-concentration lines for PCE and TCE in plan view and cross section (Figures 25 through 31).

On-site plume. This plume originates on-site with the highest concentrations most frequently measured at well SW-1, a water table well (Figures 25 and 26). The on-site plume is predominantly PCE, with PCE concentrations an order of magnitude greater than the TCE concentrations (Figure 10). PCE showed an overall increasing trend in well SW-1 with recent spikes last year including a concentration of 200 µg/L in the second quarter and over 190 µg/L in the fourth. However in 2016, the PCE concentration has decreased with detections of 150µg/L during the first quarter and 100 µg/L in the second quarter. For the remaining wells, PCE concentrations continue to decline or are stable.

Off-site, upgradient plume. This plume is first detected at the farthest upgradient well cluster, the EW-7 series, and flows southeast with only the western portion captured by the CPC system (Figures 25 and 26). The off-site plume is predominantly TCE, with TCE concentrations typically an order of magnitude greater than the PCE concentrations (Figure 16). TCE concentrations increased over 100 µg/L in the first two quarters of 2015 in well EW-7C. However, these concentrations returned to the December 2014 level of 190 µg/l by the end of the fourth quarter of 2015. TCE concentrations were the same during the first and second quarter sampling rounds of 2016 with a concentration of 220 µg/l. The overall trend in TCE concentrations since 2011 has been decreasing. The off-site, upgradient plume extends at least as far south-southeast as the MW-10 series wells.

Well EW-14D. The groundwater contamination at EW-14D is high in TCE, similar to the off-site, upgradient plume (Figure 26). The PCE concentration, however, is below the criterion. Well EW-14D has the greatest variability in TCE concentrations of all of the wells evaluated for contaminant concentration trends. In the past year, TCE concentrations have been decreasing (Figure 20).

Southern Area. This location is centered on the BP-3 series wells far south of the CPC site (Figures 25 and 26). The concentration of PCE is higher than the concentration of TCE by more than an order of magnitude (Table 3). The source of groundwater contamination at the BP-3 series wells has not been investigated.

PCE Cross Sections

Figures 27, 28 and 29 depict PCE concentrations in wells to the east, center, and to the west of the Site and show the vertical extent of PCE. PCE was detected at 13 µg/L at 198 feet bgs in EW-7C (Figure 27, Cross Section A – A’); 9.6 µg/L at 291 feet bgs at EW-4D (Figure 28, Cross Section B – B’); and 100 µg/L at 70 feet bgs at well SW-1 (Figure 29, Cross Section C - C’).

TCE Cross Sections

Figures 30 and 31 depict TCE concentrations in wells to the east and west of the Site and show the vertical extent of TCE. TCE was detected at 220 µg/L at 198 feet bgs at well EW-7C and 110 µg/L at 191 feet bgs at well EW-14D (Figure 30, Cross Section A – A’). TCE was detected at 10 µg/L at 70 feet bgs at well SW-1 (Figure 31, Cross Section B – B’).

4.3.2 Comparison to Historical Groundwater Quality

Figures 5 through 24 illustrate the historical concentration trends for PCE and TCE in multiple wells. Table 4 summarizes the concentration trends in each of the wells.

Table 4 - PCE and TCE Concentration Trends in Select Monitoring Wells

Well	Screen Depth	Location	PCE Trend	TCE Trend	Figure
CPC Plume Wells					
DW-1	93-98	South-southwest of CPC	Increasing	Flat, slightly increasing	Figure 8
EW-1A	65-75	Southwest of CPC	Slightly Decreasing	Slightly Decreasing	Figure 9
SW-1	65-70	Southwest, closest to CPC	Increasing	Slightly increasing	Figure 10
EW-5	165-175	South-southeast of CPC	Flat, slightly decreasing	Decreasing	Figure 11
Off-Site Plume(s) Wells					

Well	Screen Depth	Location	PCE Trend	TCE Trend	Figure
EW-4A	100-115	East of CPC	Increasing	Slightly Increasing	Figure 12
EW-4B	120-130	East of CPC	Decreasing	Slightly decreasing	Figure 13
EW-4C	145-155	East of CPC	Slightly increasing	Decreasing, **with small increase in 1st and 2nd Qtr of 2016**	Figure 14
EW-4D	285-295	East of CPC	Flat, slightly decreasing	Decreasing	Figure 15
EW-7C	189-199	Upgradient, North of CPC	Flat	Decreasing	Figure 16
EW-7D	273-283	Upgradient, North of CPC	Decreasing	Flat	Figure 17
MW-10D	346-351	Southeast of CPC	Flat, Slightly decreasing	Slightly decreasing	Figure 18
EW-12D	209-219	East of CPC	Flat, 10 µg/L increase mid-2015, returned to pre-2015 levels	Increasing, spike of>50 µg/L mid-2015, and >20 µg/L 2nd quarter 2016	Figure 19
EW-14D	185-195	Southeast of CPC	Flat	Decreasing with very large fluctuations	Figure 20
Extraction Wells and Plant Influent					
EX-1	75-110	Extraction well south of CPC	**Increasing**	**Increasing**	Figure 21
EX-2	95-120	Extraction well south-southeast of CPC	Decreasing	Decreasing	Figure 22
EX-3	94-194	Extraction well south-southeast of CPC	Flat	Decreasing	Figure 23
PW-002	NA	Plant influent	Flat	Decreasing	Figure 24

Decreasing trends indicate mass removal from groundwater in the area around the well. Increasing and stable trends are indicative of partial capture and/or additional source(s) contributing to groundwater contamination in the area of the well.

5 Conclusions and Recommendations

5.1 Conclusions

The second quarter 2016 groundwater monitoring event at the CPC Site included collection of 31 groundwater samples (28 groundwater monitoring wells and 3 extraction wells). Analysis of the data has resulted in the following conclusions:

- A groundwater plume of VOCs, primarily PCE, originates proximate to the former Process Building (on-site plume). The GWET system captures most of the PCE plume reducing the concentration in groundwater;

- An off-site, upgradient plume consisting mostly of TCE originates to the north or northwest in the adjoining industrial park. The TCE contamination is only partially captured by the CPC GWET system;
- The upgradient wells and south/southeastern wells are outside the radius of influence of the CPC GWET system which was intended to treat CPC OU 4 on-site contamination only;
- 1.6 kilograms of total VOCs were removed during the reporting period;
- Concentrations of contaminants in effluent groundwater samples collected during the reporting period met discharge limits;
- The results from the second quarter 2016 groundwater sampling event showed compounds detected above the NYSDEC Part 703 Class GA groundwater criteria including TCA, 1,1-DCA, 1,2-DCA, DCE, C DCE, PCE and TCE.
- An increasing trend in PCE concentrations was observed at well SW-1 in the onsite plume nearest the former Process Building beginning mid-2015. In 2016, the PCE concentration decreased by 40 µg/L during the first quarter, and 50 µg/L in the second quarter.

5.2 Recommendations

In order for the CPC GWET system to continue to operate effectively, HDR recommends rehabilitation and/or replacement of the injection wells to increase the injection rate.

6 References

Ebasco Services Inc. “Draft final remedial investigation report, Claremont Polychemical Superfund Site, Old Bethpage, New York.” Lyndhurst, NJ, 1990.

Ebasco Services Inc. “Draft final feasibility study, Claremont Polychemical Superfund Site, Old Bethpage, New York.” Lyndhurst, NJ, 1990.

US Army Corps of Engineers. “Claremont Polychemical Superfund Site Long-term Groundwater Monitoring Old Bethpage, New York.” 2001.

US Environmental Protection Agency. “Second Five-Year Review Report for the Claremont Polychemical Corporation Superfund Site.” New York, NY, 2014.

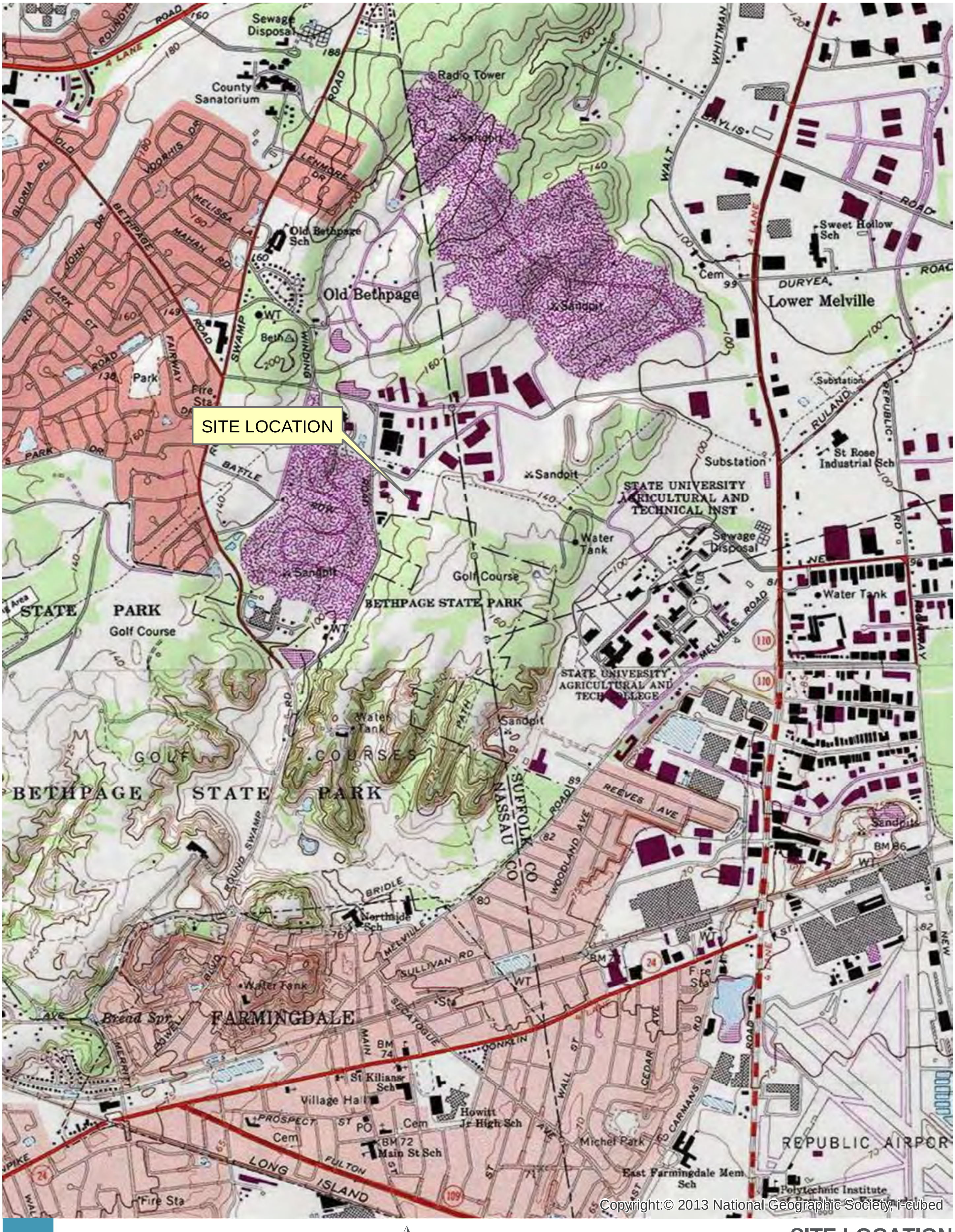
Table 5
Summary of Analytical Results
June 2016 (2Q16) Sampling Event
Claremont Polychemical Superfund Site
Old Bethpage, NY

Note: Values in blue italics are "J" flagged.		71-55-6	79-34-5	76-13-1	79-00-5	75-34-3	75-35-4	87-61-6	120-82-1	96-12-8	106-93-4	95-50-1	107-06-2	78-87-5	541-73-1	106-46-7
Values in shaded cells exceed		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
NYSDEC 703 Class GA criteria.		5	5		1	5	5			0.04	0.0006	3	0.6	1	3	3
Sample Description	Date Collected	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloro-1,2,2-Trifluoroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane (Ethylene Dibromide)	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene
BP-3A	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
BP-3B	6/20/2016	*0.89 J*	< 1.0 U	1.2	< 1.0 U	**12**	*0.45 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	*0.59 J*	< 1.0 U	< 1.0 U	< 1.0 U
BP-3C	6/20/2016	*0.41 J*	< 1.0 U	*0.38 J*	< 1.0 U	1.2	*0.40 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
DW-1	6/21/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
DW-2	6/21/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-11D	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-12D	6/20/2016	4	< 1.0 U	< 1.0 U	< 1.0 U	*0.73 J*	**7.2**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-14D	6/20/2016	**11**	< 1.0 U	*0.44 J*	*0.32 J*	< 1.0 U	**11**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**2.7**	< 1.0 U	< 1.0 U	< 1.0 U
EW-1A	6/21/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-1A DUP	6/21/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-1B	6/21/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-1C	6/21/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-2A	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-2B	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-2C	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-2D	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-4A	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-4B	6/20/2016	*0.52 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-4C	6/20/2016	4.2	< 1.0 U	< 1.0 U	< 1.0 U	4	1.5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-4D	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-5	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-7C	6/20/2016	*0.62 J*	< 1.0 U	< 1.0 U	< 1.0 U	*0.38 J*	*0.37 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-7D	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EX-1	5/17/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EX-1 DUP	5/17/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EX-2	5/17/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EX-3	5/17/2016	*0.77 J*	< 1.0 U	< 1.0 U	< 1.0 U	*0.26 J*	1.1	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
MW-10D	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	*0.57 J*	< 1.0 U	< 1.0 U	< 1.0 U
MW-8A	6/21/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
MW-8B	6/21/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
MW-8C	6/21/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
SW-1	6/21/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
WT-01	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
WT-01 DUP	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U

Sample Description	Date Collected	123-91-1	591-78-6	67-64-1	71-43-2	74-97-5	75-27-4	75-25-2	74-83-9	75-15-0	56-23-5	108-90-7	75-00-3	67-66-3
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
				50	1	5			5	60	5	5	5	7
Sample Description	Date Collected	1,4-Dioxane (P-Dioxane)	2-Hexanone	Acetone	Benzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform
BP-3A	6/20/2016	< 50 U	< 5.0 U	7.7	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	*0.81 J*
BP-3B	6/20/2016	< 50 U	< 5.0 U	6.3	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	*0.34 J*
BP-3C	6/20/2016	< 50 U	< 5.0 U	12	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
DW-1	6/21/2016	< 50 U	< 5.0 U	26	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
DW-2	6/21/2016	< 50 U	< 5.0 U	32	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-11D	6/20/2016	< 50 U	< 5.0 U	14	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-12D	6/20/2016	< 50 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-14D	6/20/2016	< 50 U	< 5.0 U	9	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	*0.60 J*
EW-1A	6/21/2016	< 50 U	< 5.0 U	15	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	*0.22 J*
EW-1A DUP	6/21/2016	< 50 U	< 5.0 U	16	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-1B	6/21/2016	< 50 U	< 5.0 U	22	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-1C	6/21/2016	< 50 U	< 5.0 U	18	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-2A	6/20/2016	< 50 U	< 5.0 U	12	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-2B	6/20/2016	< 50 U	< 5.0 U	11	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-2C	6/20/2016	< 50 U	< 5.0 U	7.4	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-2D	6/20/2016	< 50 U	< 5.0 U	7.8	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-4A	6/20/2016	< 50 U	< 5.0 U	6.3	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-4B	6/20/2016	< 50 U	< 5.0 U	8	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-4C	6/20/2016	< 50 U	< 5.0 U	6.5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-4D	6/20/2016	< 50 U	< 5.0 U	11	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-5	6/20/2016	< 50 U	< 5.0 U	15	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-7C	6/20/2016	< 50 U	< 5.0 U	17	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-7D	6/20/2016	< 50 U	< 5.0 U	14	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	*0.42 J*
EX-1	5/17/2016	< 50 U	< 5.0 U	< 5 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EX-1 DUP	5/17/2016	< 50 U	< 5.0 U	< 5 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EX-2	5/17/2016	< 50 U	< 5.0 U	< 5 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EX-3	5/17/2016	< 50 U	< 5.0 U	< 5 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
MW-10D	6/20/2016	< 50 U	< 5.0 U	8.3	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
MW-8A	6/21/2016	< 50 U	< 5.0 U	26	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
MW-8B	6/21/2016	< 50 U	< 5.0 U	32	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
MW-8C	6/21/2016	< 50 U	< 5.0 U	16	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
SW-1	6/21/2016	< 50 U	< 5.0 U	29	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
WT-01	6/20/2016	< 50 U	< 5.0 U	19	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
WT-01 DUP	6/20/2016	< 50 U	< 5.0 U	23	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U

Table 5
Summary of Analytical Results
June 2016 (2Q16) Sampling Event
Claremont Polychemical Superfund Site
Old Bethpage, NY

