THIRD FIVE-YEAR REVIEW REPORT FOR CLAREMONT POLYCHEMICAL CORPORATION SUPERFUND SITE OLD BETHPAGE, TOWN OF OYSTER BAY, NASSAU COUNTY, NEW YORK

Prepared by

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LIST OF ABBREVIATIONS & ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COCs	Contaminants of Concern
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
LTEV	Low-temperature enhanced volatilization
MCLs	Maximum Contaminant Levels
mg/kg	Milligram per kilogram
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OBSWDC	Old Bethpage Solid Waste Disposal Complex
OU	Operable Unit
O&M	Operation and Maintenance
PCE	Tetrachloroethene
PRPs	Potentially Responsible Parties
ROD	Record of Decision
RA	Remedial Action
RAO	Remedial Action Objective
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
RPM	Remedial Project Manager
TCE	Trichloroethene
ug/L	Micrograms per Liter
VOC	Volatile Organic Compound

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the third FYR for the Claremont Polychemical Corp. (CPC), Superfund Site (Site) located in Old Bethpage, Nassau County, New York. The triggering action for this statutory FYR is the completion date of the previous FYR. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Site consists of six operable units (OUs). These OUs address the identification and abatement of the source of contamination on the property and the groundwater contamination at the Site. The OUs are:

OU1 - Treatment and removal of wastes in underground storage tanks.
OU2 - Compatibility testing, bulking/consolidation and treatment/disposal of wastes in deteriorated containers, aboveground tanks, and treatment basins; soil under the Former Process Building; removal of miscellaneous construction debris, operation of a soil vapor extraction system; and institutional controls.
OU3 - Treatment of PCE-contaminated soils via low-temperature enhanced volatilization (LTEV)
OU4 - Treatment of the CPC on-Property contaminated groundwater
OU5 - Treatment of the CPC off-Property contaminated groundwater
OU6 - Decontamination of the former Process Building.

Only OU2, OU4 and OU5 are subject to the FYR requirements.

The CPC Superfund Site FYR was led by Maria Jon, EPA Remedial Project Manager (RPM). Participants included Pam Tames (Acting Eastern New York Remediation Section Chief), Michael Scorca (EPA Hydrogeologist), Charles Nace (EPA Risk Assessor), and Cecilia Echols (EPA Community Involvement Coordinator (CIC)). Benjamin Rung, representative for the New York State Department of Environmental Conservation (NYSDEC) also assisted in the preparation of this report. The property owner (Old Bethpage II, LLC) was notified of the initiation of the FYR.

Site Background

The CPC Superfund Site is primarily located on a 9.5-acre parcel of land in the industrial section of Old Bethpage, Nassau County, New York (Figure 1). The CPC Property is currently zoned exclusively for light industrial/commercial land use.

The CPC was a former manufacturer of pigments for plastics and inks, coated metal flakes, and vinyl stabilizers that operated from 1966 to 1980. During its operation, CPC disposed of liquid waste in three leaching basins and deposited solid wastes and treatment sludges in drums or in old, aboveground metal tanks. During a series of inspections in 1979, the Nassau County Department of Health (NCDOH) found 2,000 to 3,000 drums containing inks, resins, and organic solvents throughout the Site. Some of the drums were uncovered, while others reportedly were leaking. The CPC Property was sold in 2007, and the Site owner had leased the property to a tenant who was operating a construction business at the Site.

Properties adjacent to the CPC property are: the Bethpage State Park and a public golf course both located to the south and southeast of the CPC Site. The State University of New York-Farmingdale Campus is located to the east, a commercial and light industrial area is located to the north, and the Oyster Bay Solid Waste Disposal Complex (OBSWDC) is immediately west of the CPC Site across Winding Road. The OBSWDC includes the Old Bethpage Landfill Superfund (OBL) Site which is on the National Priorities List (NPL) Superfund Site with the Town of Oyster Bay (TOB) as the responsible party. The Nassau County Firemen's Training Center (FTC), which includes a New York State Inactive Hazardous Waste Site, is located approximately 500 feet south of the OBL Site. The OBL Site has a groundwater extraction and treatment system in operation. The FTC also built and operated a groundwater extraction and treatment system. Operations of the FTC Site treatment system were shut down in 2011 after cleanup objectives at the FTC Site were achieved. Another NYSDEC Superfund site known as the former Aluminum Louvre is located approximately 750 feet north (upgradient) of the CPC Site; NYSDEC has selected, but not yet implemented remedies for this site,

The golf course also has several pump/irrigation wells, which are used for watering its fairways. The closest residences are approximately one-half mile from the CPC Site and are immediately west of the OBL. These residents are served by public water.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Claremont Polychemical Corporation		
EPA ID: NYD002044584		
Region: 2	**State:** NY	**City/County:** Old Bethpage/Nassau

SITE STATUS	
NPL Status: Final	
Multiple OUs? Yes	**Has the site achieved construction completion?** Yes

REVIEW STATUS
Lead agency: EPA
Author name (Federal or State Project Manager): Maria Jon
Author affiliation: EPA
Review period 3/4/2014 thru 6/15/2019
Date of site inspection: 8/2/2018
Type of review: Statutory
Review number: 3
Triggering action date: 3/4/2014
Due date *(five years after triggering action date)*: 3/4/2019

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

A Remedial Investigation and Feasibility Study (RI/FS) were completed in August 1990. The RI findings indicated that on-Site soils were contaminated with tetrachloroethene (PCE) located in the former "spill area," which constituted a potential threat to groundwater resources. Fifteen underground tanks holding liquid and sludge wastes were also identified at the Site. Contents of the tanks were mainly the volatile organic compounds (VOCs) 2-butanone, toluene and xylene. Heavy metals (e.g., copper, zinc) were found to be present in dust accumulated throughout the Process Building. In addition, the shallow groundwater was found to be contaminated with PCE, 1,2-dichloroethene (DCE), trichloroethene (TCE), 1,1,1-trichloroethane (TCA), ethylbenzene, 1,1-dichloroethane, methylene chloride, xylenes and vinyl chloride in excess of federal Maximum Contaminant Levels (MCLs) and/or New York State Drinking Water Standards. The risks associated with these contaminants were ingestion of contaminated groundwater and exposure to contaminated soil to future on-Site industrial workers. The Site was added for inclusion on the NPL in June 1986.

An ecological risk assessment was not performed for soils due to the fact there was not suitable ecological habitat at the Site. Additionally, groundwater does not discharge to surface water. Therefore, there were no completed exposure pathways at the time of the RI.

Response Actions

Removal Action

The RI field investigations identified several imminent hazards at the Site. In September 1988, EPA's Response and Prevention Branch initiated a removal action to stabilize and isolate the leaking containers in the Process Building and all other hazardous materials at the CPC Site. This was completed in January 1989. The removal action was limited to site stabilization measures. As discussed below, these materials were subsequently disposed of off-site as called for in the 1989 record of decision (ROD) for the Site.

Remedy Selection

The EPA issued two RODs selecting remedies for the CPC Site and two Explanations of Significant Differences (ESDs) which modified these remedies.

The first ROD, signed on September 22, 1989, addressed the OU2 wastes stabilized during the September 1988 removal action and called for compatibility testing, bulking/consolidation and treatment/disposal of wastes in deteriorated containers, aboveground tanks, and treatment basins. In April 2003, the EPA issued an ESD to include additional remedial actions for OU2. These remedial actions were:

- Removal of miscellaneous construction debris.
- Operation of a soil vapor extraction system (SVE).

- Institutional controls (e.g., requiring the current and future owners to maintain the integrity of the Process Building's concrete floor so long as cadmium-contaminated soil remained underneath it, restricting the use of the CPC Property to commercial/light industrial uses, and prohibiting the occupation of buildings on the CPC Property without vapor sampling and mitigation, if necessary).
- Sampling, cleaning and closing of septic systems.

The second ROD, signed on September 28, 1990, addressed the comprehensive remedy for the remainder of the Site as follows:

OU1 - Treatment and removal of wastes in underground storage tanks
OU3 - Treatment of PCE-contaminated soils via LTEV
OU4 - Treatment of the CPC on-Property contaminated groundwater
OU5 - Treatment of the CPC off-Property contaminated groundwater
OU6 - Decontamination of the former Process Building.

The remedial action objectives (RAOs) were identified as achieving substantial risk reduction through a combination of source control with active restoration of the groundwater and building contamination. During the implementation of the second ROD it became apparent that three of the OBL Site groundwater recovery wells were capturing the CPC off-Property groundwater plume. EPA then decided to modify the selected remedy for OU5. In September 2000, EPA issued an ESD that stated that the OBL Site's groundwater treatment facility would be used to remediate the CPC off-Property groundwater plume, in lieu of constructing a new treatment system. The OBL Superfund Site groundwater treatment system is owned and operated by the TOB.

Status of Implementation

Below is a description of the OUs and remedial actions completed at the CPC Site.

OU1

OU1 consisted of the treatment and removal of wastes in underground storage tanks.
Under this action, 14 underground storage tanks and their contents were removed and shipped off-site for treatment and disposal. Cleanup levels achieved for the OU1 remedial action allowed for unlimited use and unrestricted exposure; therefore, the OU1 remedy is not subject to this review and does not require further evaluation in this report.

OU2

This remedial action addressed the wastes stabilized during the September 1988 removal action. This action included compatibility testing, bulking/consolidation and treatment/disposal of wastes in deteriorated containers, aboveground tanks, and treatment basins. Upon completion of this remedial action, stabilized wastes were removed and properly disposed off-site.

In March 2013, the 35,000-square foot one-story Process Building was demolished, however the concrete floor of the building remained intact and undisturbed as an institutional control required by the ESD to prevent exposure to VOC and cadmium-contaminated soil. In August 2014, EPA addressed VOC-contaminated soil beneath the former process building by excavating and shipping approximately 1,100 tons of contaminated soil for off-site disposal.

On October 31, 2007, Environmental Protection Easements and a Declaration of Covenants and Restrictions were filed with the Nassau County Clerk's office covering the CPC Property. Two easements were filed because the CPC Property is composed of more than one parcel of property. The Easements and Declaration of Covenants and Restrictions limit the use of the CPC Property to light industrial or commercial purposes, grant the EPA a permanent easement and covenant to provide a right of access over the property for purposes of implementing, monitoring and facilitating the response action; prohibits the residential use of this property as long as hazardous substances remain on the property; restricts the extraction consumption, exposure, and use of the groundwater (except as approved by EPA); prohibits the installation of groundwater wells (except as approved by EPA), prohibits the disturbance of the concrete slab underneath the former Process Building and requires its integrity to be maintained; requires EPA's prior written approval before cadmium-contaminated soil underneath the Process Building can be removed; prohibits interference with or disturbance of the operation of the groundwater treatment system; prohibits the occupation of buildings on the CPC Property without vapor sampling and mitigation, if necessary. Because some cadmium-contaminated soil may still be present under the OU2 remedy above levels that do not allow for unlimited use and unrestricted exposure to the CPC Property, this OU is subject to this FYR.

OU3

OU3 addressed the treatment of soil contaminated with PCE located in the former "spill area" east of the former Process Building via LTEV. Approximately 8,800 tons of soils contaminated with PCE were excavated, treated to health-based standards and backfilled on the Site. The OU3 remedy achieved soil standards which allow for unrestricted use and unlimited exposure; therefore, the OU3 remedy is not subject to this review and does not require further evaluation in this report.

OU4

OU4 addressed the contaminated groundwater underneath the CPC Property. The remedy consists of the extraction and treatment of the contaminated groundwater underneath the CPC Property via metals precipitation, air stripping and carbon adsorption, and re-injection of the treated water into the ground. On October 1, 2016 NYSDEC shut down the OU4 groundwater treatment system. This remedy is subject to this FYR.

OU5

OU5 addressed the contaminated groundwater beyond the CPC Property. The remedy consists of the extraction and treatment of the contaminated groundwater that has migrated beyond the

CPC Property boundary via air stripping at the OBL treatment plant and re-injection of the treated water into the ground. This remedy is on-going and subject to this FYR.

OU6

OU6 addressed the decontamination of the former Process Building. This remedy consisted of decontamination of the Process Building via vacuuming and dusting of the contaminated surfaces and removing the asbestos insulation for off-site treatment and disposal. All hazardous substances, asbestos containing materials, and salvageable materials were removed from this building and disposed properly off-site prior to building decontamination. The Process Building's walls and interior surfaces were pressure washed. The OU6 remedy achieved health-based standards which allow for unrestricted use and unlimited exposure; therefore, the OU6 remedy is not subject to this review and does not require further evaluation in this report.

Institutional Controls Implementation

Table 1: Summary of Planned and/or Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Soil	Yes	Yes	Lot 267 Lots 283,295 and 296	Establishing institutional controls in the form of deed restrictions on future uses of the property	Environmental Easement/Restrictive Covenants were placed on the real property on October 3, 2007.
Groundwater	Yes	Yes	Lot 267 Lots 283,295 and 296	Restrict future groundwater use at the Site while the groundwater contamination is above health-based levels.	Environmental Easement/Restrictive Covenants were placed on the real property on October 3, 2007.

Systems Operations/Operation & Maintenance

The groundwater portion of the remedy was implemented in two phases. For the first Phase (OU4), three extraction wells were installed on the property boundary to capture the most contaminated groundwater. The second phase (OU5) was designed to address the groundwater contamination that has migrated beyond the Claremont property boundary.

OU4 Groundwater Extraction and Treatment System

Construction of the OU4 groundwater extraction and treatment facility began in 1997 and the system went into full-scale operation in February 2000. In May 2011, after completion of LTRA operations, responsibility for the operation and maintenance of the OU 4 system was transferred from EPA to NYSDEC. The OU4 groundwater treatment system consisted 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 CPC property (Figure 2).

Until the system was shut down, monitoring points consisted of the three extraction wells, four re-injection wells, 43 monitoring wells (21 wells on the CPC Property and 22 wells off the CPC Property), influent and effluent streams to and from the air stripper. The effluent from the air stripper was sampled monthly and the extraction wells, re-injection wells and monitoring wells were sampled on a quarterly basis. Sampling parameters include PCE, DCE, TCE, ethylbenzene, xylenes, vinyl chloride, arsenic, chromium, lead, manganese, chlorides, iron, TDS, TSS, pH and alkalinity. EX-1, EX-2, and EX-3 extracted an average pumping rate of approximately 500,000 to 560,000 gallons per day.

