FOURTH FIVE-YEAR REVIEW
FOR THE
DELAVAN MUNICIPAL WELL NO. 4 SUPERFUND SITE
WALWORTH COUNTY, WISCONSIN

Prepared by

U.S. Environmental Protection Agency
Region 5
Chicago, Illinois

9/14/2020

X

Douglas Ballotti, Director
Superfund & Emergency Management Division
Signed by: DOUGLAS BALLOTTI

Table of Contents

LIST OF ABBREVIATIONS & ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
BRRTS	Bureau for Remediation and Redevelopment Tracking System
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Continuing Obligations
COC	Contaminants of Concern
CSES	Chip Storage Extraction System
DMW4	Delavan Municipal Well No. 4
EPA	United States Environmental Protection Agency
ES	Enforcement Standard (State of Wisconsin)
ESD	Explanation of Significant Differences
FYR	Five-Year Review
ICs	Institutional Controls
ICIAP	Institutional Control Implementation and Assurance Plan
LTS	Long-Term Stewardship
MCL	Maximum Contaminant Level
MW	Monitoring Well
NCP	National Contingency Plan
NPL	National Priorities List
NR	Natural Resources (as in "NR 140.28, WAC")
O&M	Operation and Maintenance
OU	Operable Unit
PAL	Preventive Action Limit (State of Wisconsin)
PCE	Perchloroethylene or Tetrachloroethylene
PCOR	Preliminary Closeout Report
PRP	Potentially Responsible Party
RAO	Remedial Action Objectives
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
SES	Soil Extraction System
SVE/GWE	Soil Vapor Extraction and Groundwater Extraction
SWRAU	Sitewide Ready for Anticipated Use
TCA	Trichloroethane
TCE	Trichloroethylene
TBC	To Be Considered
UU/UE	Unlimited Use and Unrestricted Exposure
VI	Vapor Intrusion
VOC	Volatile Organic Compounds
WAC	Wisconsin Administrative Code
WDHSS	Wisconsin Department Health and Social Services
WDNR	Wisconsin Department of Natural Resources
WPDES	Wisconsin Pollutant Discharge Elimination System

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 United States Environmental Protection Agency (EPA), with the Wisconsin Department of Natural Resources (WDNR), is preparing this FYR report 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 in consideration of EPA policy.

This is the fourth FYR report for the Delavan Municipal Well No. 4 Superfund Site (the Site). The triggering action for this statutory review is the signature date of the previous FYR report. The FYR was conducted because 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 one, site-wide Operable Unit (OU) that encompasses contaminated soil and groundwater, and which is addressed in this FYR report. It is a State-lead enforcement site, with response actions implemented under the authority of the Wisconsin Department of Natural Resources (WDNR).

The Site FYR was led by William Ryan, Remedial Project Manager (RPM) for EPA, Region 5. Participants included Thomas Wentland, WDNR Project Manager, and Charles Rodriguez, EPA Community Involvement Coordinator. The review began on August 21, 2019 when EPA sent WDNR a notice letter. EPA also notified Pentair Flow Technologies, LLC (Pentair), the Potentially Responsible Party (PRP) at the Site, on September 24, 2019, when the RPM called to schedule the FYR site inspection.

Site Background

The 70-acre Delavan Municipal Well No. 4 Superfund Site is defined as the contaminated portion of the aquifer currently used by the City of Delavan (City) for its public water supply. It consists of the City's Delavan Municipal Well No. 4 (DMW4), which it installed in 1968, and the Pentair facility property at 293 Wright Street in Delavan, Walworth County, Wisconsin, which is located in the southeast 1/4 of Section 17 in Delavan Township T.2N., R.16E near the intersection of Interstate Highway I-43 and State Trunk Highway 50 (see Figure 1 in Appendix B). The Pentair property has been home to manufacturing facilities since 1958. Sta-Rite Industries (Sta-Rite) previously owned and operated the facility until being acquired by Pentair in 2004. Pentair produces high-quality water pumps and related products in its two large plants - Plant No. 1, which is located approximately 1000 feet northeast of DMW4, and Plant No. 2, which is located approximately 400 feet due east of DMW4.

WDNR detected the volatile organic compound (VOC) trichloroethylene (TCE) in DMW4 during a random public well sampling event it conducted in March 1982. WDNR found that the TCE concentrations in DMW4 exceeded the water quality standards set by the Wisconsin Department of Health and Social Services (WDHSS). Subsequent sampling also found the VOCs 1,1,1-trichloroethane (TCA) and tetrachloroethylene (PCE) in DMW4. As a result, the City removed DMW4 from its

municipal water supply system in 1982. EPA performed a hazard assessment and proposed the Site for the National Priorities List (NPL) in 1983 and then listed it on the NPL in 1984.

Prior to NPL listing, both the City and Pentair had conducted hydrogeological investigations to try to find the source of the TCE contamination in DMW4. The studies indicated that the contamination in the aquifer likely originated from the property occupied by Pentair, having identified a former solvent disposal sump in an area near Pentair Plant No. 2 as containing significant concentrations of TCE in the soil and groundwater and also finding that TCE and TCA were in the soil and groundwater around Pentair Plant No. 1.

The Pentair property is located within the City's corporate limits and is bordered on the north by the Wisconsin Calumet Railroad, on the south by a commercial strip mall, on the east by agricultural land, and on the west by Wright Street. Land use in the area is mixed and includes commercial, residential, and light industrial use. Adjacent to the property and west of Wright Street are industrial and commercial properties and the City's DMW4. The Pentair property is currently zoned for general manufacturing. A map of current land use in the area is presented in Figure 11, and the official zoning map for the City is presented in Figure 12 (both figures are in Appendix B). There are no contemplated changes to future land use in the area by either the City or Pentair.

By 2000, due to the earlier interim remedial actions taken by Pentair on its property, contaminant concentrations in DMW4 had fallen below applicable drinking water standards. Therefore, the City brought its DMW4 back on-line and plans to continue using it as a source of municipal water.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Delavan Municipal Well No. 4		
EPA ID: WID980820062		
Region: 5	**State:** WI	**City/County:** Delavan, Walworth County
SITE STATUS		
NPL Status: Final		
Multiple OUs? No	**Has the site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: State		
Author name (Federal or State Project Manager): William J. Ryan		
Author affiliation: EPA, Region 5		
Review period: 8/21/2019 - 5/15/2020		
Date of site inspection: 10/2/2019		
Type of review: Statutory		
Review number: 4		
Triggering action date: 8/17/2015		
Due date *(five years after triggering action date)*: 8/17/2020		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

Pentair (Sta-Rite) took several interim response actions (see next section) mostly in the 1980s to address major source areas on its property. Subsequent investigations were then conducted as part of the Remedial Investigation/Feasibility Study (RI/FS) at the Site between August 1991 and July 1992. Based on the 1993 RI Report, the 2000 Record of Decision (ROD) identified TCE, TCA, and PCE as the primary contaminants of concern (COCs) in the soil and groundwater. RI surveys included soil, soil gas, groundwater, surface-water, and sediment investigations, as well as an ecological assessment of the facility and the surface-water corridor downstream of the stormwater discharge, which contains runoff and extracted groundwater from the Pentair facility. The ecological assessment did not identify any evidence of impacts to receiving waters or to area flora and fauna. However, the ROD determined that the Site posed a risk to human health due to the ingestion of VOCs in drinking water because contaminated groundwater had entered the municipal water supply system via DMW4. No other potential receptors or adverse exposure pathways were identified.

Response Actions

Prior to issuance of the 2000 ROD, Pentair, with WDNR oversight, had implemented the following interim remedial actions to remove and contain the TCE, TCA, and PCE impacts discovered on its property:

- In 1983, the former sump area and adjacent soil at Plant No. 2 was excavated and removed. A portion of the impacted soil was taken off-site for disposal and the remainder was treated by aeration and then used as backfill.
- In 1984, Pentair installed a groundwater extraction system consisting of five extraction wells at Plant No. 1 and two extraction wells at Plant No. 2 to remove contaminated groundwater and hydraulically contain the contaminant plume. The groundwater from the extraction wells was aerated to remove VOCs and the treated groundwater was discharged to the storm sewer under a Wisconsin Pollutant Discharge Elimination System (WPDES) permit.
- In 1984, Pentair installed a spray irrigation flushing system that sprayed a portion of the groundwater extracted by well EX-1 onto the ground surface at the Plant No. 2 former sump area. The goal was for this water to infiltrate into the ground and enhance the removal of VOCs from unsaturated soil. A gravel trench was also installed to assist in infiltration. The spray irrigation of groundwater ceased in 1988 and all extracted groundwater is now discharged to the storm sewer.
- In May 1988, a soil vapor extraction (SVE) system was installed at the former sump location at Plant No. 2 to enhance the VOC removal rate from this area, which had significant soil impacts remaining. Heating wells were also added to the SVE system in 1988 to accelerate the rate of vapor extraction.
- In 1994, combination soil vapor and groundwater extraction wells were installed in the former chip storage and drainage swale source areas. These combination wells constitute the chip storage extraction system (CSES) and the southern soil extraction system (SES), respectively.
- In 1994, groundwater monitoring wells were installed to monitor all source areas. Sitewide groundwater monitoring continues annually.

WDNR and EPA signed a ROD on September 25, 2000 and September 28, 2000, respectively. The 2000 ROD selected no further action under CERCLA authorities, other than groundwater monitoring and the continued operation and maintenance of the existing soil vapor and groundwater extraction and treatment systems, because the existing response actions implemented under State authority and oversight were progressing toward meeting the remedial action objectives (RAOs) (see below) given in the 2000 ROD.