Note: Values in blue italics are "J" flagged.		74-87-3	156-59-2	10061-01-	110-82-7	124-48-1	75-71-8	100-41-4	98-82-8	79601-23-	79-20-9	78-93-3	108-10-1	108-87-2	75-09-2	95-47-6	100-42-5	75-65-0	1634-04-4	127-18-4	108-88-3	156-60-5	10061-02-	79-01-6	75-69-4	75-01-4
Values in shaded cells exceed		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
NYSDEC 703 Class GA criteria.		5	5				5	5	5			50			5	5	5		10	5	5	5		5	5	2
Sample Description	Date Collected	Chloromethane	Cis-1,2-Dichloroethylene	Cis-1,3-Dichloropropene	Cyclohexane	Dibromochloromethane	Dichlorodifluoromethane	Ethylbenzene	Isopropylbenzene (Cumene)	m,p-Xylene	Methyl Acetate	Methyl Ethyl Ketone (2-Butanone)	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	Methylcyclohexane	Methylene Chloride	O-Xylene (1,2-Dimethylbenzene)	Styrene	Tert-Butyl Alcohol	Tert-Butyl Methyl Ether	Tetrachloroethylene (PCE)	Toluene	Trans-1,2-Dichloroethene	Trans-1,3-Dichloropropene	Trichloroethylene (TCE)	Trichlorofluoromethane	Vinyl Chloride
BP-3A	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	*0.37 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
BP-3B	6/20/2016	< 1.0 U	**61**	< 1.0 U	*0.98 J*	< 1.0 U	2.7	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	*0.46 J*	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	**130**	< 1.0 U	*0.36 J*	< 1.0 U	**11**	*0.40 J*	*0.55 J*
BP-3C	6/20/2016	< 1.0 U	**55**	< 1.0 U	*0.82 J*	< 1.0 U	*0.70 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	**150**	< 1.0 U	1.1	< 1.0 U	**10**	< 1.0 U	< 1.0 U
DW-1	6/21/2016	< 1.0 U	*0.48 J*	< 1.0 U	*0.96 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	1.6	< 1.0 U	< 1.0 U	< 1.0 U	2	< 1.0 U	< 1.0 U
DW-2	6/21/2016	< 1.0 U	< 1.0 U	< 1.0 U	1.1	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	*0.54 J*	< 1.0 U	< 1.0 U	< 1.0 U	*0.73 J*	< 1.0 U	< 1.0 U
EW-11D	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	*0.68 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	*0.32 J*	< 1.0 U	< 1.0 U
EW-12D	6/20/2016	< 1.0 U	2.6	< 1.0 U	1.1	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	*0.21 J*	4.8	< 1.0 U	< 1.0 U	< 1.0 U	**22**	< 1.0 U	< 1.0 U
EW-14D	6/20/2016	< 1.0 U	*0.84 J*	< 1.0 U	*0.67 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	2.6	< 1.0 U	< 1.0 U	< 1.0 U	**110**	< 1.0 U	< 1.0 U
EW-1A	6/21/2016	< 1.0 U	2.9	< 1.0 U	*0.58 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	3.4	< 1.0 U	< 1.0 U	< 1.0 U	1.5	< 1.0 U	< 1.0 U
EW-1A DUP	6/21/2016	< 1.0 U	3	< 1.0 U	*0.46 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	3.6	< 1.0 U	< 1.0 U	< 1.0 U	1.3	< 1.0 U	< 1.0 U
EW-1B	6/21/2016	< 1.0 U	*0.28 J*	< 1.0 U	*0.63 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	*0.32 J*	< 1.0 U	< 1.0 U	< 1.0 U	*0.98 J*	< 1.0 U	< 1.0 U
EW-1C	6/21/2016	< 1.0 U	*0.43 J*	< 1.0 U	*0.66 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	1.5	< 1.0 U	< 1.0 U
EW-2A	6/20/2016	< 1.0 U	1	< 1.0 U	*0.63 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	*0.63 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-2B	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	*0.92 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	*0.32 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
EW-2C	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	*0.46 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	*0.63 J*	< 1.0 U	< 1.0 U
EW-2D	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	*0.46 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	*0.73 J*	< 1.0 U	< 1.0 U	< 1.0 U	*0.28 J*	< 1.0 U	< 1.0 U
EW-4A	6/20/2016	< 1.0 U	**9**	< 1.0 U	*0.47 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	**8.7**	< 1.0 U	< 1.0 U	< 1.0 U	1.5	< 1.0 U	< 1.0 U
EW-4B	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	*0.39 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	1.4	< 1.0 U	< 1.0 U	< 1.0 U	2.8	*0.25 J*	< 1.0 U
EW-4C	6/20/2016	< 1.0 U	1.4	< 1.0 U	*0.88 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	*0.43 J*	**29**	< 1.0 U	2.9	< 1.0 U	**30**	< 1.0 U	< 1.0 U
EW-4D	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	*0.62 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	*0.16 J*	**9.6**	< 1.0 U	< 1.0 U	< 1.0 U	**14**	< 1.0 U	< 1.0 U
EW-5	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	1.2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	*0.26 J*	< 1.0 U	< 1.0 U	< 1.0 U	2.2	< 1.0 U	< 1.0 U
EW-7C	6/20/2016	< 1.0 U	3.7	< 1.0 U	*0.74 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	1.3	**13**	< 1.0 U	< 1.0 U	< 1.0 U	**220**	< 1.0 U	< 1.0 U
EW-7D	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	*0.63 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	3	< 1.0 U	< 1.0 U	< 1.0 U	4.2	< 1.0 U	< 1.0 U
EX-1	5/17/2016	< 1.0 U	3.6	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	*0.25 J*	2.9	< 1.0 U	< 1.0 U	< 1.0 U	4.9	< 1.0 U	< 1.0 U
EX-1 DUP	5/17/2016	< 1.0 U	3.7	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	*0.28 J*	3.2	< 1.0 U	< 1.0 U	< 1.0 U	**5**	< 1.0 U	< 1.0 U
EX-2	5/17/2016	< 1.0 U	*0.38 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	*0.16 J*	*0.72 J*	< 1.0 U	< 1.0 U	< 1.0 U	1.6	< 1.0 U	< 1.0 U
EX-3	5/17/2016	< 1.0 U	2.9	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	*0.43 J*	**7.7**	< 1.0 U	< 1.0 U	< 1.0 U	**38**	< 1.0 U	< 1.0 U
MW-10D	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	*0.87 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	1.8	< 1.0 U	< 1.0 U	< 1.0 U	1.6	< 1.0 U	< 1.0 U
MW-8A	6/21/2016	< 1.0 U	< 1.0 U	< 1.0 U	*0.40 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	**5**	< 1.0 U	< 1.0 U	< 1.0 U	*0.41 J*	< 1.0 U	< 1.0 U
MW-8B	6/21/2016	< 1.0 U	< 1.0 U	< 1.0 U	*0.87 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	*0.25 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
MW-8C	6/21/2016	< 1.0 U	< 1.0 U	< 1.0 U	1	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	*0.33 J*	< 1.0 U	< 1.0 U
SW-1	6/21/2016	< 1.0 U	**5.5**	< 1.0 U	*0.61 J*	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	**100**	< 1.0 U	< 1.0 U	< 1.0 U	**10**	< 1.0 U	< 1.0 U
WT-01	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	*0.22 J*	< 1.0 U	< 1.0 U
WT-01 DUP	6/20/2016	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U



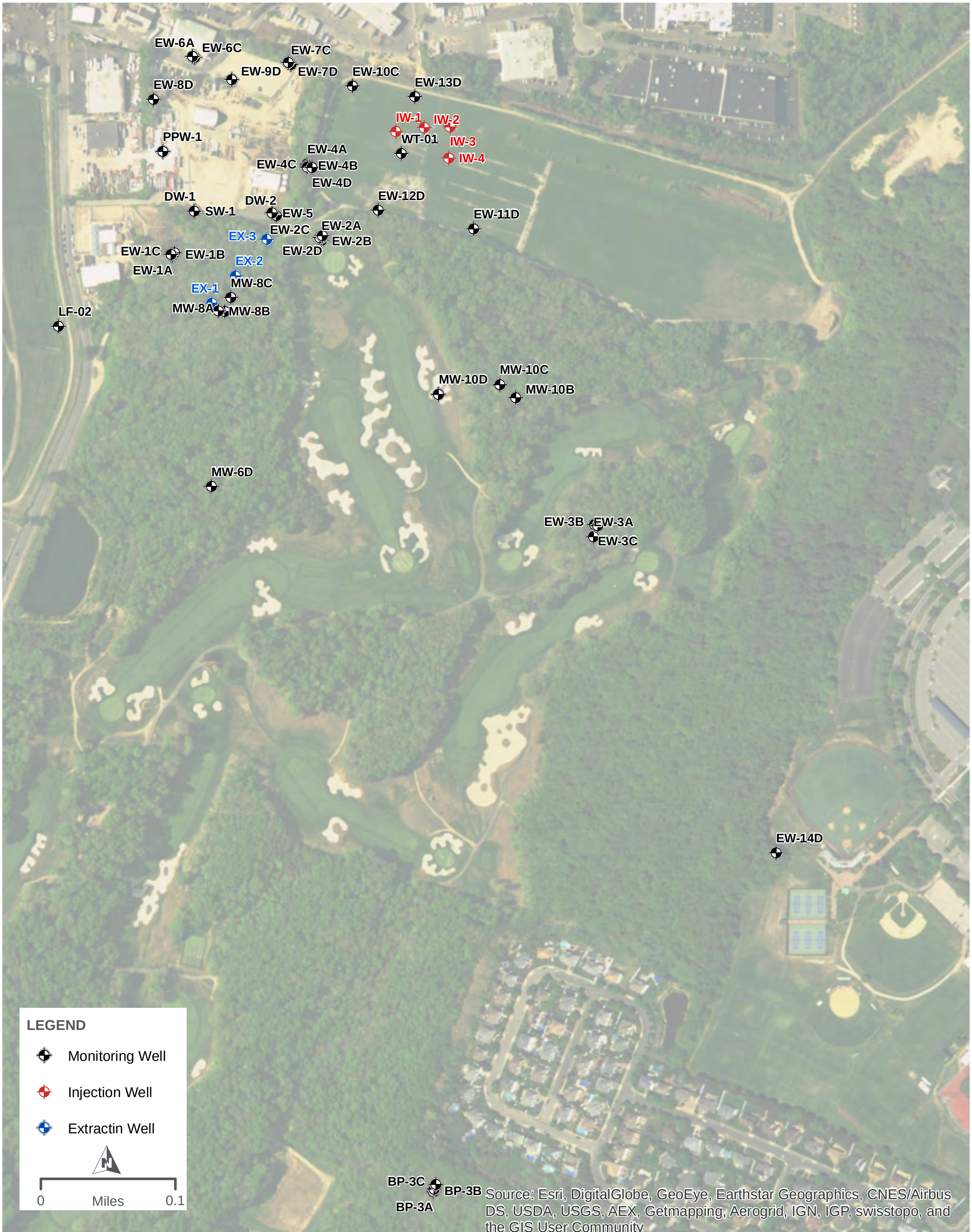
0 Miles 0.4

SITE LOCATION

CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 1

PATH: M:\202315_NEW YORK STATE DEPT OF ENVIRONMENTAL CON\250751_NYSDECPPWA19_CLAREMONT\GIS\MAP_DOCS\FINAL\SITELOCATION.MXD - USER: CWEAVER - DATE: 7/7/2016

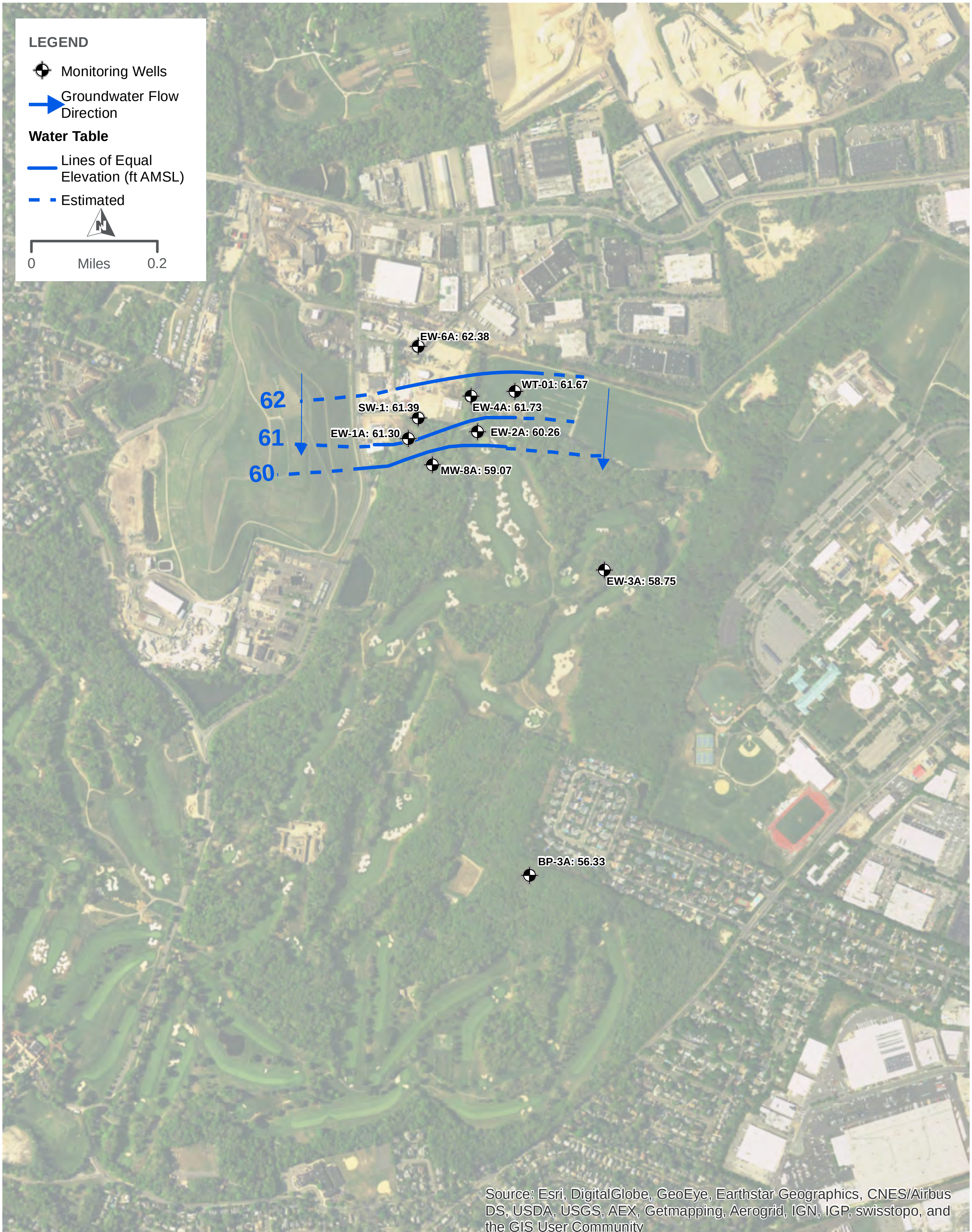


SAMPLE LOCATION MAP

CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 2

PATH: M:\202315_NEW YORK STATE DEPT OF ENVIRONMENTAL CON\250751_NYSDECPPWA19_CLAREMONT\GIS\MAP_DOCS\DRAFT\SAMPLELOCATION_A.MXD - USER: CWEAVER - DATE: 7/7/2016

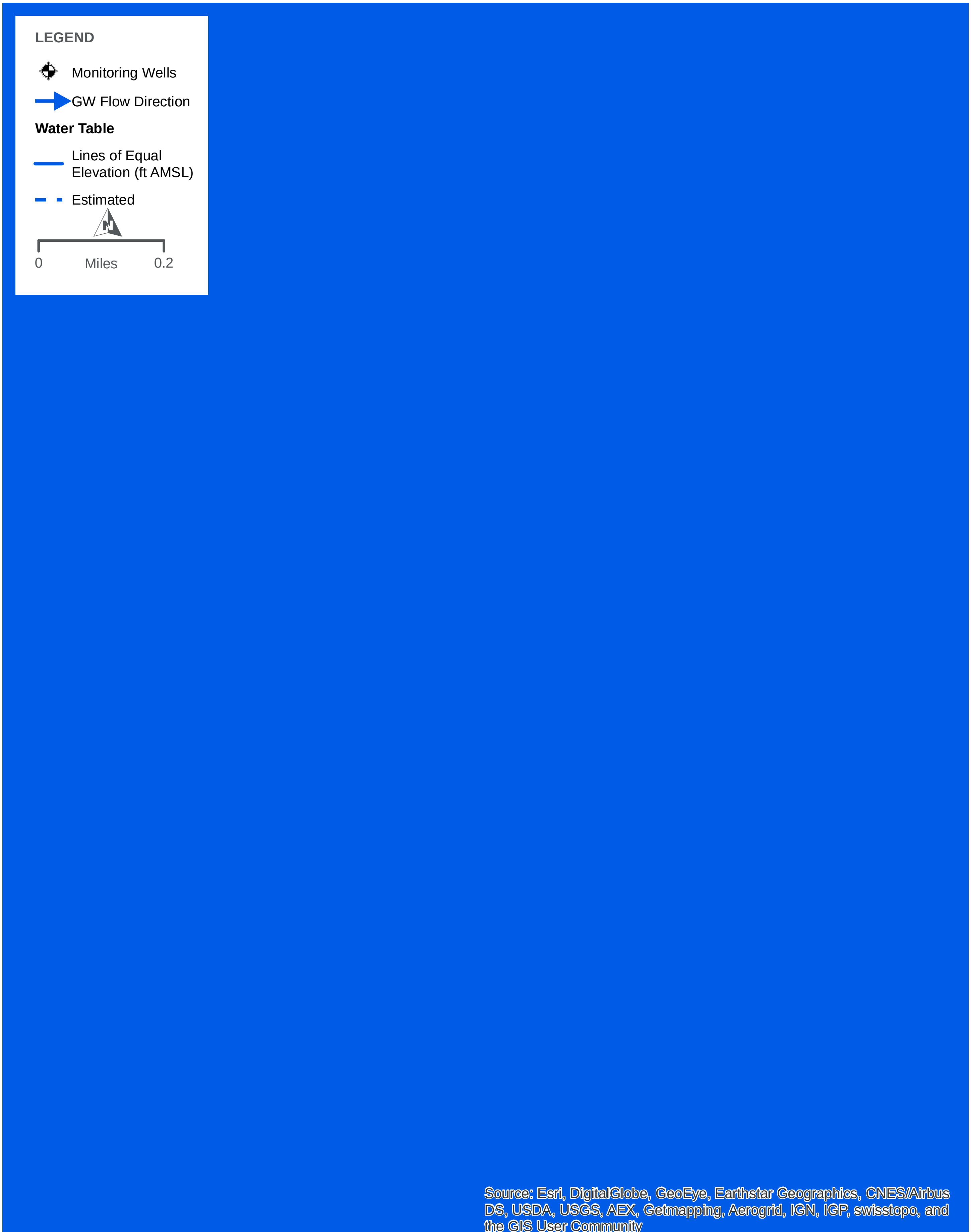


WATER TABLE CONTOURS

CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 3

PATH: M:\202315_NEW YORK STATE DEPT OF ENVIRONMENTAL CON\250751_NYSDECPPWA19_CLAREMONT\GIS\MAP_DOCS\DRAFT\WATERTABLECONTOURS.MXD - USER: CWEAVER - DATE: 7/27/2016