On October 1, 2016, at the direction of NYSDEC the OU4 groundwater treatment system was shut down and has not been in operation since that time. See section "Revised Approach to Grondwater Cleanup at the CPC Site" below for a discussion on the NYSDEC rationale for shutting down OU4 groundwater extraction and treatment system.

OU5 Groundwater Extraction and Treatment System

EPA issued an ESD on September 29, 2000, indicating that the ongoing OBL groundwater extraction and treatment facility was inadvertently capturing the CPC groundwater contamination that has migrated beyond the Claremont property boundary, or OU5. Therefore, the OBL groundwater extraction and treatment facility would be used to capture this plume instead of constructing a new treatment facility. This phase is being addressed by NYSDEC through a municipal agreement with the Town of Oyster Bay. The responsibility for the remediation of this plume was transferred from EPA to NYSDEC in December 2007 and the treatment facility is operated by HDR, under a contract with the NYSDEC.

The groundwater collection system originally consisted of five extraction wells known as RW-1, RW-2, RW-3, RW-4 and RW-5 located approximately 800 feet apart within Bethpage State Park Black Golf Course south of the CPC Site (Figure 2). The recovery wells were designed with the total maximum pumping capacity of 1.76 million gallons per day (mgd) and a designed flow of 1.5 mgd to the treatment system. Recovery wells RW-1 and RW-2 were petitioned to be discontinued by the TOB. These recovery wells capture and treat the OBL landfill groundwater plume and historically had non-detectable or very low levels of VOCs and did not capture the CPC groundwater plume. The individual VOC results were lower than the Town's Consent Decree requirements and Class GA standards. On October 2, 2016, the NYSDEC granted the TOB permission to discontinue treatment for the OBL plume. At the direction of the NYSDEC, RW-1 and RW-2 were taken off-line.

Recovery wells RW-3, RW-4, and RW-5 capture the groundwater downgradient of the CPC Superfund Site for treatment at the OBL treatment facility. The treated water is discharged into a series of Town-owned recharge basins in accordance with State Pollution Discharge Elimination System (SPDES) requirements. The groundwater monitoring network for CPC OU5 currently consists of eight monitoring wells, three extraction wells and one discharge basin operated by the TOB. Monthly and quarterly water-level measurements and groundwater quality sampling are conducted on the monitoring wells. The groundwater samples are analyzed for VOCs and metals. Also, monthly SPDES monitoring of groundwater treatment plant discharges is performed and air stripper influent/effluent sample pairs are collected and analyzed for VOCs.

Revised Approach to Groundwater Cleanup at the CPC Site

The NYSDEC has informed EPA and has decided that the continued operation of both the Claremont Groundwater Extraction and Treatment System (OU4) and the OBL Groundwater Extraction and Treatment System (OU5) to remediate the Claremont contaminant plume is no longer economically and technically warranted. Based on monitoring performed to date, the NYSDEC has concluded that the contamination persisting in groundwater at the Claremont property and the removal efficiencies achieved by the Claremont treatment plant no longer support the operation of that system. Therefore, the NYSDEC shut down the Claremont Groundwater Extraction and Treatment System and assumed operational responsibility of the Old Bethpage treatment facility. It is anticipated that any impacted groundwater, in low exceedance of applicable cleanup criteria, will be captured by the Old Bethpage system at the down-gradient extraction wells, specifically RW3, RW-4 and RW-5.

Based on the recent groundwater reports recently provided to EPA, the Claremont-related contaminants in the groundwater continue to decline or are stable. See Data Review section of this document. Based on this information, EPA agrees with the NYSDEC decision to shut down the OU4 groundwater extraction and treatment plant.

Climate Change

Potential Site impacts from climate change have been assessed, and the performance of the remedy is currently not at risk due to the expected effects of climate change in the region and near the Site.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the last FYR as well as the recommendations from the last **FYR** and the current status of those recommendations.

Table 2: Protectiveness Determinations/Statements from the 2014 FYR

OU #	Protectiveness Determination	Protectiveness Statement
2	Protective	The implemented remedy for OU2 (Treatment of soil under the former Process Building) is protective of human health and the environment.
4	Protective	The implemented remedy for OU4 (treatment of groundwater underneath the former Claremont Polychemical Corporation (CPC)) is protective of human health and the environment
5	Protective	The implemented remedy for OU5 (treatment of the former CPC-Off Property groundwater) is protective of human health and the environment.
Sitewide	Protective	The implemented remedies are protective of human health and the environment.

No issues or recommendations were identified in the 2014 FYR.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

On October 1, 2018, EPA Region 2 posted a notice on its website indicating that it would be reviewing site cleanups and remedies at 42 Superfund sites in New York and New Jersey, including the Claremont Polychemical Corporation Superfund Site. The announcement can be found at the following web address: https://www.epa.gov/sites/production/files/2018-10/documents/five_year_reviews_fy2019_for_web_posting.pdf.

In addition to this notification, a notice of the commencement of the FYR was sent to local public officials. The notice was provided to the Town on November 1, 2018, with a request that the notice be posted on the Town of Oyster Bay webpage. The purpose of the public notice was to inform the community that the EPA would be conducting the third FYR to ensure that the remedy implemented at the Site remains protective of public health and is functioning as designed. The notice included the contact information for the RPM and CIC for questions related to the FYR process or the Site. Once the FYR is completed, the results will be made available on EPA's Claremont Polychemical Superfund Site (https://www.epa.gov/superfund/claremont-polychemical) and at the local Site repository located at the Plainview-Old Bethpage Public Library, 999 Old County Road, Plainview, New York. In addition, efforts will be made to reach out to stakeholders and local public officials to inform them of the results.

No interviews were conducted as part of this FYR.

Data Review

OU4 and OU5

Review of the distribution of contaminants in the groundwater monitoring data indicate that PCE and TCE were detected at the greatest frequency and with the highest concentrations. PCE is the predominant contaminant of concern (COC) associated with the Claremont Site, and TCE is also a COC, usually present at much lower concentrations than PCE. Other VOCs, including cis-1,2-DCE and TCA, were also detected, but at varying frequencies and at low concentrations, in many cases below drinking water standards. Attached Figure 2 depicts the location of monitoring wells and extraction wells.

VOC concentrations at the CPC OU4 on-property extraction wells (EXT-1, EXT-2, EXT-3) had been relatively stable at very low values for several years (Figures 3, 4 and 5). Based on these results, and the removal of additional source soils by EPA in August 2014. NYSDEC decided to shut down the OU4 groundwater extraction system in 2016 and decommissioned the treatment plant.

Shallow on-property monitoring well SW-1 (screened 65-70 feet deep), which had the highest historical detection of PCE in the groundwater, recently showed a temporary increase in PCE and TCE concentrations around the time of the source excavation, but values declined significantly by 2017 (Figure 6). Well SW-1 was not sampled in the first quarter of 2018 because of dry conditions.

Well EW-4A (screened 100 - 115 feet deep) is a shallow well located to the east of the Claremont property. Since 2016, concentrations of cis-1,2-DCE (typically a breakdown product of TCE and PCE) have increased significantly at this well (Figure 8). PCE and TCE also showed lesser increases since 2016.

Nearby off-property shallow well EW-1A (screened 65 - 75 feet deep) has shown stable and low concentrations of VOC since 2013, usually below the drinking water standard (Figure 7).

Some deeper wells near the Claremont Site have shown elevated concentrations of VOCs, particularly TCE. Wells EW-04C (screened 145-155 feet deep), EW-12D (screened 209-219 feet deep), and EW-7C (screened 189-199 feet deep), have elevated TCE concentrations, with lesser concentrations of PCE, and are side- or up-gradient of the Claremont Site. See Figures 10, 11, and 12. The major source of this TCE-predominant contamination is considered to have entered the aquifer from a source located upgradient of the Claremont property and migrated beneath the bulk of the Claremont plume. These high concentrations of TCE in monitoring well EW-7C, which is both deeper and upgradient of the CPC monitoring wells, indicate that TCE is migrating onto the CPC Site from off-site sources at deeper levels in the aquifer. There is strong evidence of at least one source of upgradient off-site contamination is contributing to TCE levels in the groundwater beneath the CPC Site. The American Louever site, a NYSDEC Superfund site, is located approximately 750 feet north (upgradient) of the CPC Site. Groundwater data from the former Aluminum Louvre site were noted at levels up to 3,000 ug/l of TCE and 130 ug/l of PCE. The TCE plume from the former Aluminum Louvre site extends to the southeast in the direction of groundwater flow and is migrating onto the CPC Site.

The OU5 extraction and treatment system is south of the Claremont property and was established to treat groundwater affected by the OBL. In 2000, it was determined that some OBL extraction wells (RW-3, RW-4, RW-5) also intercepted the downgradient part of the Claremont plume, so the OBL system is being used to capture the downgradient CPC plume instead of constructing a new treatment facility. Long-term trends at the three extraction wells show that VOC concentrations have dropped significantly since 2013 and have been less variable in recent years. The discharge from the OU5 treatment plant is currently operating under an equivalency permit from the NYSDEC. All analyzed parameters for the treated water have been below permit limits.

The primary VOC constituent recovered from the OU5 recovery wells is TCE, with lesser concentrations of PCE. During this reporting period (2014-2019), TCE concentrations in recovery well RW-3 (screened 163-255 feet deep) ranged from 2.2 to 39.7 ug/1 and PCE concentrations ranged from 0.75 to 11.6 ug/1. In well RW-4 (screened 147-250 feet deep), TCE concentration levels ranged from 17 to 320 ug/1 and PCE concentrations ranged from 2.9 to 51.6 ug/1. In recovery well RW-5 (screened 153-263 feet deep), TCE concentration levels ranged from 4.9 to 83 ug/1 and PCE concentrations ranged from 0.6 to 12 ug/1. See Figures 13, 14, and 15.

A few wells downgradient of the OU5 extraction wells have elevated VOC concentrations. Monitoring well MW-7B-R is located near extraction wells RW-3 and RW-4 and is screened in a deeper potentiometric zone of the aquifer (screened 230-235 feet deep). The TCE concentration in this well, which reached as high as 900 ug/L in 2017 before declining, appears to be from a source located upgradient of the CPC Site. See Figure 16 for trends. Groundwater data collected indicates that part of the TCE plume from the upgradient source is being captured partially by RW-4 and treated at the OBL treatment plant.

Since 2013, groundwater from downgradient monitoring wells BP-3B (screened 215-235 feet deep) and BP-3C (screened 280-300 feet deep) has contained significantly increased levels of PCE and cis-1,2-DCE, with some lesser increases of TCE. See Figures 17 and 18 for trends. Further downgradient wells MW-11A (screened 140-145 feet deep) and MW-11B (screened 240-245 feet deep) have shown minor increases of these VOCs. See Figures 19 and 20 for trends.

The beginning of the concentration increases in 2013 coincided with the suspension of pumping operations at the Fireman's Training Center (FTC). The FTC is south and west of the Old Bethpage landfill; however, the pumping of its extraction well could have influenced regional groundwater flow directions near the BP-3 and MW-11 monitoring well clusters.

It appears that this “deep” TCE plume emanates from a source upgradient of the CPC Site and flows downgradient under the CPC Site. It may also flow under and downgradient of the CPC off-Property groundwater recovery wells (OU5) operated by the NYSDEC at the Old Bethpage Landfill as well as further downgradient monitoring wells. The Aluminum Louvre site is one source of off-site contamination upgradient of the CPC Site and is being addressed by NYSDEC. NYSDEC completed an RI confirming groundwater beneath the former Aluminum Louvre site is contaminated with PCE, TCE, and DCE, and issued a ROD in March 2013 for the on-site contamination. This NYSDEC ROD is currently in the design phase. A second ROD was also issued by NYDEC in March 2019 that addresses the contaminated groundwater. These recent changes in VOC concentrations at these downgradient wells will be monitored and evaluated

further as the remedies described in the NYSDEC RODs for the Aluminum Louvre NYSDEC site are being implemented.

OU2 - CPC Soil under the Former Process Building

In accordance with the 2003 ESD, an SVE system was used to address VOC sources below the Process Building. While operating, the system removed more than 1,200 pounds of VOCs from soils beneath the building. In May 2013, the new property owner demolished the building, however the concrete floor of the building remained intact and undisturbed as an institutional control required by the ESD to prevent exposure to contaminated soil.

EPA collected soil samples from beneath the building's concrete floor slab to assess whether the soil cleanup goals established in the decision document had been achieved as a result of the SVE operations. Sampling results indicated that there were still some residual VOCs above the soil cleanup goals established for the soil under the slab. PCE was detected at 270,000 ug/kg (soil cleanup goal of 1,500 ug/kg) and TCE was detected at 19,000 ug/kg (soil cleanup goal of 700 ug/kg). In August 2014, EPA addressed the last residual soil contamination with VOCs beneath the former Process Building by excavating and shipping off-site for proper disposal approximately 1,100 tons of contaminated soil. However, some cadmium-contaminated soil may still be present above EPA's acceptable levels, therefore, the concrete floor of the building must remain intact and undisturbed as an institutional control to prevent exposure to cadmium-contaminated soil.

Site Inspection

A Site inspection was conducted on August 2, 2018. The following parties were in attendance:

- Maria Jon, EPA RPM
- Robert Alvey, EPA Hydrologist
- Chuck Nace, EPA Risk Assessor
- Benjamin Rung, NYSDEC Project Manager

The property owner leased the parcel to a construction company that was operating a solid waste management facility illegally or without authorization, and its operations have been in significant violation of environmental regulations. During the Site inspection with NYSDEC, EPA observed solid waste materials on the property, mainly on the OU2 concrete slab. EPA and NYSDEC observed several stockpiles of unprocessed concrete, soil and asphalt; open containers of diesel fuel and oil; oil spills. There was evidence of significant re-grading of portions of the property without apparent concern for slope stability or separation of waste materials. Further, the tenant has appeared to have abandoned the property without cleanup or removal of waste oil and other materials.

