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July 28, 2023

Mr. James Rea, P.G.
Pennsylvania Department of Environmental Protection
Southcentral Regional Office
Environmental Cleanup and Brownfields Program
909 Elmerton Avenue
Harrisburg, PA 17110

Ms. Kristin Koroncai
U.S. Environmental Protection Agency, Region III
RCRA Corrective Action Branch 2
1650 Arch Street
Philadelphia, PA 19103

Re: Transmittal of Groundwater and Surface Water Monitoring Report for 2022, Former York Naval Ordnance Plant (fYNOP), York, Pennsylvania

Dear Mr. Rea and Ms. Koroncai:

On behalf of the Former York Naval Ordnance Plant (fYNOP) Remediation Team (Harley-Davidson Motor Company Operations, Inc., and the U.S. Army Corps of Engineers), Groundwater Sciences Corporation is submitting this report titled "Groundwater and Surface Water Monitoring Report for 2022."

If you have questions regarding this report, please contact Ralph Golia of AMO Environmental Decisions at 267-249-0417 or rgolia@amoed.com.

Respectfully submitted,
GROUNDWATER SCIENCES CORPORATION

Christopher D. O'Neil, P.G.
Senior Hydrogeologist

CDO/dlp

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GROUNDWATER AND SURFACE WATER MONITORING REPORT FOR 2022
Former York Naval Ordnance Plant
1425 Eden Road, Springettsbury Township
York, Pennsylvania

Prepared for:

Former York Naval Ordnance Plant Remediation Team

July 28, 2023

Prepared by:

Groundwater Sciences Corporation
2550 Interstate Drive, Suite 303
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July 28, 2023

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** - in portable document format (PDF) on the fYNOP public website at https://yorksiteremedy.com*

LIST OF ACRONYMS AND ABBREVIATIONS

11DCA	1,1-dichloroethane
11DCE	1,1-dichloroethene
12DCA	1,2-dichloroethane
%D	percent difference
%R	percent recovery
%RSD	percent relative standard deviation
µg/L	micrograms per liter
amsl	above mean sea level
AWQC	applicable water quality criteria
CCV	continuing calibration verification
cfs	cubic feet per second
cis12DCE	cis-1,2-dichloroethene
Cleanup Plan	Site-Wide Cleanup Plan
COC	constituent of concern
CPA	Central Plant Area
CVOC	chlorinated volatile organic compound
DQA	data quality assessment
DQI	data quality indicator
DQO	data quality objective
EDD	electronic data deliverable
ESP	Eastern Site Perimeter
FDRTC	Final Decision and Response to Comments
FSP	Field Sampling Plan
fYNOP	former York Naval Ordnance Plant
gpm	gallons per minute
GSC	Groundwater Sciences Corporation
HTG	Hydro-Terra Group
HQ	hazard quotient
IS	internal standard
LCL	lower control limit
LCS/LCSD	laboratory control sample/laboratory control sample duplicate
Levee Area	Codorus Creek Levee Area
MCL	maximum contaminant level
MG	million gallons
MNA	monitored natural attenuation
MS/MSD	matrix spike/matrix spike duplicate
MSC	medium-specific concentration
MTBE	methyl tertiary-butyl ether
NETT	North End of Test Track
NIST	National Institute for Standards and Technology
NPA	North Plant Area
NPBA	Northern Property Boundary Area
NPDES	National Pollutant Discharge Elimination System
NSP	Northern Site Perimeter

PADEP	Pennsylvania Department of Environmental Protection
Part 2 SRI	Part 2 Supplemental Groundwater Remedial Investigation
PCE	tetrachloroethene
pounds/MG	pounds per million gallons
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
QC	quality control
Q_h	harmonic mean flow
RCRA	Resource Conservation Recovery Act
RPD	relative percent difference
RRF	relative response factor
RSL	regional screening level
SARM	Standard Analytical Reference Materials
SCSA	South-Central Site Area
SDG	sample delivery group
SHS	Statewide health standard
SPA	South Plume Area
SPBA	Southern Property Boundary Area
SRI	Supplemental Remedial Investigation
TCA	1,1,1-trichloroethane
TCE	trichloroethene
TI	Technical Impracticability
UCL	upper control limit
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VC	vinyl chloride
VOC	volatile organic compound
WPL	West Parking Lot

EXECUTIVE SUMMARY

This report documents results of groundwater and surface water monitoring conducted in January through December 2022 at the former York Naval Ordnance Plant (fYNOP or Site). The fYNOP is located in Springettsbury Township, York County, Pennsylvania. Groundwater and surface water monitoring were conducted in accordance with the Site-Wide Cleanup Plan (Cleanup Plan) approved by the Pennsylvania Department of Environmental Protection (PADEP) in February 2020, and the Final Decision and Response to Comments (FDRTC) for fYNOP prepared by the United States Environmental Protection Agency (USEPA) in February 2020.

Two areas of the Site have been designated Technical Impracticability (TI) Areas because groundwater restoration is not practicable due to Site conditions and nature of the contaminants. In 2022, monitoring wells were not sampled in TI Areas in accordance with the Cleanup Plan. However, groundwater monitoring is conducted around theGSC boundary of TI Area 1 to assess potential changes in groundwater chemistry during West Parking Lot (WPL) extraction system shutdown.