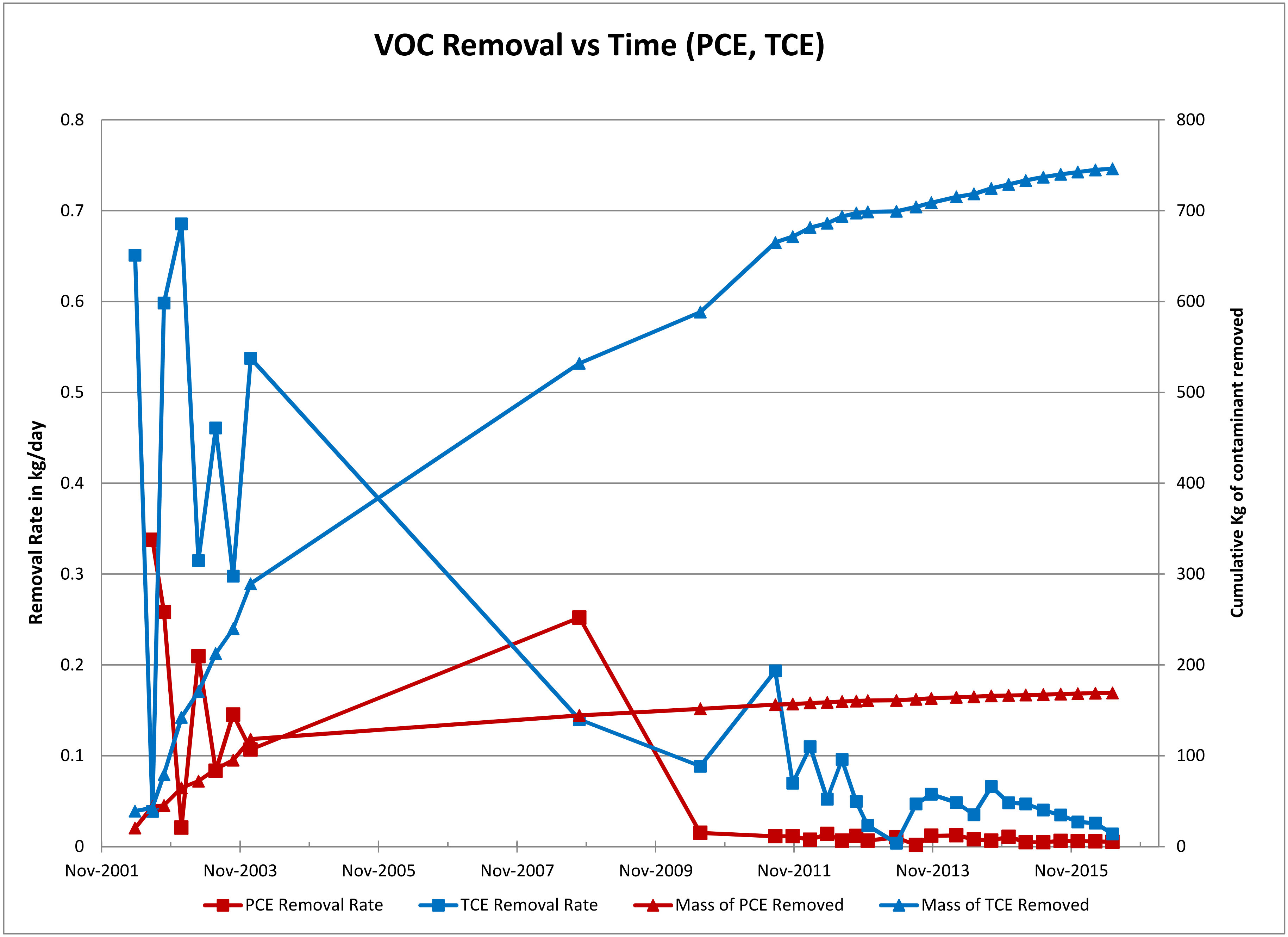


POTENTIOMETRIC SURFACE - MAGOTHY AQUIFER (-91 TO -142 FT AMSL)

CLAREMONT POLYCHEMICAL CORPORATION

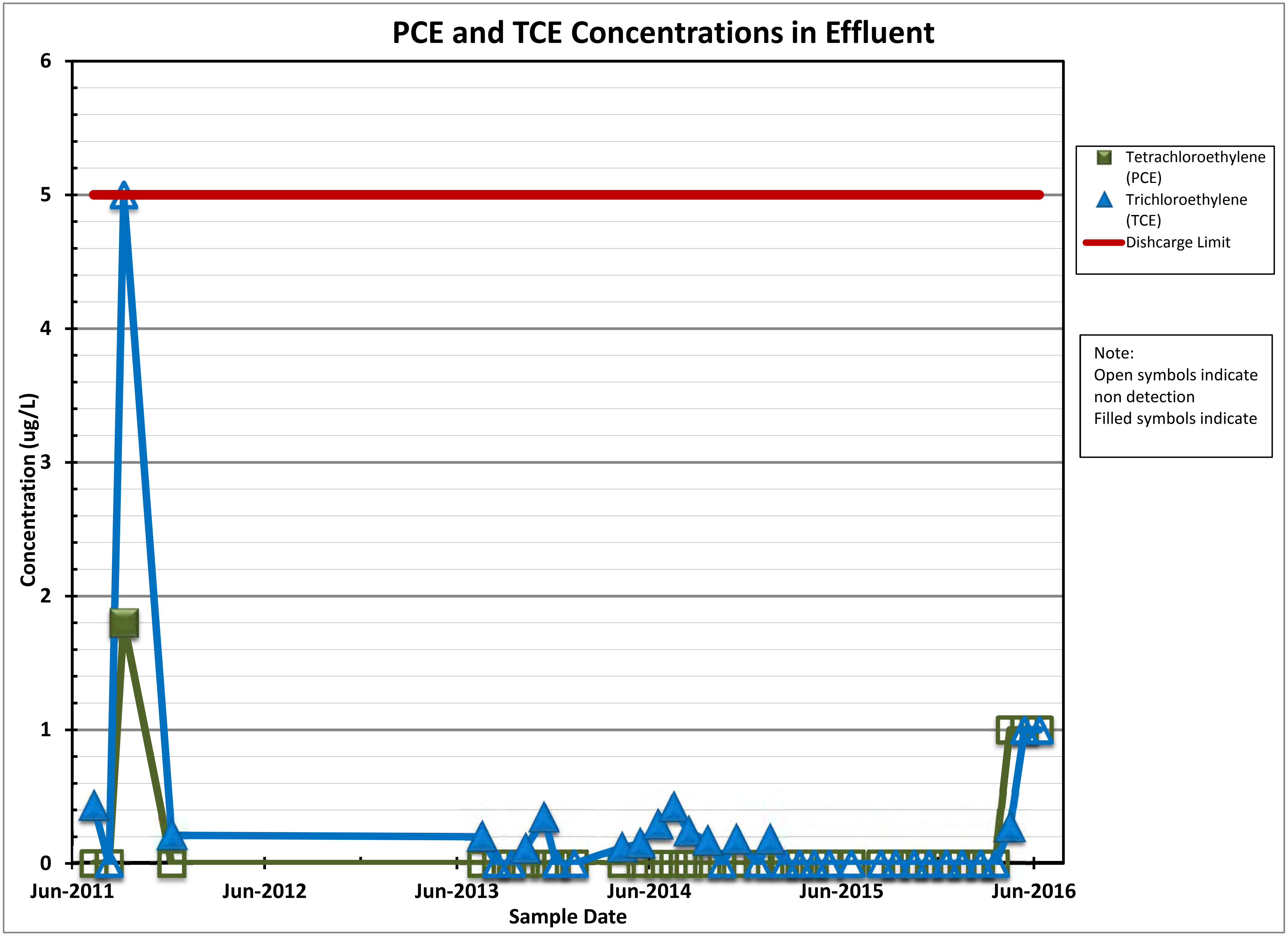
FIGURE 4

PATH: M:\202315_NEW YORK STATE DEPT OF ENVIRONMENTAL CON\250751_NYSDECPPWA19_CLAREMONT\GIS\MAP_DOCS\FINAL\GW_MAGOTHY.MXD - USER: CWEAVER - DATE: 7/27/2016



VOC Removal vs Time (PCE, TCE)
Removal Rate in kg/day
Cumulative Kg of contaminant removed
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
800
700
600
500
400
300
200
100
0
Nov-2001
Nov-2003
Nov-2005
Nov-2007
Nov-2009
Nov-2011
Nov-2013
Nov-2015
PCE Removal Rate
TCE Removal Rate
Mass of PCE Removed
Mass of TCE Removed

Figure 5



PCE and TCE Concentrations in Effluent
Concentration (ug/L)
0
1
2
3
4
5
6
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Dishcarge Limit
Note:
Open symbols indicate non detection
Filled symbols indicate

Figure 6

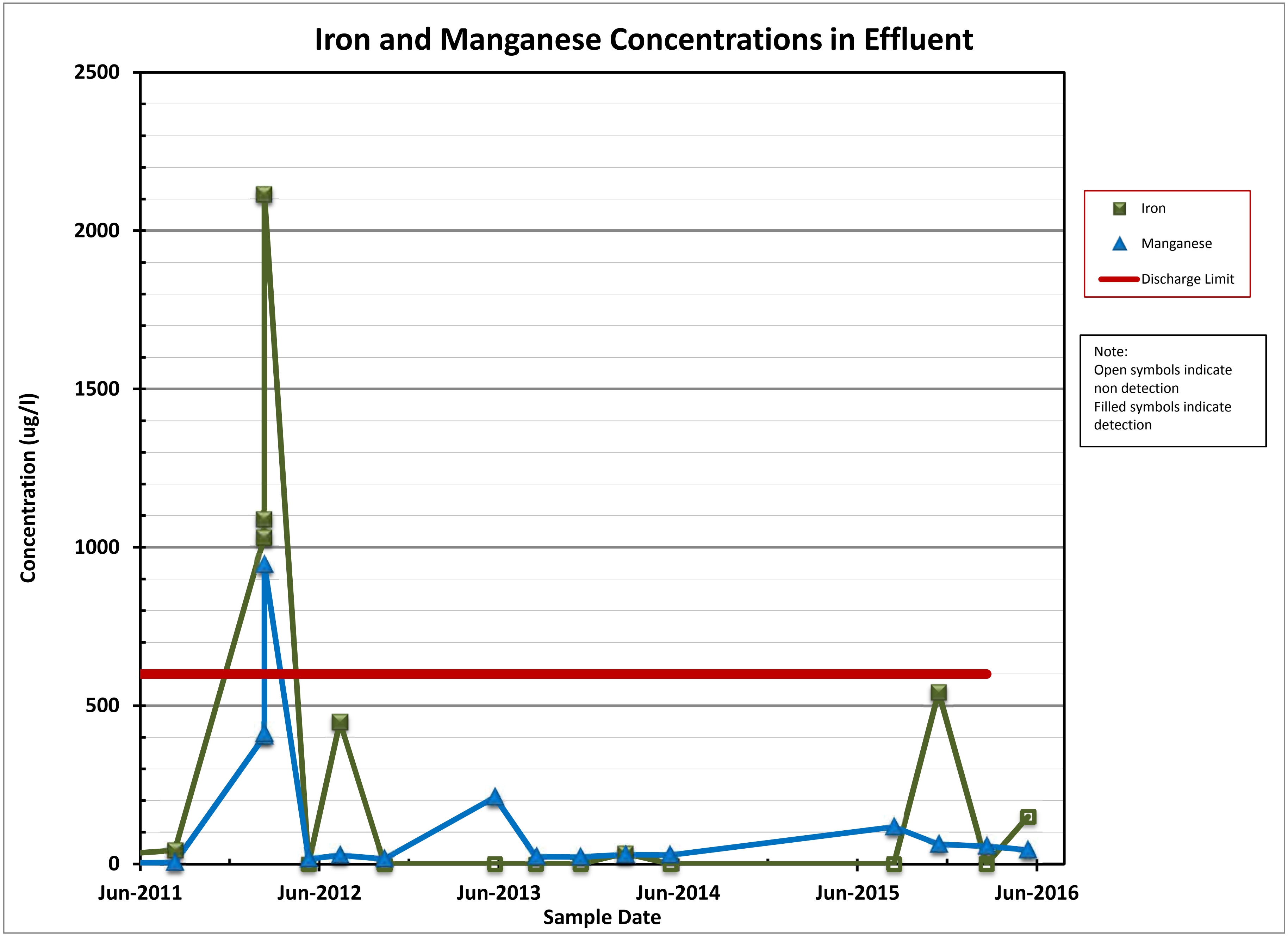

Iron and Manganese Concentrations in Effluent
2500
2000
1500
1000
500
0
Concentration (ug/l)
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Iron
Manganese
Discharge Limit
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 7

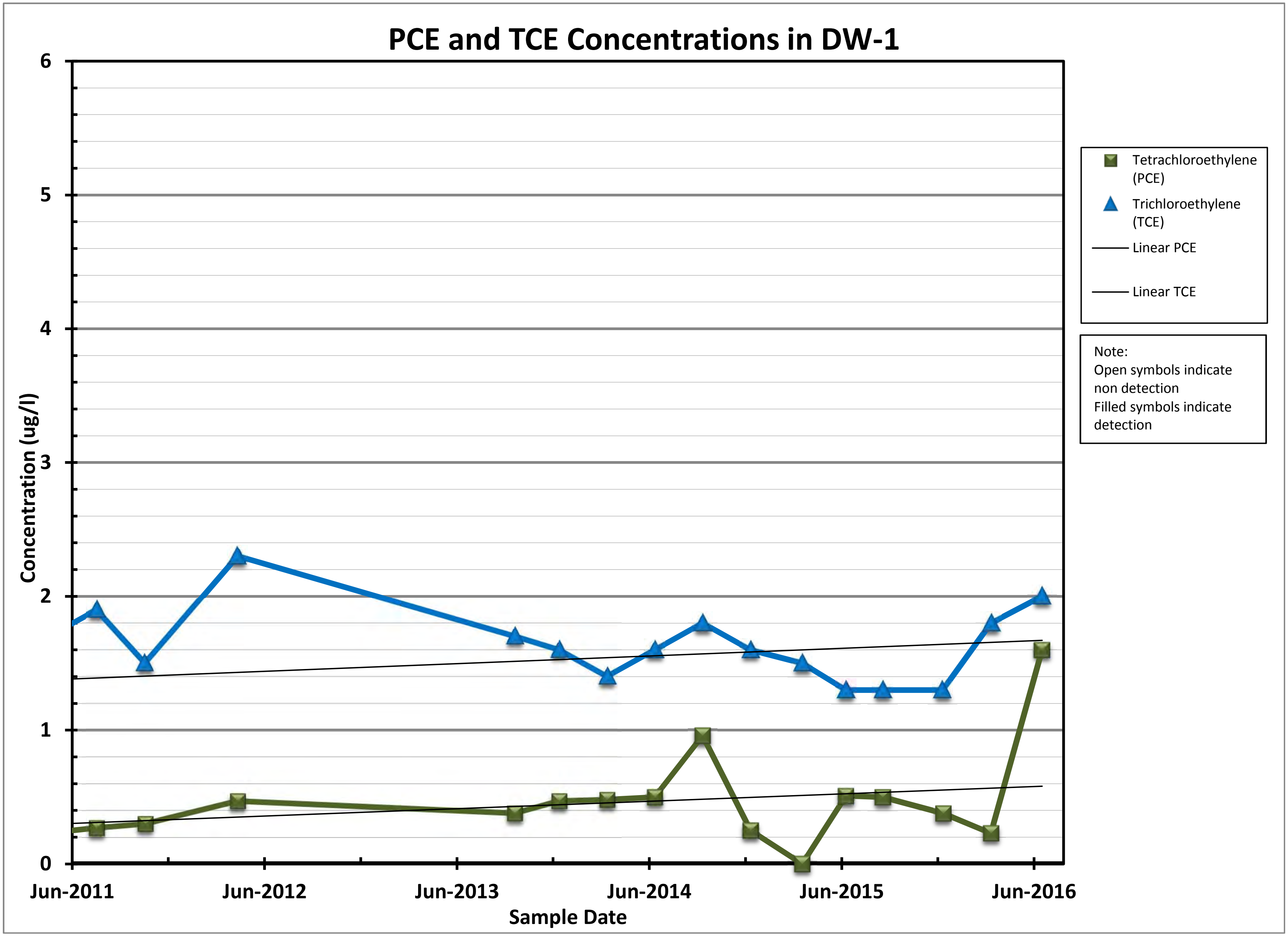

PCE and TCE Concentrations in DW-1
Concentration (ug/l)
6
5
4
3
2
1
0
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 8