NYSDEC executed a Consent Order with the tenant on August 2, 2018, requiring to pay penalties and cleanup the property. The tenant has been unresponsive, and NYSDEC is pursuing additional enforcement actions against the tenant.

The OU5 groundwater treatment plant is surrounded by a fence with a gated entrance to control access. There has been no evidence of trespassing. The fence and the gate are inspected on a regular basis, and monitoring wells and recovery wells are intact and in good repair.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

The remedy was designed to achieve substantial risk reduction through a combination of source control with active restoration of the groundwater and building contamination. Given that the VOC-contaminated soils were excavated with off-site disposal or treatment, the contaminated materials were removed from the Site. Contaminated groundwater is extracted and properly treated. Review of data indicates extraction system and monitoring wells are impacted by sources upgradient. However, review of site-specific contaminant concentrations indicates that the extraction system is effectively capturing and remediating the CPC contaminant plume. Groundwater extraction from RW-3, RW-4 and RW-5 continues to capture and treat impacted groundwater associated with the CPC Site and the Former American Louvre NYSDEC site.

The remedy is functioning to eliminate the completed exposure pathways and is currently protective from a human health and ecological perspective. There is a future potential for exposure to contaminated soil if the slab of the former building is removed, however, the concrete slab is currently in place as a barrier to the underlying cadmium-contaminated soil. The groundwater use restrictions placed on the CPC Site includes restricting the extraction consumption, exposure, and use of the groundwater; and prohibits the installation of groundwater wells.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

Human Health – The previous FYRs indicated that the exposure pathways, exposure assumptions and toxicity data identified in the 1990 ROD were still valid. The exposure pathways and exposure assumptions were evaluated as part of this review and they remain valid for this FYR. There are two media, soil and groundwater, for which cleanup values have been used. The soil cleanup values were based upon action-specific ARARs and health-based levels for both the low-temperature enhanced volatilization (1990 ROD) and for the soil excavation (2003 ESD). The soil cleanup values that were used are still valid and fall within USEPA's acceptable risk range of 10^{-6} to 10^{-4} and a hazard index of 1. The groundwater cleanup values were identified as "all related ARARs including NY Groundwater Quality Standards and Federal Maximum Contaminant Levels (MCLs)". The process of applying the current Federal and State Drinking Water Standards and groundwater standards as cleanup values for the groundwater remain valid. The remedial action objectives (RAOs) were identified as achieving substantial risk reduction through a combination of source control with active restoration of the groundwater and building contamination. These RAOs are still valid.

Vapor intrusion was evaluated in the previous FYR and it was concluded that vapor intrusion is not expected to be a completed pathway since there are no buildings above the plume and no further evaluation of vapor intrusion is needed.

Ecological – The previous FYR indicated that there were no completed exposure pathways for ecological receptors. Based upon review of the past and current data, combined with the Site visit, the previous conclusion that there are no completed exposure pathways for ecological receptors is still valid because the primary exposure pathway for ecological receptors would be through exposure to groundwater. However, since the contaminated groundwater associated with the Site does not discharge to any local surface water bodies, there is not a complete exposure pathway for groundwater.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

TCE contamination detected in deep monitoring well MW-7B-R appears to be from a source located upgradient of the CPC Site. Also, since 2013, groundwater from downgradient monitoring wells has contained significantly increased levels of PCE and cis-1,2-DCE, with some lesser increases of TCE (see Figures 17 and 18 for trends). Further downgradient wells MW-11A and MW-11B have shown minor increases of these VOCs. See Figures 19 and 20 for trends. It appears that this "deep" TCE plume emanates from a source upgradient of the CPC Site and flows downgradient under the CPC Site. It may also flow under and downgradient of the CPC off-Property groundwater recovery wells (OU5) operated by the NYSDEC at the OBL as well as further downgradient monitoring wells. The Aluminum Louvre site is one source of off-site contamination upgradient of the CPC Site and is being addressed by NYSDEC. NYSDEC completed an RI confirming contaminated groundwater beneath the former Aluminum Louvre site with PCE, TCE, and DCE, and issued a ROD in March 2013 for the on-site contamination. This NYSDEC ROD is currently in the design phase. A second ROD was also issued by NYDEC in March 2019 that addresses the contaminated groundwater.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations				
OU(s) without Issues/Recommendations Identified in the Five-Year Review:				
OU(s):	**Issue Category: Monitoring**			
	Issue: Changes in VOC concentrations in the groundwater at downgradient wells will need to be monitored and evaluated to verify upgradient source.			
	Recommendation: These recent changes in VOC concentrations at these downgradient wells will be monitored and evaluated further as the remedies described in the NYSDEC RODs for the Aluminum Louvre NYSDEC site are being implemented			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	EPA/State	EPA	6/20/2025

OTHER FINDINGS

There are no other findings in this FYR.

VII. PROTECTIVNESS STATEMENT

Protectiveness Statement(s)		
Operable Unit: OU2	*Protectiveness Determination:* Protective	*Planned Addendum Completion Date:* Click here to enter a date
Protectiveness Statement: The remedy for OU2 is protective of human health and the environment.		
Operable Unit: OU4	*Protectiveness Determination:* Protective	*Planned Addendum Completion Date:* Click here to enter a date
Protectiveness Statement: The implemented remedy for OU4 (treatment of groundwater underneath the former Claremont Polychemical Corporation (CPC)) is protective of human health and the environment.		

Protectiveness Statement(s)		
Operable Unit: OU5	*Protectiveness Determination:* Short-term Protective	*Planned Addendum Completion Date:* Click here to enter a date
The implemented remedy for OU5 is protective of human health and the environment in the short term since there are currently no exposures. To be protective in the long term, recent changes in VOC concentrations in the groundwater at downgradient wells will need to be monitored and evaluated to verify upgradient source. These recent changes in VOC concentrations at these downgradient wells will be monitored and evaluated further as the remedies described in the NYSDEC RODs for the Aluminum Louvre NYSDEC site are being implemented.		
Sitewide Protectiveness Statement		
Protectiveness Determination: Short-term Protective		*Planned Addendum Completion Date:* Click here to enter a date
The implemented remedy for Claremont Polychemical Superfund Site is protective of human health and the environment in the short term since there are currently no exposures. To be protective in the long term, recent changes in VOC concentrations in the groundwater at downgradient wells will need to be monitored and evaluated to verify upgradient source. These recent changes in VOC concentrations at these downgradient wells will be monitored and evaluated further as the remedies described in the NYSDEC RODs for the Aluminum Louvre NYSDEC site are being implemented.		

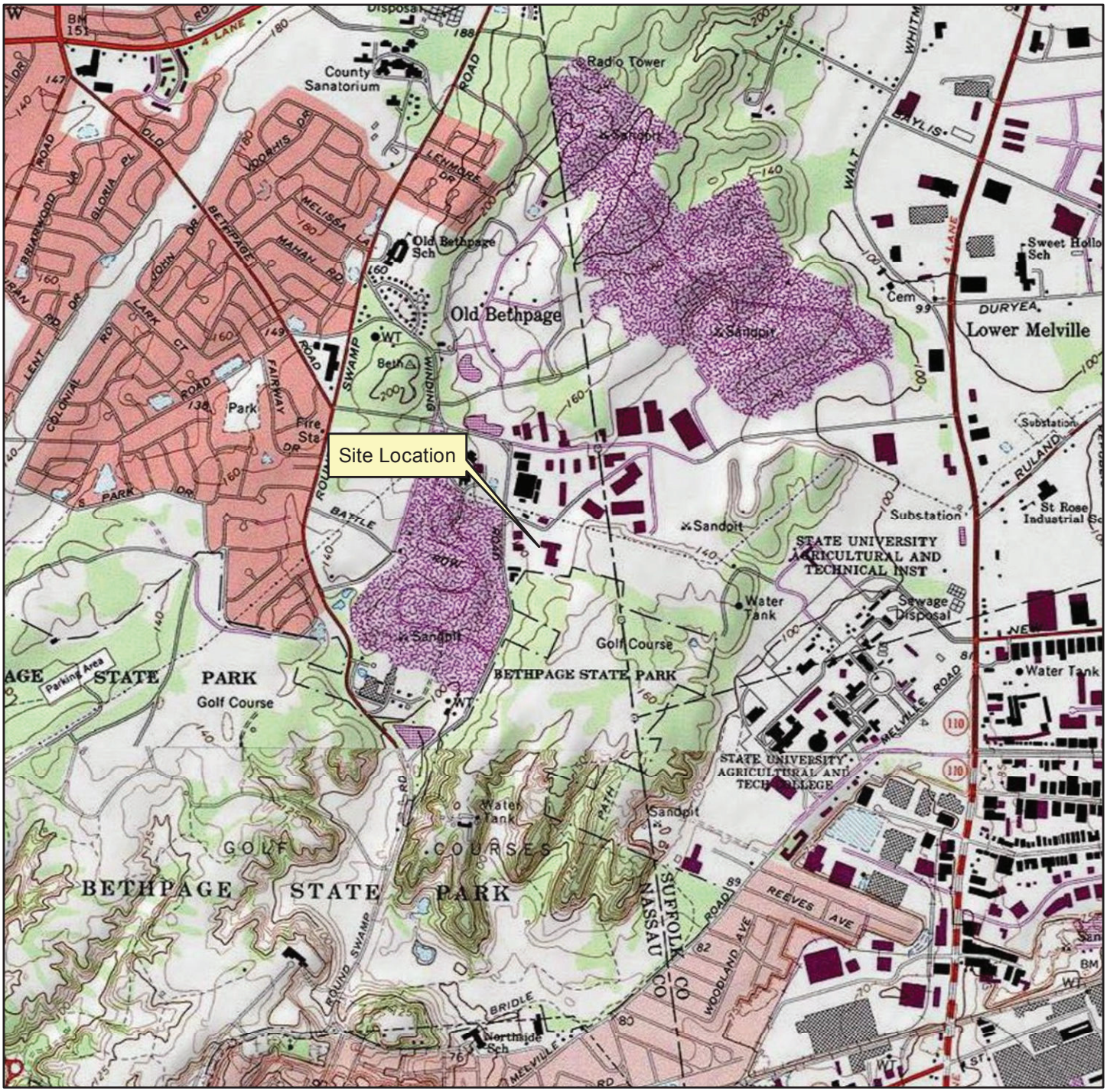
VIII. NEXT REVIEW

The next FYR for the CPC Superfund Site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

Table 3 - Documents, Data and Information Reviewed in Completing the Five-Year Review

Document Title, Author	Submittal Date
Remedial Investigation/Feasibility Study, Army Corps of Engineers, Kansas City District, Kansas City, Missouri.	1987
Record of Decision, EPA	1990
Final Remedial Design Report, EPA	1999
ESDs, EPA	2001 and 2003
Preliminary Close-Out Report, EPA	2003
CPC Superfund Site, Long-term Groundwater Monitoring, Old Bethpage, New York, U.S. Army Corps of Engineers, Kansas City District, Kansas City, Missouri.	2008- 2010
Organic Analysis Report, Old Bethpage Solid Waste Disposal Complex Groundwater Treatment Facility, Lockwood Kessler & Bartlett, Inc.	2008-2012
Groundwater Monitoring Report Claremont Polychemical Corporation Site, HRP Engineering, P.C.	2013-2014
Groundwater Monitoring Report Claremont Polychemical Corporation Site, HDR, P.C.	2015-2018



USGS Quadrangle Information
Quad ID: 40073-G4
Name: Huntington, New York
Date Rev: 1977
Date Pub: 1979

0 1,000 2,000 4,000 6,000 8,000 Feet

1 inch = 2,000 feet

N

Figure 1
Site Location
Claremont Polychemical Corporation
Old Bethpage, New York
HRP # NEW9625.OM
Site Code 130015
Scale 1" = 2,000'

HRP Associates, Inc.
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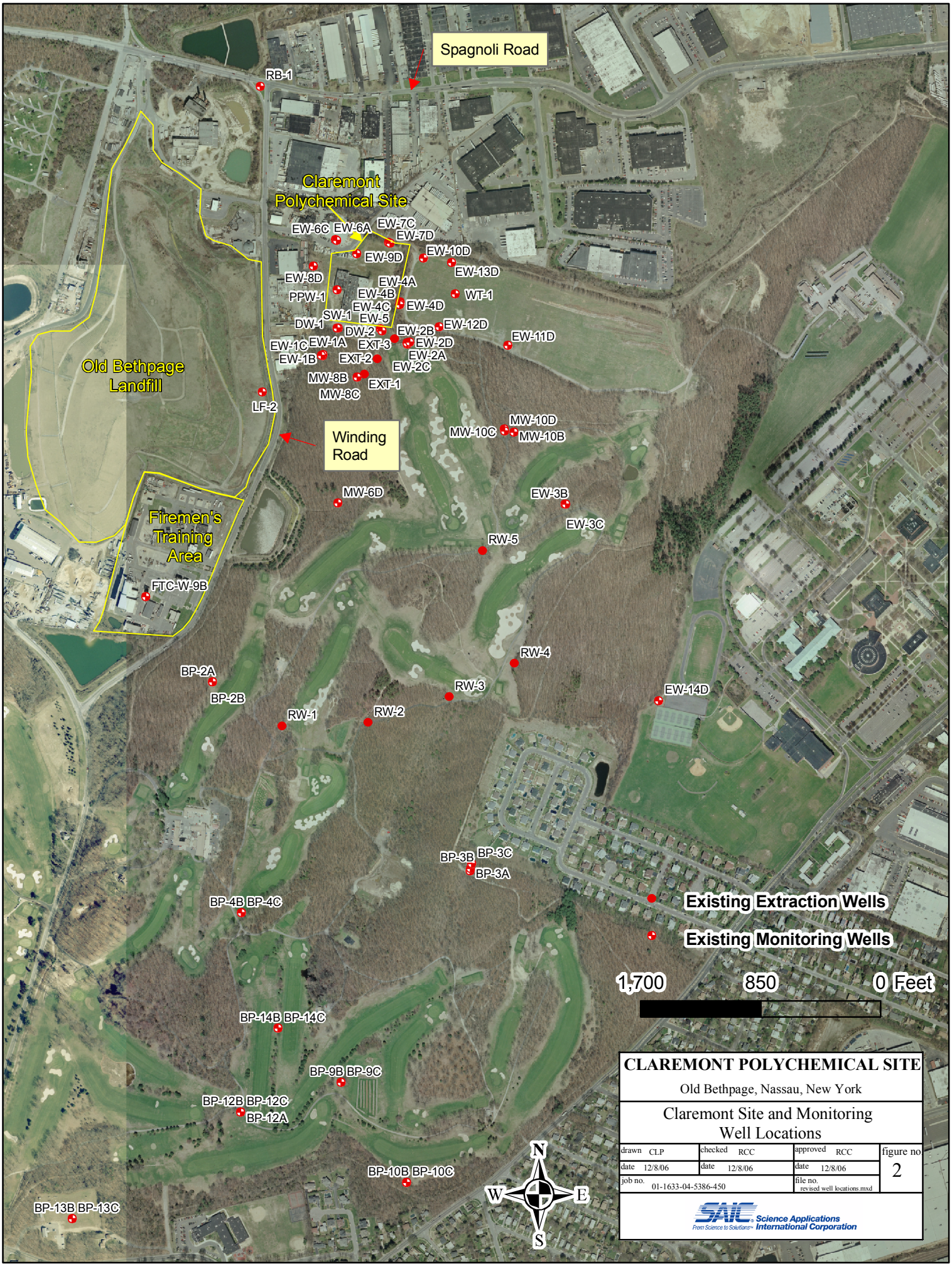
Path: J:\NNEWEN - NY STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION\CLAREMONT POLYCHEMICAL CORP, OLD BETHPAGE, NY\NEW9625OM\GIS\Site Location.mxd



