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

Prepared by

U.S. Environmental Protection Agency
Region 2
New York, New York

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Date

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LIST OF ABBREVIATIONS & ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CPC	Claremont Polychemical Corporation
CPC-ETS	Claremont Polychemical Corporation Extraction and Treatment System
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
ηg/L	Nanograms per liter
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
OBL-ETS	Old Bethpage Landfill Extraction and Treatment System
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
UU/UE	Unlimited Use/Unlimited Exposure
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 reports, 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 fourth FYR for the Claremont Polychemical Corp. Superfund site (CPC 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 sources 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 Site FYR was led by Maria Jon, EPA Remedial Project Manager (RPM). Participants included:

- Damian Duda, EPA Chief, Eastern New York Remediation Section
- Shereen Kandil, EPA Community Involvement Coordinator (CIC)
- Stephanie Kim, EPA Human Health and Ecological Risk Assessor
- Michael Scorca, EPA Hydrogeologist
- Julie McPherson, EPA Risk Assessor
- Payson Long, Project Manager, New York State Department of Environmental Conservation (NYSDEC)
- Jeffrey Dyber, NYSDEC Chief, Remedial Section D

For a list of documents reviewed in the preparation of this report please see **Appendix A**.

Site Background

The CPC Site is primarily located on a 9.5-acre parcel of land in the industrial section of Old Bethpage, Nassau County, New York (See **Appendix B - 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 CPC Site. Some of the drums were uncovered, while others reportedly were leaking. The CPC Property was sold in 2007 by EPA pursuant to the Bankruptcy Court for the Eastern District of New York order. The Court ordered the CPC Property to be sold pursuant to an auction. Old Beth II, LLC became the new owner of the CPC Property on September 28, 2007. The new 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 site (OBL Site) which is on EPA's National Priorities List (NPL) 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 (OBL-ETS) in operation. The FTC also built and operated a groundwater extraction and treatment system. The FTC Site treatment system operations were shut down in 2011 after cleanup objectives at the FTC site were achieved. Another NYSDEC Inactive Hazardous Waste Site known as the former Aluminum Louvre site, is located approximately 750 feet north (upgradient) of the CPC Site; NYSDEC has selected, but not yet implemented, remedies for the Aluminum Louvre 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 11/30/2023 - 7/23/2024
Date of site inspection: 7/22/2024
Type of review: Statutory
Review number: 4
Triggering action date: 8/28/2019
Due date *(five years after triggering action date)*: 8/28/2024

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 CPC 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 former 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 CPC Site was added to the NPL in June 1986.

An ecological risk assessment was not performed for soils since there was not suitable ecological habitat at the CPC 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 CPC Site. In September 1988, EPA's Response and Prevention Branch initiated a removal action to stabilize and isolate the leaking containers in the former 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 OU2 of the CPC Site.

Remedy Selection

EPA issued two RODs, selecting remedies for the CPC Site and two Explanation 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 the following:

- Removal of miscellaneous construction debris.
- Installation and operation of a soil vapor extraction system (SVE).
- Institutional controls (*e.g.*, requiring the current and future owners to maintain the integrity of the former 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.

Remedial action objectives (RAOs) were not explicitly identified, but the ROD discusses achieving substantial risk reduction through a combination of source control with active restoration of the groundwater and building de-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-ETS would be used to remediate the CPC off-Property groundwater plume, in lieu of constructing a new treatment system. The OBL-ETS is owned by the TOB.

Status of Implementation

Below is a description of the OUs, and the subsequent 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. OU1 remedial action activities were completed in August 1991. Cleanup levels achieved for the OU1 remedial action allowed for UU/UE; 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. The removal of construction debris, decommissioning of treatment basins and closing of septic systems were completed in September 2003.

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.

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 details for the Easements and Declaration of Covenants and Restrictions are as follows:

- Limits the use of the CPC Property to light industrial or commercial purposes;
- Grants 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 former Process Building can be removed;
- Prohibits interference with or disturbance of the operation of the groundwater treatment system, and
- Prohibits the occupation of buildings on the CPC Property without vapor sampling and mitigation, if necessary.

In March 2013, the 35,000-square foot one-story former Process Building was demolished by the property owner; however, the concrete floor of the building remained intact and undisturbed, in accordance with an institutional control required by the 2003 ESD to prevent exposure to VOC- and cadmium-contaminated soil. EPA subsequently collected soil samples from beneath the building's concrete floor slab to assess whether the soil cleanup goals for VOCs 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 stablished for the soil under the slab. 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 proper off-site disposal.

Because the 2014 excavation under the former Process Building was limited to areas of VOC contamination, some residual cadmium-contaminated soil may still be present above EPA's acceptable levels which present a risk; therefore, the concrete floor of the building must remain intact and undisturbed to prevent any exposure to cadmium-contaminated soil in accordance with the 2007 Environmental Easement/Restrictive Covenant. As a result, OU2 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. OU3 remedial action activities were completed in March 1997. The OU3 remedy achieved soil standards which allow for UU/UE; 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 CPC-

Groundwater Extraction and Treatment System (ETS). Please refer to the "Revised Approach to Groundwater Cleanup at the CPC Site" below for a discussion on the NYSDEC rationale for shutting down the OU4 CPC-ETS. The OU4 remedy is subject to this FYR.

OU5

OU5 addressed the contaminated groundwater beyond the CPC Property. This 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-ETS and re-injection of the treated water into the ground. The OU5 remedy is on-going and subject to this FYR.

OU6

OU6 addressed the decontamination of the former Process Building. The OU6 former building decontamination work began in July 1998 and was completed in December 1998. All hazardous substances, asbestos-containing materials, and salvageable materials were removed from the building and disposed of properly off-site prior to the building decontamination which consisted of dusting and vacuuming all contaminated surfaces and removing the asbestos insulation for off-site treatment and disposal. The former Process Building's walls and interior surfaces were also pressure-washed. The OU6 remedy achieved health-based standards which allow for UU/UE; therefore, the OU6 remedy is not subject to this review and does not require further evaluation in this report.

Institutional Controls

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 CPC selected 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 CPC property boundary.

OU4 - Groundwater Extraction and Treatment System

Construction of the OU4 CPC-ETS began in 1997, and the system went into full-scale operation in February 2000. In May 2011, after completion of the long-term response action (LTRA) operations, responsibility for the operation and maintenance (O&M) of the OU4 system was transferred from EPA to NYSDEC. The OU4 CPC-ETS consisted of three extraction wells: EX-1, EX-2, and EX-3 (also referred to as EXT-1, EXT-2 and EXT-3) which were installed approximately 150 feet apart, south of the CPC property.

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. When operational, EX-1, EX-2, and EX-3 extracted an average of approximately 500,000 to 560,000 gallons per day.

On October 1, 2016, at the direction of NYSDEC, the OU4 CPC-ETS was shut down and has not been in operation since that time. Please refer to the "Revised Approach to Groundwater Cleanup at the CPC Site" below for a discussion on the NYSDEC rationale for shutting down the OU4 CPC-ETS).

OU5 - Groundwater Extraction and Treatment System

EPA issued an ESD on September 29, 2000, identifying that the ongoing OBL-ETS was inadvertently capturing the CPC groundwater contamination that has migrated beyond the CPC property boundary, or OU5. Therefore, the OBL-ETS would be used to capture this plume instead of constructing a new treatment facility. This phase was addressed by NYSDEC through a municipal agreement with the TOB. The responsibility for the remediation of this plume was transferred from EPA to NYSDEC in December 2007, and the treatment facility is being operated by Ramboll Americas Engineering Solutions, Inc. (Ramboll) under a contract with the NYSDEC.

The groundwater collection system, which was managed by the TOB, originally consisted of five extraction or recovery wells: RW-1, RW-2, RW-3, RW-4 and RW-5, located approximately 800 feet apart within the Black Course, a golf course within Bethpage State Park 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 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 TOB'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 continue to capture the groundwater downgradient of the CPC Site for treatment at the OBL-ETS. The treated water is discharged into a series of TOB-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.

Pilot Study - Granular Activated Carbon (GAC) Treatment for OU5

Effluent from the OBL-ETS (OU5) at the CPC Site contains per- and polyfluoroalkyl substances (or PFAS) and 1,4-dioxane. Although the highest observations of PFAS and 1,4-dioxane are detected in wells that are not associated with CPC (as discussed further under Data Review), a pilot study consisting of the installation and operation of a temporary OU5 system upgrade to treat PFAS is being performed by NYSDEC to assess the effectiveness of granular activated carbon (GAC) in reducing PFAS concentrations in the effluent.

The temporary OU5 system upgrade started in late April 2024, and is intended to treat PFAS compounds in the water for a duration of up to 5 months. The system upgrade consists of two ten-foot diameter, 20,000 lbs. GAC vessels, piped and valved in a lead-lag series configuration. The water entering the OBL-ETS upgrade has been previously treated to remove VOCs using the existing air stripper. Upon completion of the pilot study, the OU5 system upgrade will be dismantled, and the results analyzed by Ramboll and reported to NYSDEC.

Revised Approach to Groundwater Cleanup at the CPC Site

In 2016, the NYSDEC informed EPA that the combined operation of both the CPC-ETS (OU4) and the OBL-ETS (OU5) to remediate the Claremont contaminant plume was no longer economically and technically warranted. Based on the monitoring performed, the NYSDEC had concluded that: 1) the contamination persisting in groundwater at the CPC property and 2) the removal efficiencies achieved by the CPC treatment plant (OU4) no longer supported the continued operation of that system. Therefore, the NYSDEC shut down the CPC-ETS in October 2016 and maintained operational responsibility of the OBL-ETS. Hence, it was anticipated that any impacted groundwater, in low exceedance of applicable cleanup criteria, would be captured by the OBL-ETS at the down-gradient extraction wells, specifically RW3, RW-4 and RW-5. EPA agreed with the NYSDEC decision to shut down the CPC-ETS OU4.

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. Please see **Appendix C - Climate Assessment**.

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 2019 FYR

OU #	Protectiveness Determination	Protectiveness Statement
2	Protective	The remedy for OU2 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	Short-term Protective	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	Short-term Protective	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.

Table 3: **Status of Recommendations from the 2019 FYR**

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
OU5	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 levels 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.	Ongoing	The Aluminum Louvre NYSDEC March 2013 ROD is currently in the design phase.	

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

On August 7, 2023, EPA Region 2 posted a notice on its website indicating that it would be reviewing site cleanups and remedies at Superfund sites in New York, New Jersey, Puerto Rico and the U.S. Virgin Islands, including the Claremont Polychemical Corporation Superfund Site. The announcement can be found at the following web address: https://www.epa.gov/superfund/R2-fiveyearreviews.

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 July 2, 2024, with a request that the notice be posted on the TOB webpage. The purpose of the public notice was to inform the community that the EPA would be conducting the fourth 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 CPC 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. **Figure 2** depicts the location of monitoring wells and extraction wells.

Shallow on-property monitoring well SW-1 (screened 65-70 feet deep), which had the highest historical detection of PCE (3,600 ug/L in 2004) in the groundwater on the CPC property, showed a temporary increase in PCE and TCE concentrations around the time of the supplementary source excavation that was completed in August 2014, but values had declined significantly by 2017 (**Figure 3**). During the current FYR review period, PCE concentrations have increased again to as high as 500 ug/L in March 2022, and then declined to 87 ug/L in August 2023, followed by an increase to 280 ug/L in March 2024.

Nearby off-property shallow well EW-1A (screened 65 to 75 feet deep) has shown stable and low concentrations of VOCs since 2013, usually below drinking water standards (**Figure 4**).

Well EW-4A (screened 100 to 115 feet deep) is a shallow well located to the east of the CPC property. Since 2016, concentrations of cis-1,2-DCE (typically a breakdown product of TCE and PCE) have continued to increase at this well (**Figure 5**). PCE and TCE have also shown some

increases since 2016. The prevalence of cis-1,2-DCE suggests that some natural degradation is occurring in this zone. The increasing PCE concentrations could be related to some residual contamination on the CPC property, which could be causing the increasing trends observed in wells EW-4A and SW-1. Intermediate depth well EW-4B (screened 120-130 feet) has shown low, stable concentrations of VOCs during this FYR period (**Figure 6**).

Some deeper wells (EW-04C, EW-7C, EW-12D), see **Figures 7, 8,** and **9**, near the CPC Site have shown elevated concentrations of VOCs, particularly TCE, in the areas side- and up-gradient of the CPC Site. Well EW-7C (screened 189-199 feet deep), has elevated TCE concentrations, with lesser concentrations of PCE. See **Figure 8.** The major source of this TCE-predominant contamination is considered to have entered the aquifer from a source located upgradient of the CPC property and migrated beneath the bulk of the CPC 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 Aluminum Louvre site, a NYSDEC Superfund site, is located approximately 750 feet north (upgradient) of the CPC Site. Groundwater data from the former Aluminum Louvre site has been observed at levels up to 3,000 µg/l of TCE and 130 µg/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.

Well EW-04C (screened 145-155 feet deep) usually has higher TCE than PCE concentrations and is likely also affected by the contamination migrating from the source upgradient of the CPC site. See **Figure 7**.

Well EW-12D (screened 209-219 feet deep) is about 400 feet further east of the CPC property. It has shown increasing trends of PCE, TCE, and cis-1,2-DCE since 2017, but TCE remains well above PCE, and this well is likely also affected by the upgradient contamination source. See **Figure 9**.

The OU5 OBL-ETS is south of the CPC property and was established to treat groundwater affected by the OBL. In 2000, a study revealed that three of the OBL Site groundwater recovery wells (RW-3, RW-4, RW-5), previously installed to control landfill related groundwater impacts, were also capturing the CPC off-Property groundwater plume. In September 2000, EPA, in consultation with NYSDEC, issued an ESD that stated that the OBL-ETS would be the operating treatment system 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 OBL-ETS is currently operating under an equivalency permit from the NYSDEC. All analyzed parameters for the effluent (treated) water have been below discharge permit limits.

During this FYR period, there were several periods of shutdown of individual extraction wells as a result of mechanical issues. Following repairs, the OU5 OBL-ETS had an average daily flow of 818,838 gallons per day (gpd) in the fourth quarter of 2023 (about 560 gpm), with the system operating all three recovery wells.