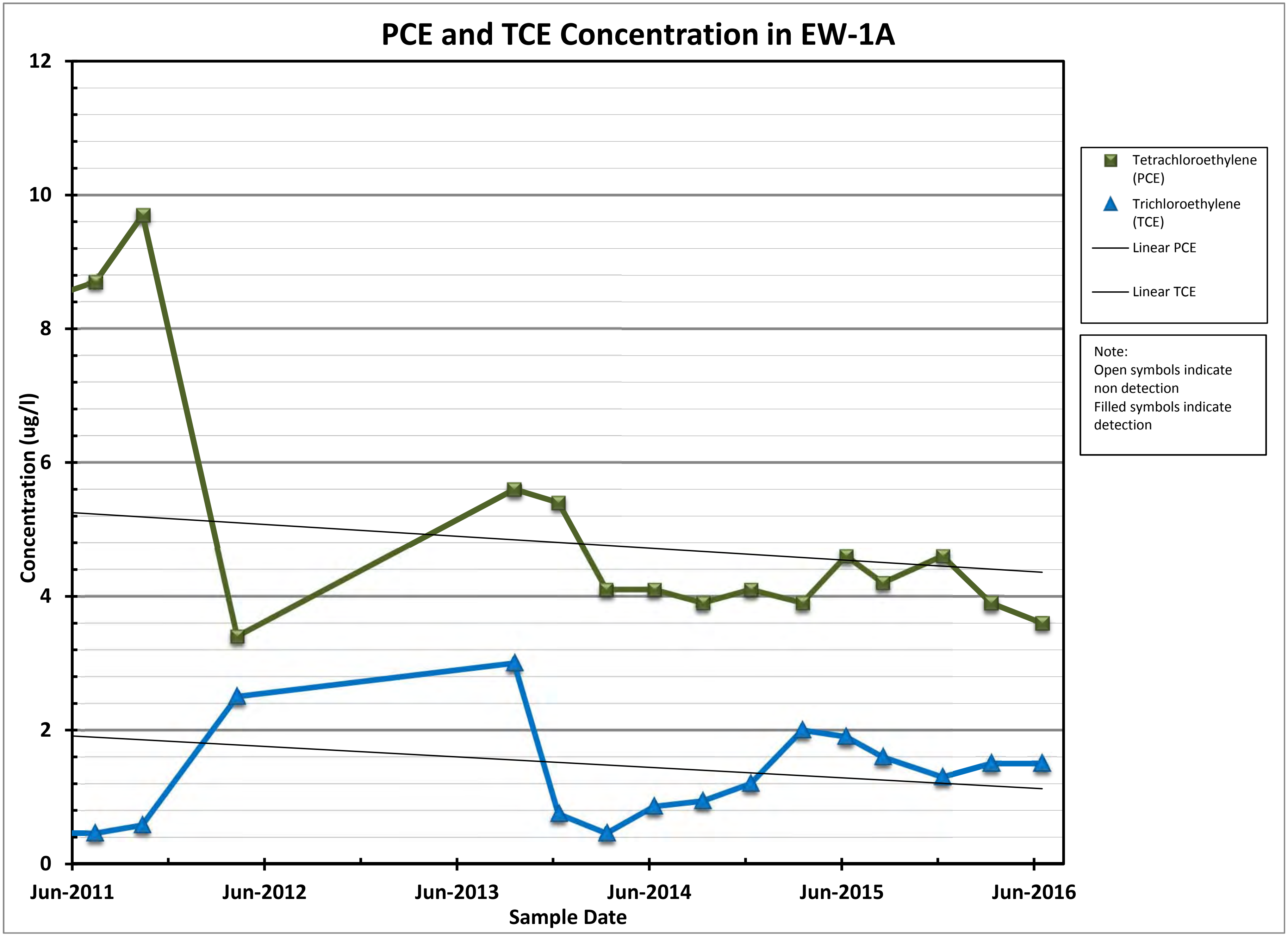
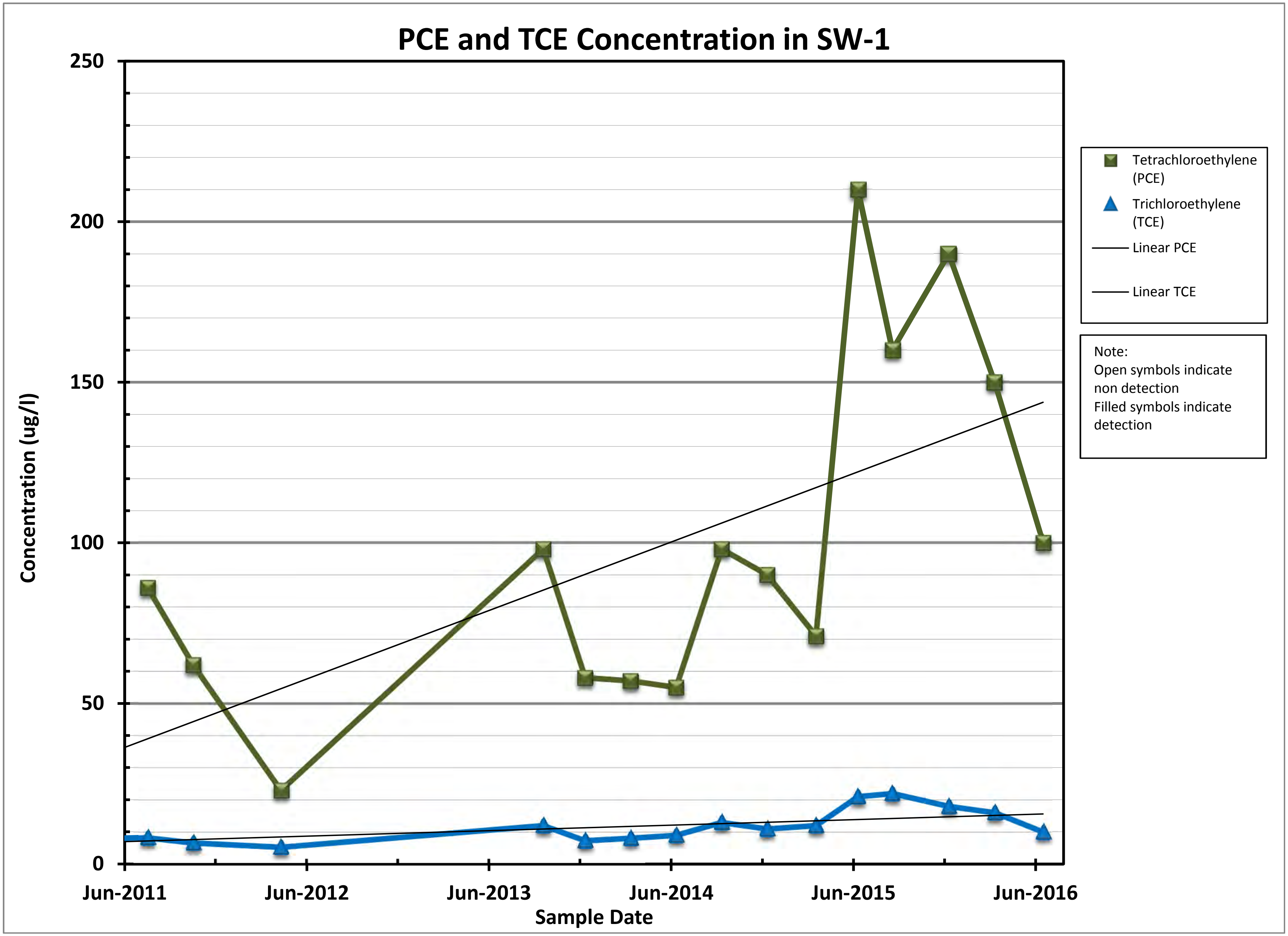
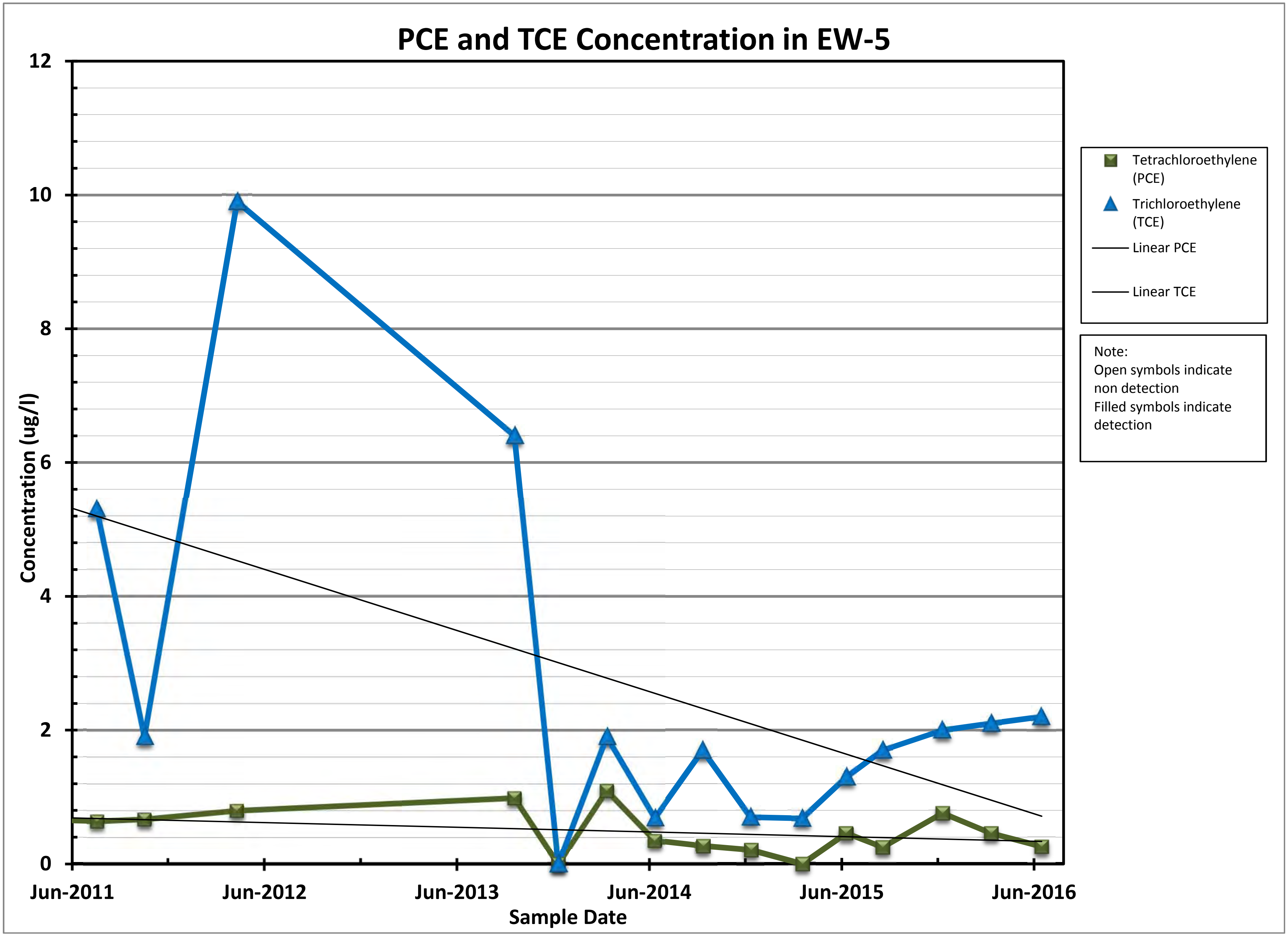

PCE and TCE Concentration in EW-1A
Concentration (ug/l)
12
10
8
6
4
2
0
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 9



PCE and TCE Concentration in SW-1
Concentration (ug/l)
250
200
150
100
50
0
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 10



PCE and TCE Concentration in EW-5
Concentration (ug/l)
0
2
4
6
8
10
12
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 11

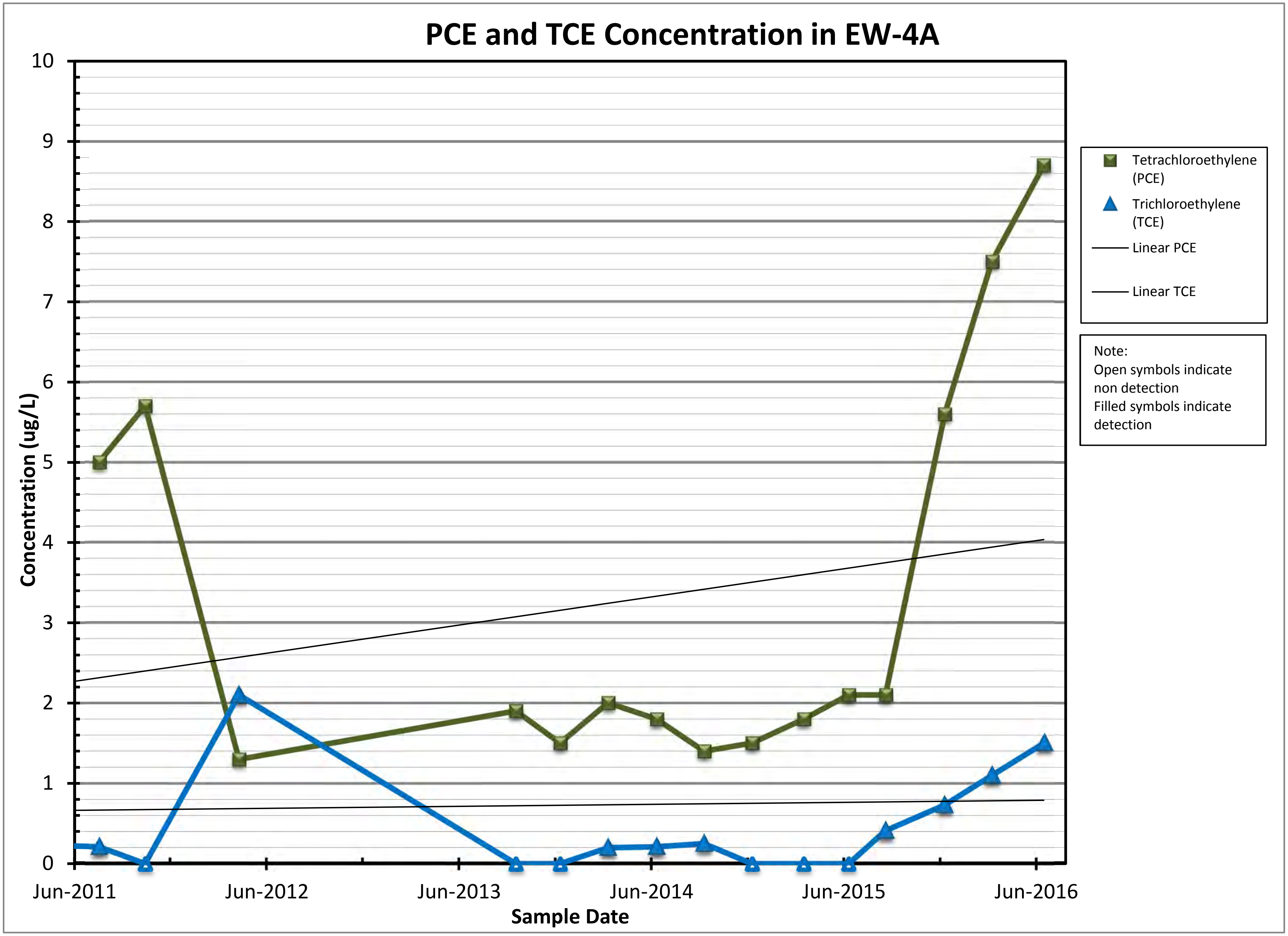

PCE and TCE Concentration in EW-4A
10
9
8
7
6
5
4
3
2
1
0
Concentration (ug/L)
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 12

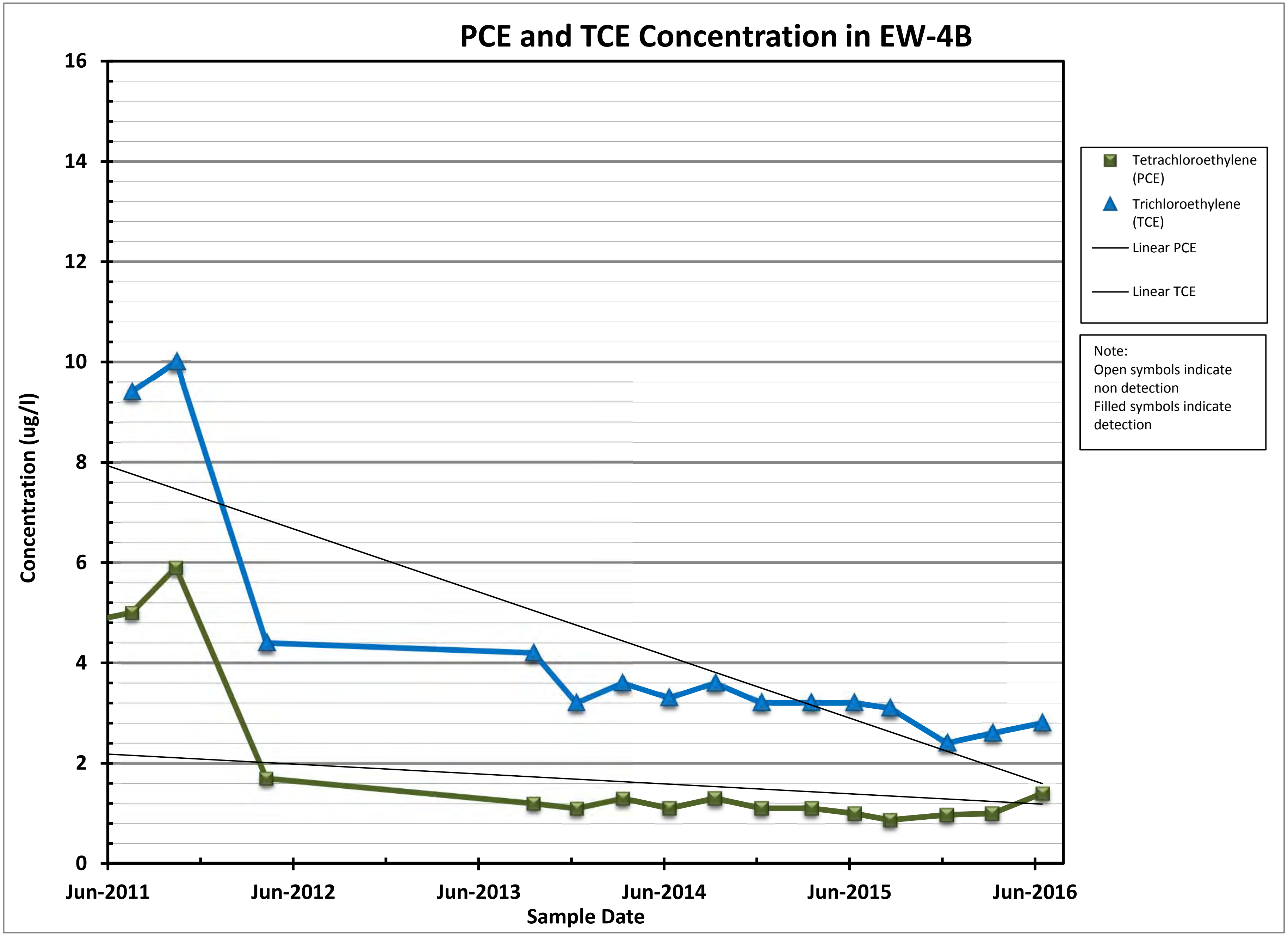

PCE and TCE Concentration in EW-4B
16
14
12
10
8
6
4
2
0
Concentration (ug/l)
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 13

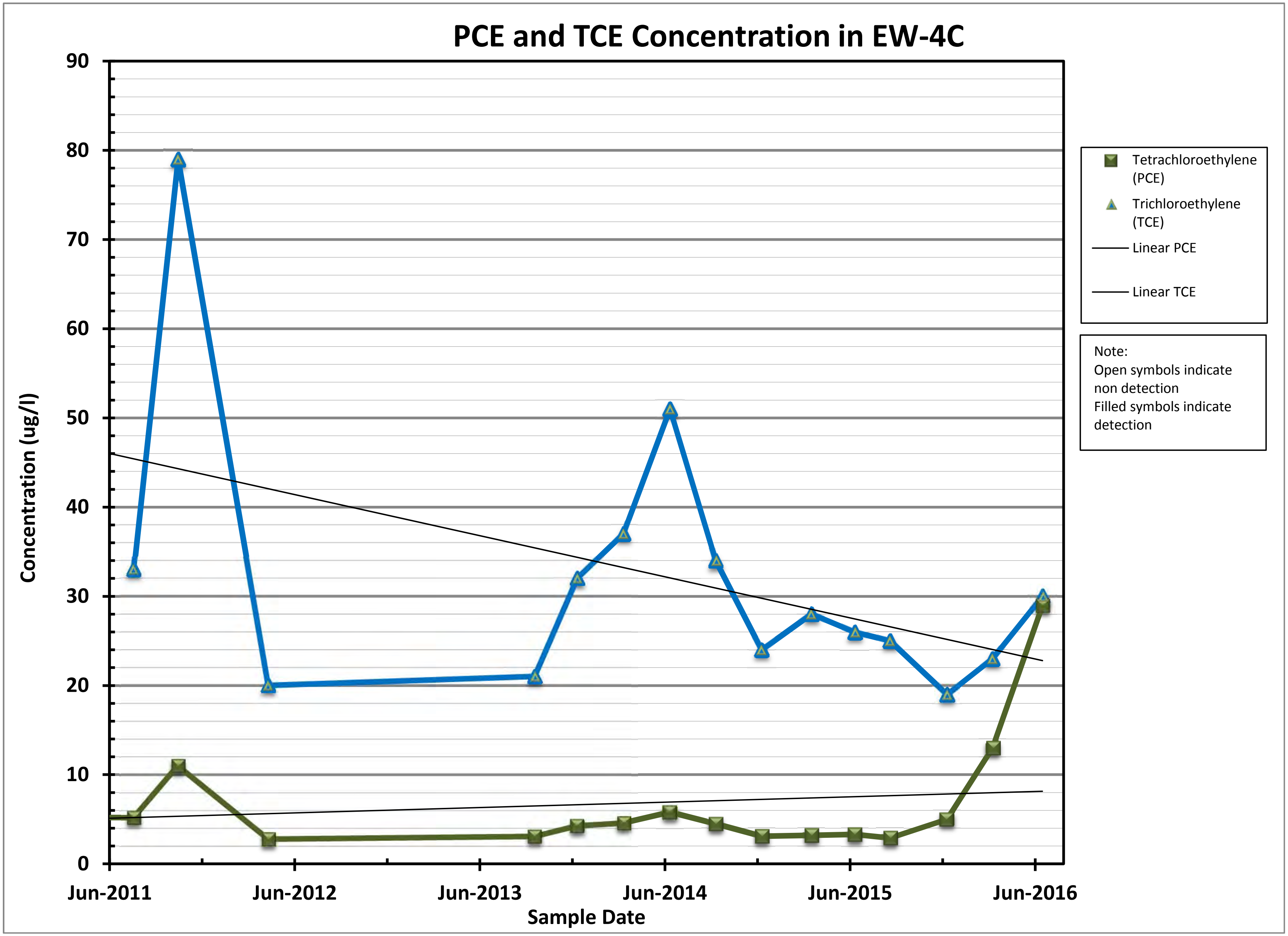

PCE and TCE Concentration in EW-4C
Concentration (ug/l)
90
80
70
60
50
40
30
20
10
0
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 14