CLAREMONT POLYCHEMICAL SITE

Old Bethpage, Nassau, New York

Claremont Site and Monitoring Well Locations

drawn CLP	checked RCC	approved RCC	figure no 2
date 12/8/06	date 12/8/06	date 12/8/06	
job no. 01-1633-04-5386-450		file no. revised well locations.mxd	

SAIC Science Applications International Corporation
From Science to Solutions™

Figure 3. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EXT-1

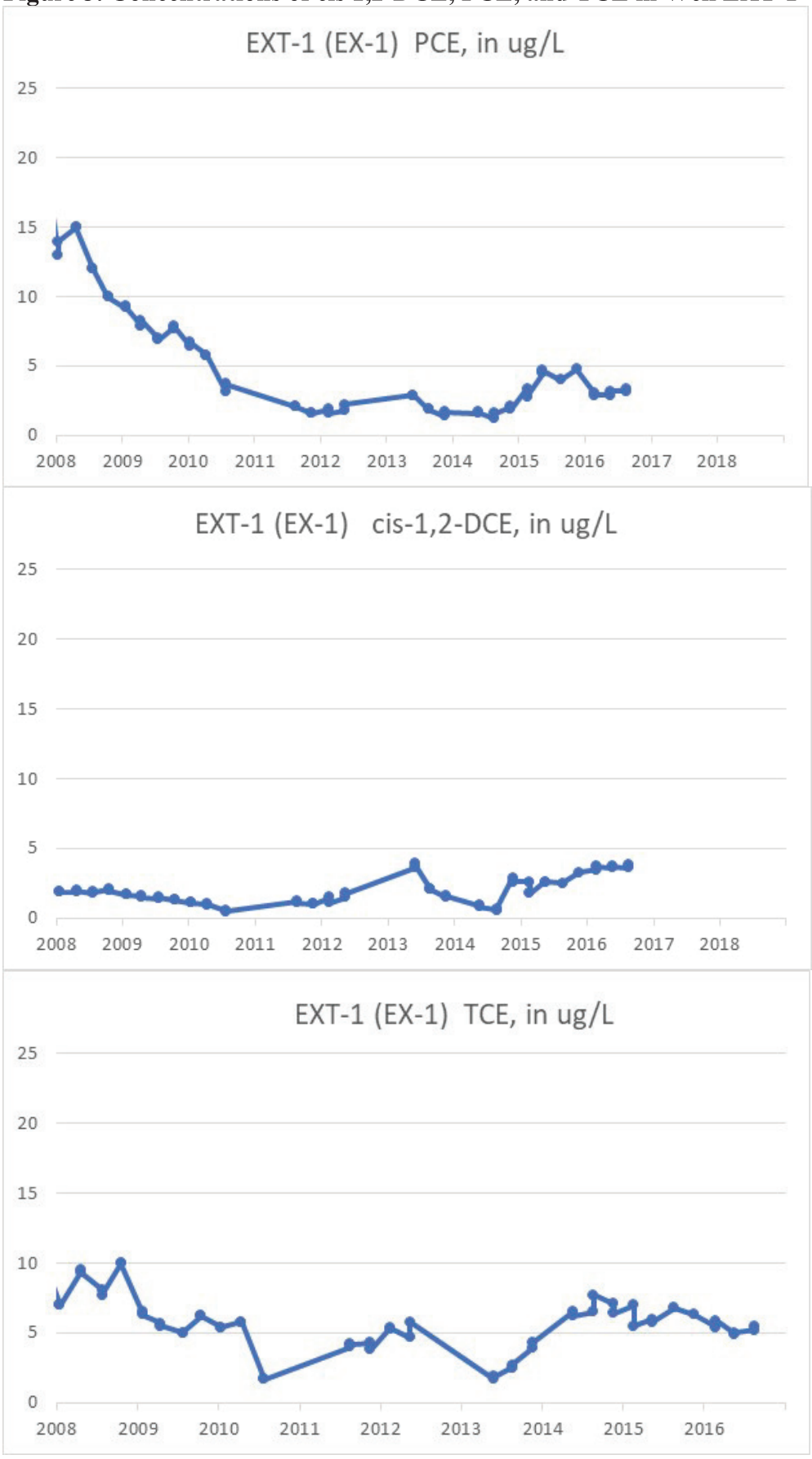


Figure 4. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EXT-2

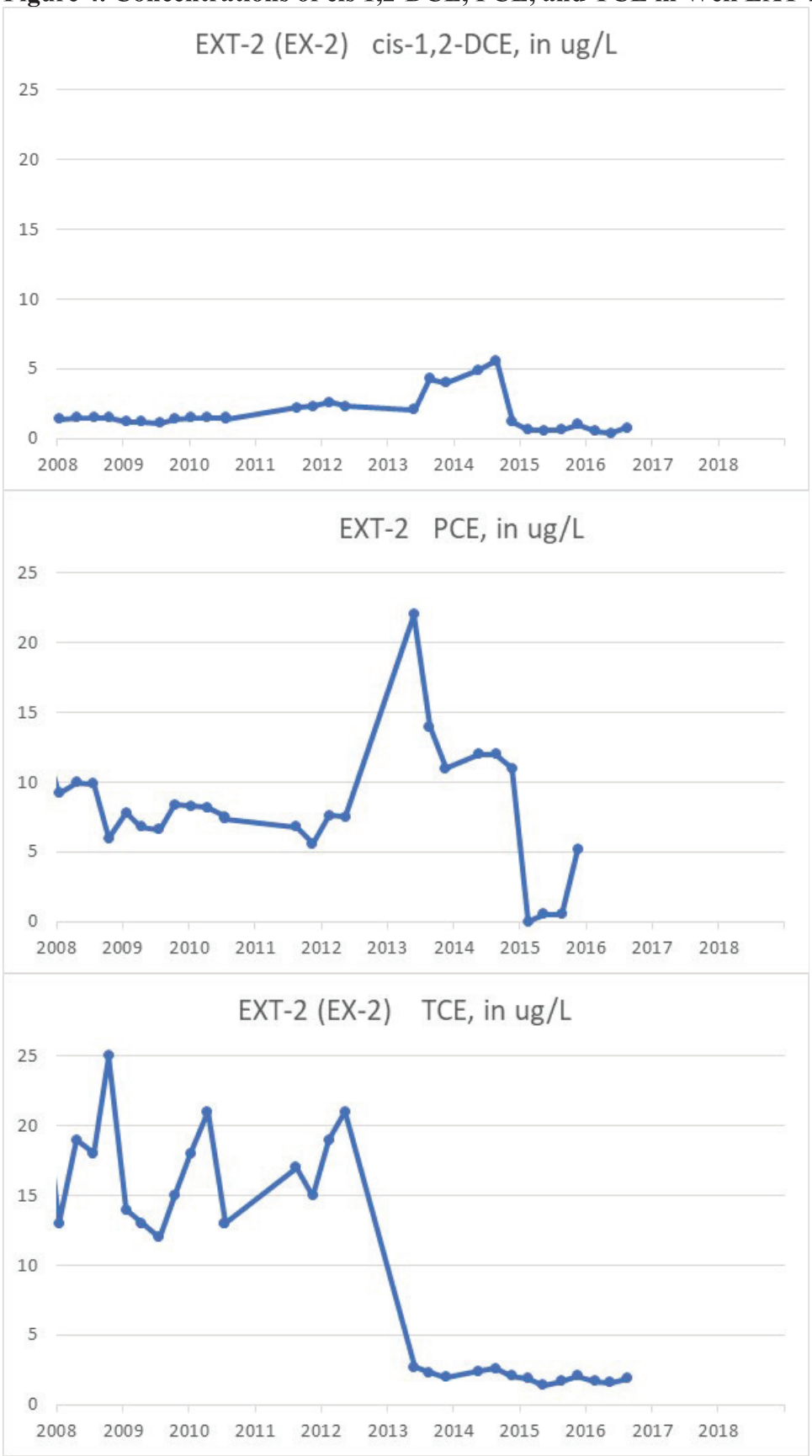


Figure 5. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EXT-3

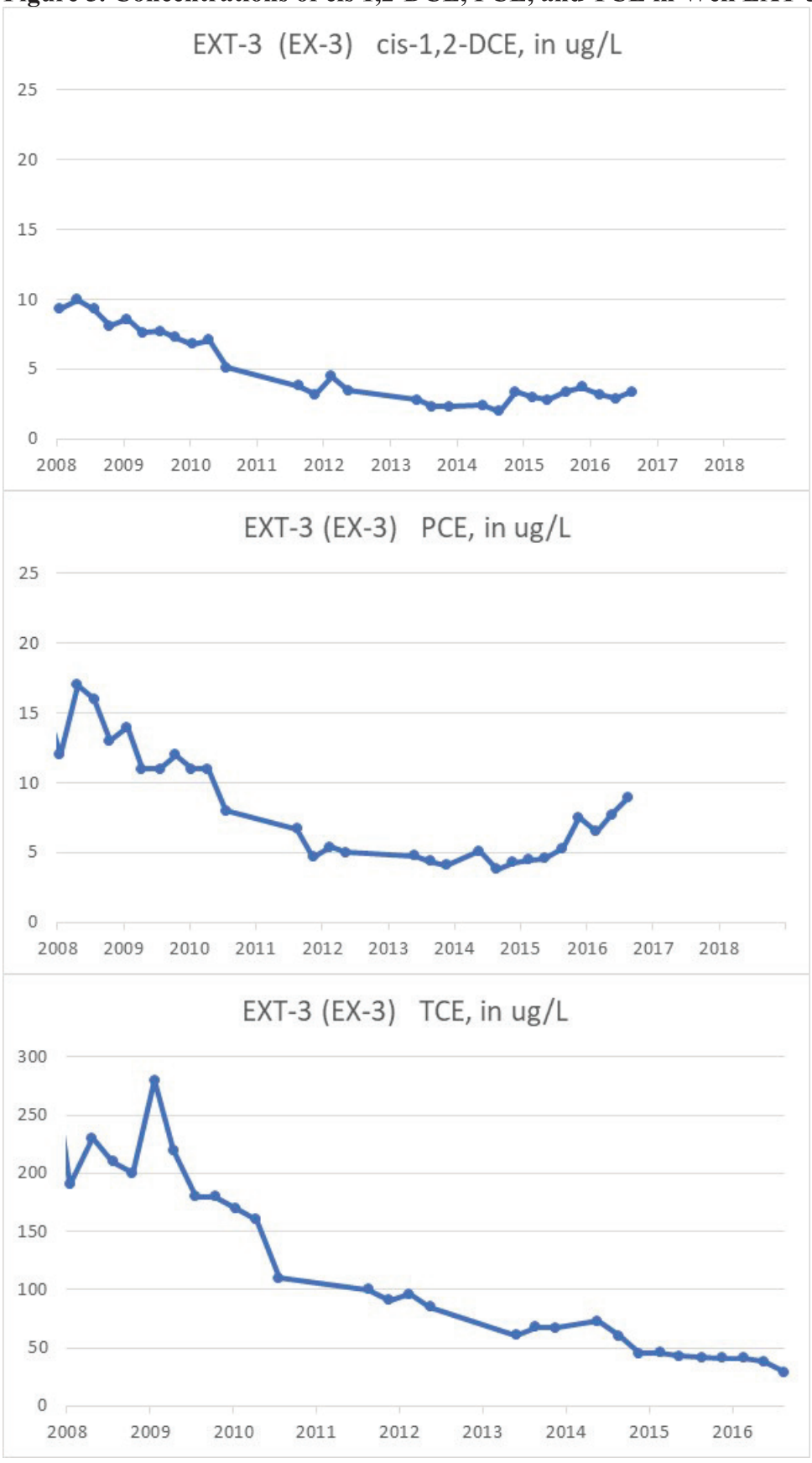
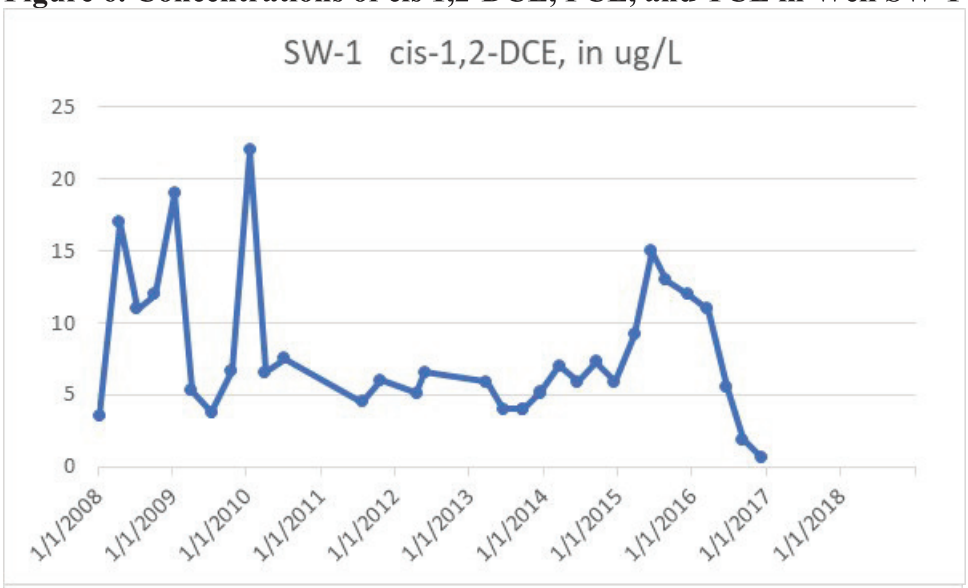
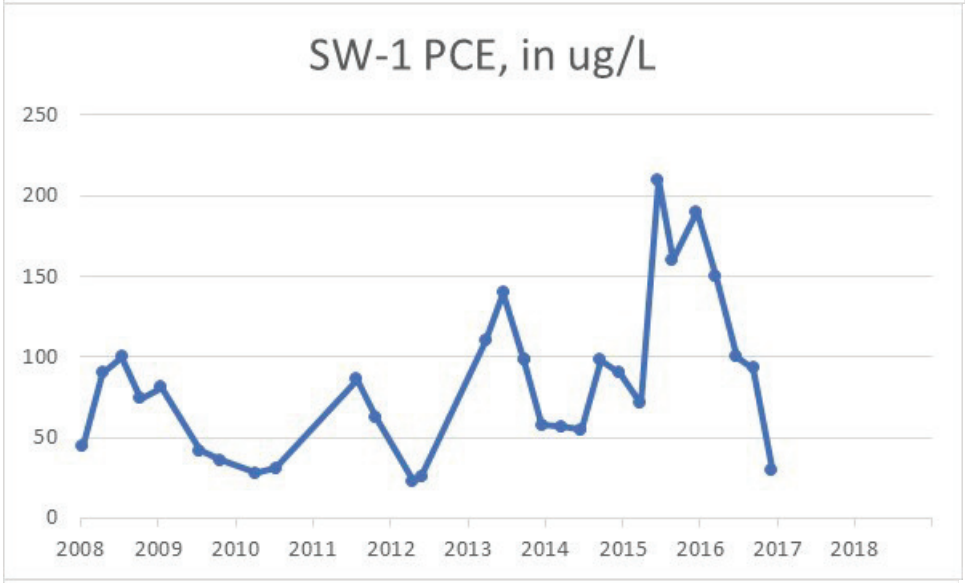