The primary VOC constituent recovered from the OU5 recovery wells is TCE, with lesser concentrations of PCE. During this reporting period (2019 - 2024), TCE concentrations in

recovery well RW-3 (screened 163-255 feet deep) ranged from 11 to 37 µg/1 and PCE concentrations ranged from 3 to 5.1 µg/1. In well RW-4 (screened 147-250 feet deep), TCE concentration levels ranged from 150 to 240 µg/1 and PCE concentrations ranged from 17 to 26 µg/1. In recovery well RW-5 (screened 153-263 feet deep), TCE concentration levels ranged between 3.5 and 43 µg/1 and PCE concentrations ranged from 2.9 to 8.7 µg/1. See **Figures 10**, **11,** and **12**.

A few monitoring wells downgradient of the OU5 extraction wells have elevated VOC concentrations. Monitoring well MW-7B-R (screened 230-235 feet deep) is located near extraction wells RW-3 and RW-4 and is screened in a deep part of the aquifer. The TCE concentrations in this well, which reached as high as 900 µg/L in 2017 before declining to 52 µg/L in 2024, appear to be primarily from the source(s) located upgradient of the CPC Site. See **Figure 13** for trends. Groundwater data analysis and capture zone flow modeling in 2019 for the three OBL recovery wells (used for CPC OU5 extraction) confirmed that the combined effect of the three recovery wells (RW-3, RW-4 and RW-5) when operating as designed is to laterally capture the CPC plume. However, the analysis indicates that a significant part of the TCE plume from the upgradient source is only being partially captured by the combined capture zone of the OU5 recovery wells. The model analysis concluded that it is possible that some contaminant mass could migrate beneath the limited influence of the combined capture zones of the recovery wells in the deeper aquifer.

At the further downgradient well cluster BP-3, VOCs in well BP-3B (screened 215-235 feet deep) had declined with the start-up of the FTC recovery system and began to rise again at about the same time that FTC shut down its recovery well system (around 2011). During the third FYR period, groundwater in the further downgradient monitoring wells BP-3B (screened 215-235 feet deep) and BP-3C (screened 280-300 feet deep) contained significantly increased levels of PCE and cis-1,2-DCE, relative to previous FYR periods, with some lesser increases of TCE. During the last five years, the VOC trends have been declining or generally stable at lower values than those observed in 2018. See **Figures 14** and **15** for trends.

The beginning of the concentration increases in 2013 coincided with the suspension of pumping operations at the FTC. The FTC is south and west of the OBL; however, the past pumping of its extraction wells could have influenced regional groundwater flow directions near the BP-3 and MW-11 monitoring well clusters.

Wells MW-11A (screened 140-145 feet deep) and MW-11B (screened 240-245 feet deep) are about 2,000 feet further downgradient. At well MW-11A, PCE and TCE concentrations have been fairly steady with some variability between sampling rounds. The concentrations of cis-1,2-DCE reached a maximum of 68 ug/L in 2018, declined until 2020, and then started to increase again to 47 ug/L in 2024. See **Figure 16**. At well MW-11B, PCE, TCE, and cis-1,2-DCE concentrations all increased to some degree during this FYR period. See **Figure 17**. The concentration of cis-1,2-DCE (a common degradation product of PCE and TCE) is the predominant VOC at both wells, which suggests that a significant level of biodegradation is occuring as the VOCs have progressed along the flowpath and broken down over time and distance from upgradient sources.

In July 2018, groundwater monitoring began at six far downgradient sentinel wells to the three Farmingdale public supply wells. These sentinel monitoring wells are presently sampled as part

of the Claremont OU5 groundwater quarterly monitoring program. Well MW-CPC-36 (screen depth 246-256 ft bgs) is located somewhat upgradient of and just about halfway between two Farmingdale supply wells. Its location is about 1,200 feet west of the main flowpath of migration from the CPC Site. PCE has ranged from a maximum concentration of 67 ug/L in 2019 to as low as 11 ug/L in 2021, followed a period of variability, and a recent concentration of 62 ug/L in 2024. See **Figure 18.** Concentrations of TCE and cis-1,2-DCE have also been variable. Concentrations of TCE are significantly lower than PCE or cis-1,2-DCE, and have not exceeded 10 ug/L during the last five years. Well MW-CPC-36 also contains significant levels of chemicals not related to CPC, which may indicate other sources of contamination to this well. Samples show benzene ranging between 14 and 70 ppb, cis-1,2-DCE ranging between 34 ppb to 70 ppb, and PFAS greater than 100 parts per trillion (ppt). The concentration of 1,4-dioxane has been rising from 2.9 to 17 ppt in 2024.

Only two sentinel wells contain PCE, Well MW-CPC-36 (62 µg/L in 2024) and MW-CPC-41 (6.2 µg/L in 2024 µg/L at 263 feet deep); the other public-supply sentinel wells do not have PCE. The PFAS compounds are commonly detected at the six sentinel wells, with the highest total PFAS results observed at well MW-CPC-36 (310 ηg/L in 2023). The NYS MCL for perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), the two primary PFAS compounds detected, is 10 ηg/L. The EPA MCL for PFOS and PFOA is 4.0 ηg/L. It should be noted that the highest observations of PFAS in all of the network wells are detected in wells that are not associated with CPC (*e.g.*, MW-6B (323 ηg/L in 2017), MW-6D (255 ηg/L in 2017), MW-6E (247 ηg/L in 2017), OBS-1 (259 ηg/L in 2017), LF-2 (463 ηg/L in 2017), LF-3 (80 ηg/L in 2017), all near the landfill and/or FTC). PFOA and PFOS also exceeded the EPA MCL of 4 ηg/L in MW-CPC-36 (PFOS: 140 ηg/L and PFOA:110 ηg/L), MW-CPC-37 (PFOA: 28 ηg/L), and MW-CPC-41 (PFOS: 22 ηg/L and PFOA: 26 ηg/L). The highest values of 1,4-dioxane in sentinel wells were observed in MW-CPC- 36 (6.8 µg/L in 2023) and MW-CPC-37 (19 µg/L in 2023). The NYS MCL for 1,4-dioxane is 1 µg/L. The highest levels of 1,4-dioxane in the well network are in wells that are not associated with CPC as well (*e.g.* upgradient EW-7C (53 µg/L in 2017) and EW-07D (86 µg/L in 2017), MW-6B (250 µg/L in 2017), MW-6D (160 µg/L in 2017), MW-6E (130 µg/L in 2017), and LF-2 (390 µg/L in 2017)). These wells were not sampled during this FYR period. EPA will continue to work with NYSDEC to determine future 1,4-dioxane and PFAS sampling needs. Any further updates related to the toxicity values of emerging contaminants of concern will also be monitored through the next FYR period.

In general, the Claremont plume migrated from the CPC property towards the south and southeast. The PCE observed at MW-CPC-36 is to the west of the natural plume direction. Although other aquifer stresses (such as pumping of the FTC recovery system) could have influenced flow, the distance from the main flowpath, and the presence of other chemicals significantly different from the Claremont plume, suggests that CPC is not the major contributor of contamination to MW-CPC-36 nor any of the other sentinel wells.

In summary, there are multiple sources of contamination in the area surrounding the CPC property, including Aluminum Louvre, Old Bethpage Landfill and the Firemen's Training Center. The contamination from the CPC Site (PCE dominant) has been/is captured by the OBL (CPC OU5) recovery wells, which was confirmed by modeling analysis in 2019. Some monitoring wells that are farther downgradient of the OU5 wells contain some PCE, but other chemicals that are not associated with the CPC are also found in most samples, suggesting that additional sources are contributing.

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 a ROD was issued in March 2013 for the on-site contamination. This deep TCE plume emanates from the Aluminum Louvre 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 NYSDEC March 2013 ROD for the Aluminum Louvre site is currently in the remedial design phase. A second ROD was also issued by NYSDEC in March 2019 that addresses a portion of the off-site plume. The Aluminum Louvre groundwater remedy does not address the groundwater contamination beneath the CPC property or groundwater downgradient of the CPC property. The 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 site, are being implemented.

OU2 - CPC Soil under the Former Process Building

Sampling for soil beneath the concrete slab is not being performed as the VOC contamination impacting groundwater was removed by excavation in 2014. There are no exposures to soil which may still contain elevated levels of cadmium under the slab and the ICs currently in place restrict future uses of the property.

Site Inspection

A Site inspection was conducted on July 22, 2024. The following parties were in attendance:

- Maria Jon, EPA RPM
- Julie McPherson, EPA Risk Assessor
- Payson Long, NYSDEC Project Manager
- Jeffrey Dyber, NYSDEC Chief, Remedial Section D
- Brian Dunn, Operator with Groundwater and Environmental Services, Inc. (GES) – subcontractor to Ramboll
- Andrew Leitzinger, PG - Geologist/Senior Manager with Ramboll Americas Engineering Solutions, Inc.

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. NYSDEC executed a Consent Order with the tenant on August 2, 2018, requiring them to clean up the property. The inspection revealed that stockpiles of unprocessed concrete, soil and asphalt, as well as open containers of diesel fuel and oil that were abandoned by the tenant had been removed.

The OU5 OBL-ETS 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. The VOC-contaminated soils were excavated with off-site disposal or treatment and the contaminated materials, with the exception of some cadmium-contaminated soil located below the former Process Building slab, were removed from the Site. Contaminated groundwater is extracted and properly treated. Review of data indicates the 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. Additionally, groundwater extraction from RW-3, RW-4 and RW-5 continues to treat some impacted groundwater associated with the former Aluminum Louvre site. However, the groundwater that flows under the CPC Site from upgradient sources may continue past the CPC off-Property groundwater recovery wells (OU5) operated by NYSDEC at the OBL site. Therefore, the downgradient wells should continue to be monitored to further support that upgradient sources are impacting these wells. Continued monitoring will also aid in evaluating whether remedy implementation at the upgradient sources is reducing concentrations of VOCs in groundwater at locations downgradient of the CPC 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 Process Building is removed; however, the concrete slab is currently in place as a barrier to the underlying cadmium-contaminated soil and ICs are in place that prohibit disturbance of the slab and the soil underneath. In addition, the groundwater use restrictions placed on the CPC Site include restricting the extraction, consumption, exposure, and use of the groundwater; and prohibiting 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 still valid?

Human Health Risk Assessment

The toxicity data, exposure assumptions, pathways, and receptors that were used to estimate the potential risks and hazards to human health followed the standard risk assessment paradigm in use at the time. The cleanup values identified for soil were based on action-specific ARARs and health-based levels for both the LTEV (1990 ROD) and for the soil excavation (2003 ESD), and these values remain valid. The groundwater cleanup values were identified as "all related ARARs including NY Groundwater Quality Standards and Federal Maximum Contaminant Levels (MCLs)," which remain valid. Some of the toxicity values used to calculate the risks and hazards in the ROD have changed; however, the changes would not impact the remedial decisions made for the CPC Site.

Vapor Intrusion

The previous FYRs indicated that vapor intrusion was not expected to be a completed pathway, since there were no buildings above the plume; and, thus, no further evaluation of vapor intrusion was needed. There are currently no buildings above the plume; therefore, vapor intrusion is still not an issue at this CPC Site.

Ecological Risk Assessment

Based upon review of the past and current data, 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. 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.

While RAOs were not explicitly identified in the ROD, the goal of restoring groundwater remains valid. Although groundwater restoration has not been achieved, controls are in place to ensure that exposure is not occurring.

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

No other information has come to light that would call into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

<table>
<tr><th colspan="5">Issues/Recommendations</th></tr>
<tr><td colspan="5">OU(s) without Issues/Recommendations Identified in the Five-Year Review:</td></tr>
<tr><td rowspan="3">OU(s): 5</td><td colspan="4">Issue Category: Monitoring</td></tr>
<tr><td colspan="4">Issue: TCE contamination detected in various deep monitoring wells appears to emanate from a source upgradient of the CPC Site. This groundwater flows under the CPC Site and may continue past the CPC off-Property groundwater recovery wells (OU5) operated by NYSDEC at the OBL site as well as further downgradient monitoring wells.</td></tr>
<tr><td colspan="4">Recommendation: The VOC concentrations at the downgradient wells should continue to be monitored to further support that upgradient sources are impacting these wells.</td></tr>
<tr><th>Affect Current Protectiveness</th><th>Affect Future Protectiveness</th><th>Party Responsible</th><th>Oversight Party</th><th>Milestone Date</th></tr>
<tr><td>No</td><td>Yes</td><td>EPA/State</td><td>EPA</td><td>10/30/2028</td></tr>
</table>

OTHER FINDINGS

In addition, the following suggestion was identified during the FYR and may improve performance of the remedy and O&M, but does not affect current and/or future protectiveness:

- Continued monitoring at the downgradient monitoring well locations will further aid in evaluating whether the implementation of remedies for upgradient sources is reducing concentrations of VOCs in groundwater at these locations.

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)	
Operable Unit: OU2	*Protectiveness Determination:* Protective
Protectiveness Statement: The remedy for OU2 is protective of human health and the environment.	
Operable Unit: OU4	*Protectiveness Determination:* Protective
Protectiveness Statement: The remedy for OU4 is protective of human health and the environment.	
Operable Unit: OU5	*Protectiveness Determination:* Short-term Protective
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, monitoring VOC concentrations at downgradient wells needs to continue to further support that upgradient sources are impacting these wells.	
Sitewide Protectiveness Statement	
Protectiveness Determination: Short-term Protective	
The implemented remedies for Claremont Polychemical Superfund Site are protective of human health and the environment in the short term since there are currently no exposures. To be protective in the long term, monitoring VOC concentrations at downgradient wells needs to continue to further support that upgradient sources are impacting these wells.	