The RAO for contaminated unsaturated zone soil is to clean up the soil in accordance with Ch. NR 720, Wisconsin Administrative Code (WAC). Contaminated soil must be addressed so that contaminants migrating from the soil into groundwater do not cause exceedances of Wisconsin groundwater standards. The interim remedial actions taken above are considered a soil performance standard in accordance with Ch. NR 720 19(2), WAC, provided that they continue to be operated and maintained until the groundwater RAO is met.

The RAO for contaminated groundwater was to clean up the groundwater to meet Ch. NR 140, WAC groundwater Preventive Action Limits (PALs) for all COCs. Ch. NR 140, WAC establishes a two-tiered system of groundwater quality standards, namely PALs and Enforcement Standards (ESs). PALs are to be used as an indicator parameter for potential groundwater contamination, and the ES is the groundwater cleanup level for protecting human health and welfare. In 2018, EPA issued an Explanation of Significant Differences (ESD) to revise the groundwater RAO to meet the ES for all COCs, instead of the PALs (see below).

In 2018, EPA issued an ESD for the Site because the 2000 ROD did not require that institutional controls (ICs) be implemented at the Site. EPA had determined that ICs were necessary to prevent exposure to contaminated groundwater and soil and issued the ESD to document its decision to add ICs and long-term stewardship (LTS) of the ICs as components of the selected remedy. The 2018 ESD also clarified the groundwater RAO and corresponding cleanup standards for the Site.

The 2018 ESD documented the following significant changes to the Site remedy:

- Revision and clarification of the groundwater RAO and the groundwater cleanup standards from PALs to ESs (as indicated in Table 1 below);
- Addition of the requirement for ICs to restrict future land use on the Pentair property to industrial use because contaminant levels in the soil in the former TCE-source areas remain at levels exceeding the non-industrial direct contact soil standard;
- Addition of the requirement for Site-wide ICs to restrict groundwater use for drinking in areas that have not yet achieved the revised groundwater RAO. A continuing obligation (CO) requiring that water supply wells not be constructed on the Site without prior approval of WDNR, pursuant to WAC § NR 812.09(4)(w), will be imposed. This requirement also applies to private drinking water wells and high capacity wells. (See WAC § NR 812.09(4)(a).) As part of imposing the CO, the Site will be listed on the Wisconsin Bureau for Remediation and Redevelopment Tracking System (BRRTS) database; and
- Addition of the requirement for a LTS plan to document the specific LTS procedures that will be used to monitor, maintain and enforce the ICs at the Site.

Table 1 shows the revised groundwater cleanup standards for the Site COCs. These consist of the ESs under WAC § NR 140 or the corresponding Maximum Contaminant Levels (MCLs) under the federal Safe Drinking Water Act, which for most contaminants are numerically equivalent to the ESs. The NCP requires that the state standard be used as the applicable or relevant and appropriate requirement (ARAR) when it is more stringent than the federal standard.

Table 1: Revised Groundwater Cleanup Standards for COCs

COC	Current Wis. Admin. Code § NR 140 ES (µg/l)	Current MCL (µg/l)
PCE	5	5
1,1,1-TCA	200	200
TCE	5	5
1,1,2-TCA	5	5

Note: All values are in units of micrograms per liter (µg/l).

Status of Implementation

Currently, seven groundwater extraction wells are in operation at the Site (designated as extraction wells EX-1, EX-2R, EX-3R, EX-4R, EX-5R, EX-6R, and EX-7R). Operations of the combined groundwater and vapor extraction wells at the former CSES and former SES areas and the SVE wells in the former sump source area were discontinued in 2004. Approval for this decision is documented in a WDNR letter to Pentair (dated April 22, 2004).

Residual groundwater impacts originating from the former SES and former sump source areas are controlled by extraction wells EX-1 and EX-7R. Groundwater downgradient of the former CSES source area and the pervasive low-level residual VOCs impacts in the subsurface soil beneath a portion of the concrete floor of Plant No. 1 and south of the south wall of Plant No. 1 are controlled by extraction wells EX-2R, EX-3R, EX-4R, EX-5R, and EX-6. Extracted groundwater is treated by aeration and discharged to the storm sewer under a WPDES permit.

Institutional Controls

The 2018 ESD requires ICs in the form of informational and governmental controls**.** An Institutional Control Implementation and Assurance Plan (ICIAP) was approved on June 7, 2018 to ensure that effective ICs are implemented, monitored, maintained, and enforced. The implemented ICs restrict property use, maintain the integrity of the remedy, and help ensure the long-term protectiveness for areas that do not allow for UU/UE. A summary of the ICs implemented for the Site is provided in Table 2 below and are further discussed below.

For hazardous waste sites in Wisconsin, placement of a site on the State's web-accessible WDNR database, known as the BRRTS, in conjunction with WDNR issuing a CO letter serves as the IC at a site. WDNR placed the Site on the BRRTS and issued the CO letter on October 25, 2017. The COs will apply any time a property is sold or transferred, and each new owner is responsible for complying with the requirements. COs thereby help ensure the long-term protection of public health and the environment in accordance with state laws and comply with the 2018 ESD's IC requirements. The ICs placed on the Site by the COs are as follow:

1. WAC § NR 812.09(4)(w) restricts construction of new water supply wells on the Site without prior approval of WDNR. This requirement applies to private drinking water wells and high capacity wells. (See WAC § NR 812.09(4)(a).)
2. Pursuant to Wisconsin Industrial Soil Standards WAC §§ NR 726.15 and NR 727.07, the Site property may not be used or developed for a residential, commercial, agricultural or other non-industrial use, unless prior written approval has been obtained from WDNR. Also, Pentair or future property owners shall notify WDNR at least 45 days before changing site use. A site investigation and a remedial action plan to meet applicable soil cleanup standards may be required at that time.
3. Local zoning designation of industrial per the City's Zoning Code Subchapter 23-2: Land Use Regulations and Subchapter 24-9: Administration and Enforcement.
4. The PRP shall inspect all Site monitoring wells annually and repair as needed to maintain the integrity of the wells, as required by WDNR and the PRP's September 28, 1990 Contract, paragraphs II.E. and IV.C.2, and per the Final ICIAP, as approved on June 7, 2018 by WDNR and EPA.

Table 2. Summary of ICs Implemented at the Site

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 Objectives	Title of IC Instrument Implemented and Date
Groundwater on Pentair Property that exceeds groundwater cleanup standards	Yes	Yes	Pentair Property	Prohibit groundwater use until cleanup standards are met	- WDNR Continuing Obligation letter, October 2017 - WDNR BRRTS Web database per s. 292.12, Wisconsin statues, Oct. 2017 - Well drilling restrictions, WAC § NR 812.09(4)(w), WI Register No. 550B (October 31, 2001).
Soils remediated at Pentair property	Yes	Yes	Pentair Property	Prevent residential, commercial, agricultural or other non-industrial use, unless approval has been obtained	- WDNR Continuing Obligation letter, October 2017 - WDNR BRRTS Web database per s. 292.12, Wisconsin statues, Oct. 2017 - Wisconsin Industrial Soil Standards WAC §§ NR 726.15 and NR 727.07, WI Register No. 694B (October 31, 2013) - Local zoning designation City of Delavan Zoning Code Subchapter 23-2: Land Use Regulations and Subchapter 24-9: Administration and Enforcement
Other remedy components such as transmission lines, treatment plant, and monitoring wells	Yes	Yes	Pentair Property	Prohibit interference with remedy components	- 9/28/1990 WDNR and PRP Contract requirements

ICs were reviewed and evaluated by EPA as part of the approval process for the Sitewide Ready for Anticipated Use (SWRAU) Government Performance Results Act measure for the Site, which was signed on July 30, 2018. EPA staff verified that all ICs are in place and effective. EPA and WDNR have sufficient documentation of Pentair's current ownership of the property via tax records, past and current industrial presence on the Site, and future anticipated industrial use supported by the City zoning and WAC restrictions. EPA believes the ICs will continue to be effective in the long term; however, EPA may consider pursuing a Title Commitment from the PRP in order to confirm that the Site has no other existing property rights that may interfere with the Site remedy or cause undue exposure (e.g. utility easements, etc.) in the long term.

Systems Operations/Operation & Maintenance

Operation and maintenance (O&M) of the treatment system consists of the original seven groundwater extraction wells. Currently, all valves on the seven extraction wells are exercised weekly as a precaution against seizing. Pumps and motors for all seven wells have been replaced over time as needed. Wells are flow tested quarterly and results submitted to WDNR's Wastewater Program. An approved formal O&M plan for the Site is not yet available. This FYR will recommend that the PRP complete and submit a written O&M plan for agency review and approval. Annual reports are provided to the WDNR project manager by the PRP documenting Site maintenance and groundwater monitoring results.

Contaminant concentrations in groundwater are monitored at fifteen monitoring points that are sampled annually, and one Site monitoring point that is sampled monthly (see Table 3, below). An agency approved groundwater monitoring plan is not currently available (because it was never required by the State). This FYR will recommend that the PRP complete and submit a written groundwater monitoring plan for agency review and approval.