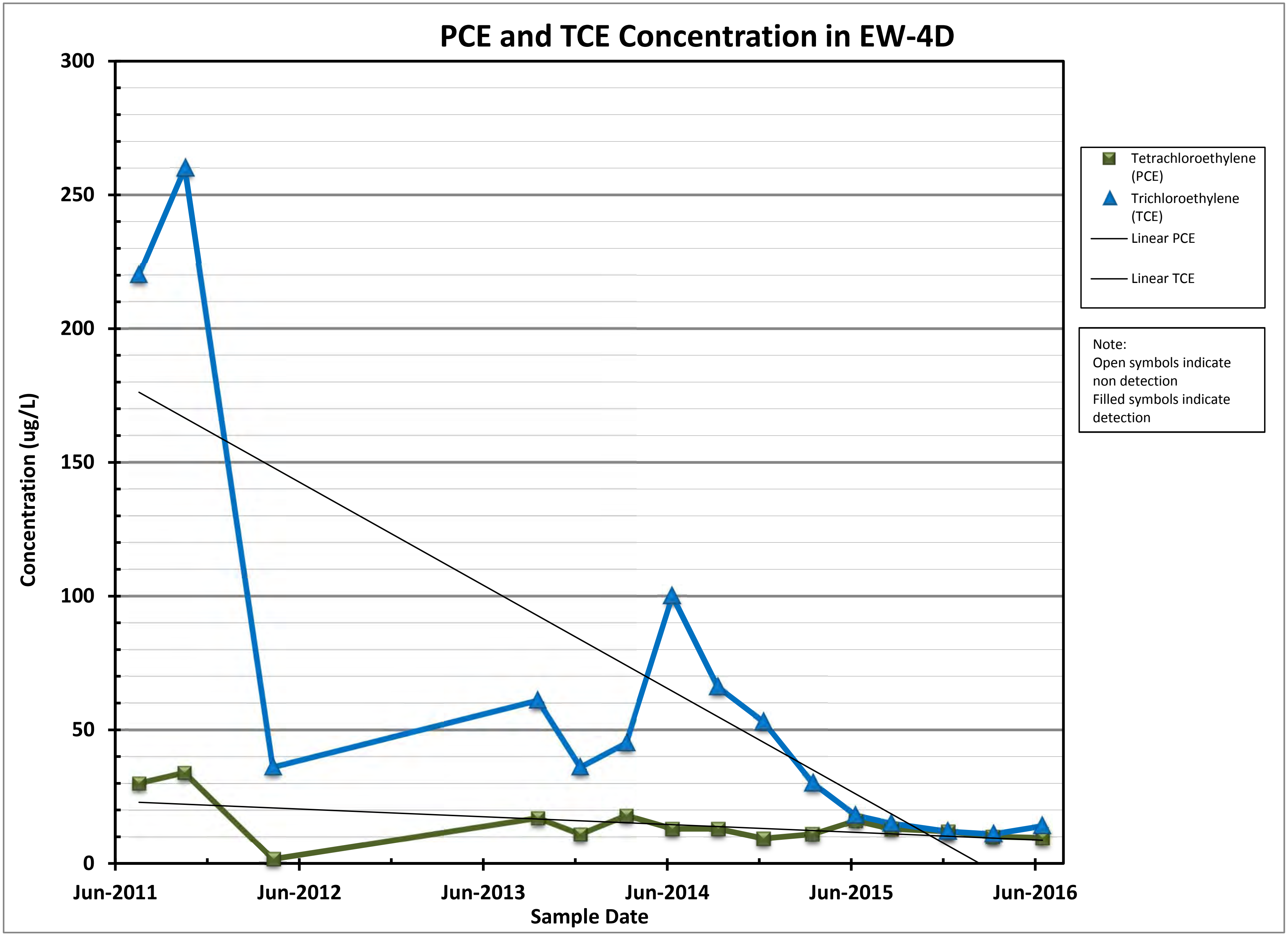

PCE and TCE Concentration in EW-4D
300
250
200
150
100
50
0
Concentration (ug/L)
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 15

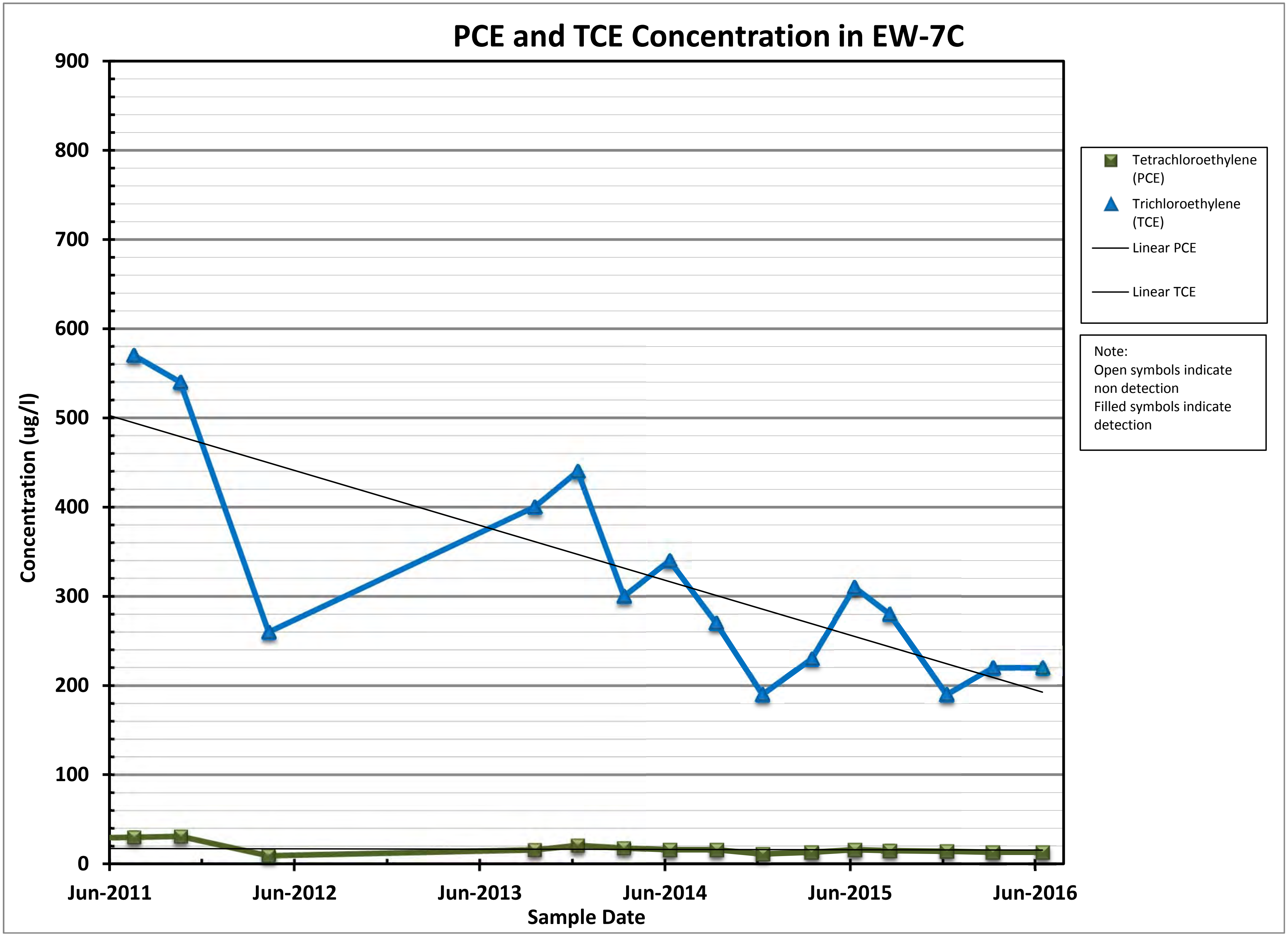

PCE and TCE Concentration in EW-7C
900
800
700
600
500
400
300
200
100
0
Concentration (ug/l)
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 16

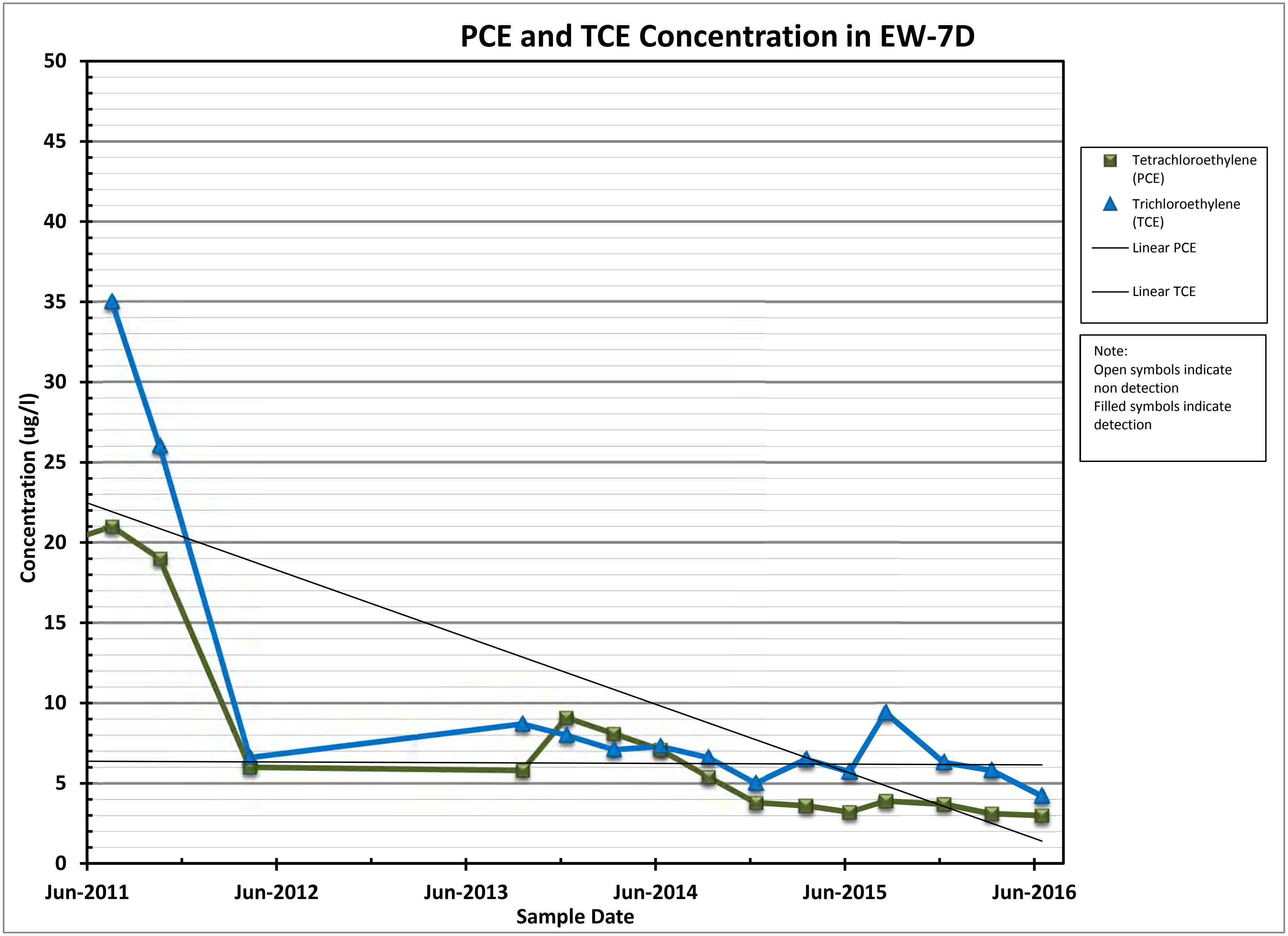

PCE and TCE Concentration in EW-7D
50
45
40
35
30
25
20
15
10
5
0
Concentration (ug/l)
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 17

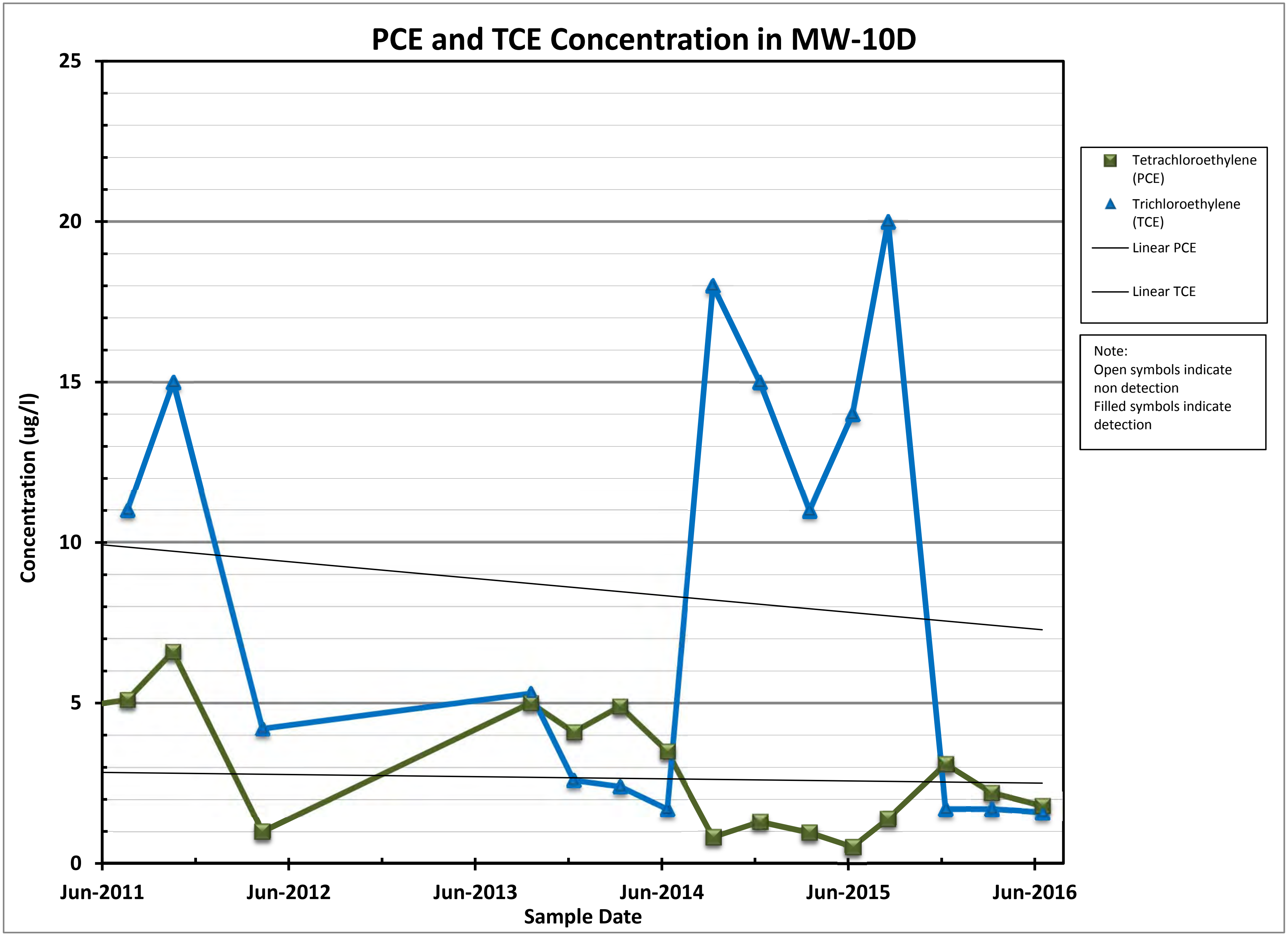
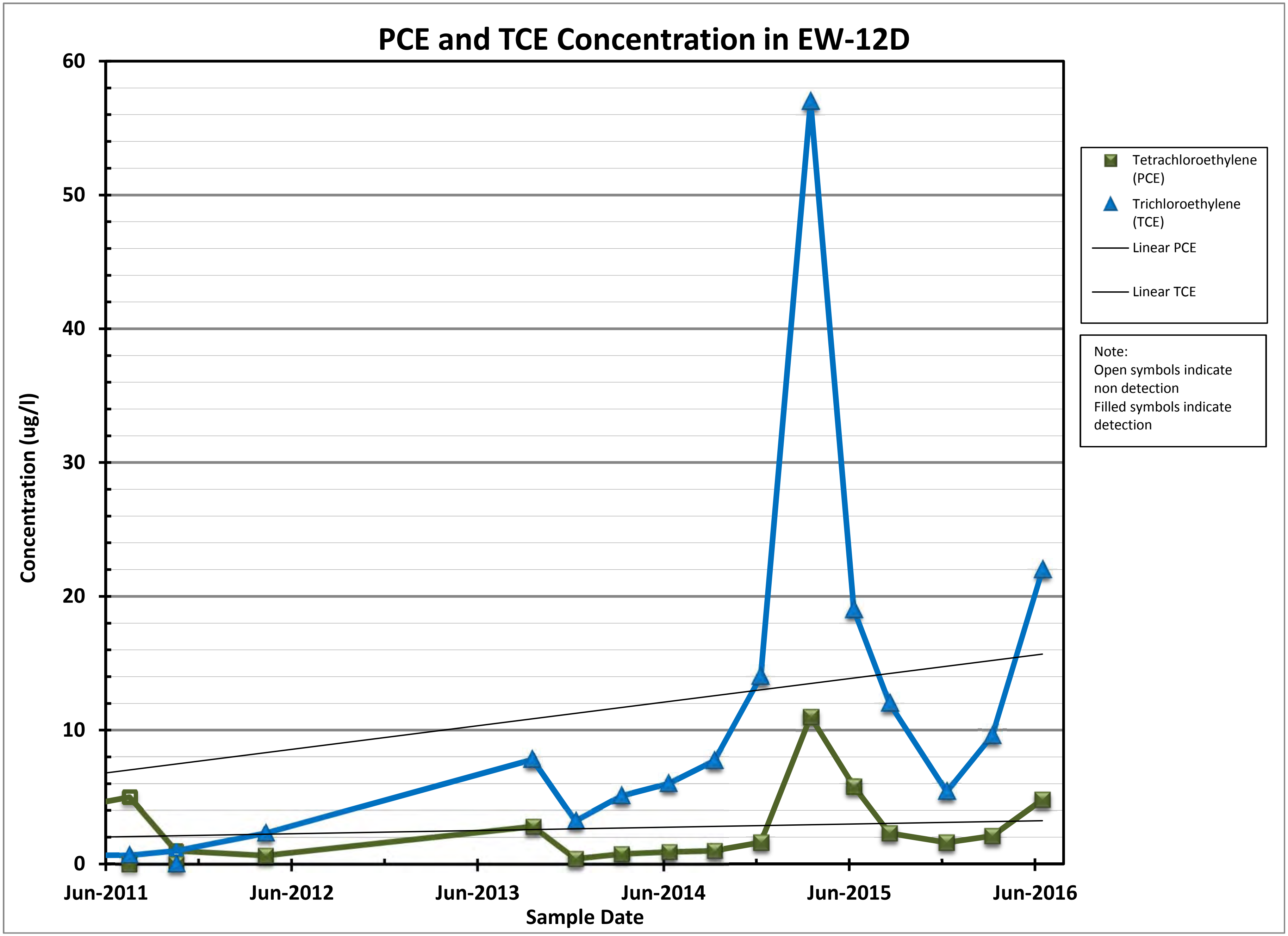
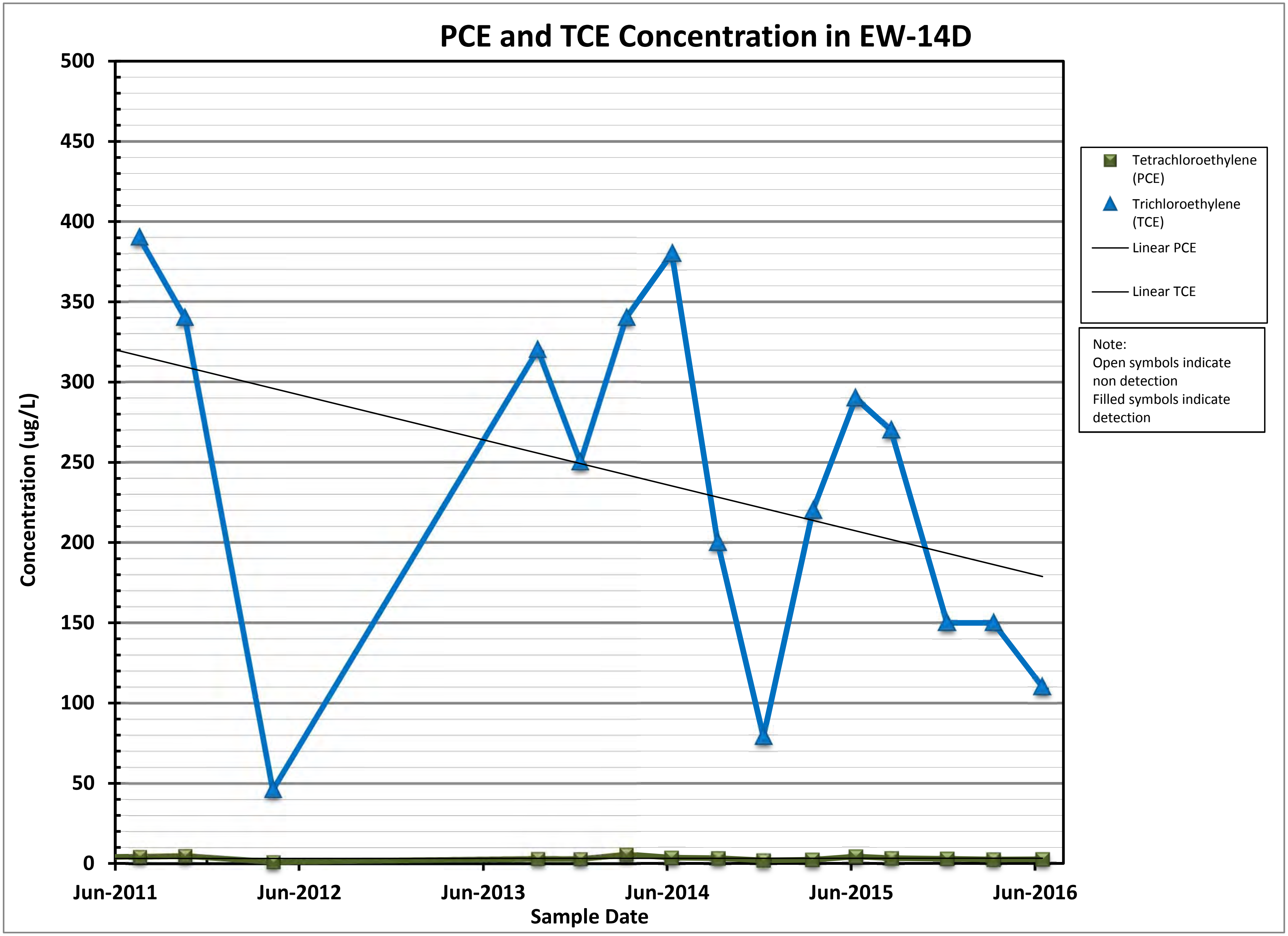