VIII. NEXT REVIEW

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

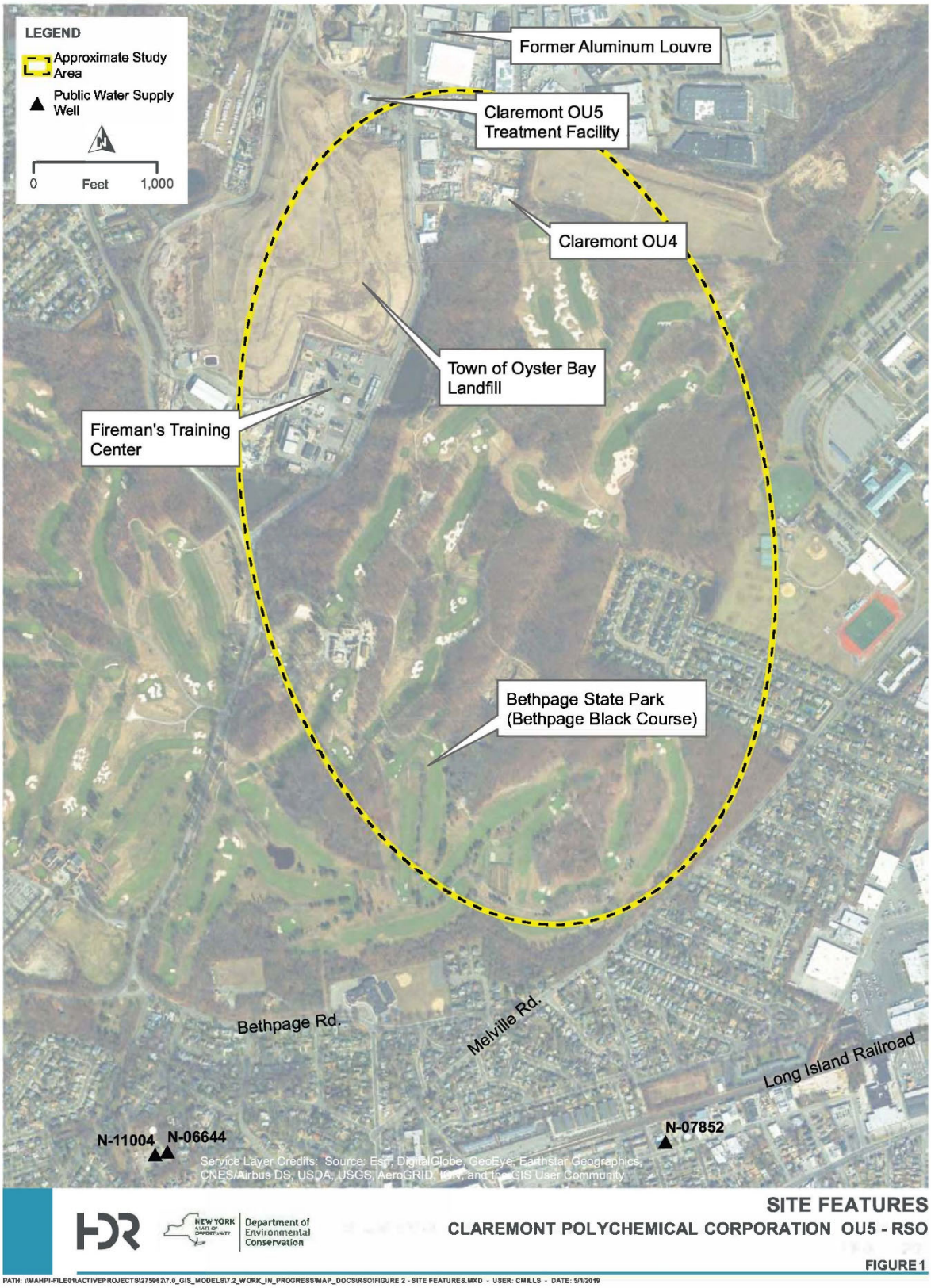
APPENDIX A – REFERENCE LIST

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, Claremont Polychemical, Old Bethpage, Nassau County, New York, EPA	1989
Record of Decision, Claremont Polychemical, Old Bethpage, Nassau County, New York, EPA	1990
Final Remedial Action Report Remediation of Contaminated Soils Via Low-Temperature Enhanced Volatilization (Operable Unit 3), EPA	1997
Final Remedial Design Report, Operable Unit 4, EPA	1999
ESDs, Operable Unit 5 and Operable Unit 2	2001 and 2003
Preliminary Close-Out Report, EPA	2003
Five-Year Review Report for The Claremont Polychemical Corporation Superfund Site, Town of Bethpage, Nassau County, New York	2008
CPC Superfund Site, Long-term Groundwater Monitoring, Operable Unit 4, 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, Operable Unit 5, Lockwood Kessler & Bartlett, Inc.	2008-2012
Groundwater Monitoring Report Claremont Polychemical Corporation Site, Operable Unit 5, HRP Engineering, P.C.	2013-2014
Remedial Action Report, Soil Excavation for The Claremont Polychemical Site, Operable Unit 2	2014
Second Five-Year Review Report for The Claremont Polychemical Site	2014
Emerging Contaminants Sampling 1,4-Dioxane and Perfluorinated Compounds Supplement to Second Quarter 2017 Groundwater Monitoring Report Claremont Polychemical Corporation Site, HDR, P.C.	2017
Groundwater Monitoring Report Claremont Polychemical Corporation Site, Operable Unit 5, HDR, P.C.	2015-2018

Third Five-Year Review Report for The Claremont Polychemical Corporation	2019
Remedial System Optimization Evaluation Claremont Polychemical Operable Unit 5 - Operations and Maintenance, HDR, P.C.	2019
Groundwater Monitoring Report Claremont Polychemical Corporation Site, Operable Unit 5, Ramboll Americas Engineering Solutions, Inc. (Ramboll)	2018-2024

APPENDIX B – FIGURES


LEGEND
Approximate Study Area
Public Water Supply Well
N
0
Feet
1,000
Former Aluminum Louvre
Claremont OU5 Treatment Facility
Claremont OU4
Town of Oyster Bay Landfill
Fireman's Training Center
Bethpage State Park (Bethpage Black Course)
Bethpage Rd.
Melville Rd.
Long Island Railroad
N-11004
N-06644
N-07852
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
HDR
NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation
SITE FEATURES
CLAREMONT POLYCHEMICAL CORPORATION OU5 - RSO
FIGURE 1
PATH: \\MAHPI-FILE01\ACTIVEPROJECTS\275982\7.0_GIS_MODELS\7.2_WORK_IN_PROGRESS\MAP_DOCS\RSO\FIGURE 2 - SITE FEATURES.MXD - USER: CMILLS - DATE: 5/1/2019

PROJECT: 1690001940101703 | DATED: 11/7/2022 | DESIGNER: SSOULE

K:\NYS-DEC.108781\Standards\GIS\Claremont\Pro\Claremont_Polychemical\Claremont_Polychemical.aprx\Fig02-Claremont_Wells