Table 3. Pentair Facility Groundwater Monitoring Program

Monitoring Point	Sampling Frequency	Parameters
Plant 1 monitoring points	Annual	PCE, TCA, TCE, vinyl chloride (VC)
D-25R	Annual	PCE, TCA, TCE, VC
MW-1026	Annual	PCE, TCA, TCE, VC
MW-1027	Annual	PCE, TCA, TCE, VC
TW-4	Annual	Total VOCs
EX-2R	Annual	PCE, TCA, TCE, VC
EX-3R	Annual	PCE, TCA, TCE, VC
Plant 2 Monitoring Points		
D-15	Annual	PCE, TCA, TCE, VC
D-18	Annual	PCE, TCA, TCE, VC
MW-2004	Annual	PCE, TCA, TCE, VC
MW-2005R	Annual	PCE, TCA, TCE, VC
MW-2011	Annual	PCE, TCA, TCE, VC
TW-1	Annual	PCE, TCA, TCE, VC
TE-3	Annual	PCE, TCA, TCE, VC
EX-1	Annual	PCE, TCA, TCE, VC
EX-7R	Annual	PCE, TCA, TCE, VC
Site Monitoring Point		
Storm Sewer Grate (SS-1)	Monthly	PCE, TCA, TCE, VC

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 4: Protectiveness Determinations/Statements from the 2015 FYR

OU #	Protectiveness Determination	Protectiveness Statement
1/Sitewide	Short-term Protective	The remedy at the Delavan Municipal Well No. 4 Site is currently protective of human health and the environment because no groundwater exceeding PALs is migrating beyond the Sta-Rite property boundary, and VOCs are no longer present in Delavan Municipal Well No. 4. In addition, VOCs in the soil have been remediated to levels that are protective for industrial use. However, in order for the remedy to be protective in the long-term, the following actions need to be taken to ensure protectiveness: groundwater data needs to be reviewed to determine whether a VI investigation is needed; a decision document is needed to record a final decision to add ICs as a component of the selected remedy; ICs need to be implemented; and an ICIAP needs to be developed to ensure that effective ICs are implemented, monitored, maintained, and enforced. Long-term protectiveness requires groundwater monitoring until performance standards are achieved as well as compliance with effective ICs.

Table 5: Status of Recommendations from the 2015 FYR

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date
1/Sitewide	ROD did not require implementation of ICs	Complete a decision document to record a final decision adding ICs as a component of the selected remedy	Completed	An ESD requiring ICs was signed on June 5, 2018.	6/5/2018
1/Sitewide	ICs and long-term stewardship procedures are needed	Develop an ICIAP and implement ICs to ensure that effective ICs are implemented, monitored, maintained, and enforced	Completed	An ICIAP was approved on June 7, 2018. Also, ICs have been implemented at the Site.	6/7/2018
1/Sitewide	Determine the need for a vapor intrusion (VI) investigation	Review an additional round of groundwater data to confirm whether VOC levels are below screening levels	Completed	In a letter dated June 7, 2018, WDNR sent Pentair confirmation that the VOC concentrations in target wells were below risk management levels for VI.	6/7/2018

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

A public notice was made available by a newspaper posting by WDNR in the *Delavan Enterprise* on 11/28/2019. The notice announced that EPA was initiating a FYR and invited the public to submit any comments to WDNR.

The notice was also published on the EPA website for this Superfund site at www.epa.gov/superfund/delavan-muni-well4 on 11/13/2019. No comments were received as a result of these postings. No interviews were conducted during this FYR period due to a lack of public interest. The results of the review and the report will be made available at the Site's website, and at the Site information repository located in the Aram Public Library in Delavan, Wisconsin, 404 E Walworth Ave, Delavan, WI 53115.

Data Review

Significant reductions in VOC impacts at Site monitoring wells have been observed since the interim remedial action began in 1984. This is demonstrated by time versus concentration plots for contaminant concentrations in the most highly impacted wells near Plant No. 1 and Plant No. 2 from January 1993 through January 2019, which are included as Figures 4 through 10 (Appendix B). While VOC removal from the dual soil vapor extraction/groundwater extraction (SVE/GWE) wells in the former CSES and former SES areas and the SVE wells in the former sump source area has been discontinued (see above in the Status of Implementation section), EPA notes that hydraulic control of the contaminant plume is maintained by pumping from the seven groundwater extraction wells located on the Pentair facility property (EX-1, EX-2R, EX-3R, EX-4R, EX-5R, EX-6 and EX-7R). An estimation of the current extent of the groundwater contaminant plume can be found in Figure 3 (Appendix B). EPA also contacted Christopher Durgin, WDNR's Water Supply Engineer for the City, who confirmed that current monitoring results for COCs in DMW4 remain below remedial standards.

In 2018, pursuant to a recommendation in the 2015 FYR, EPA conducted an evaluation of the potential for vapor intrusion (VI) due to TCE at the Site. VI is the migration of volatile chemicals from the subsurface into overlying buildings. Volatile chemicals in contaminated groundwater can emit vapors that may migrate through subsurface soils and into indoor air spaces of overlying buildings. In extreme cases, the vapors may accumulate in dwellings or occupied buildings to levels that may pose near-term safety hazards (e.g., explosion), acute health effects, or aesthetic problems (e.g., odors). The 2018 VI evaluation concluded that, because current sampling results are below the risk management level of 22 µg/L for TCE, no additional VI investigation is required at this time.

Site Inspection

The inspection of the Site was conducted on 10/2/2019. Participants in the Site inspection included William Ryan, EPA's RPM for the Site; Thomas Wentland, WDNR's RPM for the Site; Dennis Schwind, Pentair's Environmental Technician; and Steve Scharinger, Pentair's Environmental Health and Safety Manager. The purpose of the inspection was to assess the condition of the remedy components and the protectiveness of the remedy. The aforementioned team walked the Site, inspected the groundwater extraction system components and Site monitoring wells, and reviewed applicable site documents on file with Pentair. The Site inspection confirmed that the parking lot pavement next to and

the concrete floor in Plant No. 1 prevent direct contact exposure to soil contaminants in the area of the residual VOCs beneath and south of Plant No. 1 (see site inspection photos 11 and 12 in Appendix C), and the surface conditions in the former sump source area are unchanged. The undeveloped land on the east half of the property remains undeveloped and land use in and around the developed portion of the Pentair facility property, including the former CSES area and former SES area, remains the same. The groundwater extraction system's components are in proper working order, and the monitoring wells are in good condition. Nothing that would call into question the protectiveness of the remedy or the effectiveness of the ICs was observed during the Site walk-through and inspection.

V. TECHNICAL ASSESSMENT

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

Question A Summary:

Yes. The 2020 FYR finds that the remedy is currently functioning as required by the decision documents and progress is being made toward achieving cleanup standards. The ROD selected no further action under CERCLA because the existing response actions under State authorities are progressing adequately to meet the groundwater RAO presented in the ROD as modified by the 2018 ESD.

The effectiveness and progress of the remedy are tracked through the groundwater monitoring program. Monitoring data indicates that ESs are being met at the boundary of the Pentair property, even though contamination still exceeds ESs at a few locations within Pentair's property boundary. The original groundwater extraction system, consisting of seven wells, remains in operation to ensure that groundwater contamination is contained within the Pentair facility's property boundary, and the State-lead groundwater remedial action appears to be progressing toward meeting the groundwater and soil RAOs of the 2000 ROD as modified by the 2018 ESD. Exposure pathways that could result in unacceptable risk are being monitored, and DMW4 was returned to productive use in 2000. Current monitoring results show that concentrations of the COCs remain below MCLs in DMW4.

An ICIAP was approved on June 7, 2018 to ensure that effective ICs are implemented, monitored, maintained, and enforced at the Site. Per the 2018 ESD, ICs in the form of State COs and placement of the Site on the BRRTS have been implemented to help restrict certain property uses, to maintain the integrity of the remedy, and to help ensure the long-term protectiveness for areas that do not allow for UU/UE.

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?

Question B Summary:

No. Although the physical conditions of the Site have not changed in a manner that would affect the protectiveness of the remedy, the 2018 ESD changed the Site groundwater cleanup standards, exposure assumptions, and RAOs identified in the 2000 ROD from PALs to ESs for each COC.

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

No. There are no changes in the physical conditions at the Site, no natural disasters, and no adverse effects from climate change that would affect the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
No issues or recommendations were identified by this FYR affecting the protectiveness of the remedy.

OTHER FINDINGS

In addition, the following are recommendations that were identified during the FYR and may improve performance monitoring and management of O&M, but affect neither current nor future protectiveness:

- The PRP should complete and submit a written groundwater monitoring plan for agency review and approval.
- The PRP should complete and submit a written O&M plan for agency review and approval.
- The PRP should provide a Title Commitment in order to confirm that the Site has no other existing property rights that may interfere with the Site remedy or cause undue exposure (e.g. utility easements, etc.) in the long term.

VII. PROTECTIVENESS STATEMENT

OU1 & Sitewide Protectiveness Statement
Protectiveness Determination: Protective
Protectiveness Statement: The remedy at the Delavan Municipal Well No. 4 Superfund Site is protective of human health and the environment. The remedy is functioning as intended by the decision documents, contaminant concentrations in groundwater continue to decrease, ICs are in place and effective, residual contamination is contained, and DMW4 has been returned to productive use.