Figure 6. Concentrations of cis 1,2-DCE, PCE, and TCE in Well SW-1





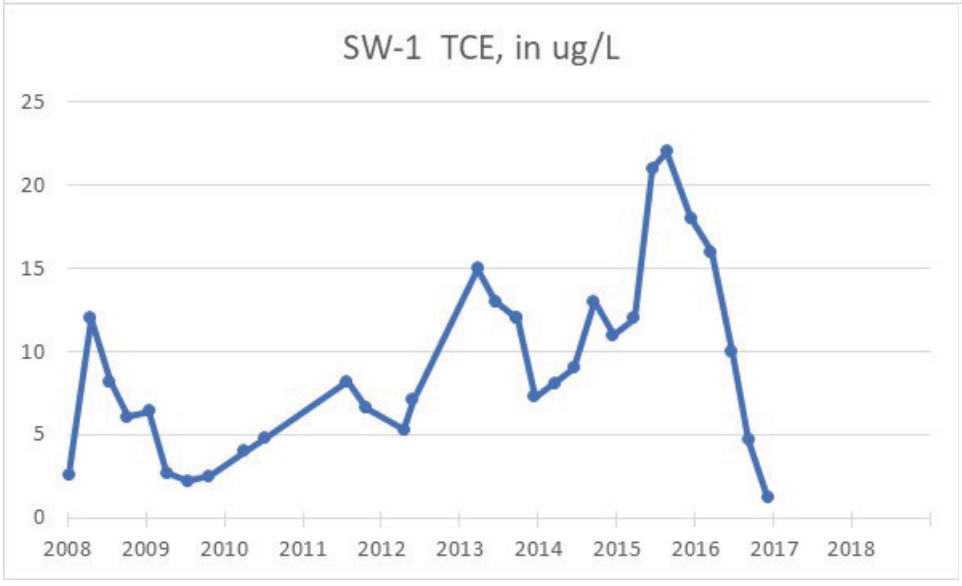


Figure 7. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EW-1A

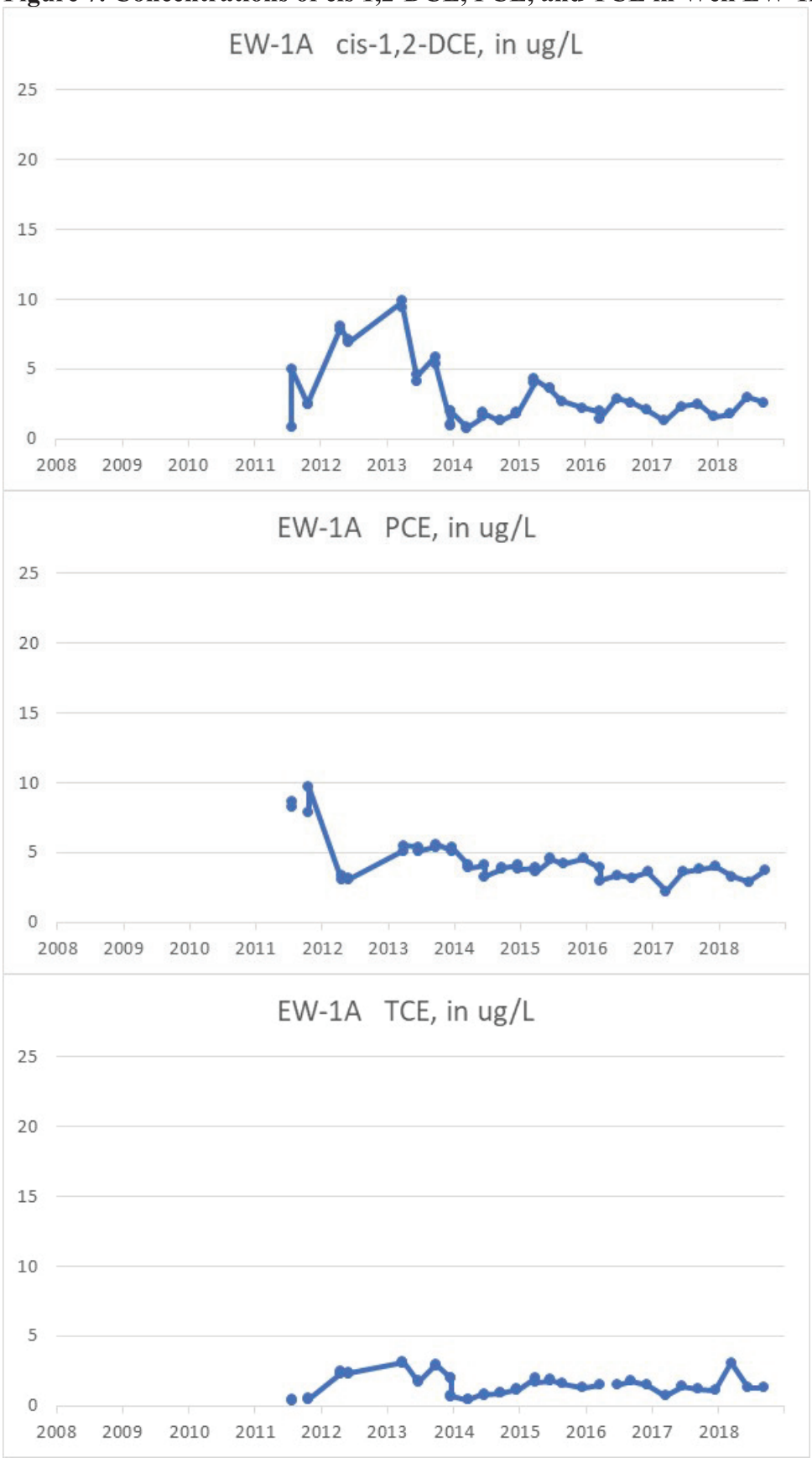


Figure 8. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EW-4A

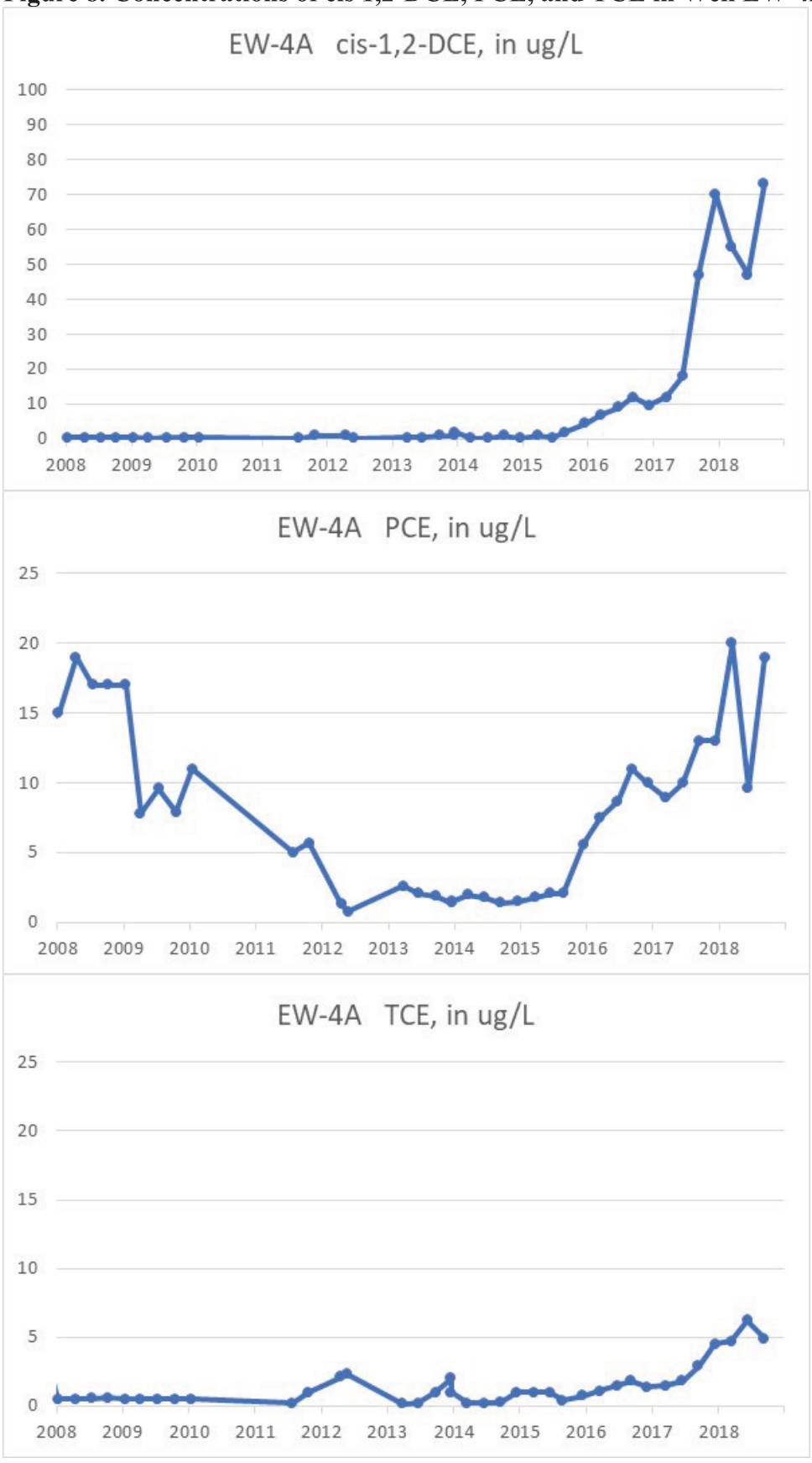


Figure 9. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EW-4B