MONITORING WELL
- GAUGED ONLY
- GAUGED AND SAMPLED

SENTINEL WELL GAUGED AND SAMPLED
RECOVERY WELL
MUNICIPAL WELL

RECHARGE BASIN
SITE BOUNDARY

0 400 800 Feet

WELLS SAMPLED

FIGURE 02

CLAREMONT POLYCHEMICAL CORPORATION
505 WINDING ROAD
OLD BETHPAGE, NEW YORK

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

RAMBOLL

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

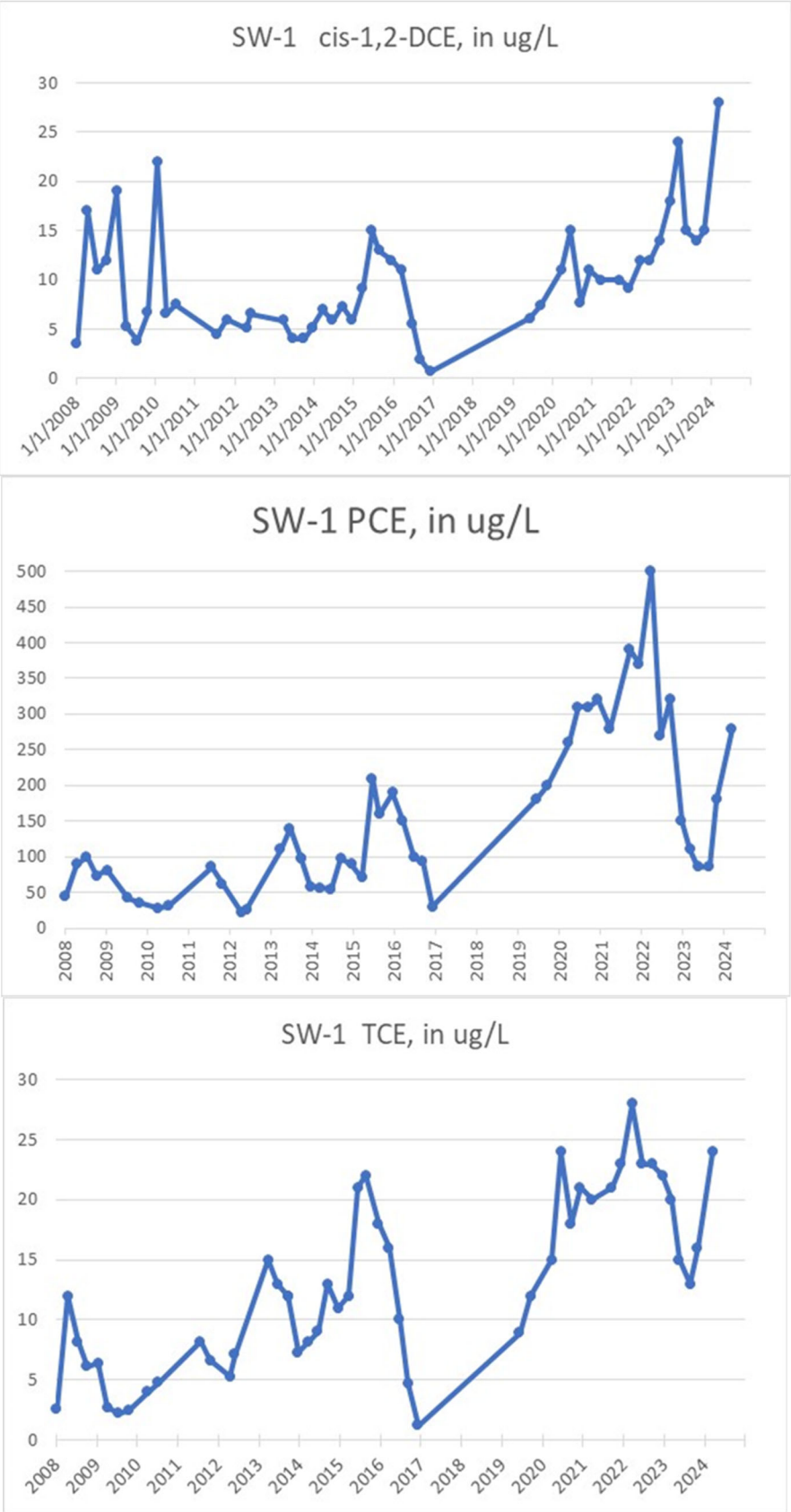


Figure 4. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EW-1A

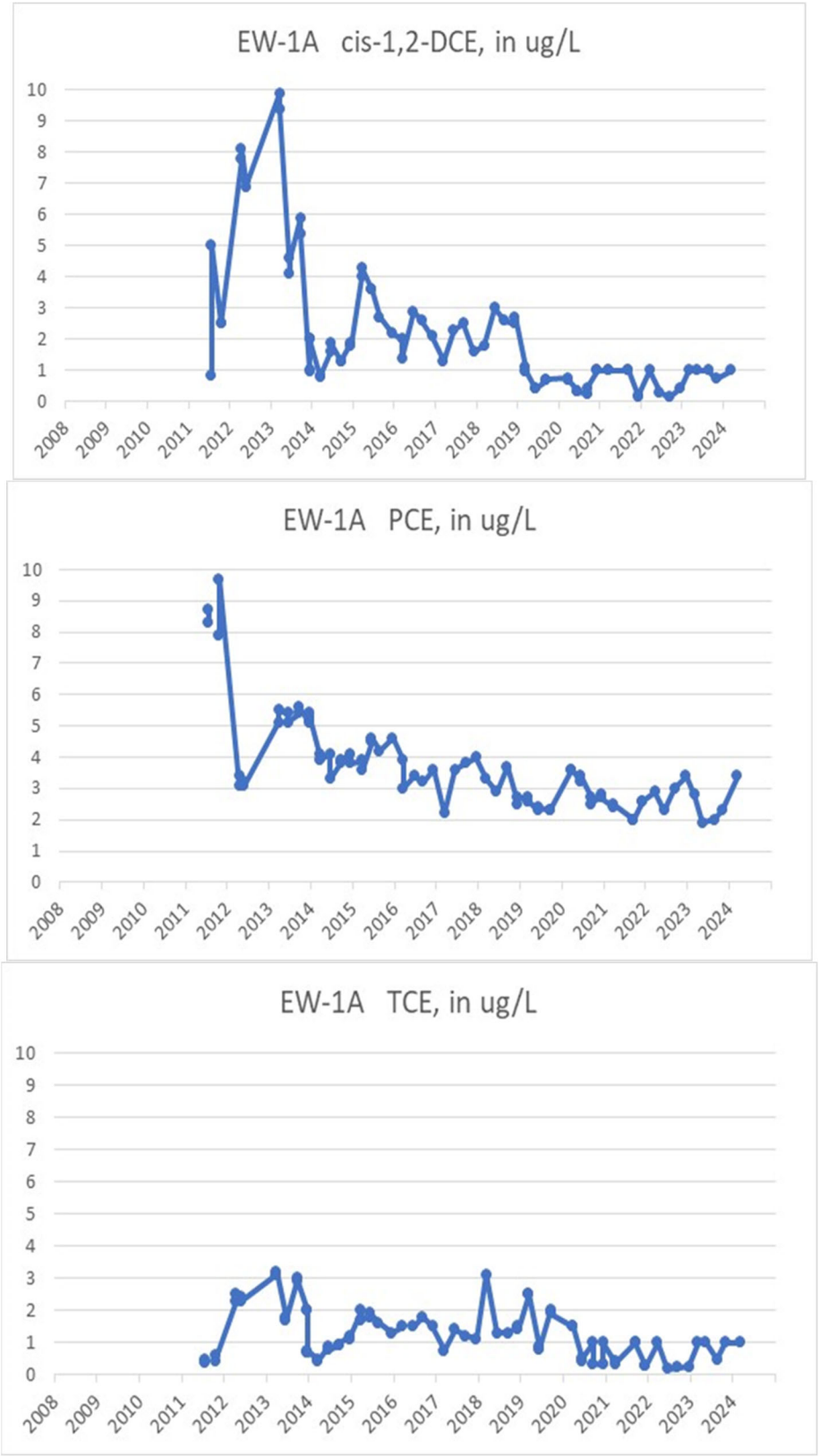


Figure 5. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EW-4A

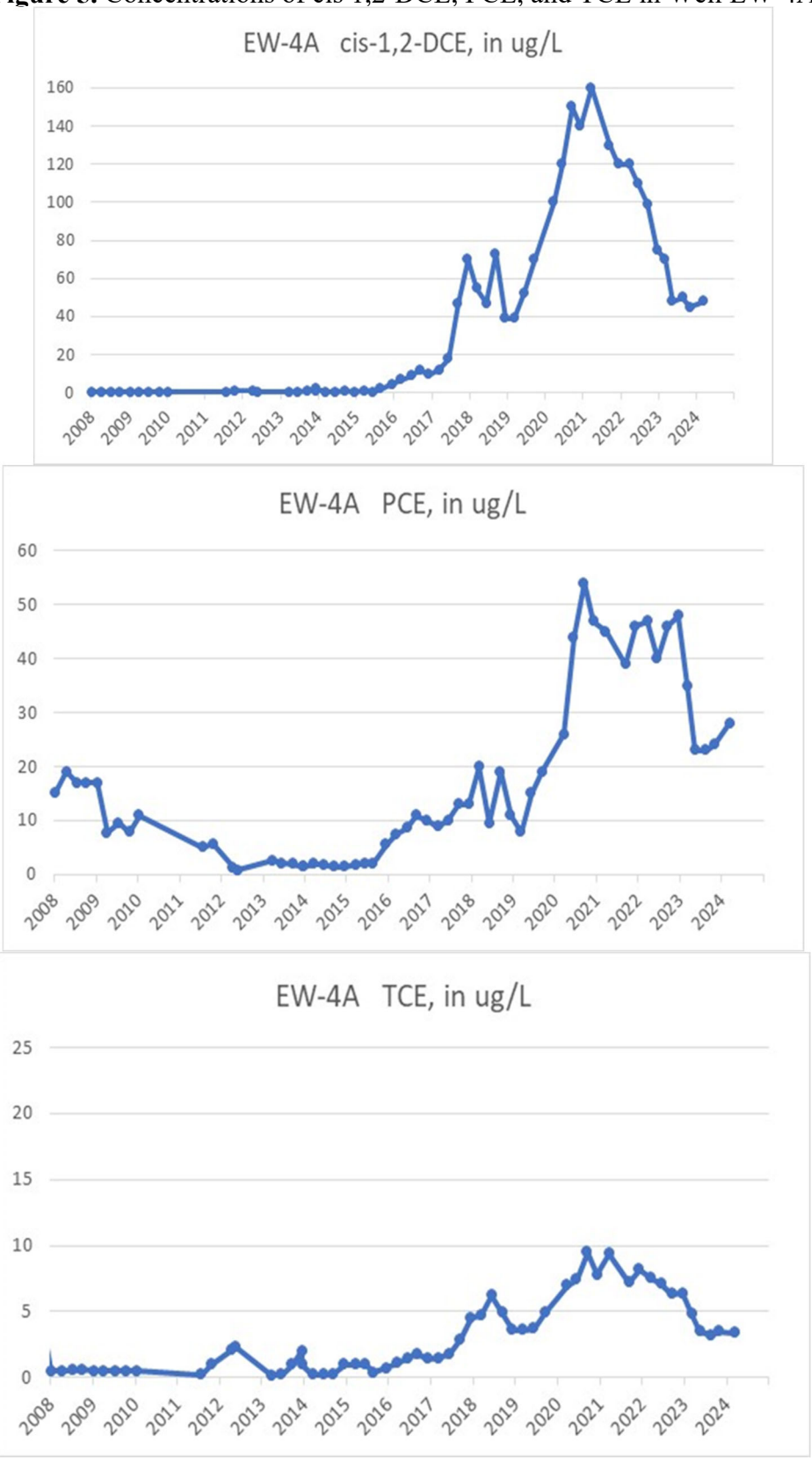


Figure 6. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EW-4B

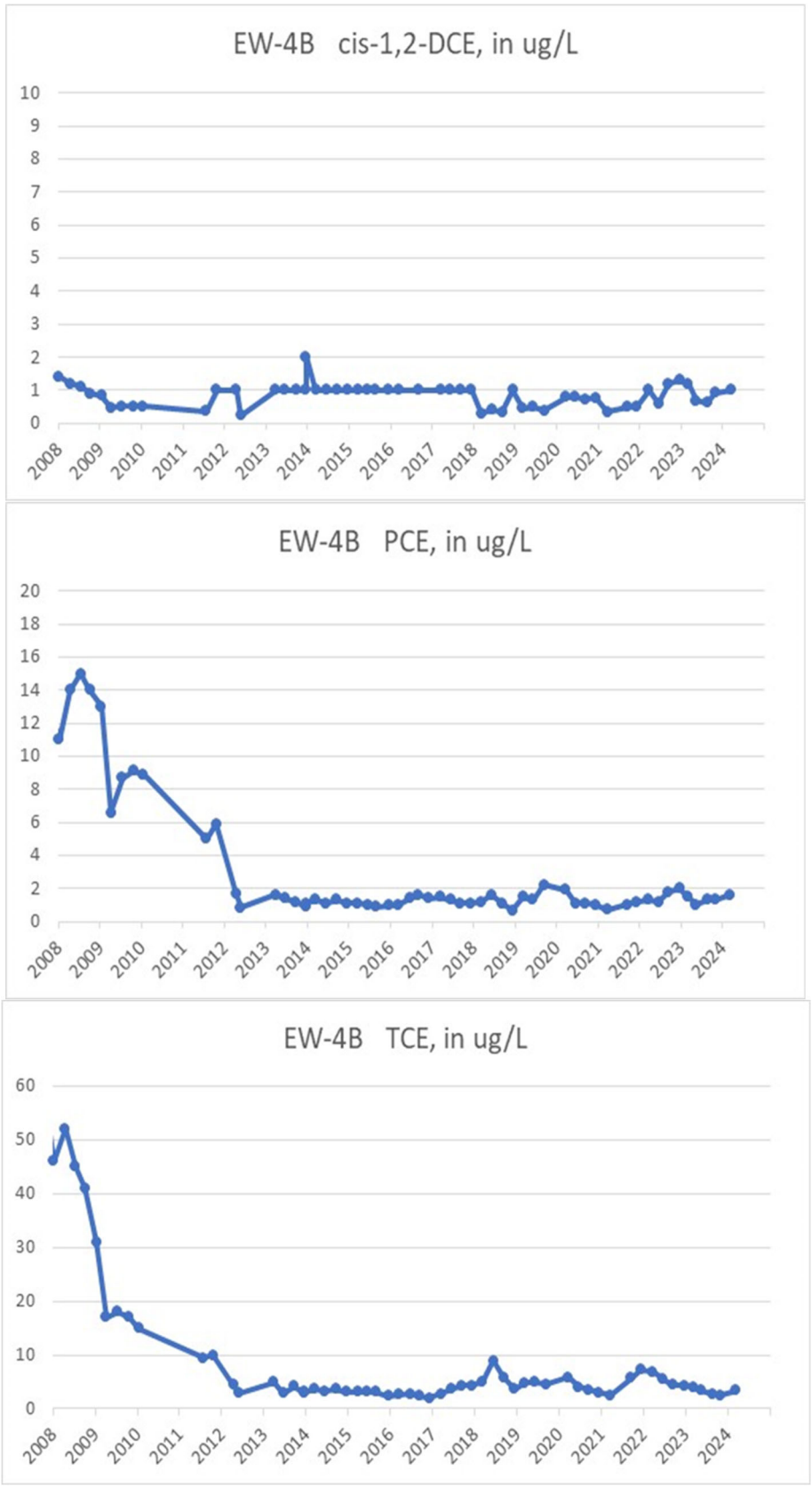
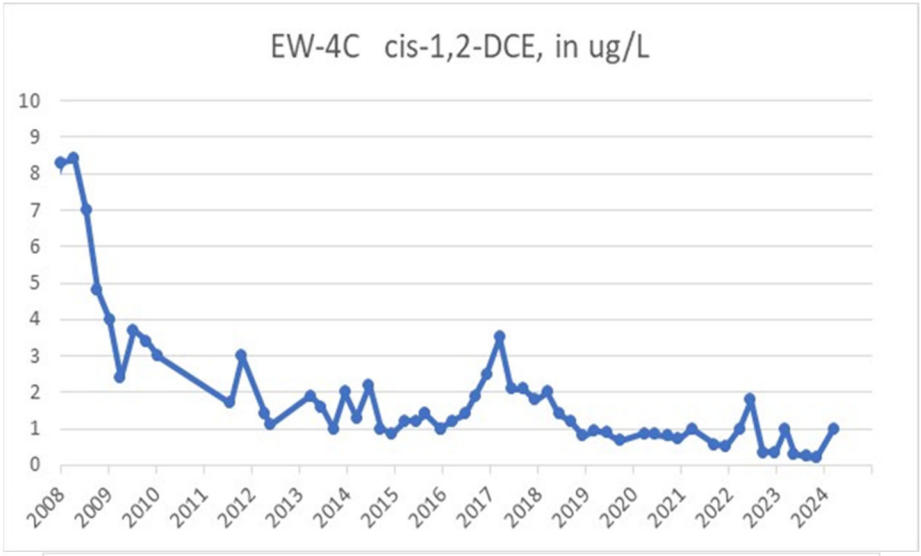
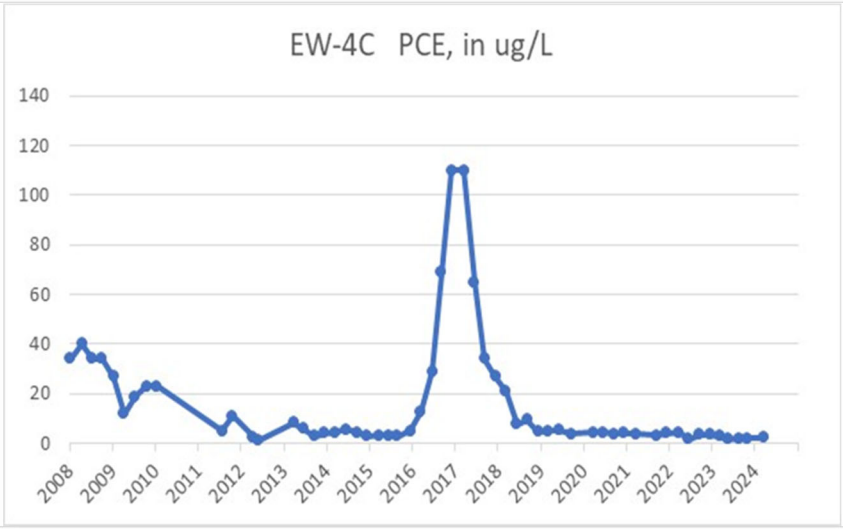


Figure 7. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EW-4C





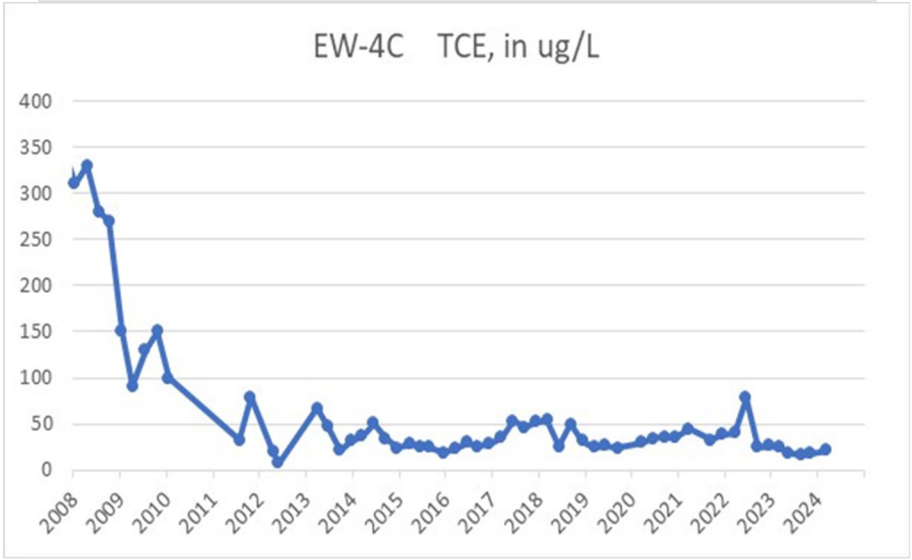
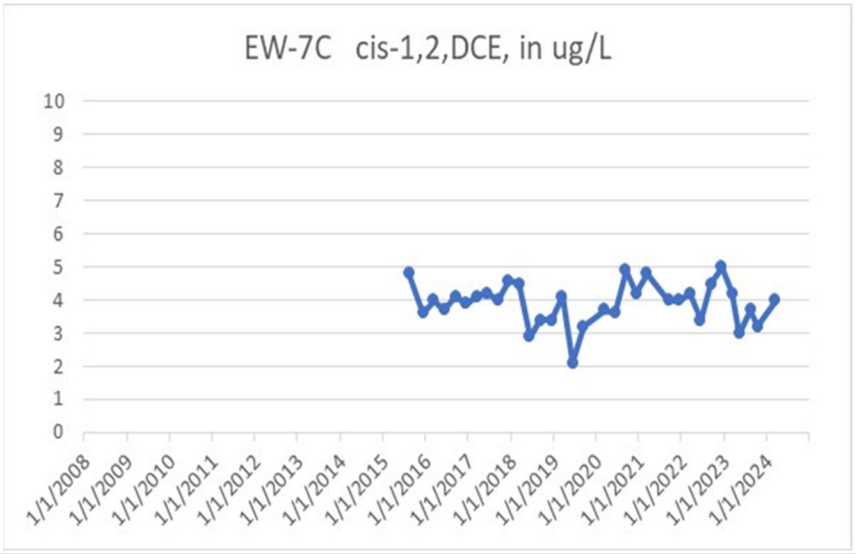


Figure 8. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EW-7C


EW-7C cis-1,2,DCE, in ug/L
10
9
8
7
6
5
4
3
2
1
0
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
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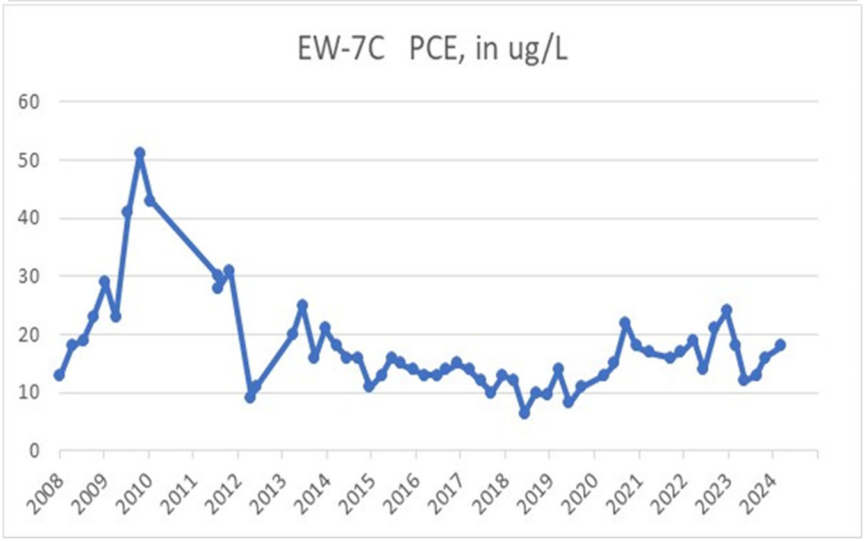