VIII. NEXT REVIEW

The next FYR report for the Delavan Municipal Well No. 4 Superfund Site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

- 2000 Record of Decision (ROD)
- 2000 Preliminary Close Out Report (PCOR)
- 2015 FYR Report
- 2016 Pentair/Delavan Annual Progress Report
- 2017 Pentair/Delavan Annual Progress Report
- 2018 Pentair/Delavan Annual Progress Report
- 2019 Pentair/Delavan Annual Progress Report
- 2018 Final Institutional Control Implementation and Assurance Plan for the Delavan Municipal Well No. 4 Superfund Site
- 2018 Explanation of Significant Differences
- 1990 WDNR Contract
- 1993 Remedial Investigation of The Sta-Rite Industries Site Delavan, Wisconsin

APPENDIX B – FIGURES

Figure 1. Site Location

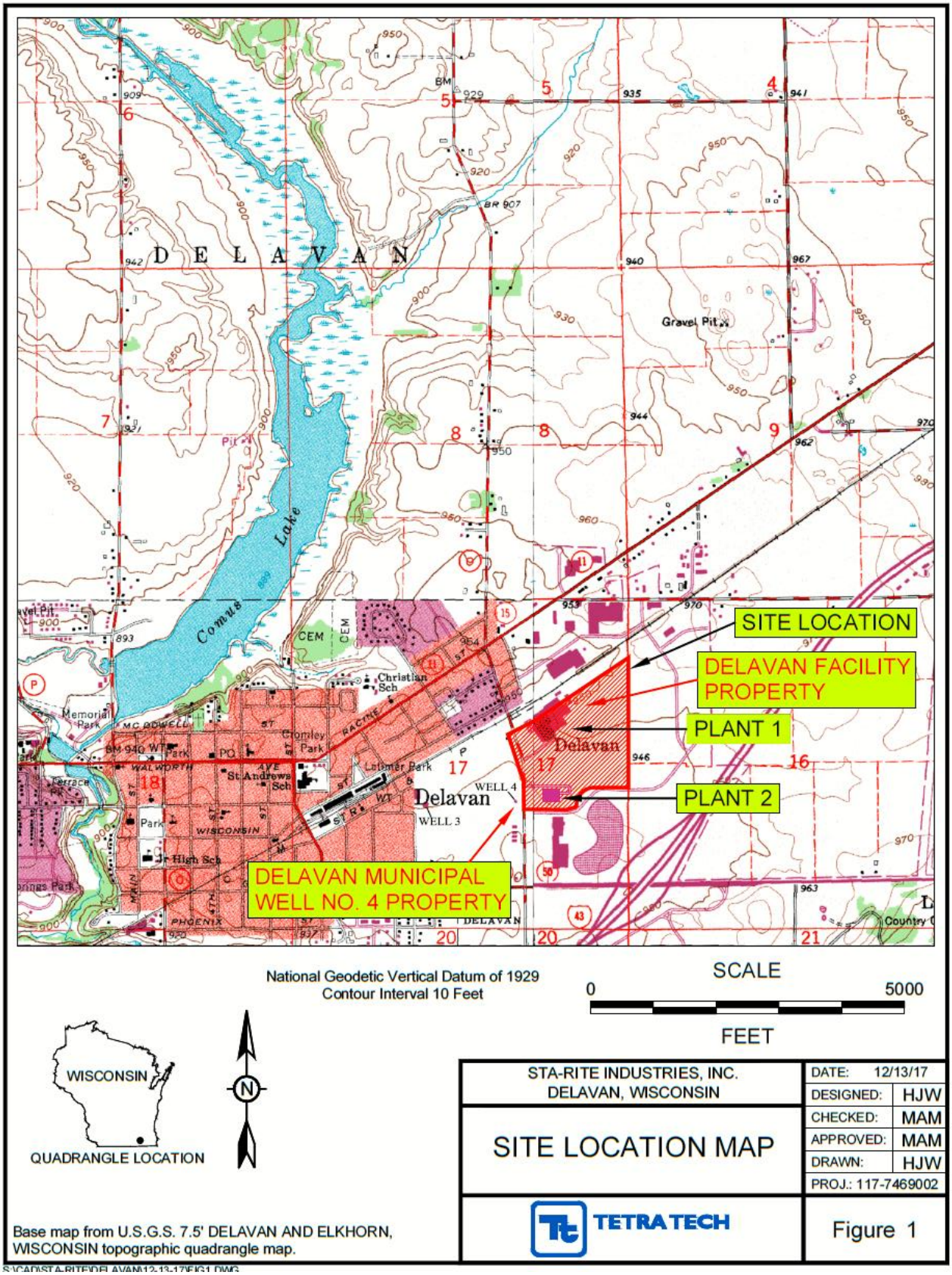


Figure 2. Site Layout

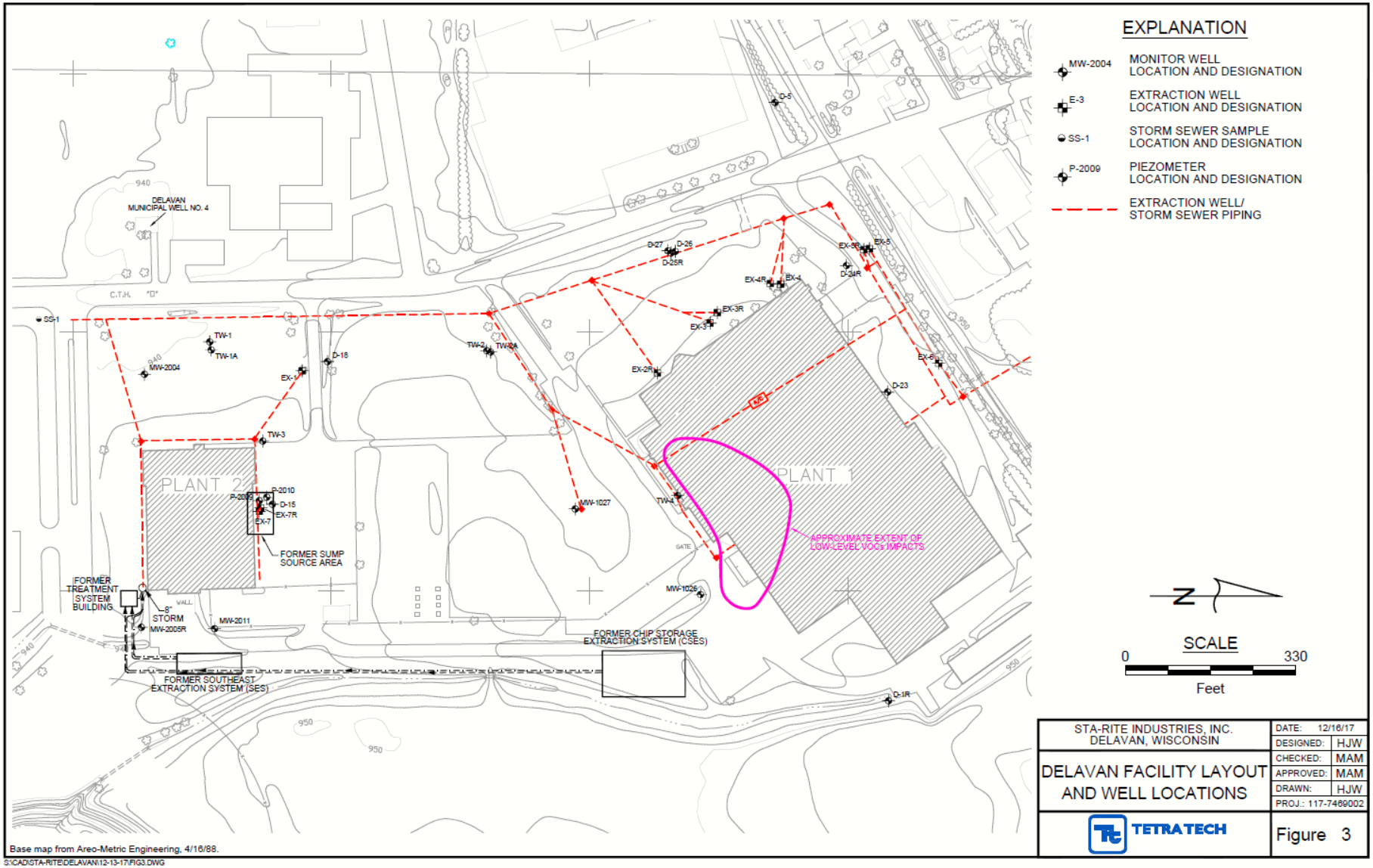


Figure 3. Plume Extent

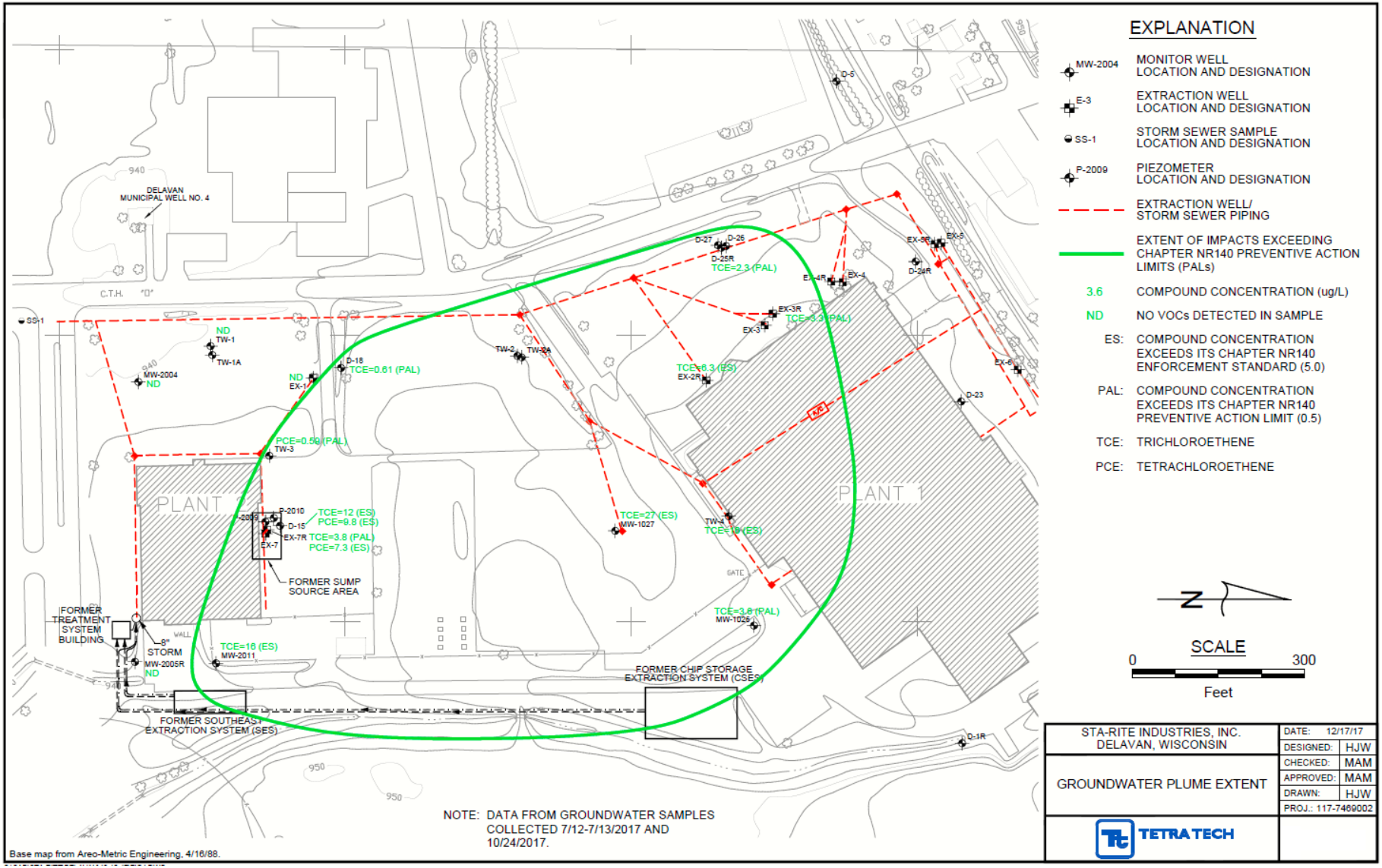


Figure 4. Total VOC concentration trends for Plant 1

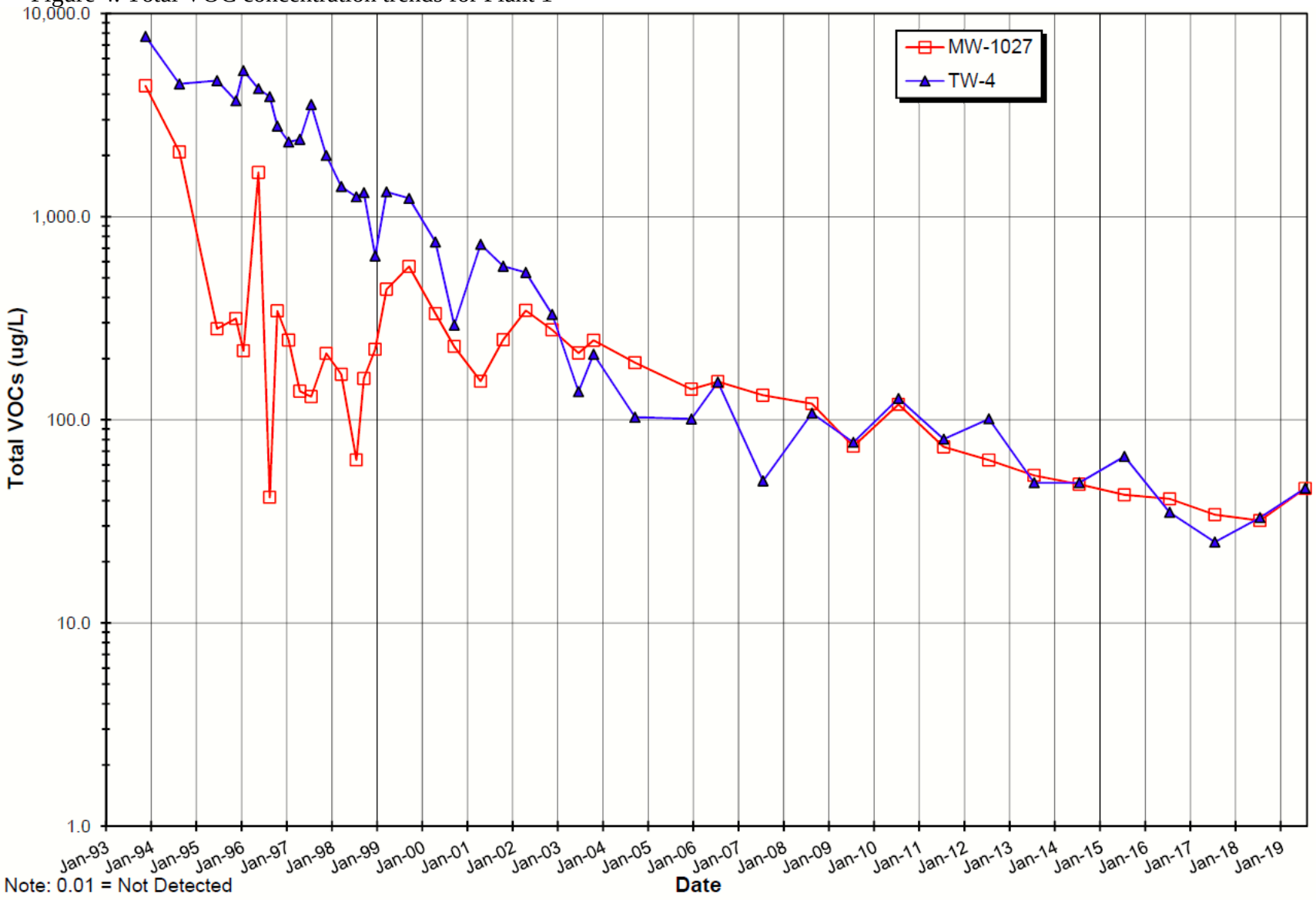


Figure 5. Total VOC concentration trends for Plant 2

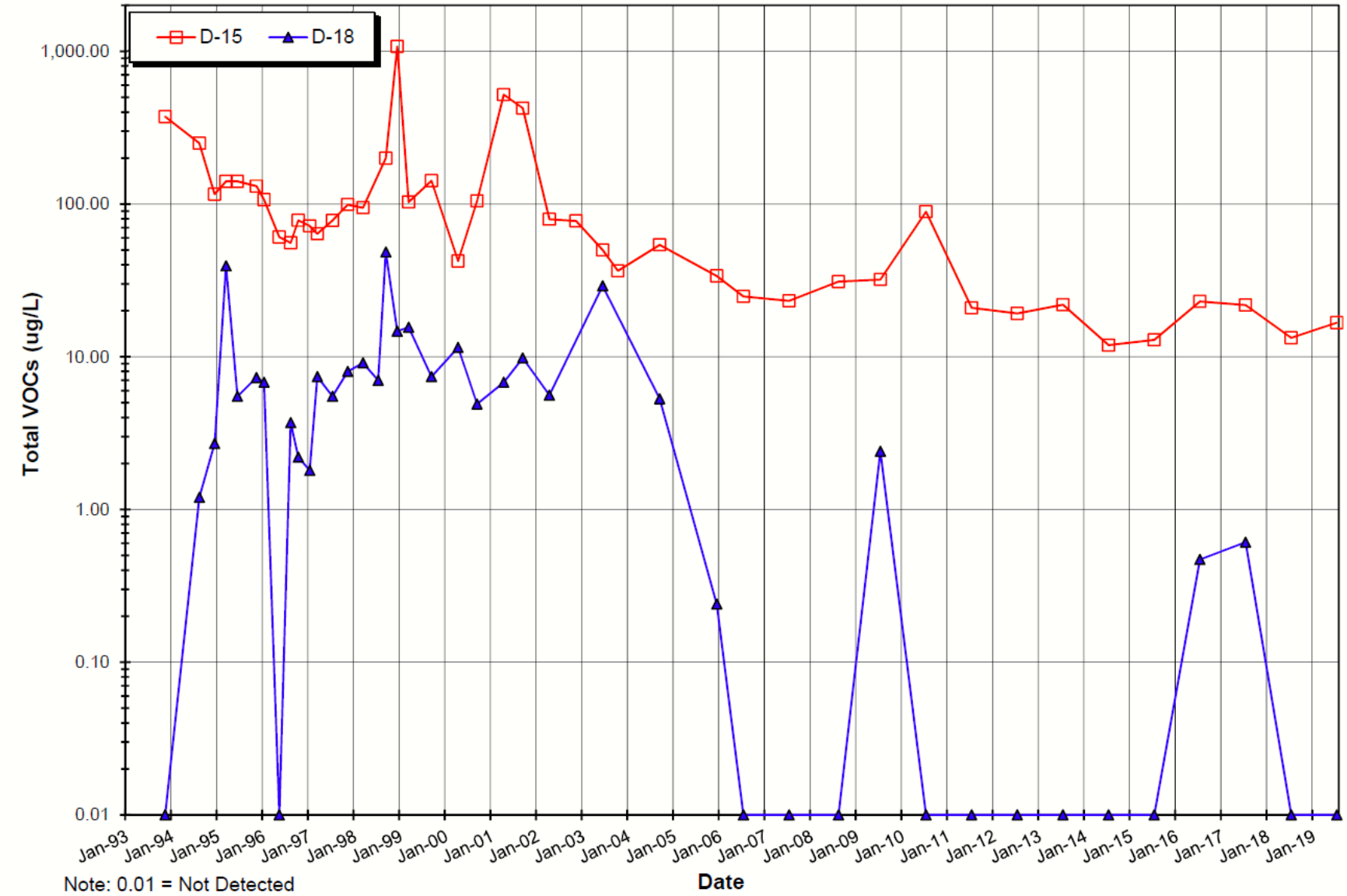


Figure 6. Plant 1 Trichloroethene (TCE) Concentration Changes

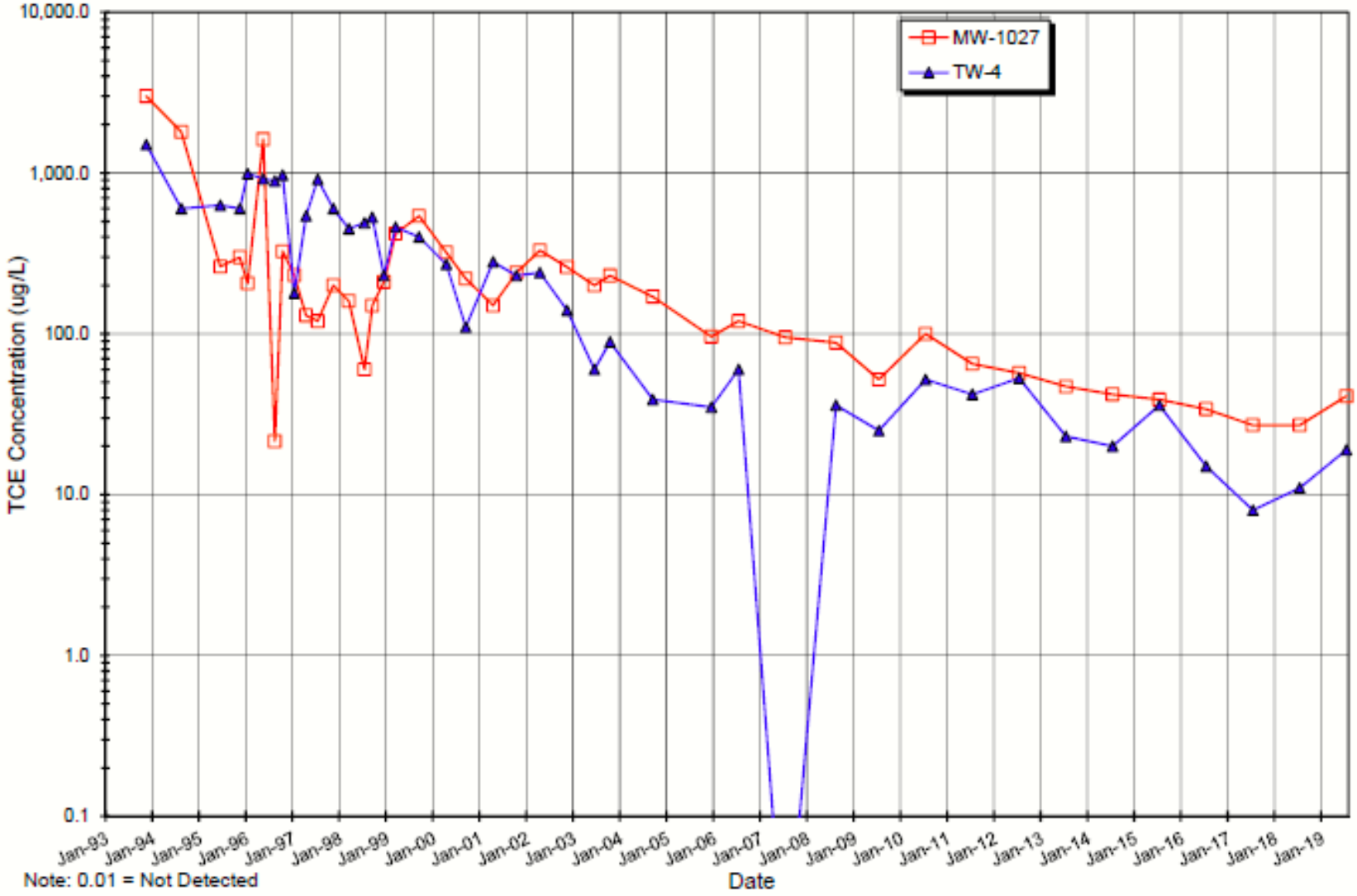