PCE and TCE Concentration in MW-10D
25
20
15
10
5
0
Concentration (ug/l)
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 18



PCE and TCE Concentration in EW-12D
60
50
40
30
20
10
0
Concentration (ug/l)
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 19



PCE and TCE Concentration in EW-14D
Concentration (ug/L)
500
450
400
350
300
250
200
150
100
50
0
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 20

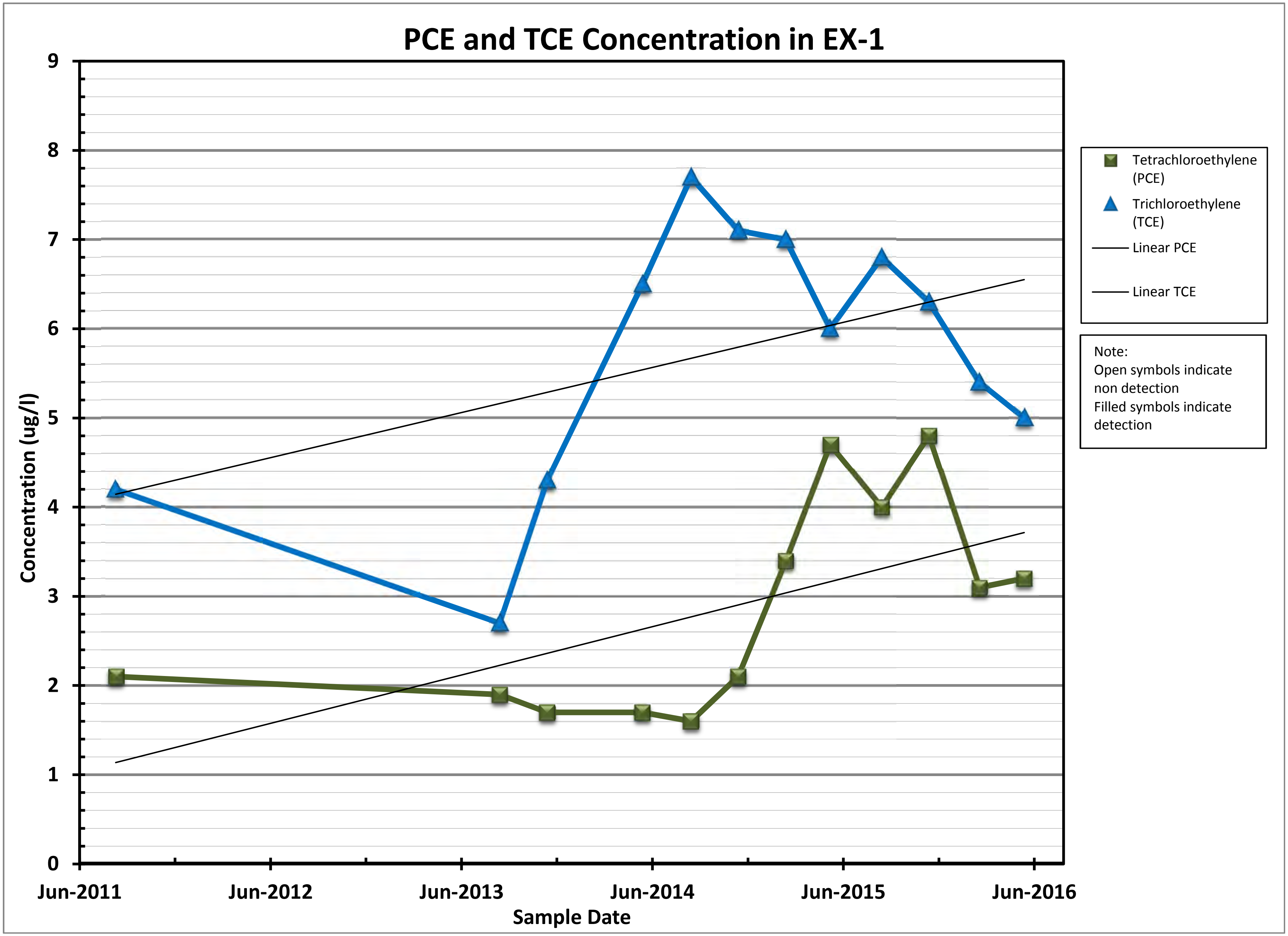

PCE and TCE Concentration in EX-1
Concentration (ug/l)
0
1
2
3
4
5
6
7
8
9
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 21

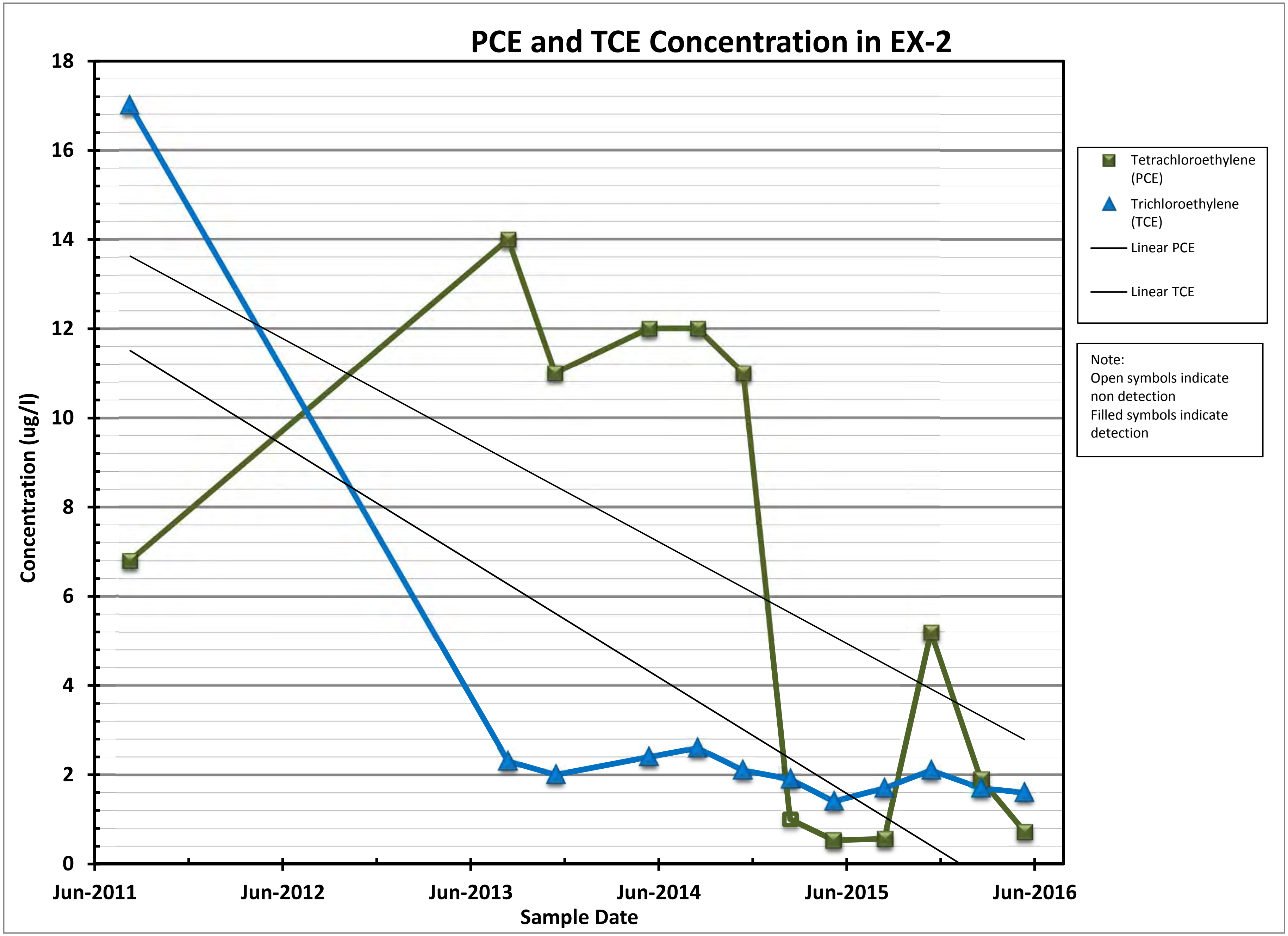

PCE and TCE Concentration in EX-2
Concentration (ug/l)
0
2
4
6
8
10
12
14
16
18
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 22

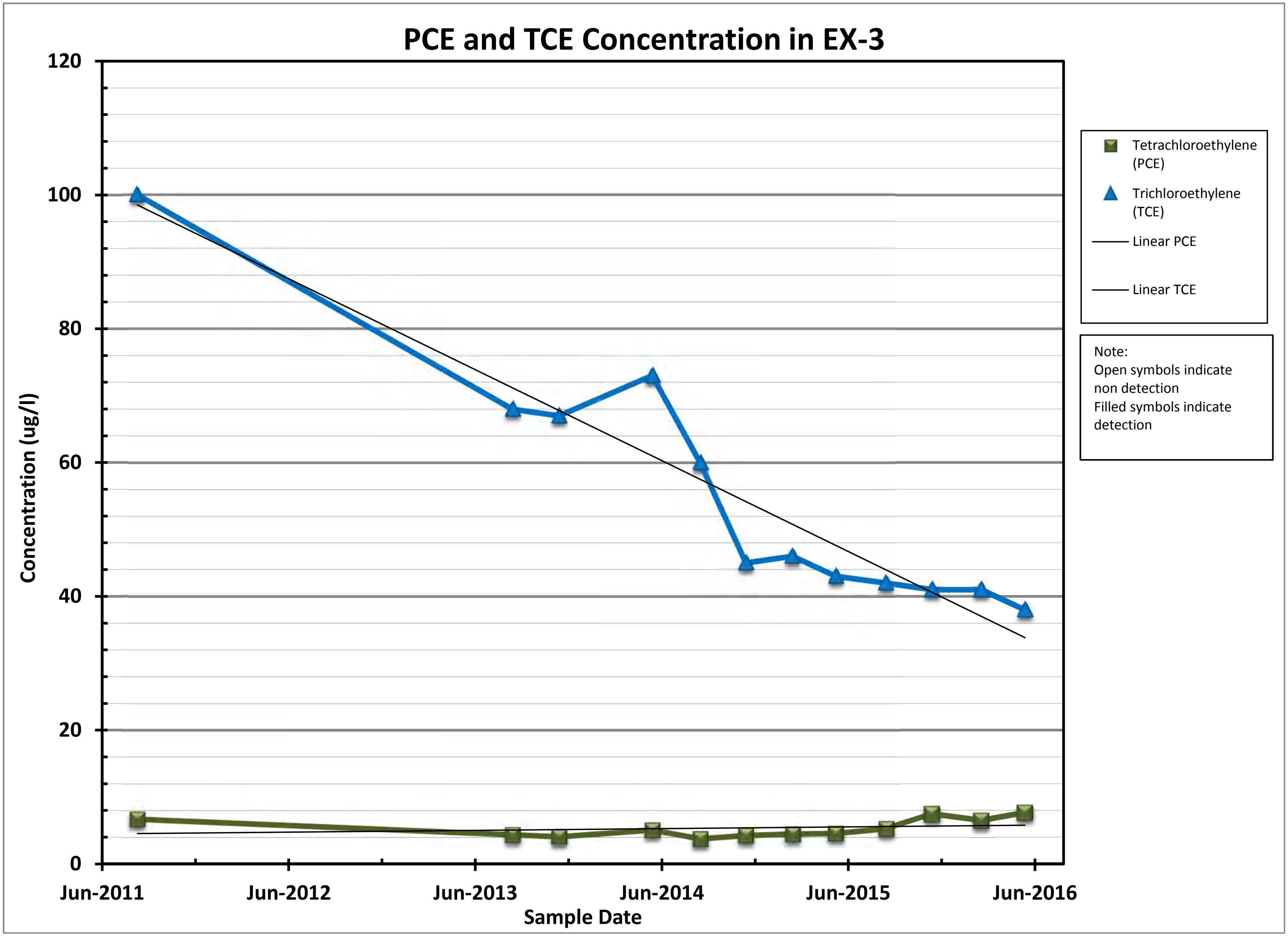

PCE and TCE Concentration in EX-3
120
100
80
60
40
20
0
Concentration (ug/l)
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 23