EW-7C PCE, in ug/L
60
50
40
30
20
10
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024

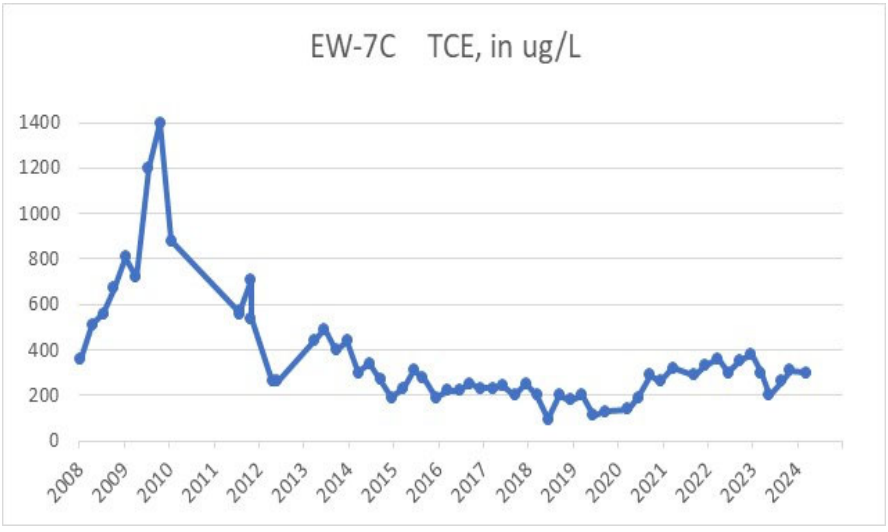

EW-7C TCE, in ug/L
1400
1200
1000
800
600
400
200
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024

Figure 9. Concentrations of cis 1,2-DCE, PCE, and TCE in Well EW-12D

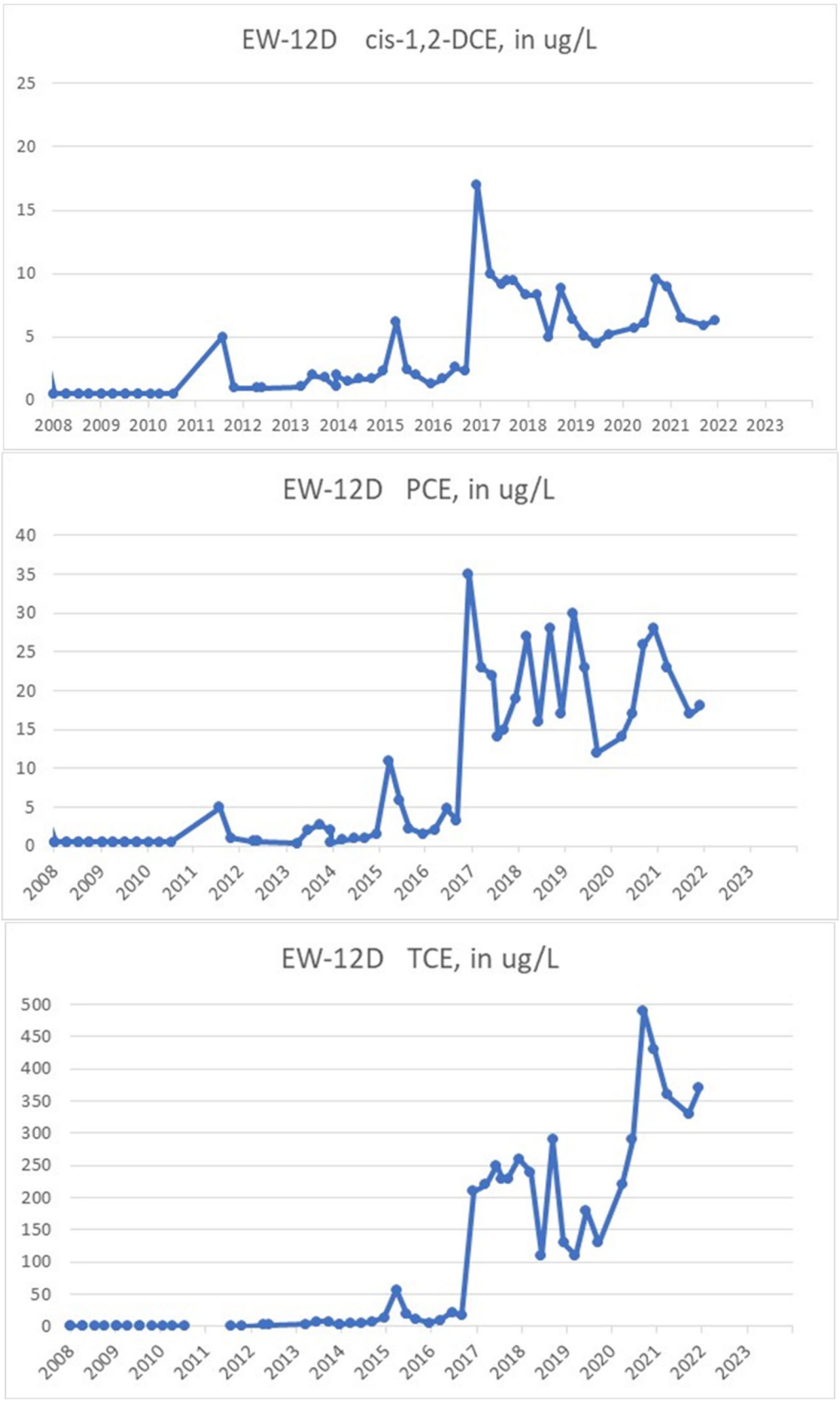


Figure 10. Concentrations of cis 1,2-DCE, PCE, and TCE in Well RW-3

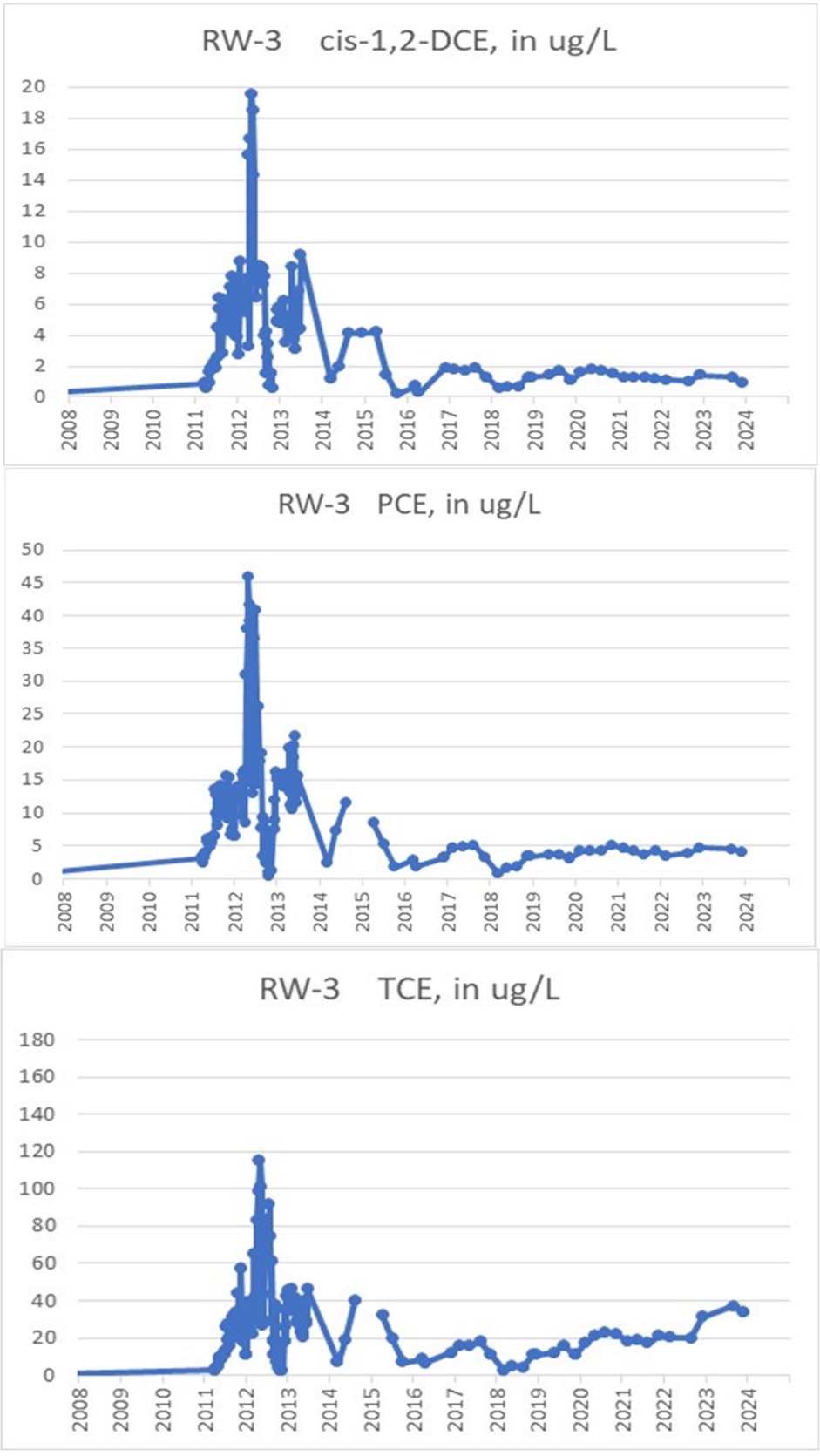
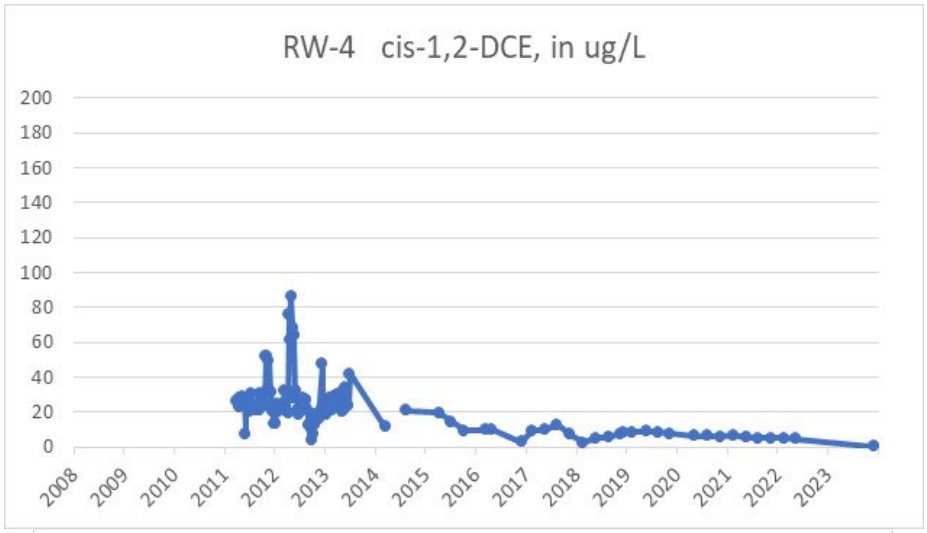
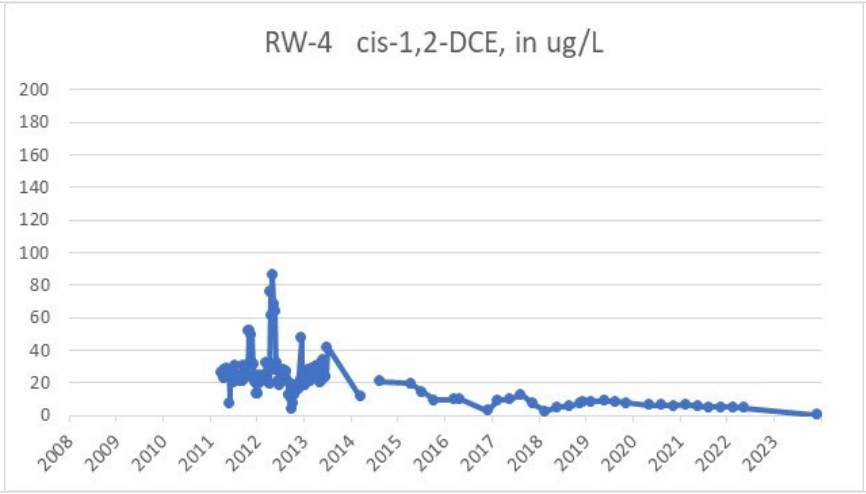