Figure 7. Plant 1 1,1,1-Trichloroethane (TCA) Concentration Changes

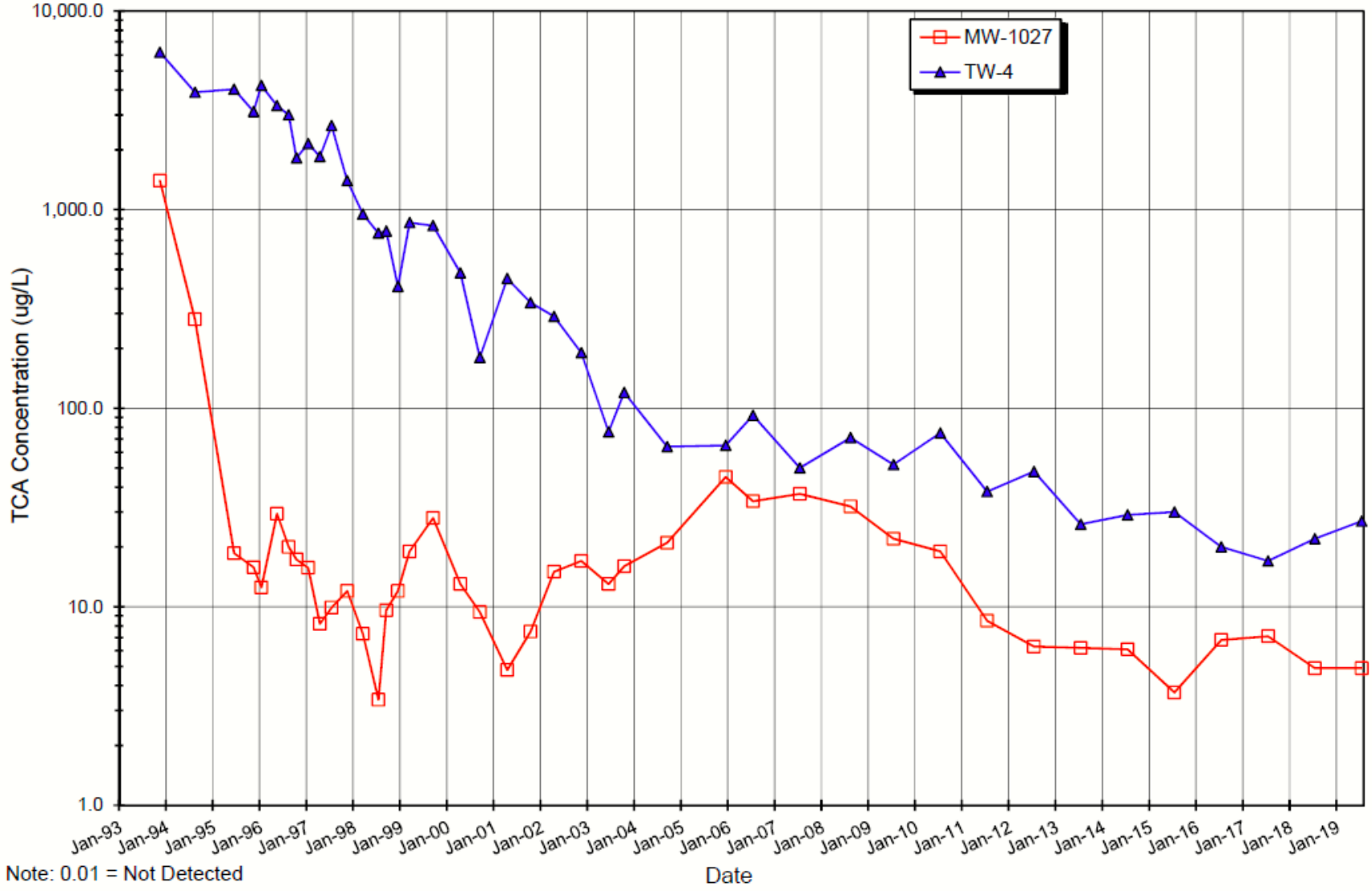


Figure 8. Plant 2 Trichloroethene (TCE) Concentration Changes

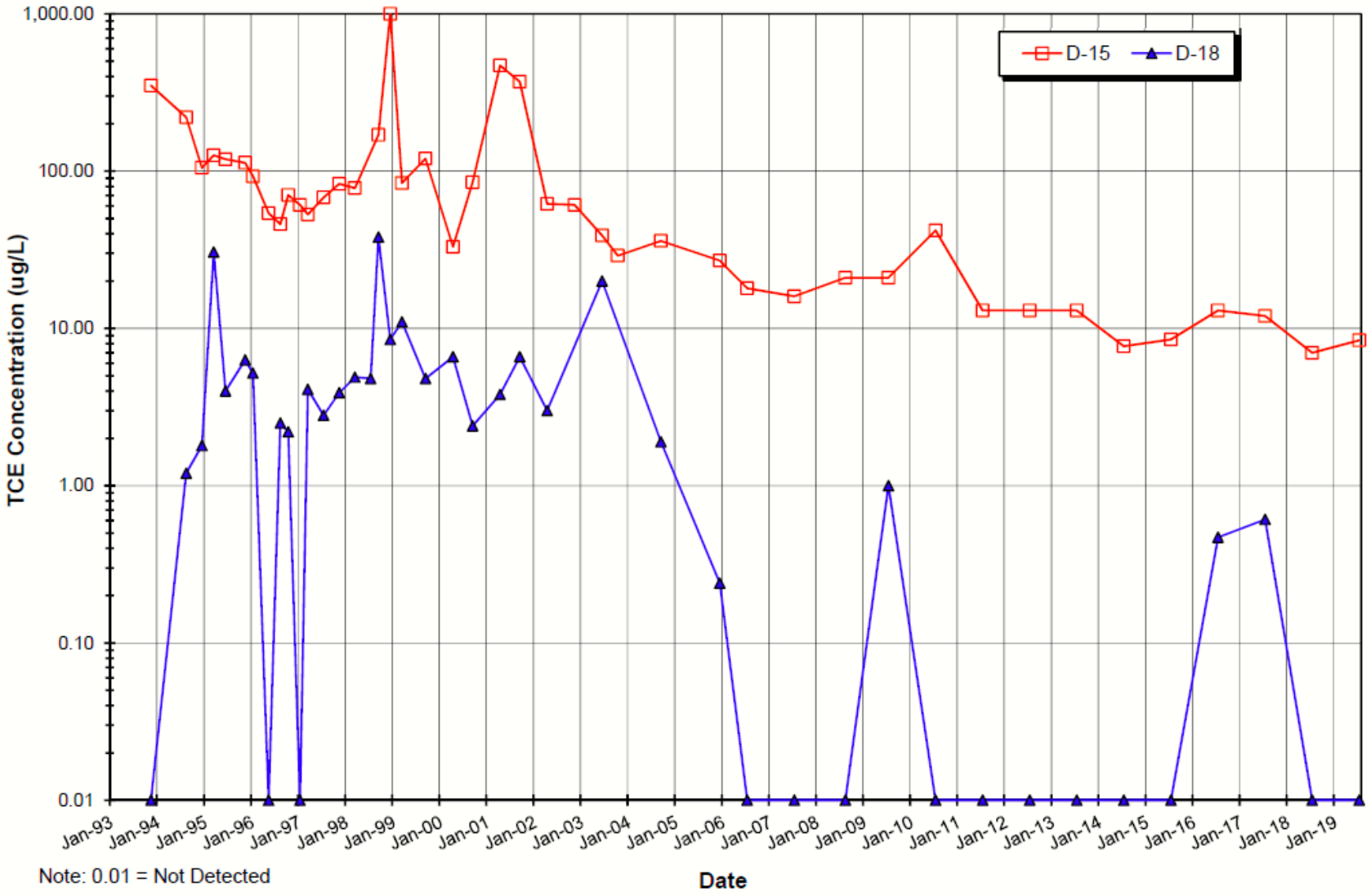


Figure 9. Plant 2 1,1,1-Trichloroethane (TCA) Concentration Changes

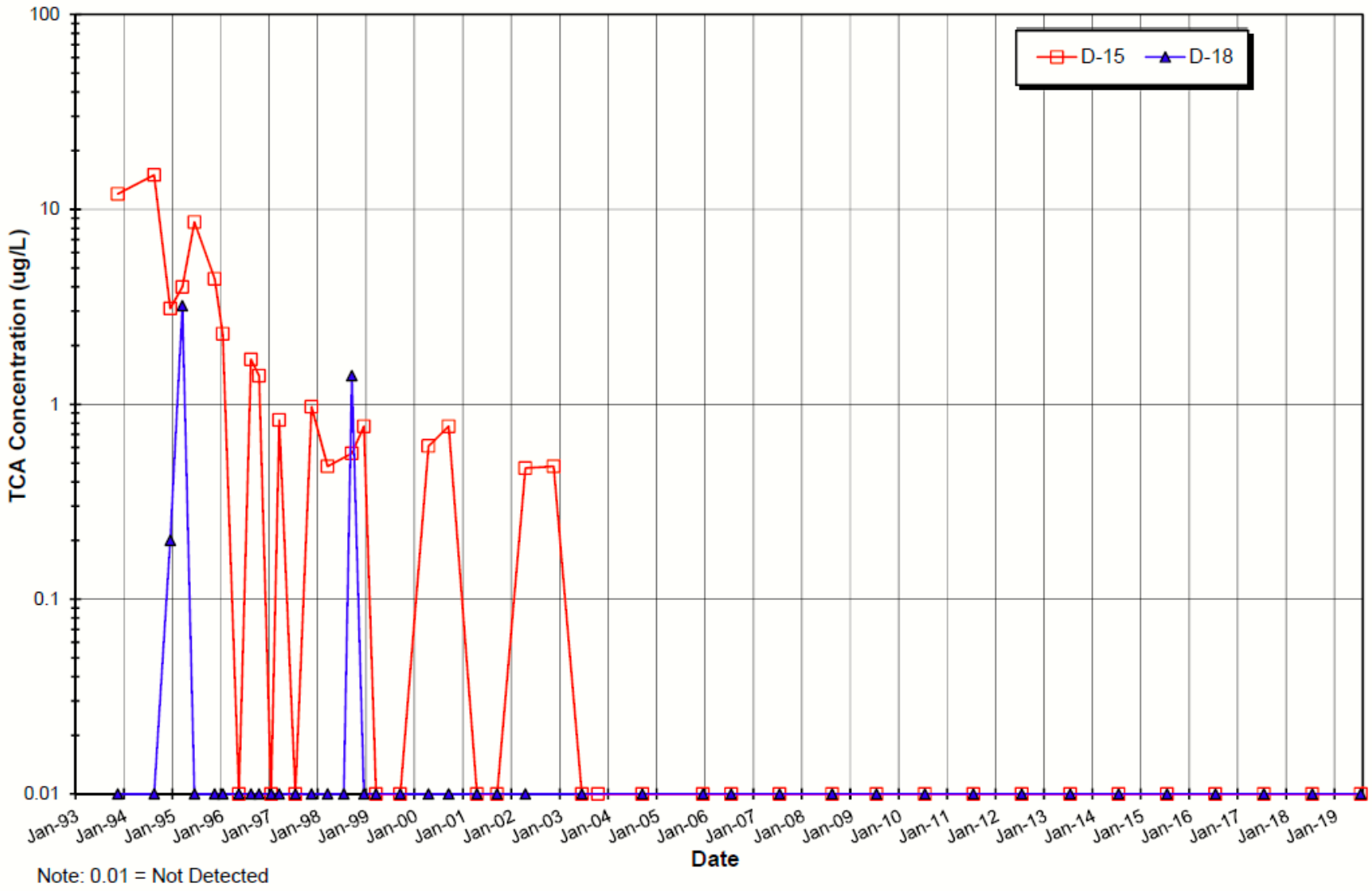


Figure 10. Plant 2 Tetrachloroethene (PCE) Concentration Changes

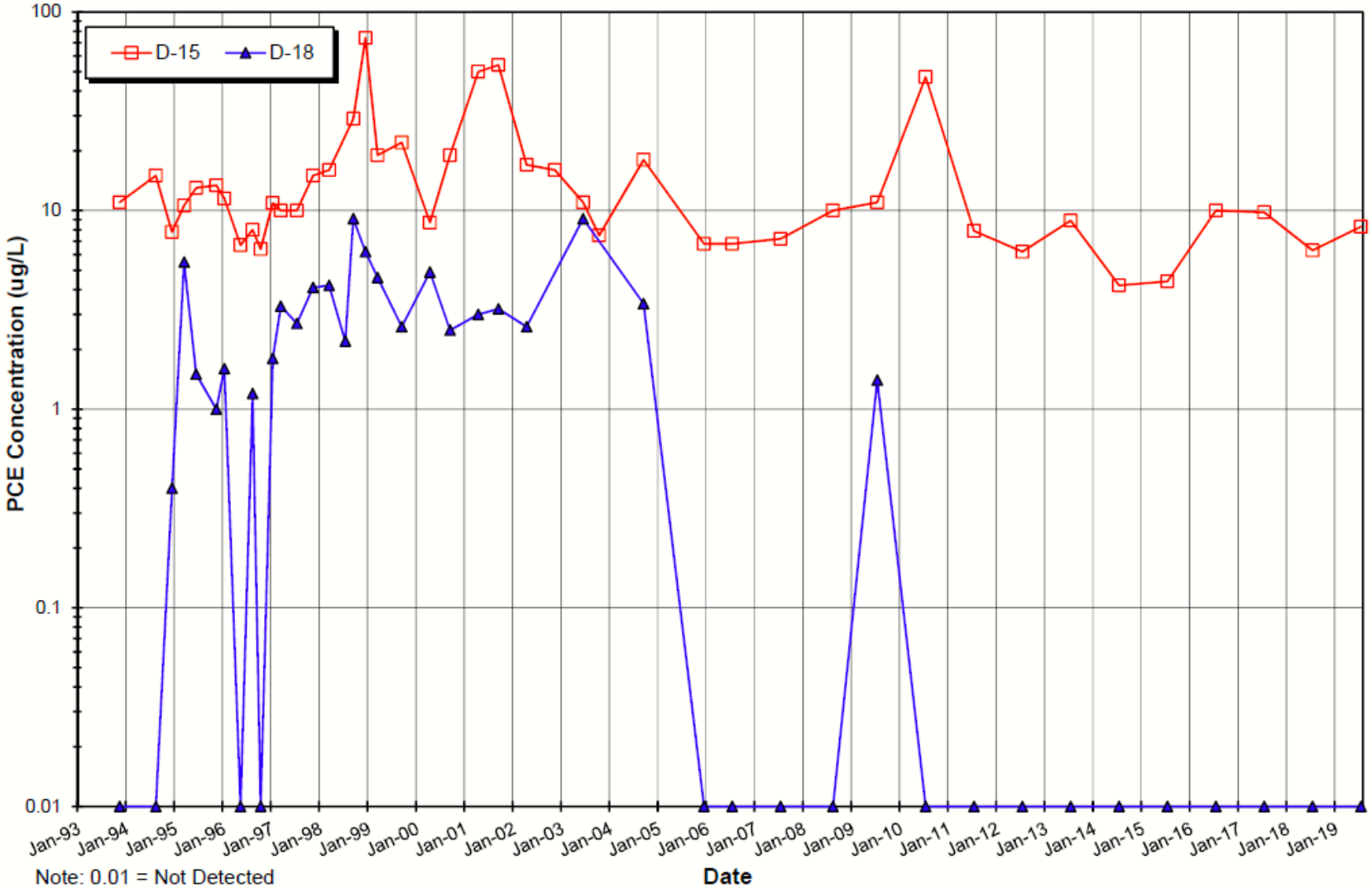


Figure 11. Land Use

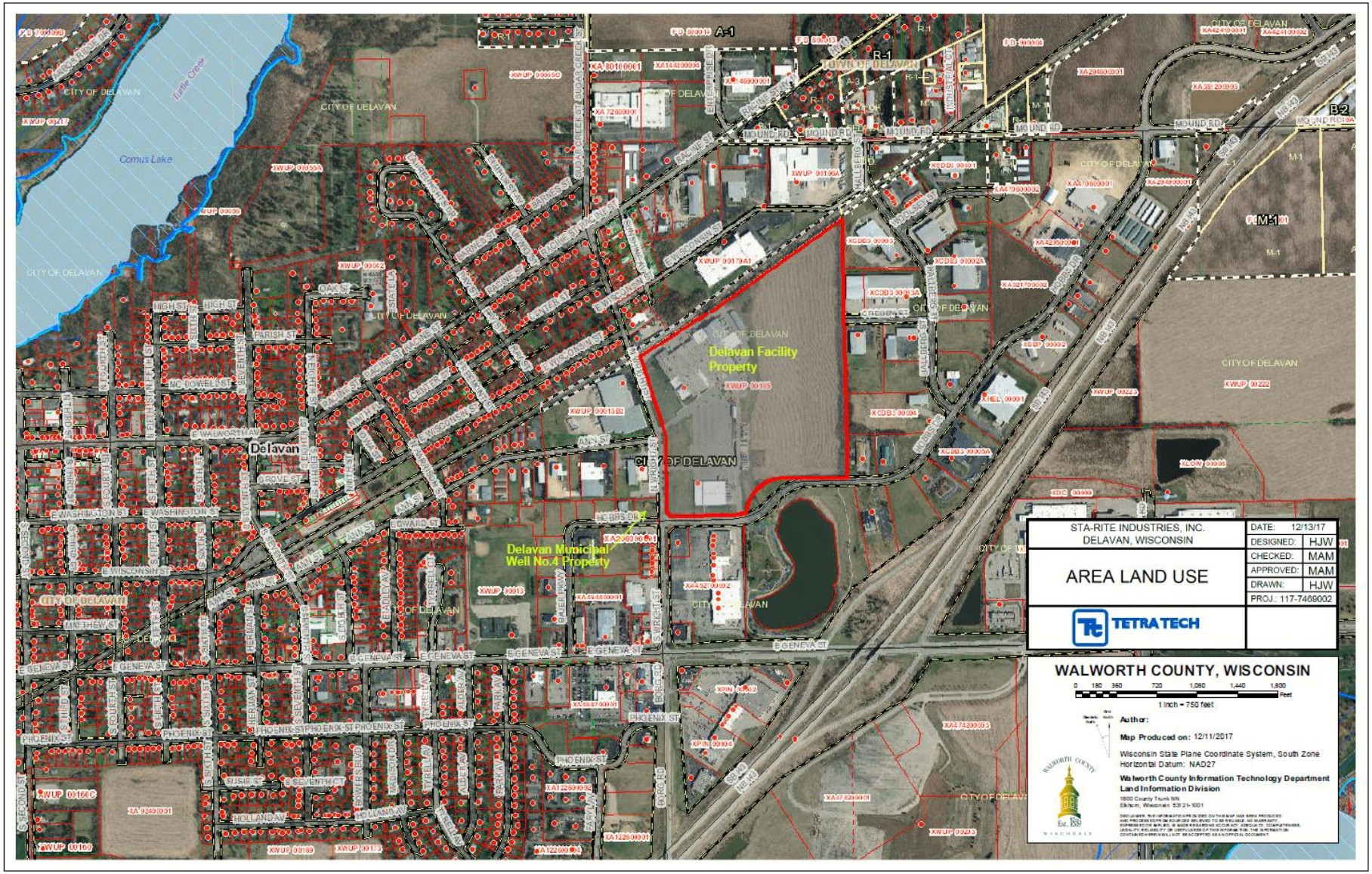
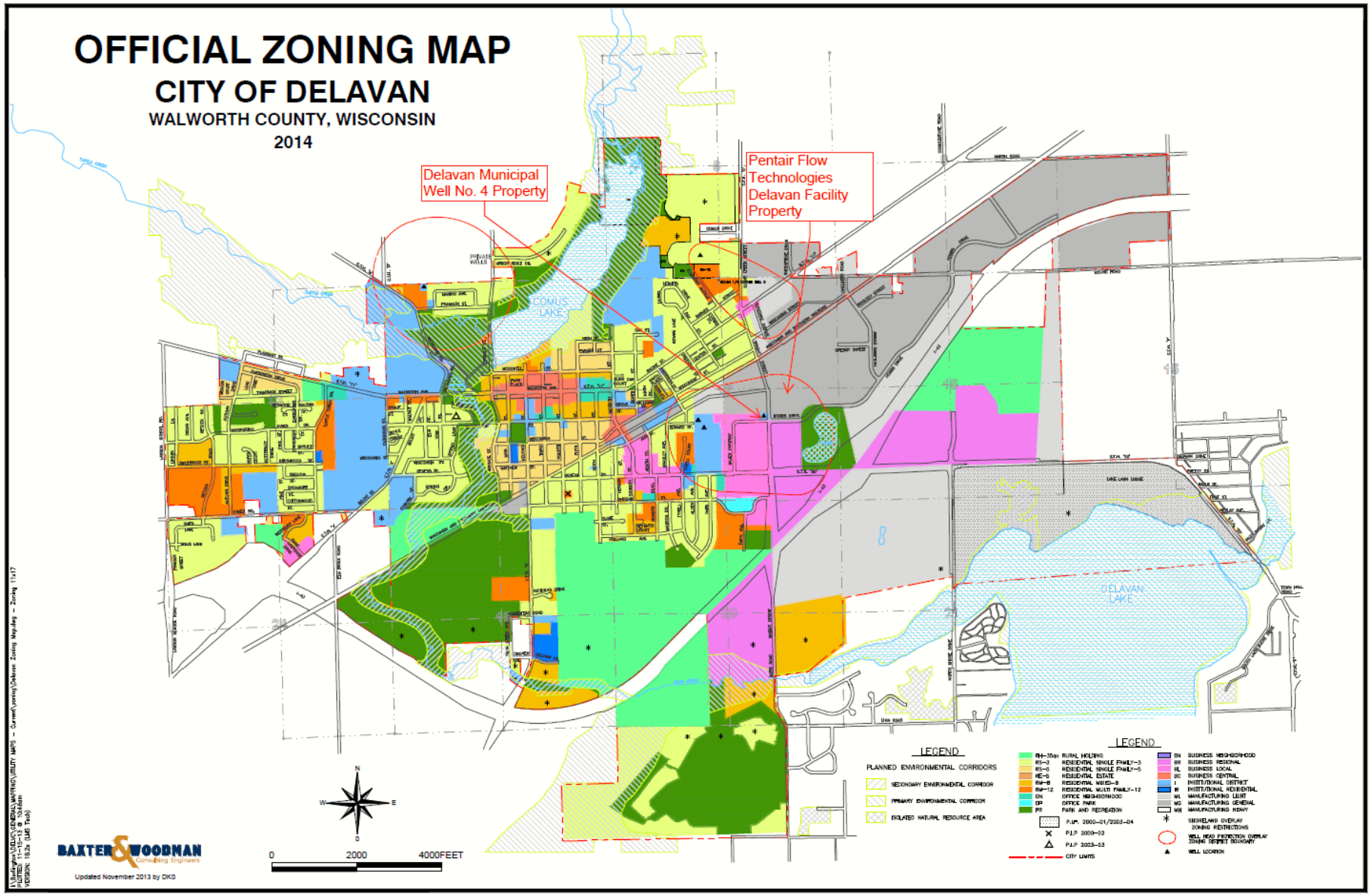


Figure 12. Zoning Map



APPENDIX C
MONITORING WELL AND SITE INSPECTION PHOTOGRAPHS

1. Enclosure installed around extraction well EX-7R to protect Dynasonics® U500w ultrasonic meter (former sump source area).

2. North side of property looking east. Plant 1 on right side of photo.

3. Northwest side of property looking south towards Plant 2.

4.Looking east from west side of Wright Street towards main entrance to Plant 1.

5.View of west side of property and Plant 2 from west side of Wright Street.

6.Looking north from Hobbs Drive at south side of property. Plant 2 on right side of photo. Plant 1 in background.

7.View looking north at south side of property. Plant 2 on left of photo. Undeveloped land on right of photo.

Middle of property in vicinity of former chip storage extraction system (CSES). Plant 1 in background on left and undeveloped land on right side of photo.

9. View looking north at loading docks on south side of Plant 1.

10. Looking west from north side of property. North wall of Plant 1 on left side of photo.

11. View looking north at paved area south of south wall of Plant 1 where low-level VOCs impacts occur in sub-surface soil.

12. View inside south side of Plant 1 in area where low-level VOCs impacts occur in the sub-surface soil.