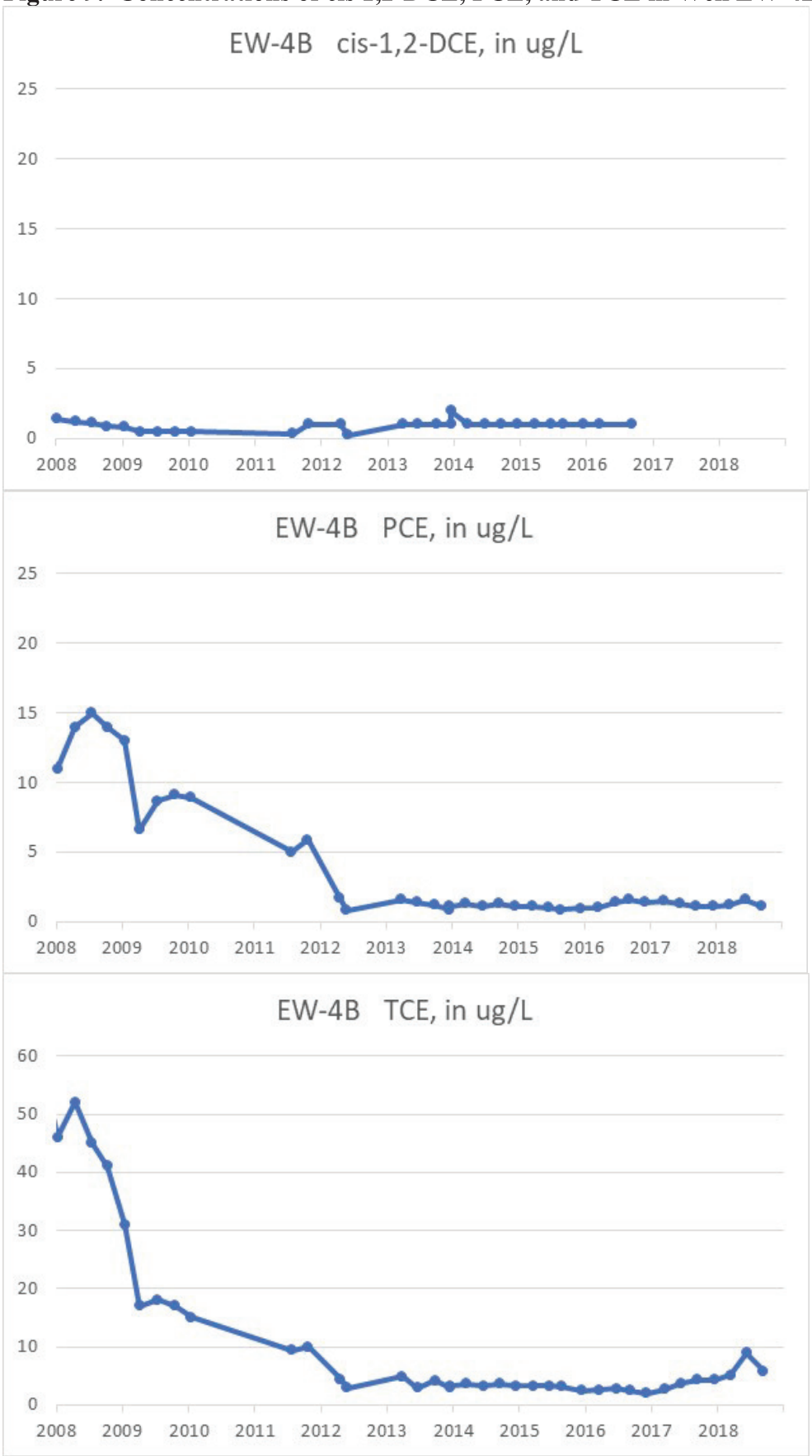


Figure 10. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EW-4C

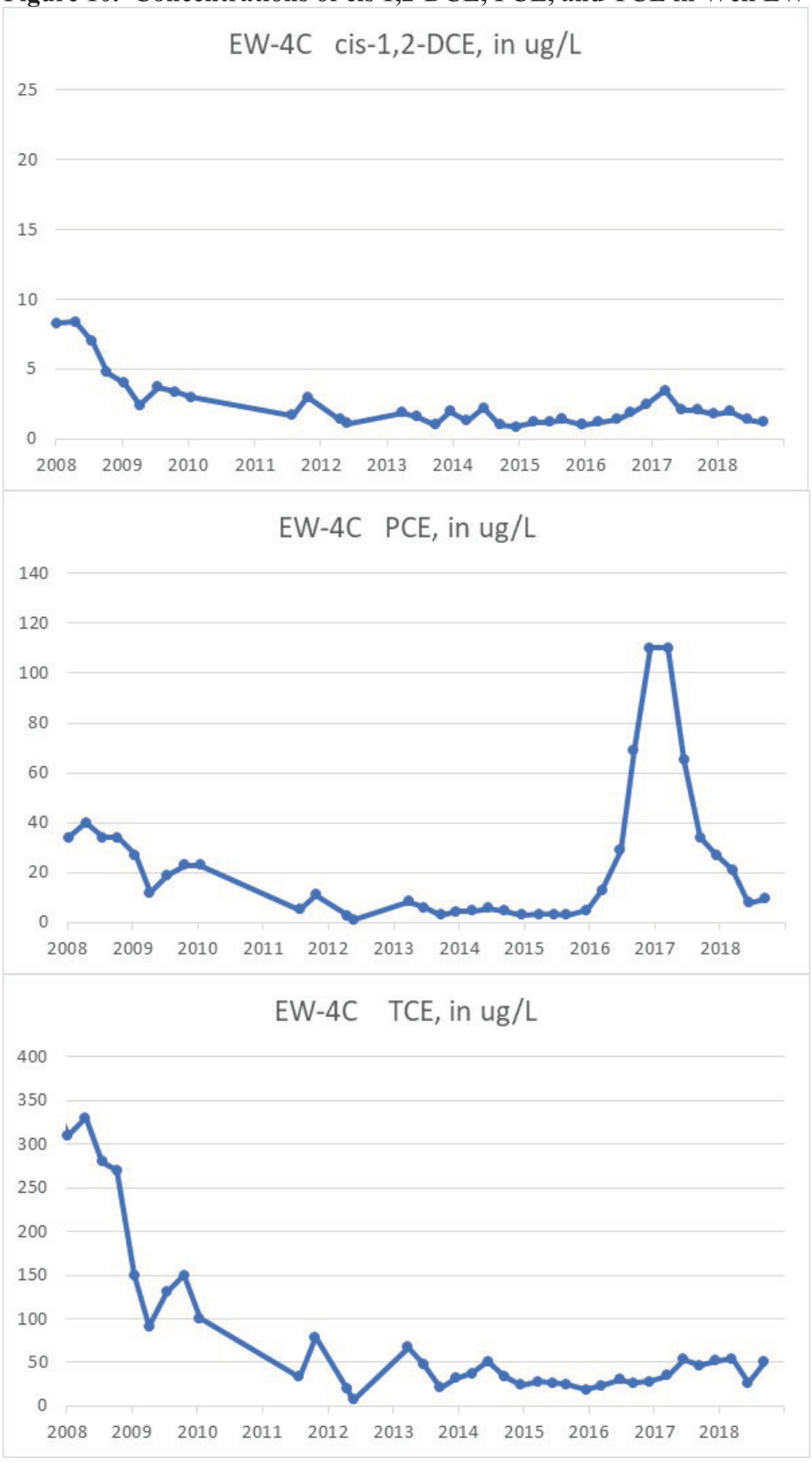


Figure 11. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EW-7C

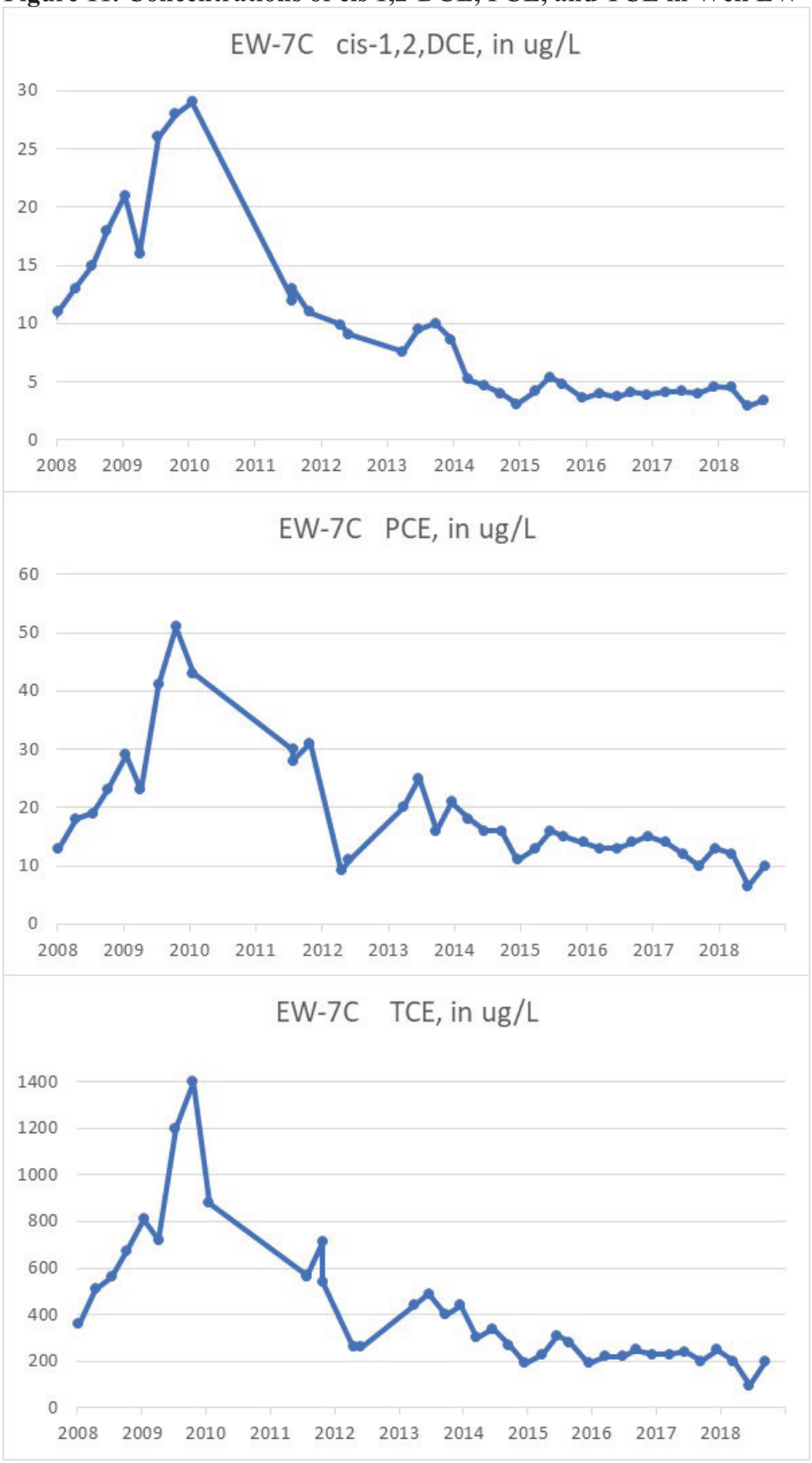


Figure 12. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EW-12D

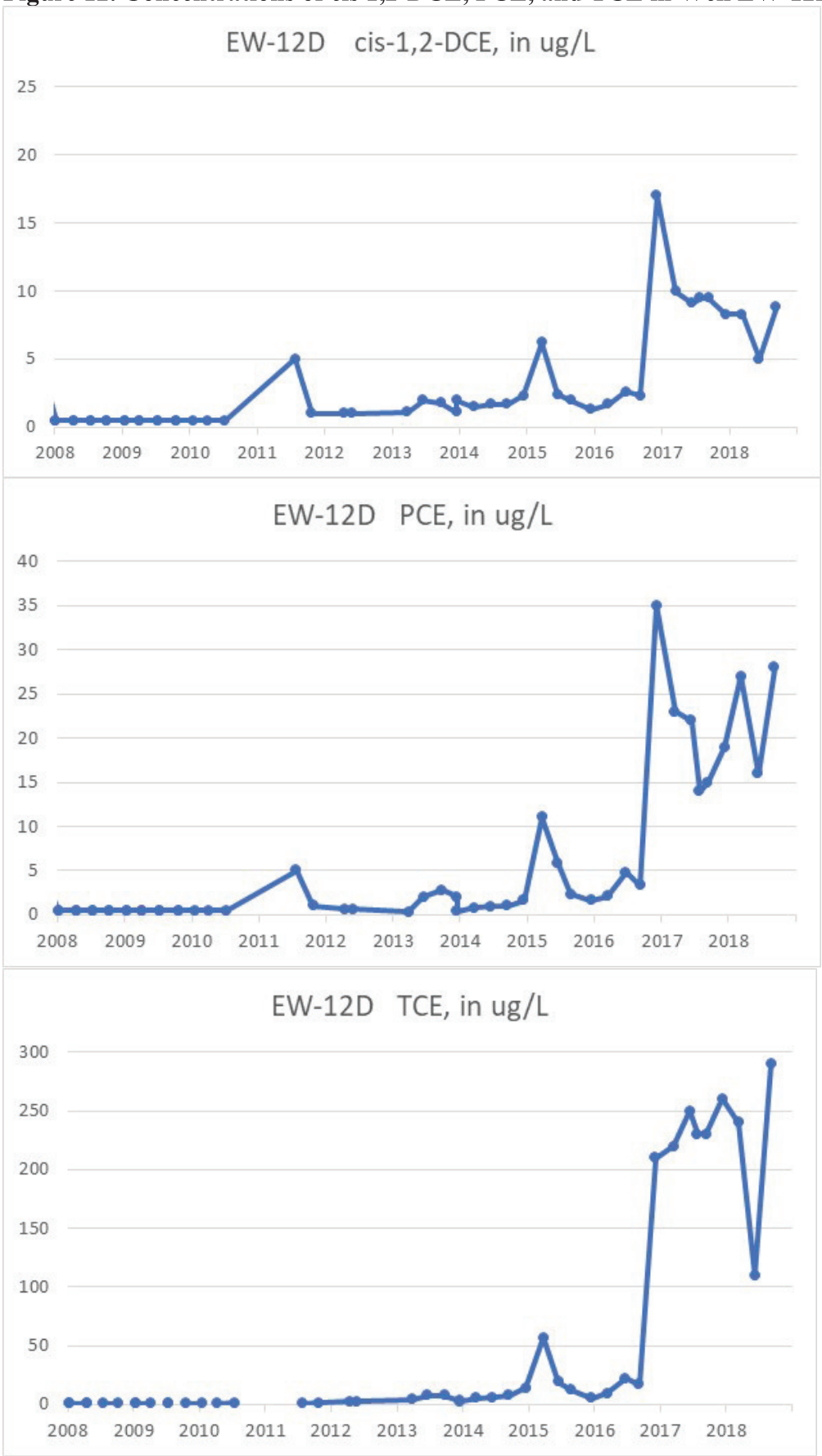