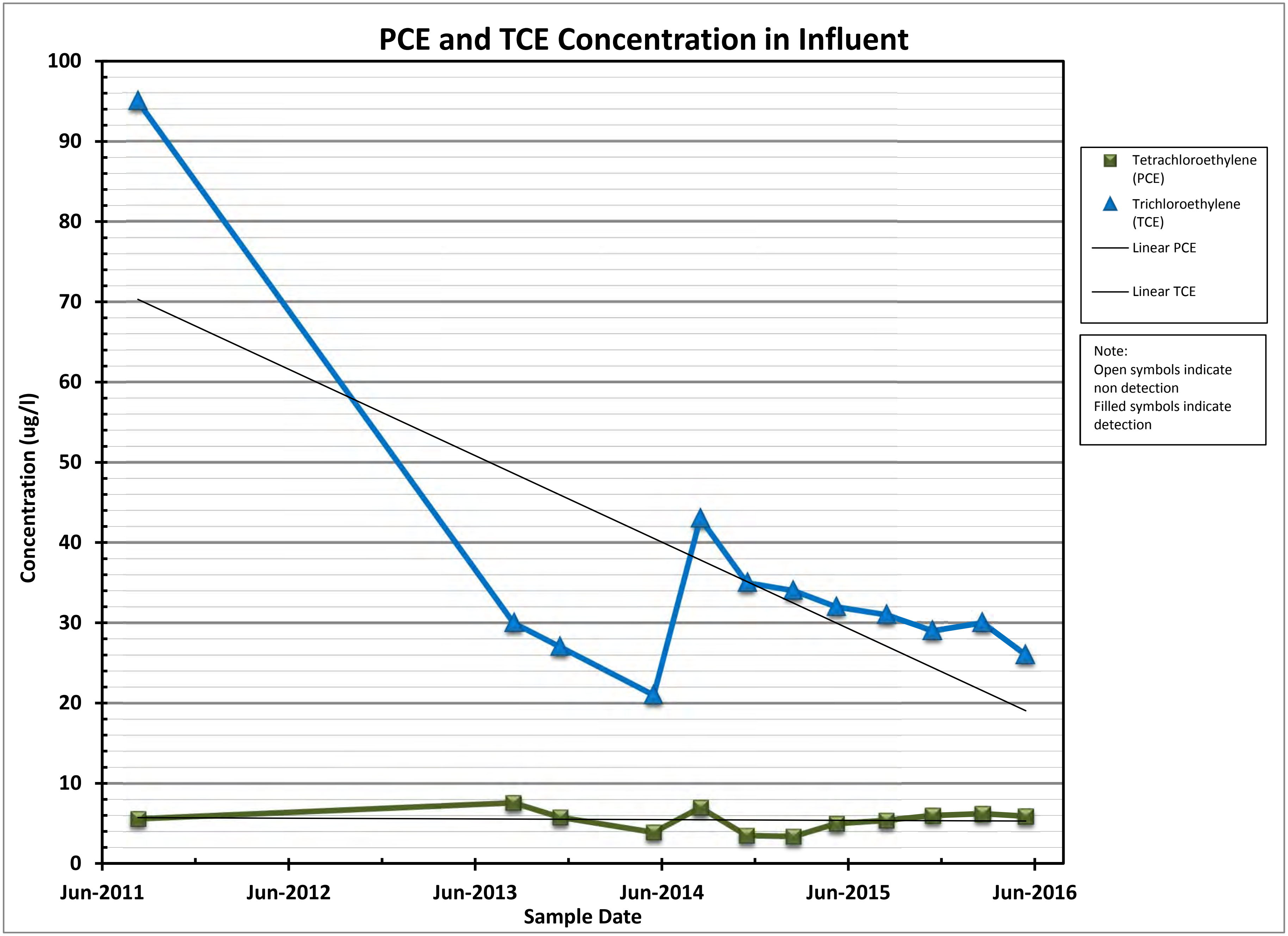
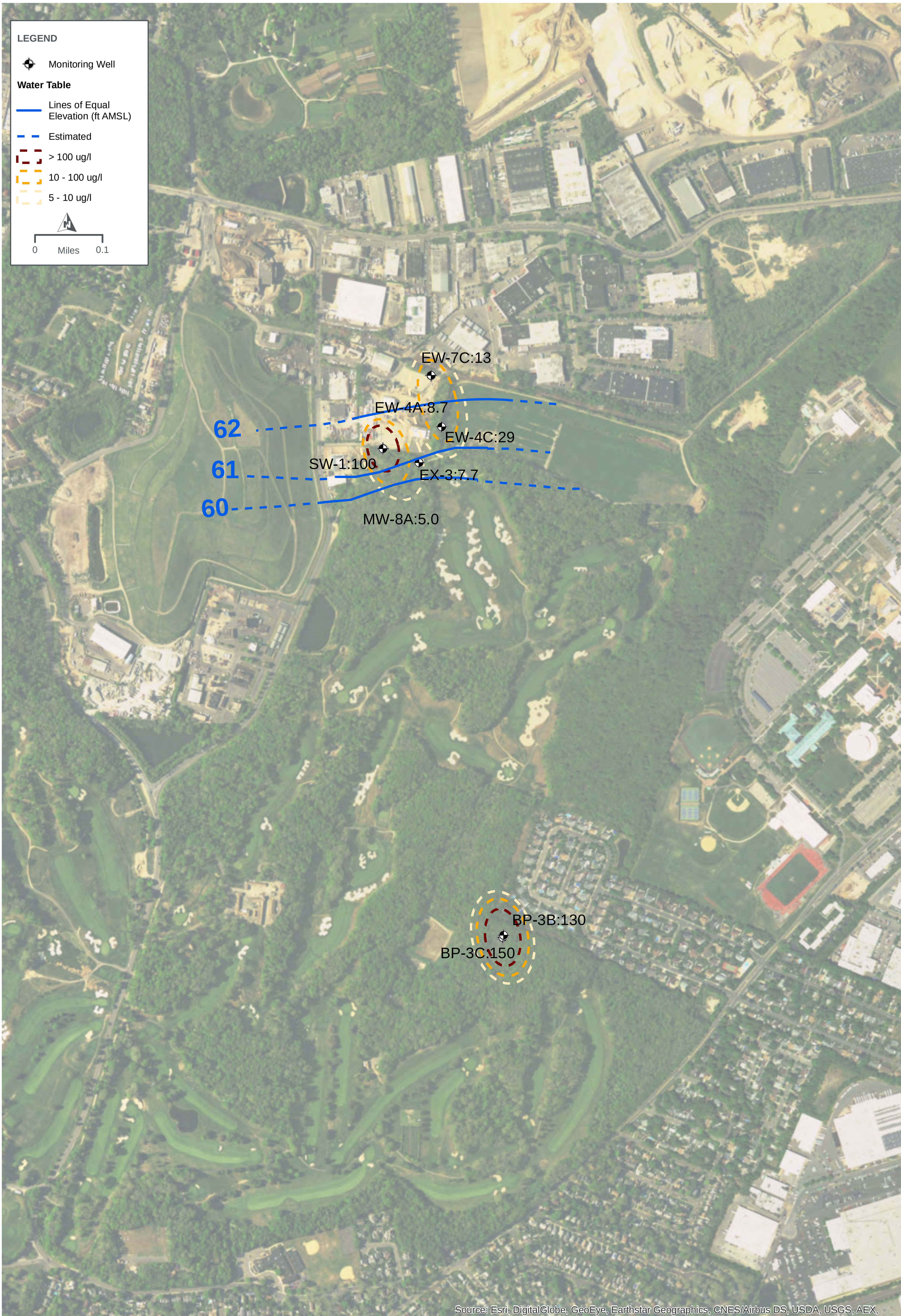

PCE and TCE Concentration in Influent
100
90
80
70
60
50
40
30
20
10
0
Concentration (ug/l)
Jun-2011
Jun-2012
Jun-2013
Jun-2014
Jun-2015
Jun-2016
Sample Date
Tetrachloroethylene (PCE)
Trichloroethylene (TCE)
Linear PCE
Linear TCE
Note:
Open symbols indicate non detection
Filled symbols indicate detection

Figure 24

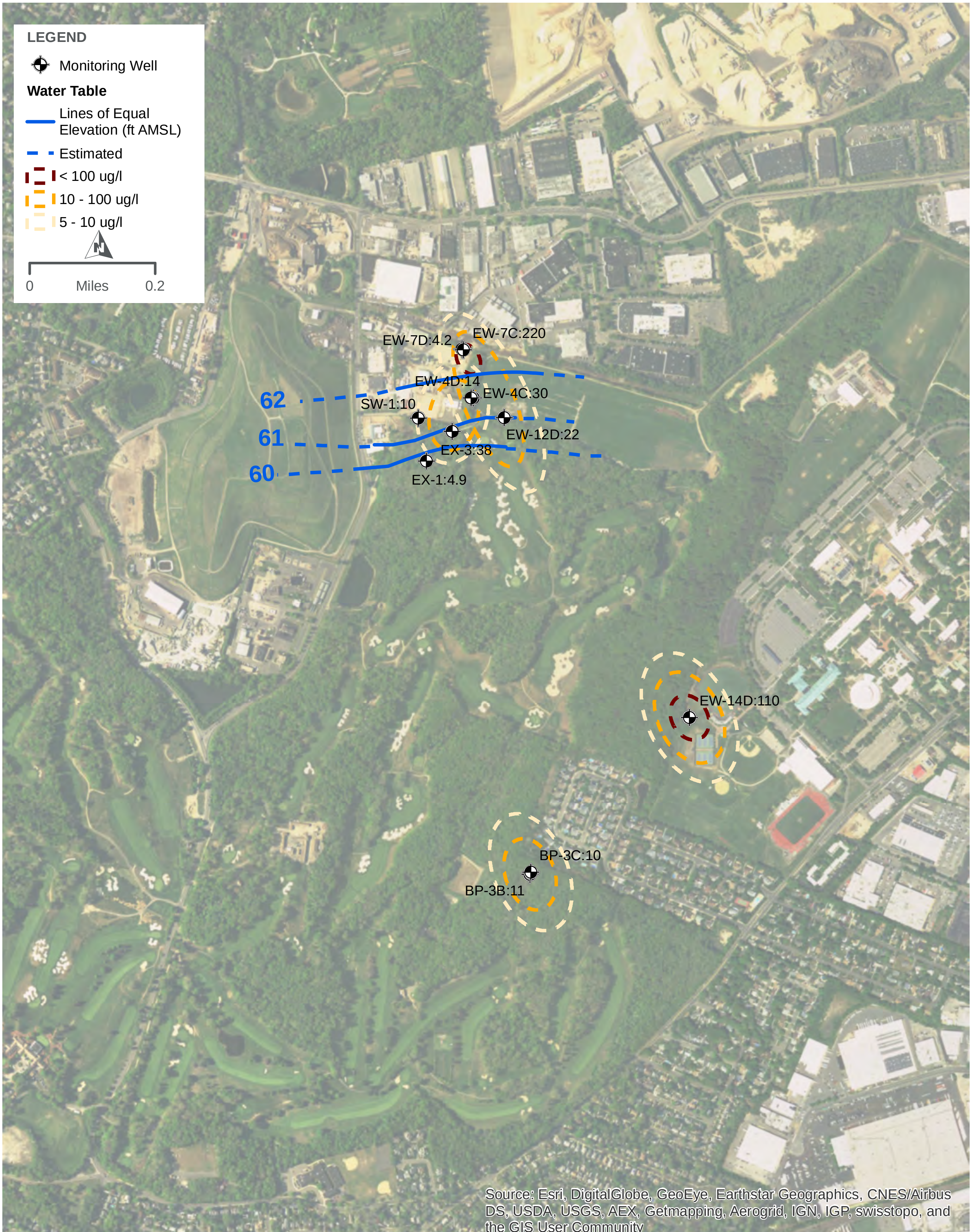


TETRACHLOROETHENE (PCE) PLUME

CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 25

PATH: M:\202315_NEW YORK STATE DEPT OF ENVIRONMENTAL CON\250751_NYSDECPPWA19_CLAREMONT\GIS\MAP_DOCS\FINAL\PCE_PLUME.MXD - USER: CWEAVER - DATE: 7/27/2016

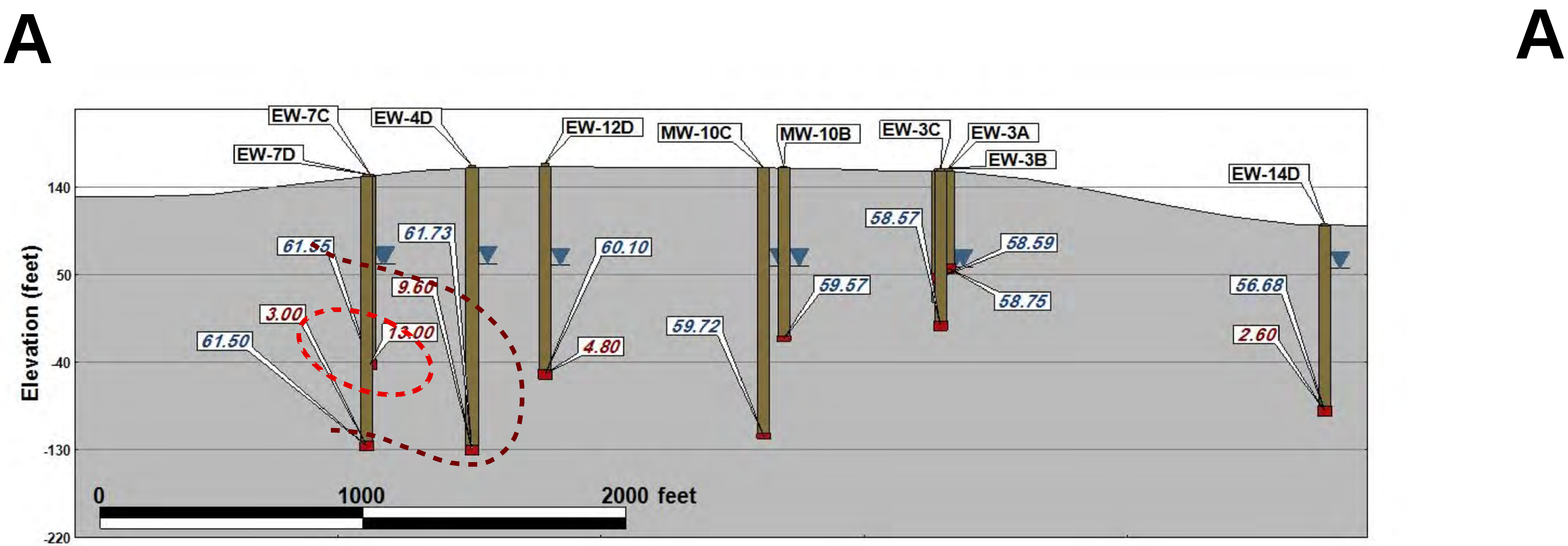


TRICHLORETHENE (TCE) PLUME

CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 26

PATH: M:\202315_NEW YORK STATE DEPT OF ENVIRONMENTAL CON\250751_NYSDECPPWA19_CLAREMONT\GIS\MAP_DOCS\FINAL\TCE_PLUME.MXD - USER: CWEAVER - DATE: 7/27/2016



Cross Section Legend

Wells

- Casing
- Screen

Well Labels:

EW-11D

Groundwater Elevation (ft)

Result Labels:

Groundwater Elevation (ft)

TETRACHLOROETHYLENE(PCE) (ug/l)

Approximate PCE Plume Extent:

- 5-10 ug/L
- 10 - 100 ug/L

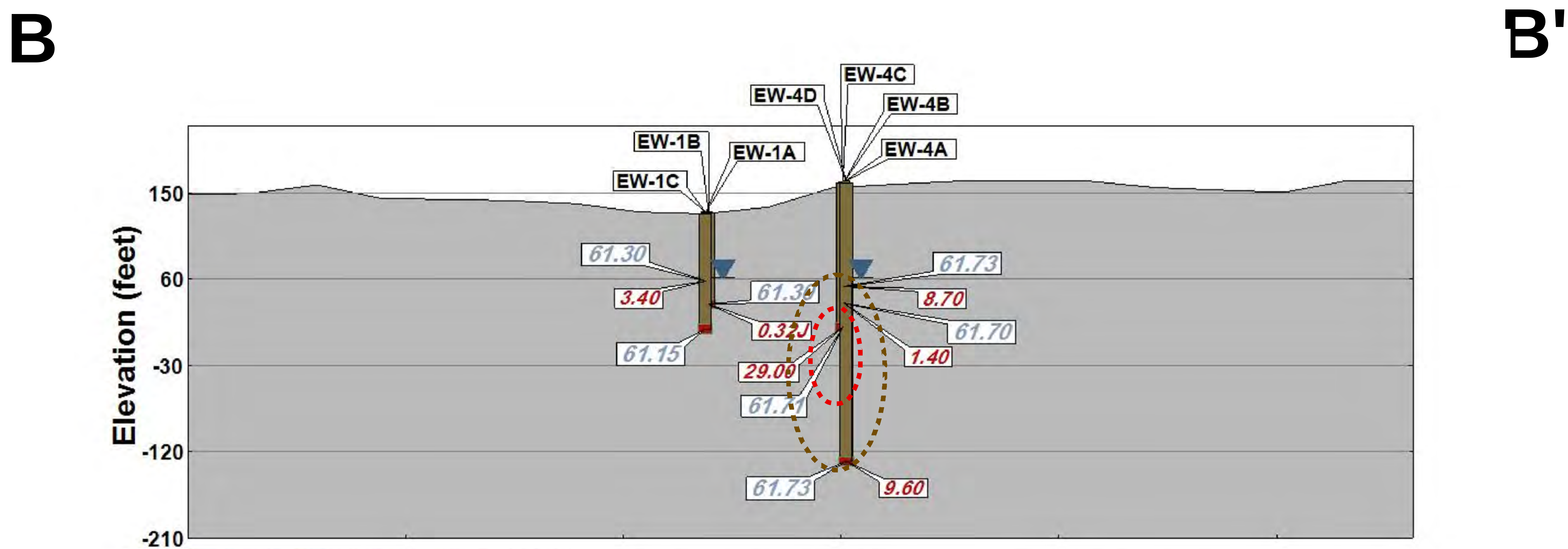
HDR | NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

TETRACHLOROETHENE CROSS SECTION

CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 27

PATH: M:\202315_NEW YORK STATE DEPT OF ENVIRONMENTAL CON\250751_NYSDECPPWA19_CLAREMONT\GIS\MAP_DOCS\FINAL\PCE_XSECTION_A-A.MXD - USER: CWEAVER - DATE: 7/29/2016



Cross Section Legend:

Wells

Casing

Screen

Well Labels:

EW-11D

Groundwater Elevation (ft)

Result Labels:

Groundwater Elevation (ft)

TETRACHLOROETHYLENE(PCE) (ug/l)

Approximate PCE Plume Extent:

5 - 10 ug/L

10 - 100 ug/L

FDR

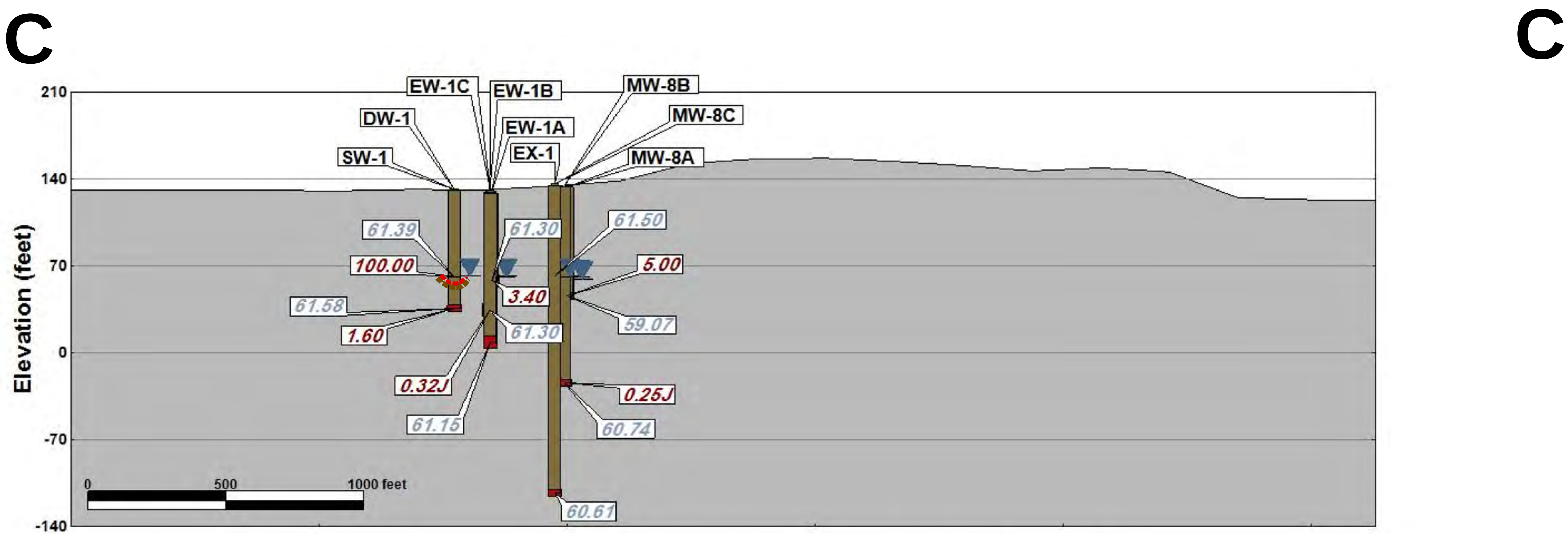
NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