Figure 11. Concentrations of cis 1,2-DCE, PCE, and TCE in Well RW-4





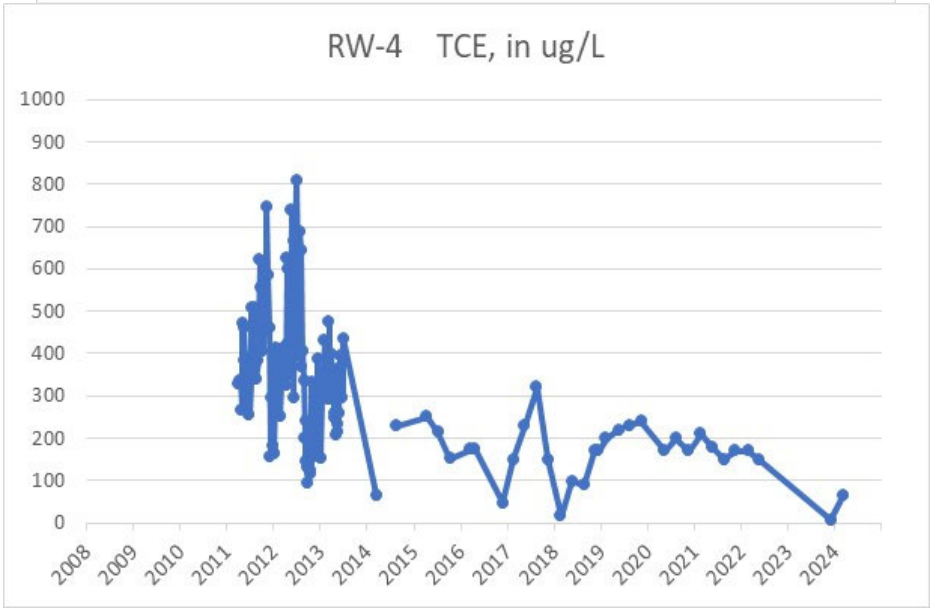


Figure 12. Concentrations of cis 1,2-DCE, PCE, and TCE in Well RW-5

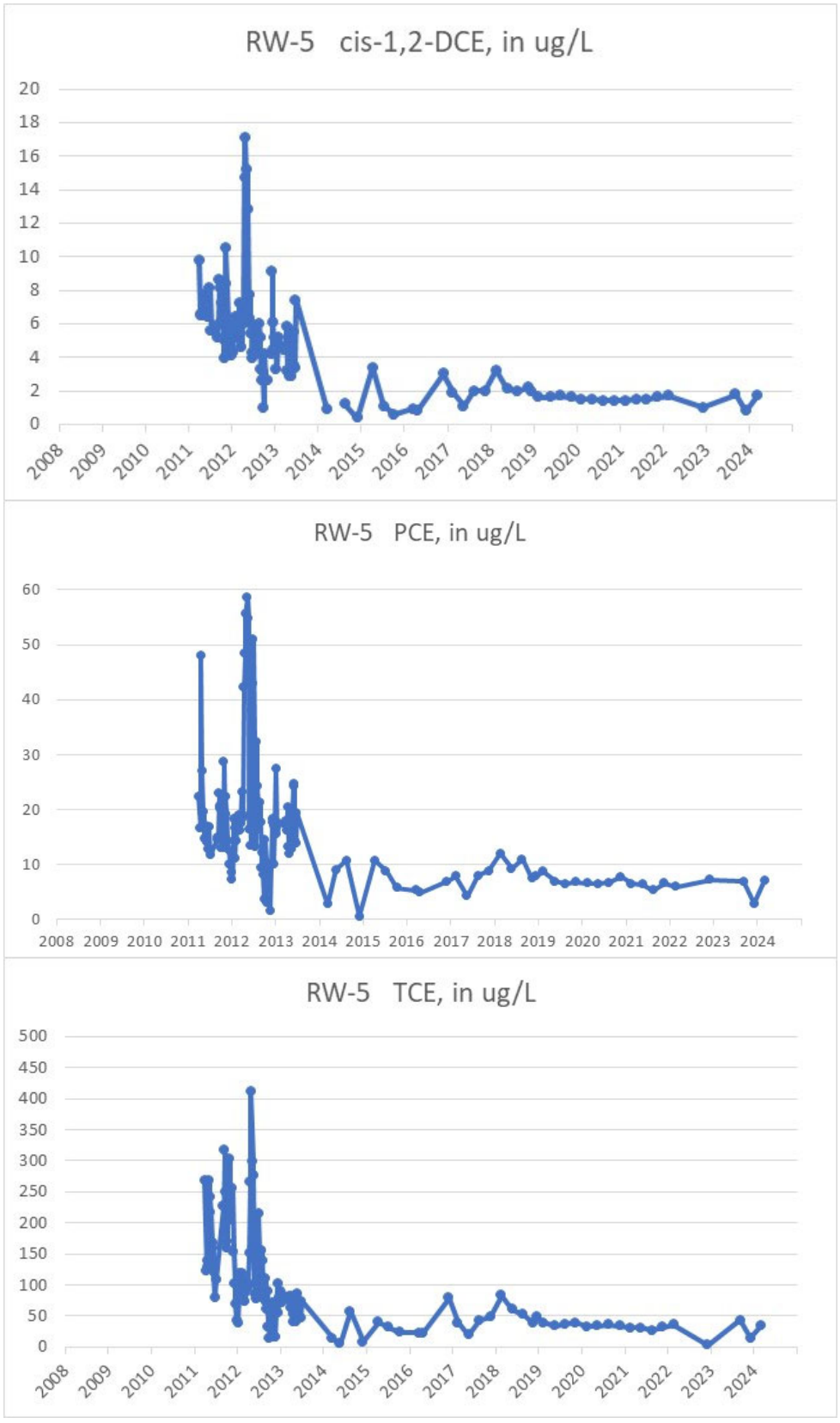


Figure 13. Concentrations of cis 1,2-DCE, PCE, and TCE in Well MW-7B-R

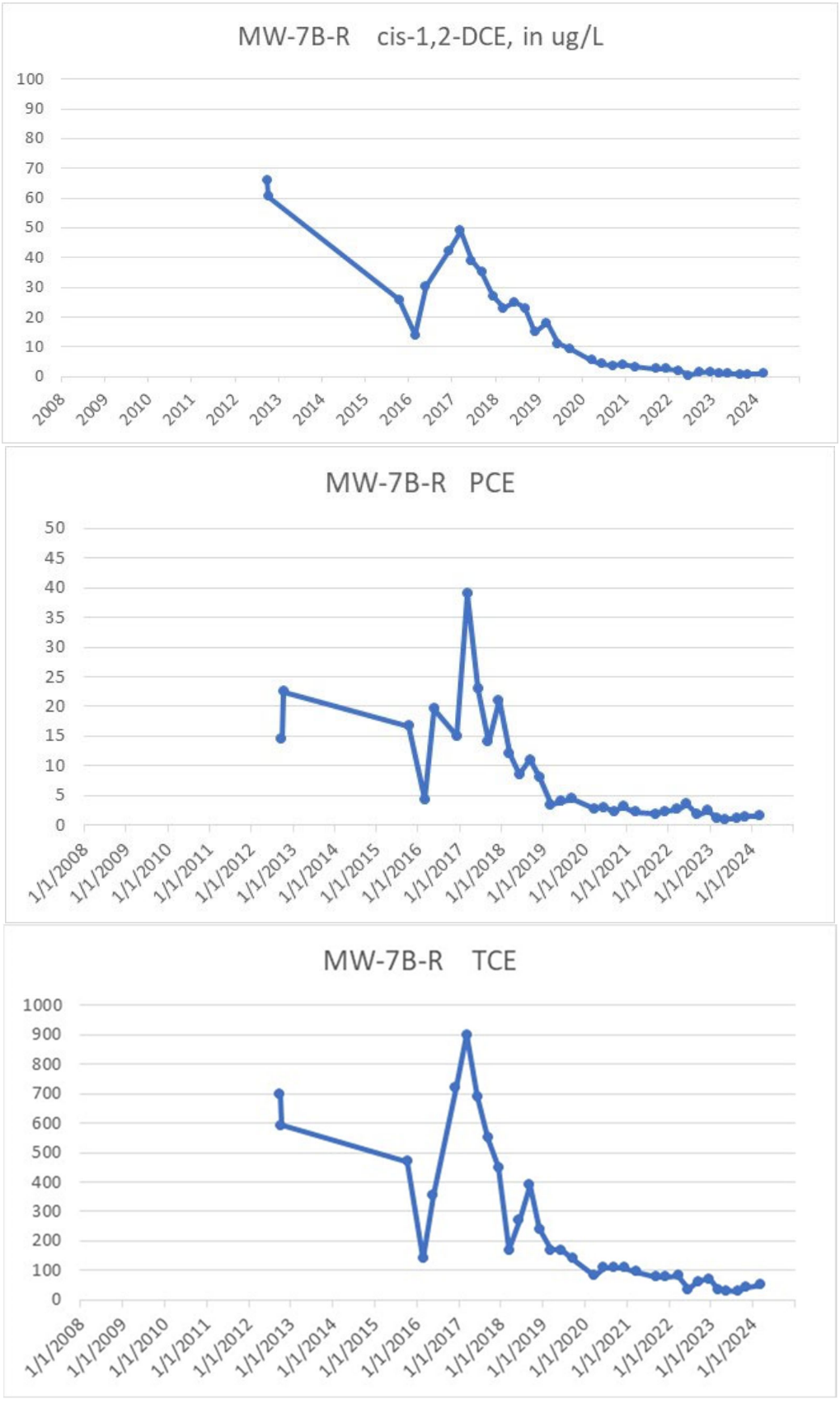


Figure 14. Concentrations of cis 1,2-DCE, PCE, and TCE in Well BP-3B

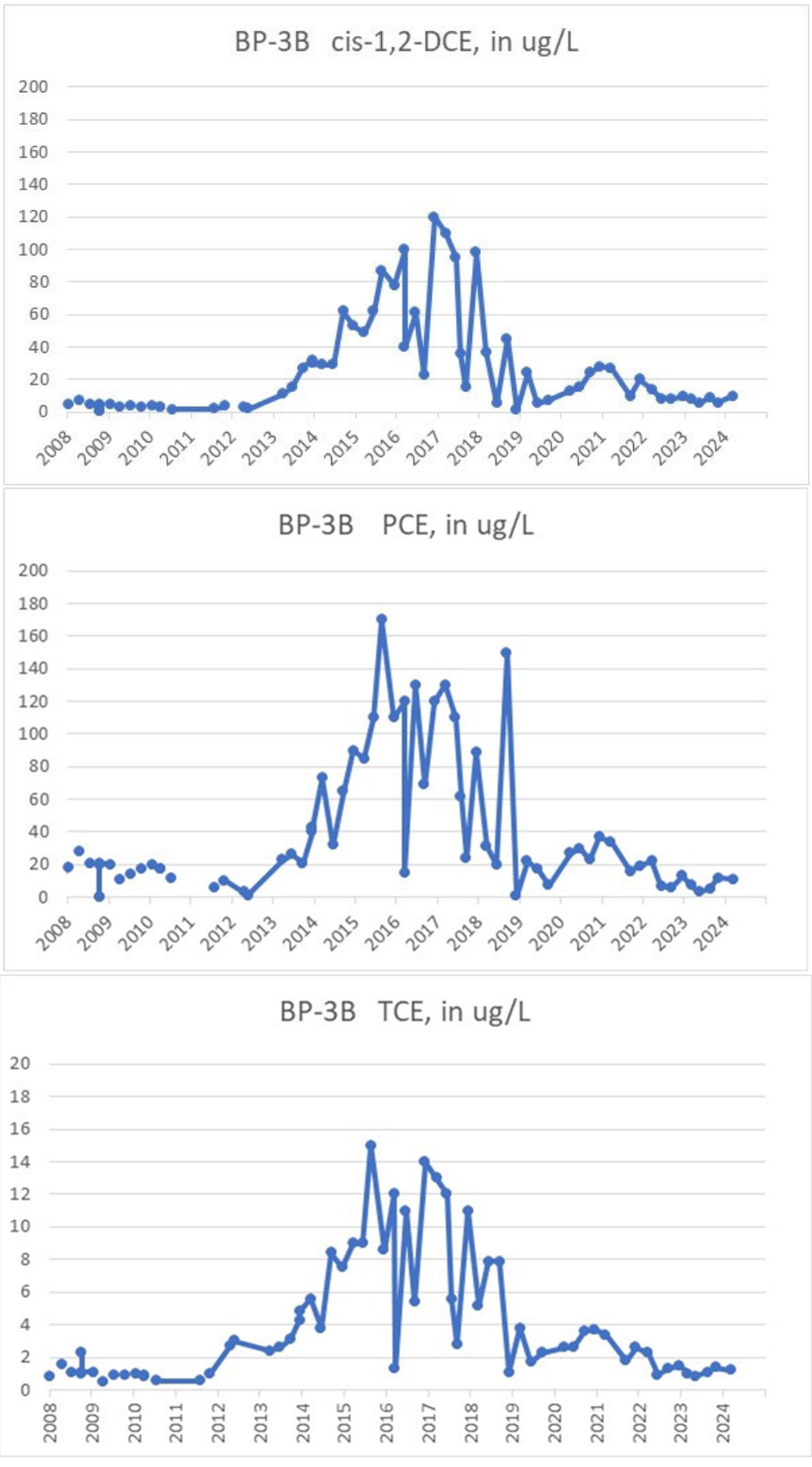


Figure 15. Concentrations of cis 1,2-DCE, PCE, and TCE in Well BP-3C

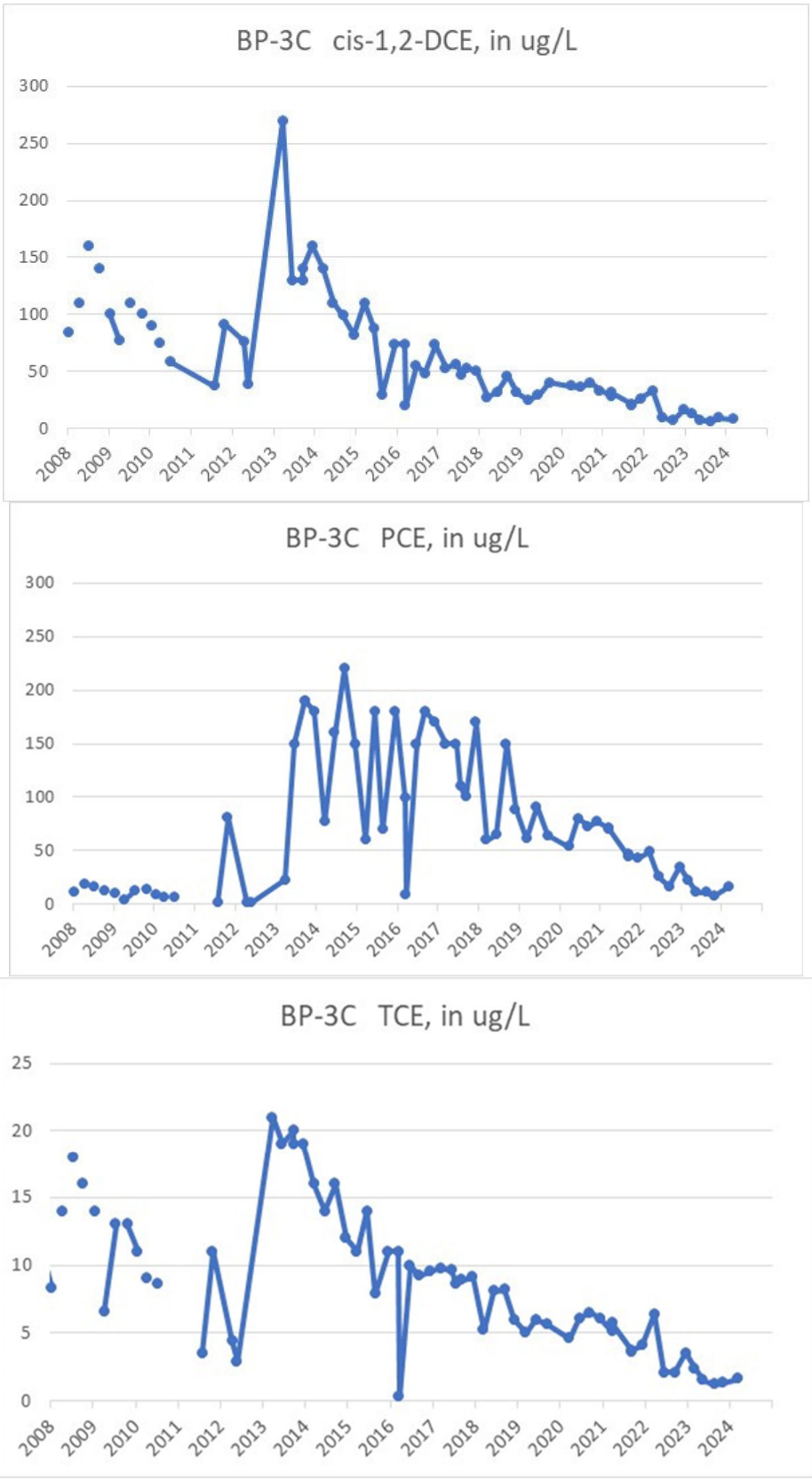
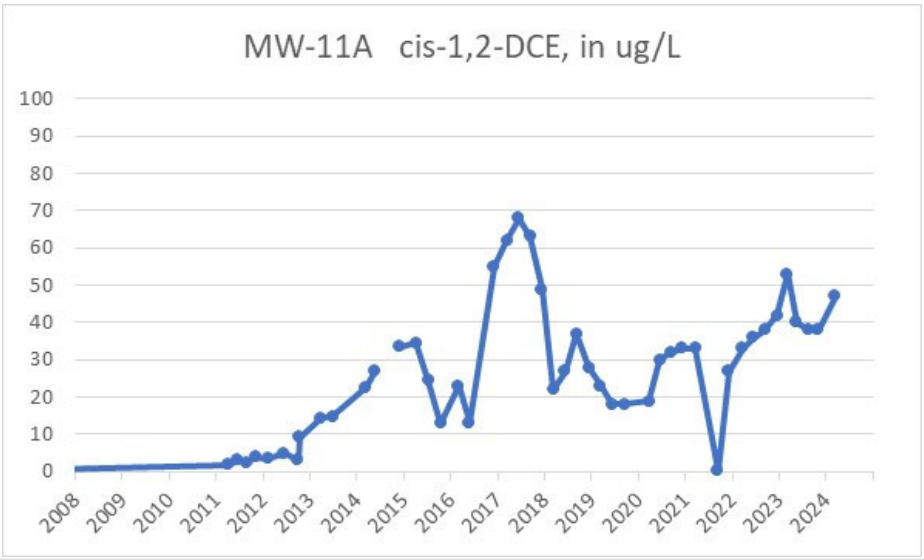
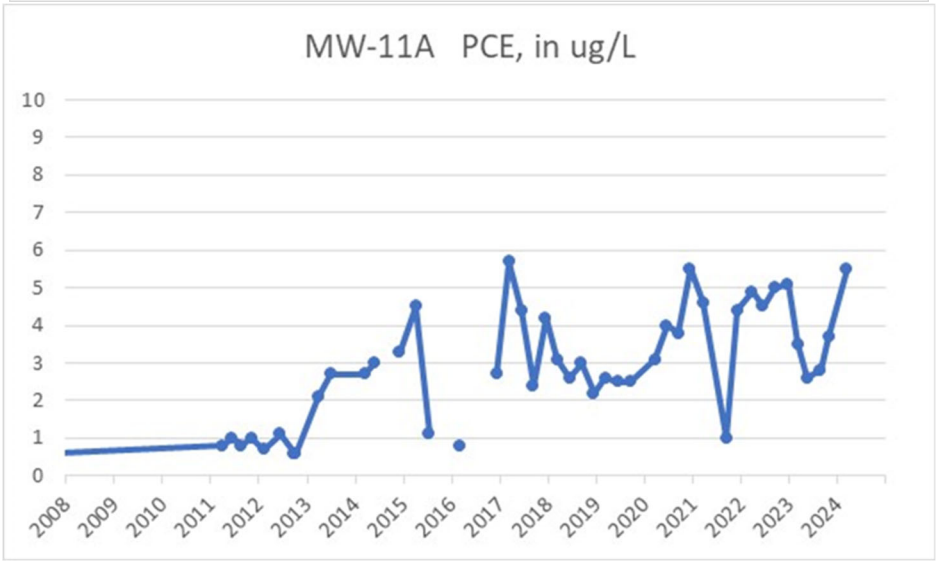