Figure 13. Concentrations of cis 1,2-DCE, PCE, and TCE in Well RW-3

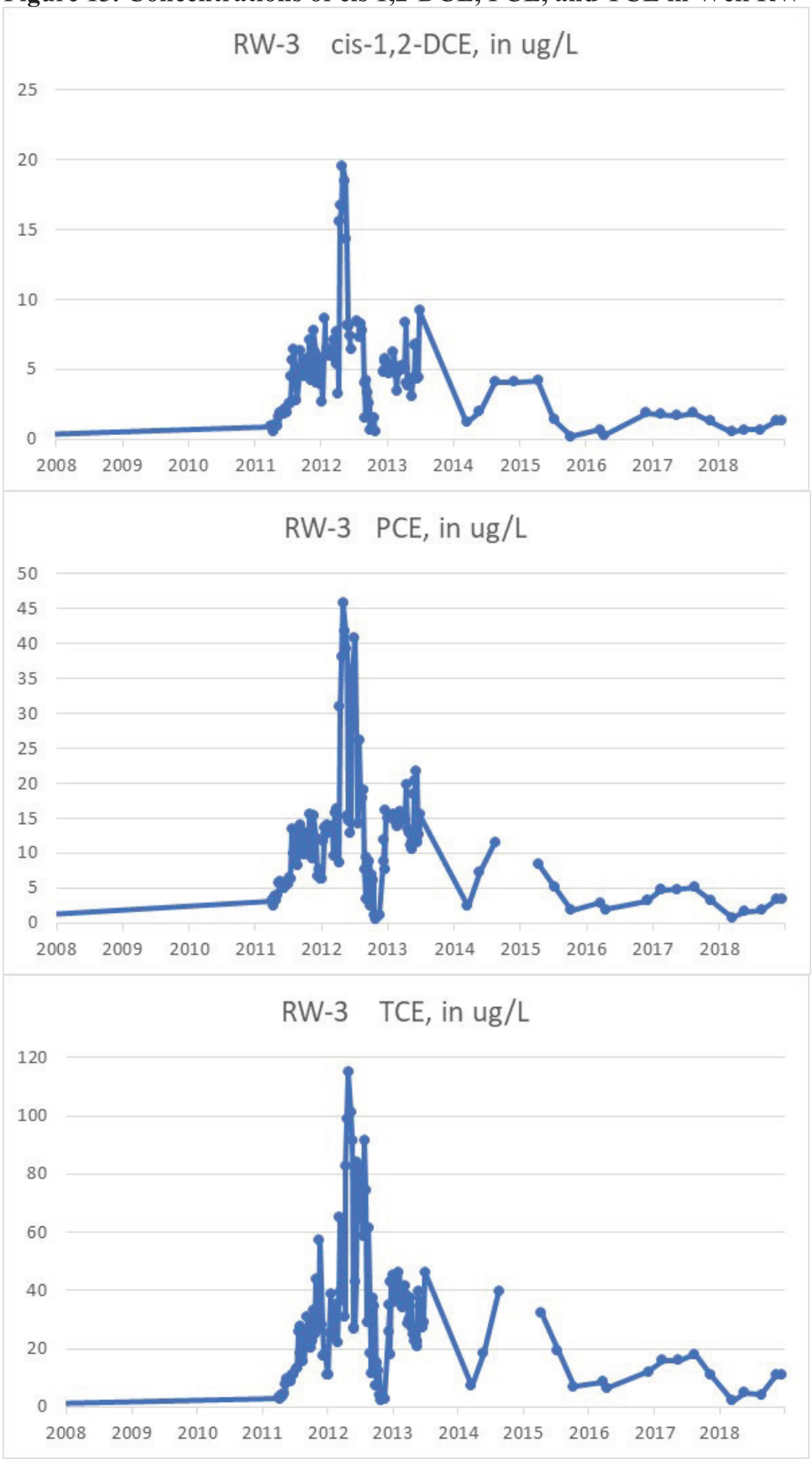


Figure 14. Concentrations of cis 1,2-DCE, PCE, and TCE in Well RW-4

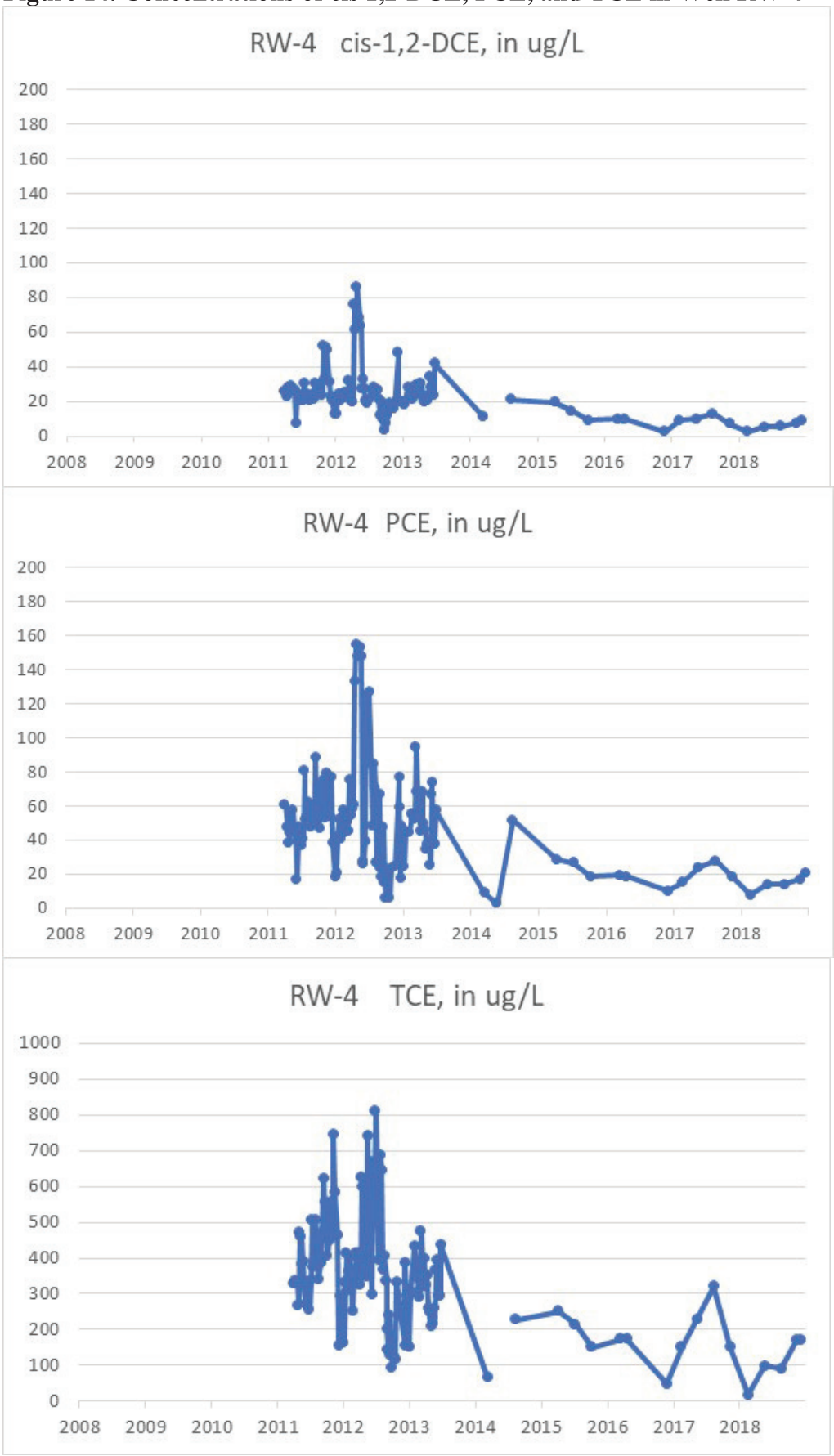


Figure 15. Concentrations of cis 1,2-DCE, PCE, and TCE in Well RW-5

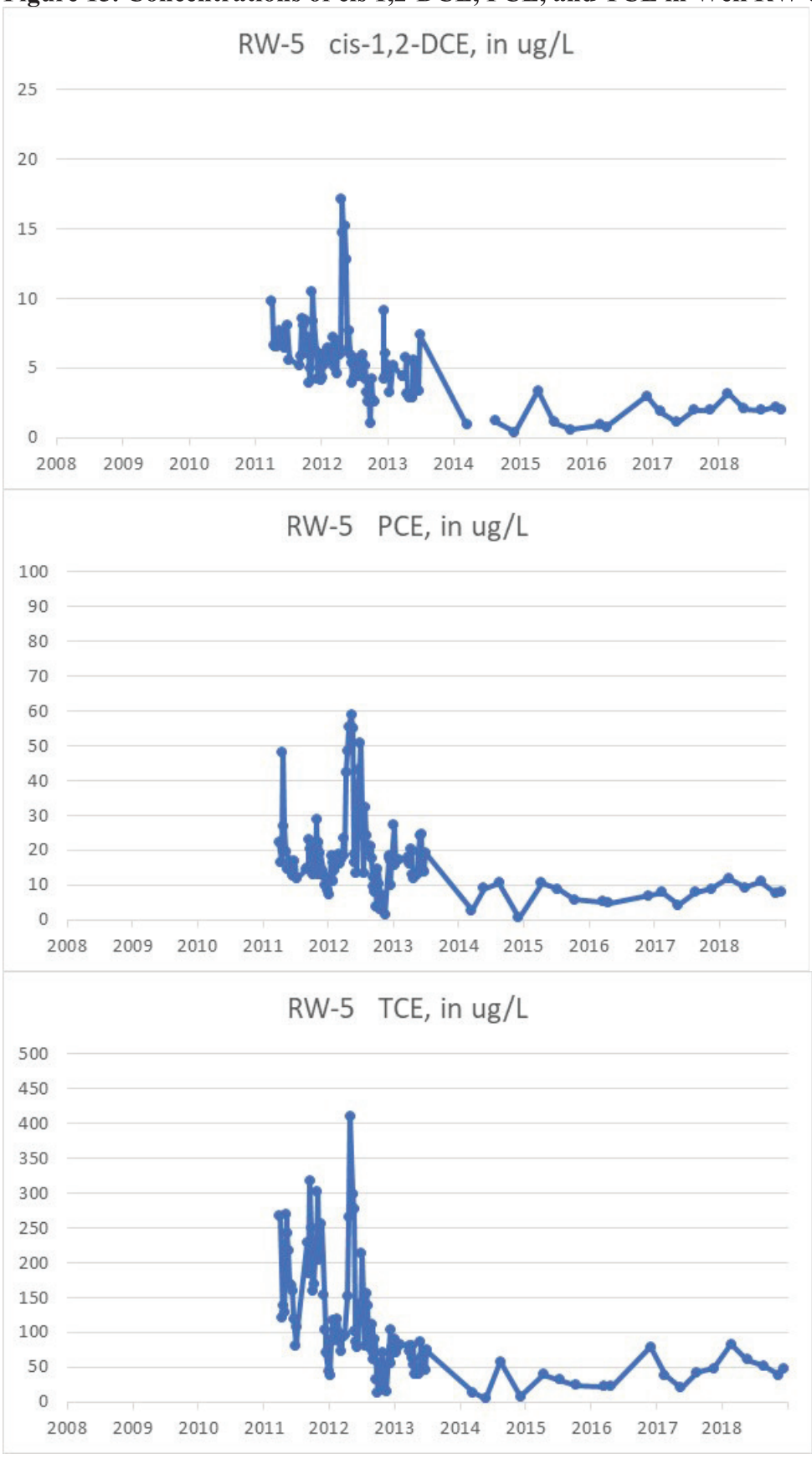
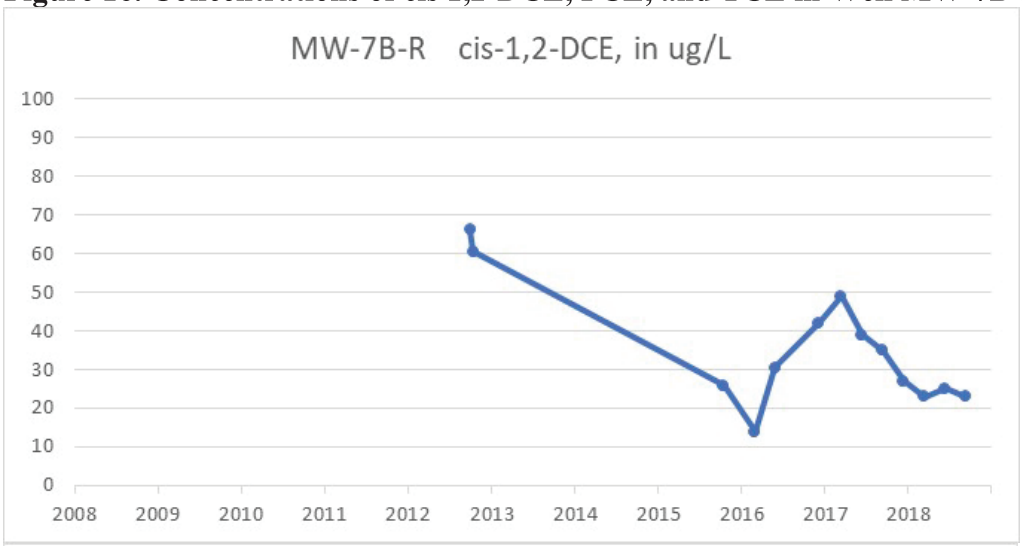
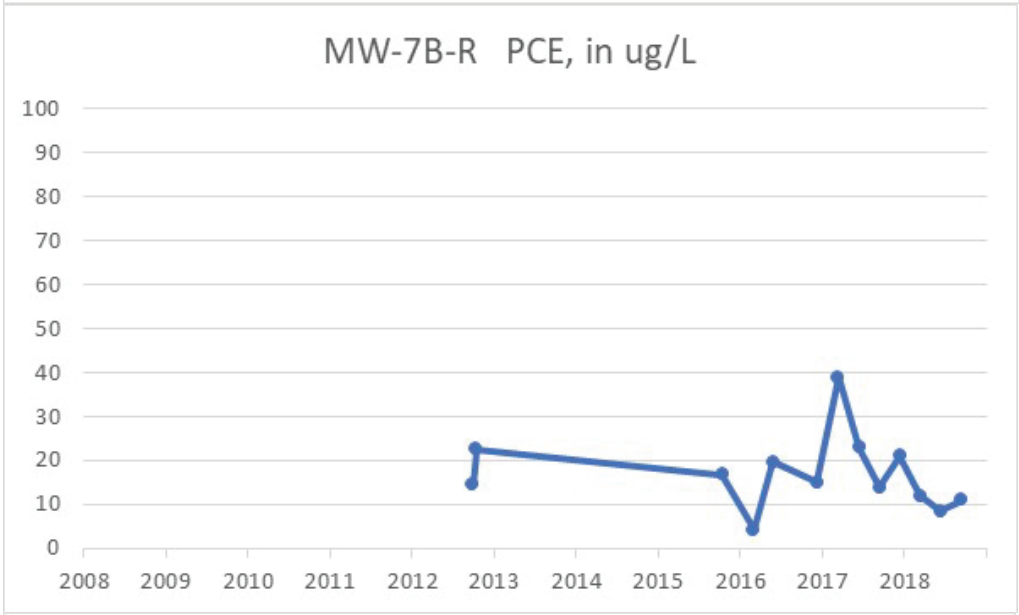