TETRACHLOROETHENE CROSS SECTION

CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 28

PATH: M:\202315_NEW YORK STATE DEPT OF ENVIRONMENTAL CON\250751_NYSDECPPWA19_CLAREMONT\GIS\MAP_DOCS\FINAL\PCE_XSECTION_B-B.MXD - USER: CWEAVER - DATE: 7/29/2016



Cross Section Legend:

Wells

Casing

Screen

Well Labels:

EW-11D

Groundwater Elevation (ft)

Result Labels:

Groundwater Elevation (ft)

TETRACHLOROETHYLENE(PCE) (ug/l)

Approximate PCE Plume Extent:

5 - 10 ug/L

10 - 100 ug/L

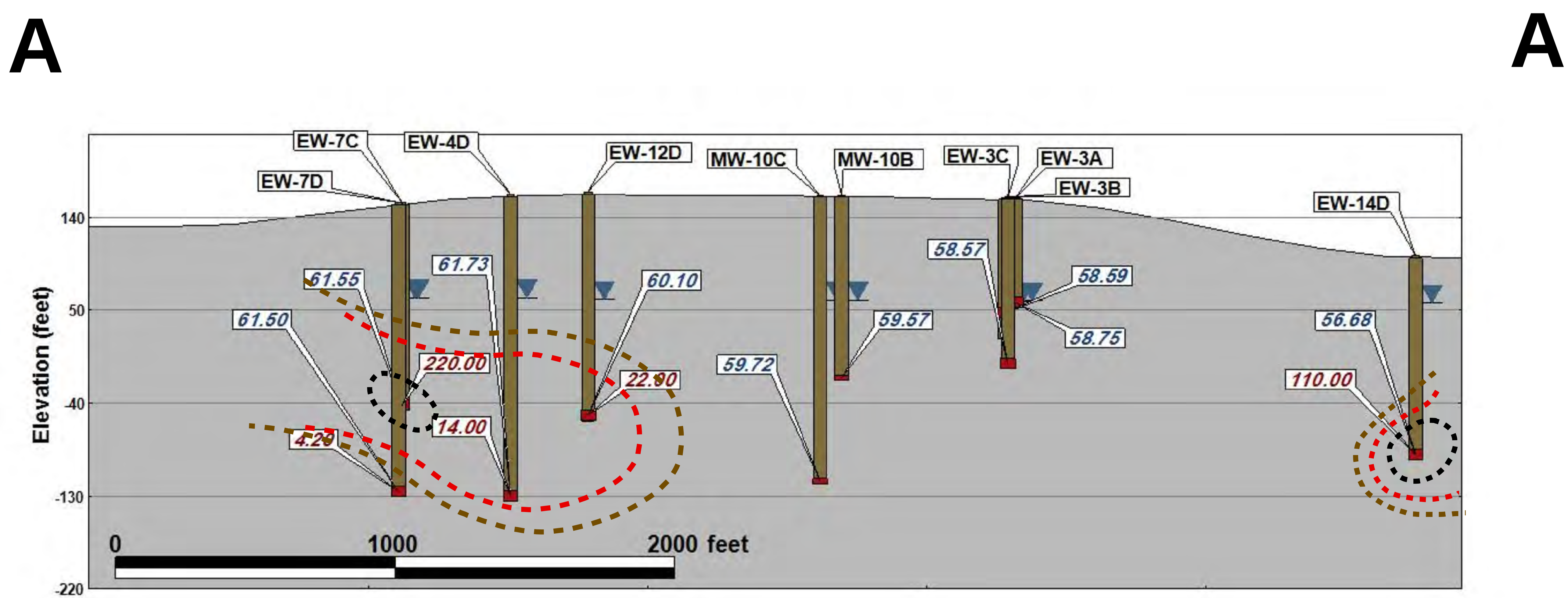
HDR | NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

TETRACHLOROETHENE CROSS SECTION

CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 29

PATH: M:\202315_NEW YORK STATE DEPT OF ENVIRONMENTAL CON\250751_NYSDECPPWA19_CLAREMONT\GIS\MAP_DOCS\FINAL\PCE_XSECTION_C-C.MXD - USER: CWEAVER - DATE: 7/29/2016



Cross Section Legend:

Wells

- Casing
- Screen

Well Labels:

EW-11D

Groundwater Elevation (ft)

Result Labels:

Groundwater Elevation (ft)

TRICHLOROETHYLENE (TCE) (ug/l)

Approximate TCE Plume Extent:

- 5-10 ug/L
- 10 - 100 ug/L
- > 100 ug/L

HDR

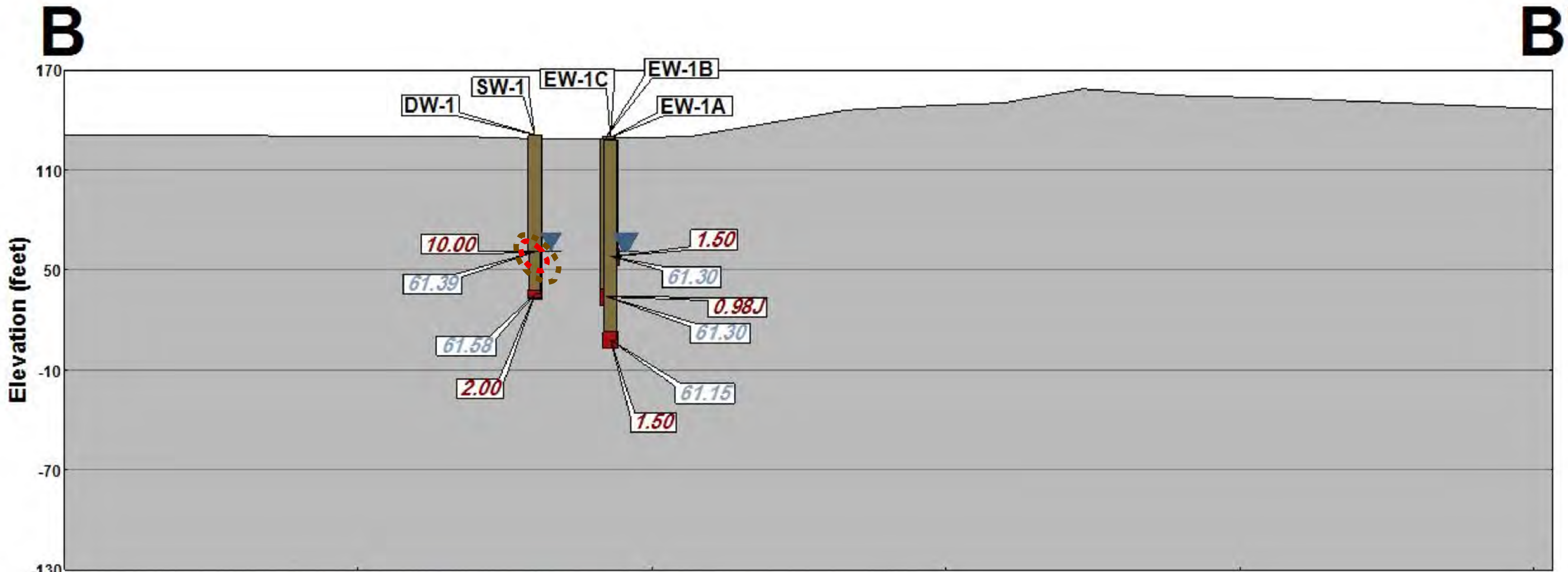
NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

TRICHLOROETHENE CROSS SECTION

CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 30

PATH: M:\202315_NEW YORK STATE DEPT OF ENVIRONMENTAL CON\250751_NYSDECPPWA19_CLAREMONT\GIS\MAP_DOCS\FINAL\TCE_XSECTION_A-A.MXD - USER: CWEAVER - DATE: 7/29/2016



Cross Section Legend:

Wells

Casing

Screen

Well Labels:

EW-11D

Groundwater Elevation (ft)

Result Labels:

Groundwater Elevation (ft)

TRICHLOROETHYLENE (TCE) (ug/l)

Approximate TCE Plume Extent:

5 - 10 ug/L

10 - 100 ug/L

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

TRICHLOROETHENE CROSS SECTION

CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 31

PATH: M:\202315_NEW YORK STATE DEPT OF ENVIRONMENTAL CON\250751_NYSDECPPWA19_CLAREMONT\GIS\MAP_DOCS\FINAL\TCE_XSECTION_B-B.MXD - USER: CWEAVER - DATE: 7/29/2016

ATTACHMENT A-1

Memo

Date:	Tuesday, January 05, 2016
Project:	Claremont Polychemical Groundwater Treatment Facility: NYSDEC WA No: D007625-19
To:	Benjamin Rung, NYSDEC
From:	Patricia Parvis, HDR
Subject:	System Optimization: Removal of Monitoring Wells from Sampling Program

The Claremont Polychemical Superfund site (Site) encompasses approximately 9.5 acres and is surrounded by industrial and commercial properties. Groundwater is contaminated with tetrachloroethene (PCE) as a result of on-site disposal practices. Trichloroethene (TCE) is also detected in the on-site groundwater; however, the TCE is likely coming from an upgradient source. Contaminated groundwater is currently extracted, treated, and injected back into the aquifer at the Site. The performance of the groundwater remedy is currently monitored with the quarterly groundwater sampling of 44 monitoring wells located on or adjacent to the site.

Henningson, Durham and Richardson Architecture & Engineering, P.C. (HDR) completed an optimization review of the performance monitoring program. HDR reviewed groundwater chemistry data from each well since start-up and evaluated the value of continuing to collect groundwater quality data from each location. Groundwater monitoring wells are recommended to remain in the sampling plan if TCE and/or PCE concentrations are increasing or present (exceeding the groundwater quality standards (GWQS) since the November 2014 sampling event), or if the well is in a key location that contributes to understanding the plume's spatial extent. Conversely, groundwater monitoring wells are recommended to be excluded from the site's sampling plan if TCE and/or PCE concentrations are decreasing or not detected, or if the well is not located in an area that assists in identification of plume extent.

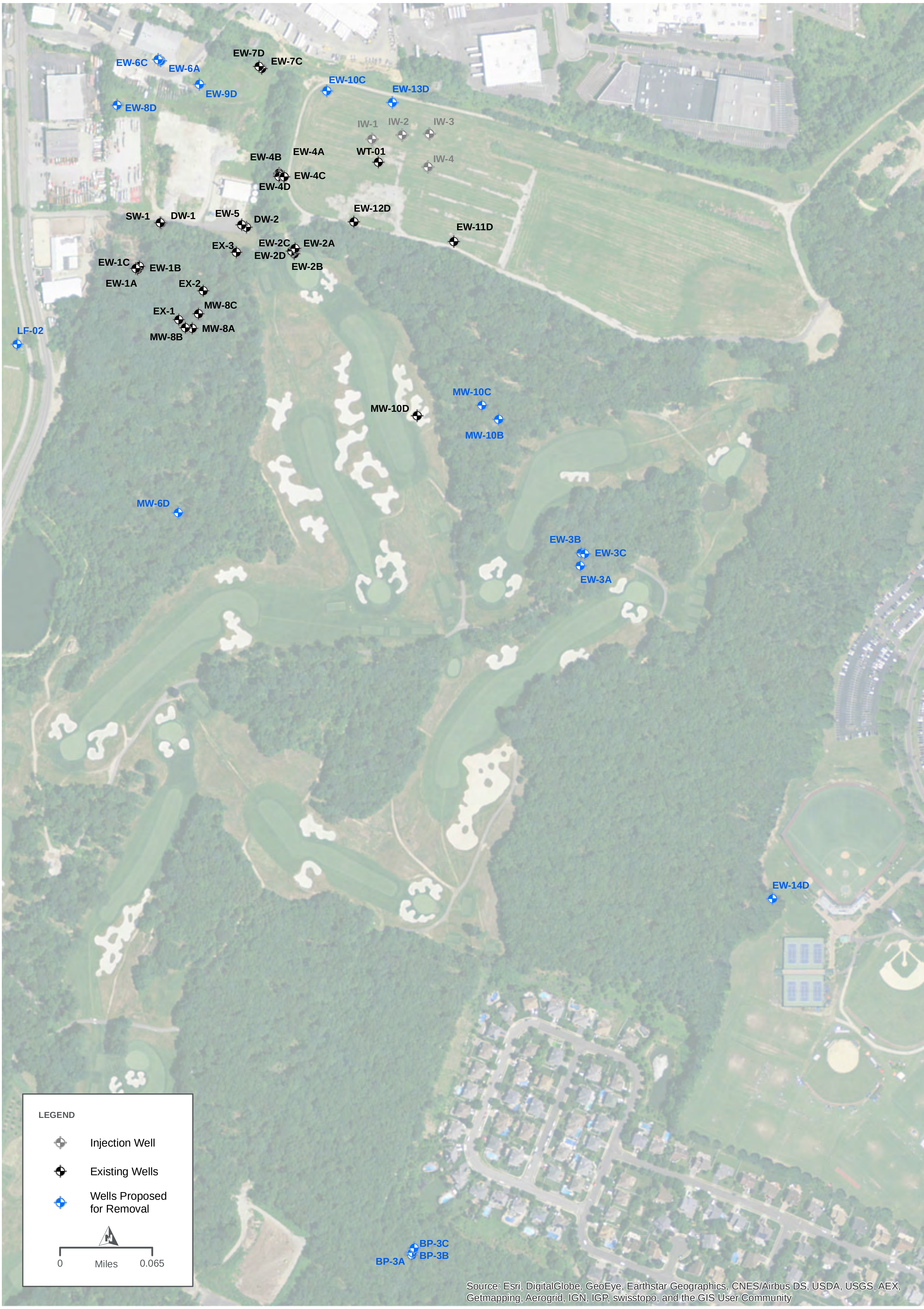
HDR proposes reducing the groundwater sampling program from 44 to 27 monitoring wells. Table 1 provides the rationale for including or excluding each monitoring well from the program. Figure 1 (attached) shows the location of the monitoring wells that are proposed to be kept and removed from the sampling plan.

Table 1. Rationale Table for Sampling Program Modifications

Wells Proposed for Exclusion from the Sampling Program	Rationale
BP-3A	well is located offsite, outside of CPC-related contamination area
BP-3B	well is located offsite, outside of CPC-related contamination area
BP-3C	well is located offsite, outside of CPC-related contamination area
EW-10C	well is upgradient of potential CPC source area; results have been < GWQS since 2006
EW-13D	well is upgradient of potential CPC source area; results have been < GWQS since 2006
EW-14D	well is located offsite, outside of CPC-related contamination area
EW-3A	well is located offsite, outside of CPC-related contamination area
EW-3B	well is located offsite, outside of CPC-related contamination area
EW-3C	well is located offsite, outside of CPC-related contamination area
EW-6A	well is upgradient of potential CPC source area; results have been < GWQS since 2006
EW-6C	well is upgradient of potential CPC source area; results have been < GWQS since 2006
EW-8D	well is upgradient of potential CPC source area; results have been < GWQS since 2006
EW-9D	well is upgradient of potential CPC source area; results have been < GWQS since 2006
LF-02	well is located offsite, outside of CPC-related contamination area
MW-10B	well is located offsite, outside of CPC-related contamination area
MW-10C	well is located offsite, outside of CPC-related contamination area
MW-6D	well is located offsite, outside of CPC-related contamination area
Wells to Remain in the Sampling Program	**Rationale**
DW-1	well location is representative of potential CPC-related contamination area extent
DW-2	used to confirm capture of PCE/TCE by extraction wells
EW-11D	used to document groundwater quality downgradient of injection area
EW-12D	used to document TCE movement and define eastern plume extent
EW-1A	well location is representative of TCE migration southward
EW-1B	well location is representative of TCE migration southward
EW-1C	well location is representative of TCE migration southward
EW-2A	used to confirm capture of PCE/TCE by extraction wells
EW-2B	used to confirm capture of PCE/TCE by extraction wells
EW-2C	used to confirm capture of PCE/TCE by extraction wells
EW-2D	used to confirm capture of PCE/TCE by extraction wells
EW-4A	used to document PCE/TCE movement
EW-4B	used to document PCE/TCE movement
EW-4C	used to document PCE/TCE movement
EW-4D	used to document PCE/TCE movement
EW-5	used to confirm capture of PCE/TCE by extraction wells
EW-7C	used to monitor upgradient plume concentrations
EW-7D	used to monitor upgradient plume concentrations
EX-1	used to track PCE/TCE at extraction point
EX-2	used to track PCE/TCE at inactive extraction point
EX-3	used to track PCE/TCE at extraction point

Wells Proposed for Exclusion from the Sampling Program	Rationale
MW-10D	used to document TCE movement
MW-8A	used to confirm capture of PCE/TCE by extraction wells
MW-8B	used to confirm capture of PCE/TCE by extraction wells
MW-8C	used to confirm capture of PCE/TCE by extraction wells
SW-1	used to document PCE/TCE movement and define western plume extent
WT-01	used to document water quality downgradient of injection area

Notes:
TCE GWQS: 5 µg/L
PCE GWQS: 5 µg/L
CPC = Claremont Polychemical Corporation



FDR

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROPOSED SAMPLING PLAN MODIFICATION

CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 1

PATH: M:\202315_NEW YORK STATE DEPT OF ENVIRONMENTAL CON\250751_NYSDECPPWA19_CLAREMONT\GIS\MAP_DOCS\DRAFT\PROPOSED_SAMPLEPLAN_MODIFICATION.MXD - USER: CWEAVER - DATE: 11/23/2015

ATTACHMENT A-2

Avudzega, David

From: Rung, Benjamin W (DEC) <benjamin.rung@dec.ny.gov>
Sent: Friday, January 15, 2016 12:59 PM
To: Parvis, Patricia A.
Subject: RE: Claremont Polychemical - Monitoring Well Sampling Reductions

Patty,

I have reviewed HDR's recommendations for removal of monitoring wells from the sampling program. Please proceed with the exclusion of recommended wells beginning in the coming sampling round with the exception of wells BP-3A, BP-3B, BP-3C, and EW14D. These wells should remain in the sampling program.

Thanks,
Ben

Benjamin Rung, P.E.
Environmental Engineer II, Division of Environmental Remediation

New York State Department of Environmental Conservation
625 Broadway, 12th Floor, Albany, NY 12233-7017
P: 518-402-9813 | Toll Free: 888-459-8667 | benjamin.rung@dec.ny.gov

www.dec.ny.gov | |

From: Parvis, Patricia A. [mailto:Patricia.Parvis@hdrinc.com]
Sent: Tuesday, January 05, 2016 04:05 PM
To: Rung, Benjamin W (DEC)
Subject: Claremont Polychemical - Monitoring Well Sampling Reductions

Ben – please see attached regarding our recommendations for reducing the number of monitoring wells in the sampling program starting this first quarter of 2016.

Thanks

Patti

Patricia Parvis, LSRP
Investigations Section Leader | Associate Vice President | Professional Associate

HDR
One International Blvd., 10th Floor
Mahwah, NJ 07495
D [201.335.9418] **M** [201.370.1760]
pparvis@hdrinc.com

hdrinc.com/follow-us