Figure 16. Concentrations of cis 1,2-DCE, PCE, and TCE in Well MW-11A


MW-11A cis-1,2-DCE, in ug/L
100
90
80
70
60
50
40
30
20
10
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024


MW-11A PCE, in ug/L
10
9
8
7
6
5
4
3
2
1
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024

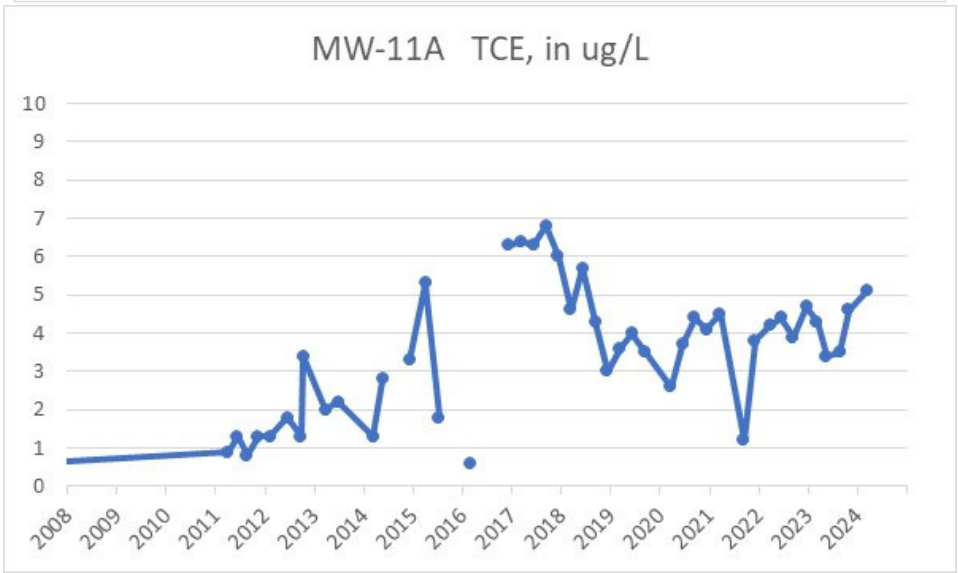

MW-11A TCE, in ug/L
10
9
8
7
6
5
4
3
2
1
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024

Figure 17. Concentrations of cis 1,2-DCE, PCE, and TCE in Well MW-11B

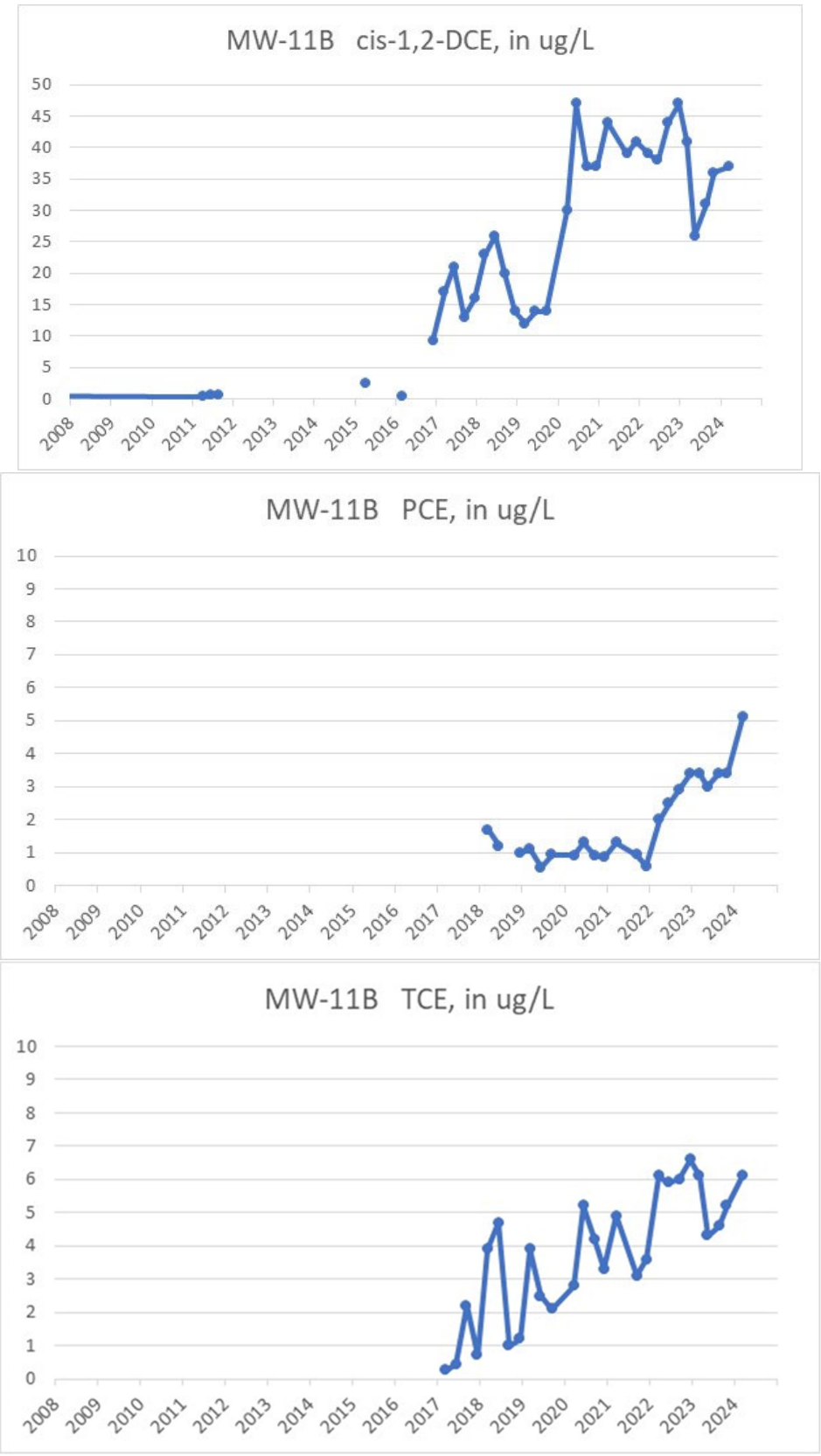
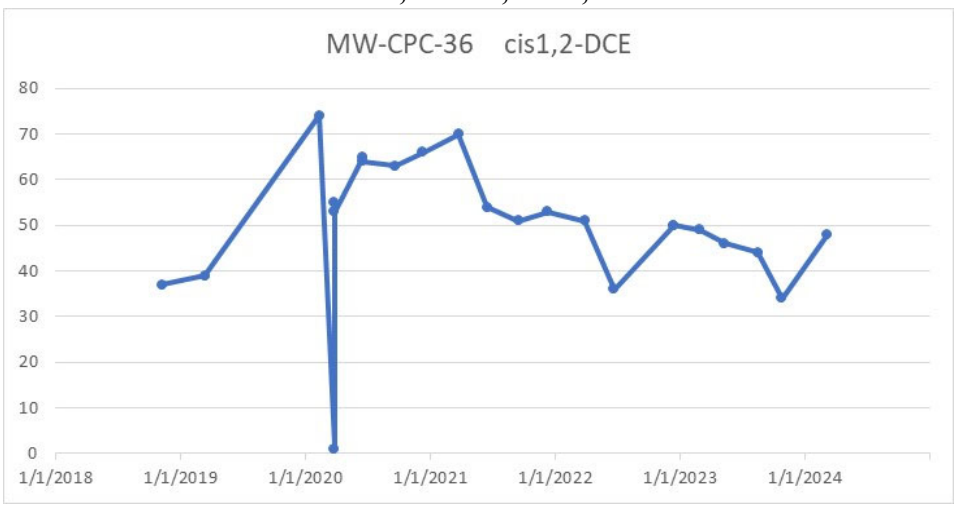
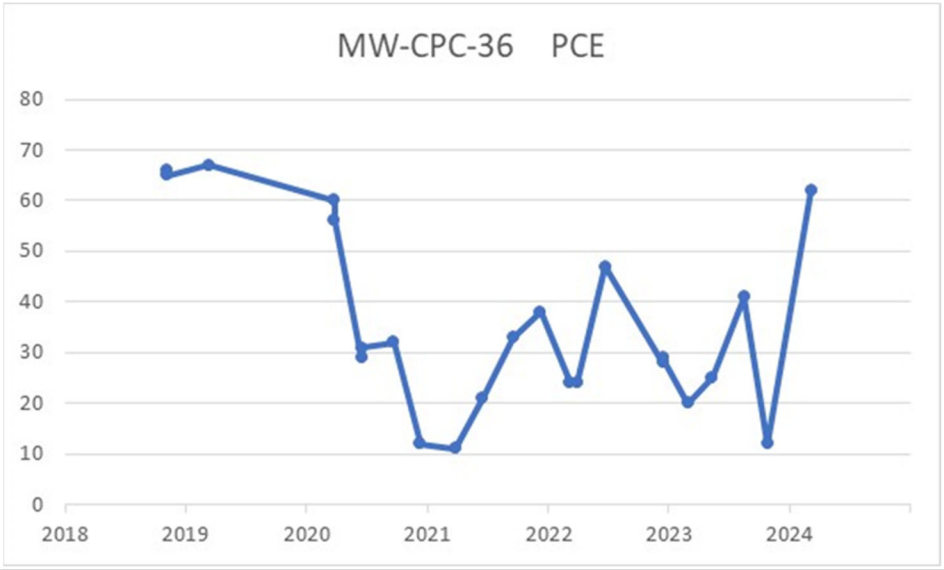
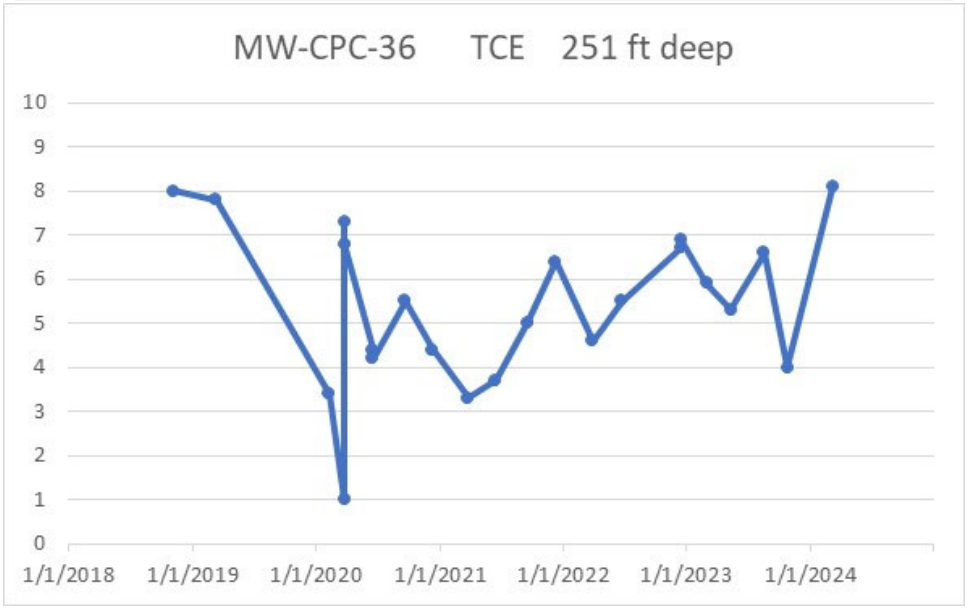