Figure 16. Concentrations of cis 1,2-DCE, PCE, and TCE in Well MW-7B-R





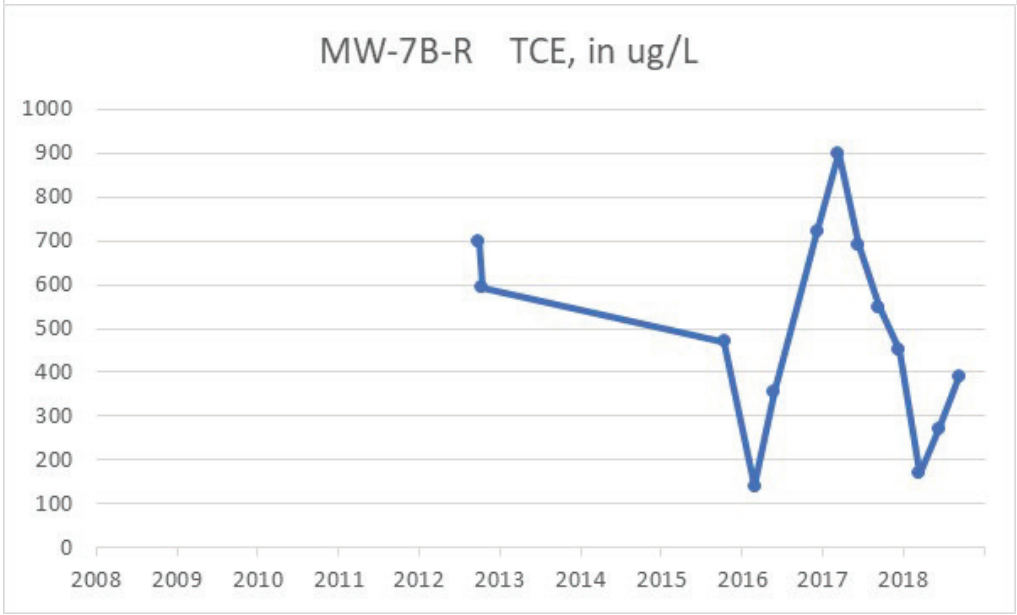


Figure 17. Concentrations of cis 1,2-DCE, PCE, and TCE in Well BP-3B

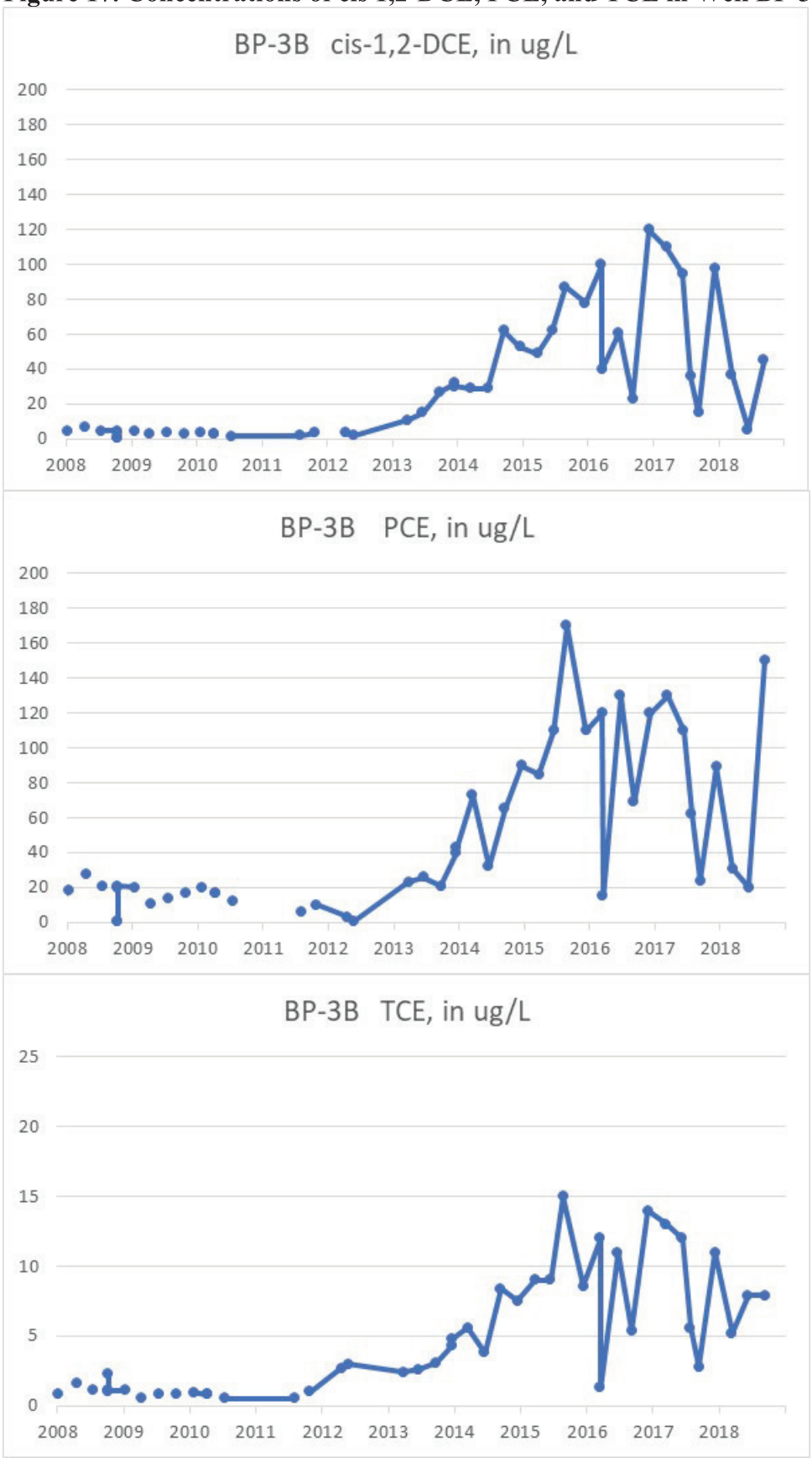


Figure 18. Concentrations of cis 1,2-DCE, PCE, and TCE in Well BP-3C

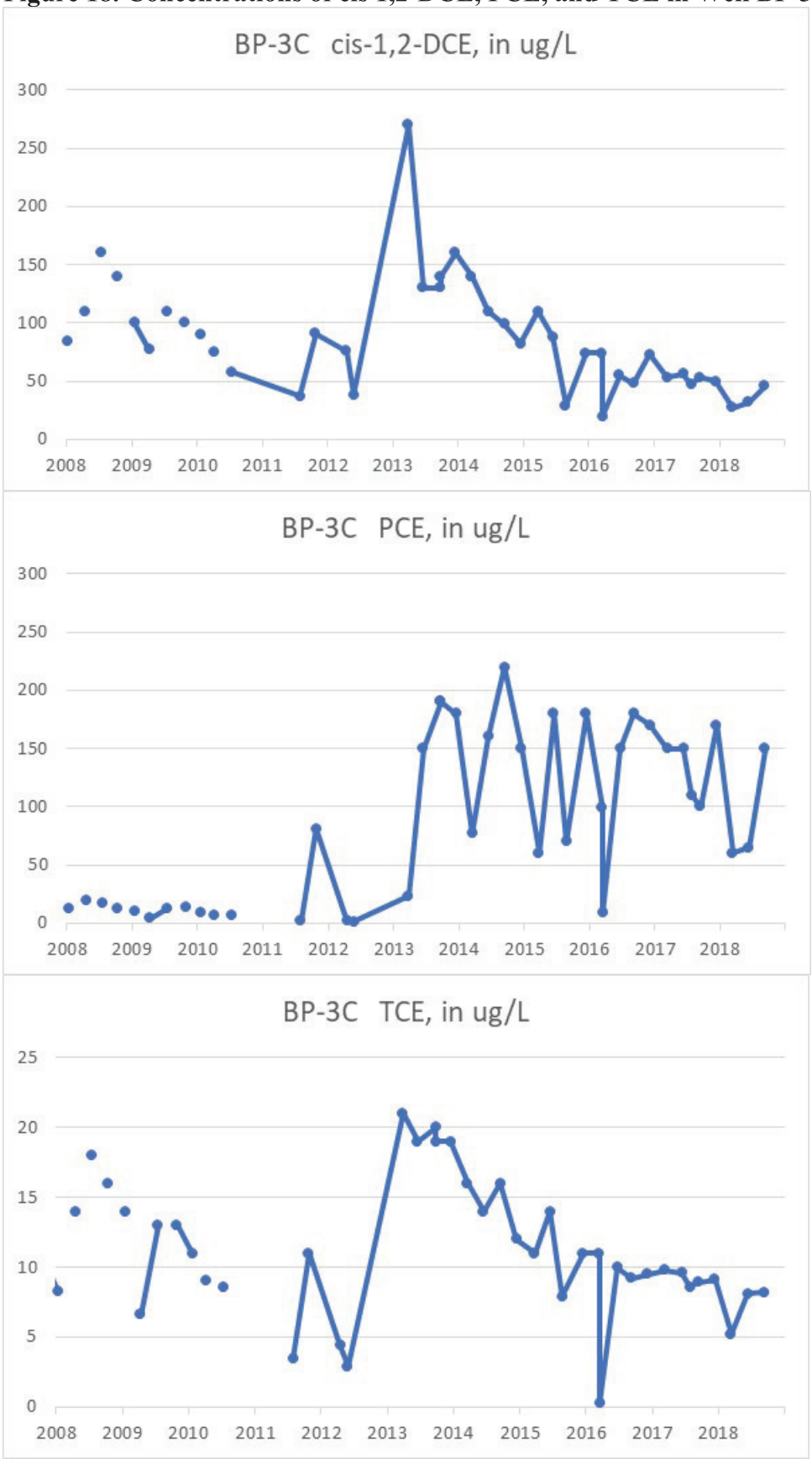


Figure 19. Concentrations of cis 1,2-DCE, PCE, and TCE in Well MW-11A

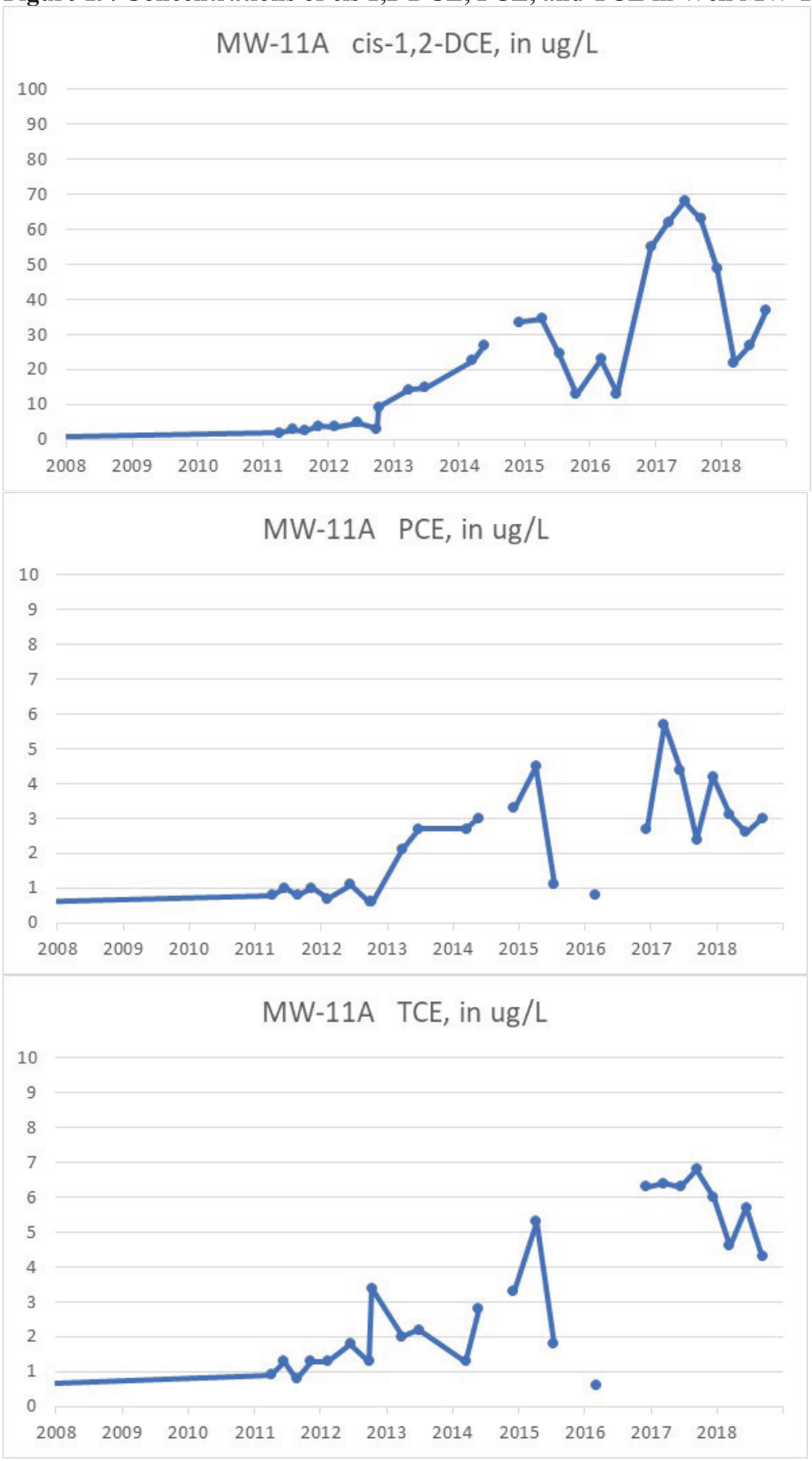


Figure 20. Concentrations of cis 1,2-DCE, PCE, and TCE in Well MW-11B