Figure 18. Concentrations of cis 1,2-DCE, PCE, and TCE in Well MW-CPC-36







APPENDIX C – CLIMATE ASESSMENT

In accordance with the Region 2 Guidance for Incorporating Climate Change Considerations in Five Year Reviews, three climate change tools were utilized to assess the Claremont Polychemical Corporation Superfund Site. Screenshots from each of the tools assessed are included below.

The first tool used to assess the Town of Old Bethpage was *The Climate Explorer*. According to this tool, the frequency of coastal flooding may increase as global sea level rises 0.5-2 feet, and relative sea level rise may be amplified in the Northeastern United States. Intense rainfall is projected to increase by 1%. As can be seen from **Figure C-1**, over the next several decades there is a projected increase between 4 and 14 days per year with maximum temperatures above 100°F. However, as can be seen on **Figure C-2**, there is little change in drought conditions in the coming years. A summary of the Top Climate Concerns from the tool can be seen in **Figure C-3**. These trends are not expected to impact the remedy at this site.

The second tool utilized is called the *Risk Factor*. According to this assessment tool, there are 259 properties in the Town of Old Bethpage, NY that have a greater than 26% chance of being severely affected by flooding over the next 30 years. This represents 22% of all properties in Old Bethpage, giving the town a moderate risk overall. The Site is located outside of the major flood risk area and is not located near the ocean, therefore, is at little risk for effects of sea level rise. The Site is also not expected to be affected by an increase in flood frequency due to its location, as shown in Figure C-4.

The final tool utilized is called *Sea Level Rise Viewer*. A rise in the sea level results in flooding that occurs more frequently and lasts for longer durations of time, referred to as tidal flooding. The Sea Level Rise Viewer indicates that there are no impacts to either the Site or the surrounding area with up to 10 feet of sea level rise. Therefore, the site and surrounding area is not considered to be at risk from tidal flooding. See **Figure C-5**.

Based on this information, 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.

Figure C-1
Climate Change Explorer
Old Bethpage, NY Days with Max Temperature > 100°

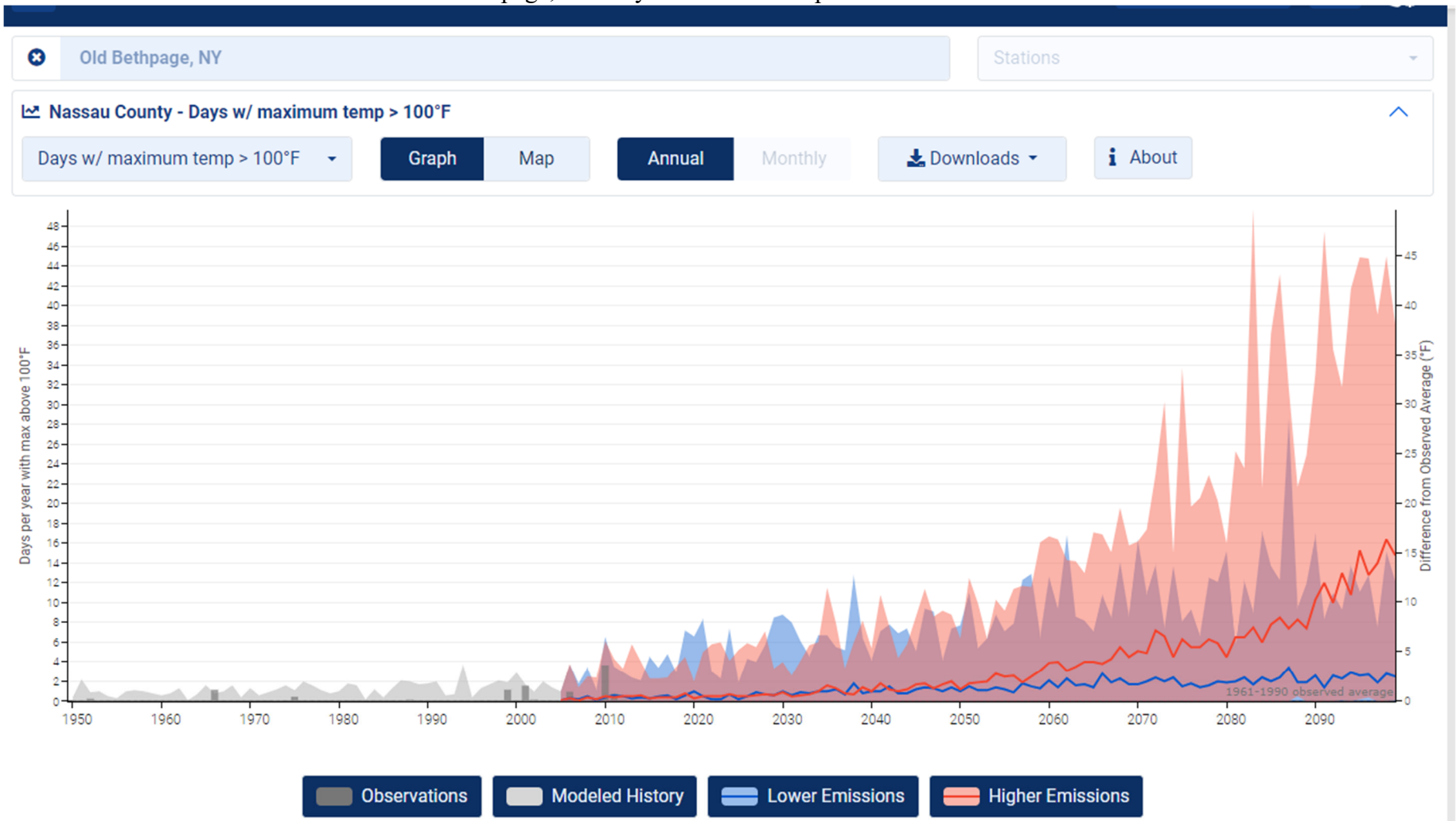


Figure C-2
Climate Change Explorer
Old Bethpage, NY Drought Conditions

Figure C-3
Climate Change Explorer
Summary of Top Climate Concerns for Old Bethpage

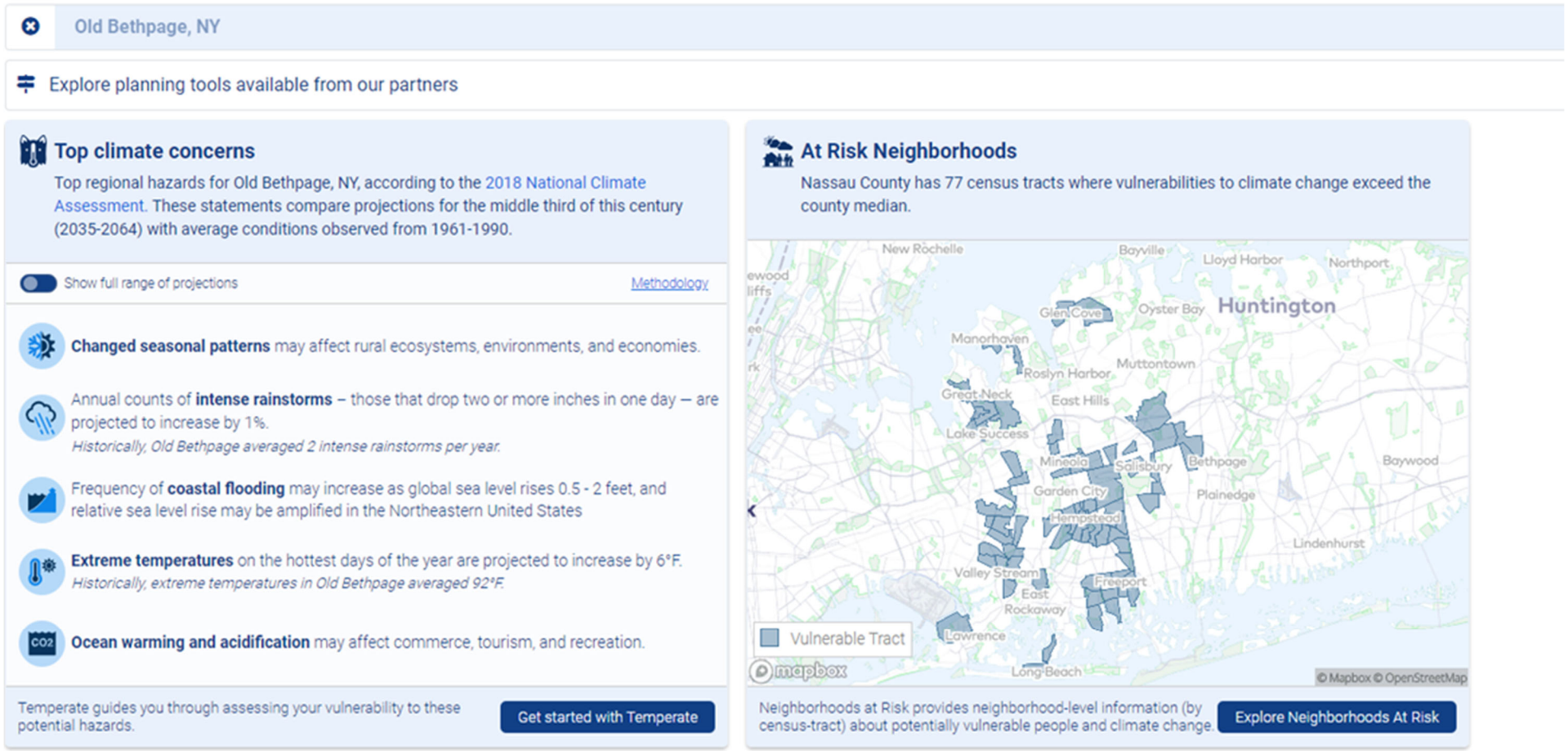


Figure C-4
Flood Factor
Flood Risk Overview for Old Bethpage

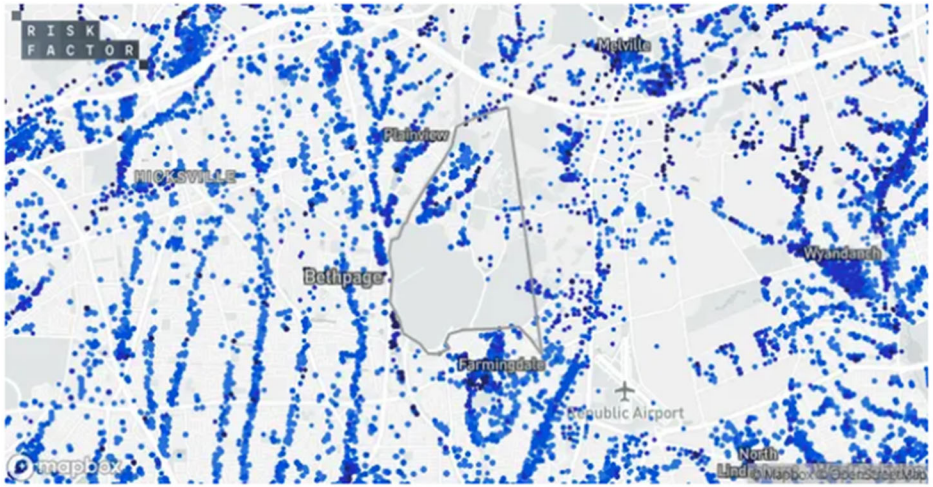
Flood Factor | Fire Factor | Wind Factor | Heat Factor

Does Old Bethpage have Flood Risk?

Moderate
FLOOD FACTOR

There are **259 properties** in **Old Bethpage** that have greater than a **26%** chance of being severely affected by flooding over the next 30 years. This represents **22%** of all properties in Old Bethpage. **See the risk for your property.**

In addition to property damage, flooding can also cut off access to utilities, emergency services, transportation, and may impact the overall economic well-being of an area. Overall, **Old Bethpage** has a **moderate risk of flooding** over the next 30 years, which means flooding is likely to impact day-to-day life within the community. This is based on the level of risk the properties face rather than the proportion of properties with risk.



Properties at risk from flood

Minimal | Minor | Moderate | Major | Severe | Extreme

Residential: **Moderate Risk**
363 out of **1,748** homes at risk

Critical Infrastructure: **Major Risk**
3 out of **7** facilities at risk

Roads: **Major Risk**
18 out of **37** miles at risk

Commercial: **Major Risk**
15 out of **34** properties at risk

Figure C-5
Sea Level Rise Viewer