The groundwater cleanup goal outside of TI Areas is to reach USEPA maximum contaminant levels (MCLs) and regional screening levels (RSLs) for constituents of concern (COCs) with no MCLs. The surface water goal is compliance with applicable surface water quality criteria (AWQC). Testing is underway to determine whether compliance with AWQC for all COCs can be maintained with the WPL pumps shut off.

The objectives of 2022 groundwater and surface water monitoring are described in Section 10 of the Cleanup Plan and Section 5 of the FDRTC and consist of the following:

- Conduct groundwater and extraction system monitoring in the Southern Property Boundary Area (SPBA) to verify that a groundwater gradient exists from off-Site wells located along Canterbury Lane toward on-Site wells located in the SPBA;
- Conduct groundwater monitoring in the Northern Property Boundary Area (NPBA), Eastern Site Perimeter (ESP), South-Central Site Area (SCSA), SPBA, South Plume Area (SPA), Codorus Creek Levee Area (Levee Area), West Side of Codorus Creek, and Northern Site Perimeter (NSP) to demonstrate monitored natural attenuation (MNA) progress outside of TI Area boundaries at the Site;
- Conduct groundwater monitoring to verify no off-Site migration of COCs above established limits from the NPBA; and

- Conduct surface water monitoring to demonstrate compliance with AWQC in Codorus Creek during WPL extraction system shutdown.

The scope of 2022 monitoring activities includes analysis of 351 samples for volatile organic compounds (VOCs) and one sample analysis for metals during monthly, quarterly, and annual sampling. Samples were collected from 50 wells, 12 surface water locations, and one groundwater extraction system. Water levels were measured in 197 wells and three surface water locations.

During 2022 SPBA system pumping, groundwater elevation data confirms a groundwater gradient that slopes from off-Site toward the fYNOP. The average 2022 pumping rate for the SPBA groundwater extraction system approximates the calculated annual average recharge rate in this area.

The December 2021 sample from SPBA off-Site well MW-166 showed higher tetrachloroethene (PCE) and trichloroethene (TCE) concentrations than previously detected. An increase in PCE and TCE concentrations did not occur in other parts of the aquifer near MW-166. Actions were taken to address the MW-166 analytical results that consisted of notifying PADEP and USEPA, reviewing system performance data, and increasing the frequency of groundwater monitoring and reporting. The results of increased sampling and analysis at MW-166 documented a steady decline in PCE and TCE concentrations in 2022. Concentrations in the other monitoring and extraction wells were consistent with previous results. These sampling results, along with the declining trend in PCE and TCE concentrations suggest that the concentration increase at MW-166 in December 2021 was a localized and transient event.

The Cleanup Plan requires a yearly comparison of annual COC concentrations in groundwater from 44 MNA area wells to baseline COC concentrations established in the Part 2 Supplemental Remedial Investigation (SRI) Groundwater Report (Part 2 SRI). Results of the 2022 comparison to baseline concentrations and MCLs/RSLs indicate a general improvement in Site-wide groundwater quality. The 2022 COC concentrations are less than or equal to baseline concentrations in samples from 36 of the 44 MNA wells and the 2022 data set contains fewer samples with COC concentrations above the MCL (17 versus 27). A more detailed statistical trend analysis of COC concentrations in groundwater at these wells will be presented in the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) Final Report.

The Cleanup Plan requires an annual evaluation of plume migration to confirm no off-Site migration north and west of the NPBA. Along the northern boundary of the NPBA, potentiometric contours developed from September 2022 elevation data indicate that groundwater flow is southwest, away from off-Site wells RW-2 (abandoned in August 2021) and RW-4. Historical laboratory analysis of groundwater samples from RW-2 and RW-4 reported detection of TCE in the RW-2 sample at a concentration below the MCL and no detections in RW-4 samples. These data indicate that the plume is not migrating northward off the Site. Along the western boundary of the NPBA, a south-southwestern groundwater flow gradient exists around wells MW-18S and MW-18D. Plume migration westward off the Site is not occurring at levels of concern based on low COC concentrations (less than 1 microgram per liter [µg/L]) in groundwater from wells downgradient of wells MW-18S and MW-18D.

Quarterly groundwater monitoring was conducted at five wells located along the boundary of TI Area 1 with the WPL extraction well pumps off. The monitoring showed non-pumping COC concentrations in the 2022 groundwater samples that are similar to concentrations during WPL extraction system pumping.

Analytical results for monthly surface water samples collected in 2022 during the shutdown test of the WPL extraction reported COC concentrations below AWQC at the 12 locations in Codorus Creek. A comprehensive evaluation of the surface water monitoring results will be documented in the Act 2 Final Report.

Monitoring in 2022 was completed consistent with the requirements in the Cleanup Plan and FDRTC. Performance goals for the SPBA groundwater extraction and treatment system were met. COC concentrations in 2022 samples indicate a general Site-wide improvement of groundwater quality based on a comparison to baseline concentrations and MCLs/RSLs. Monitoring in the NPBA confirmed that northern and westward plume migration off the Site is not occurring. COC concentrations in 2022 surface water samples verify AWQC in Codorus Creek is met with the WPL groundwater extraction system shut down. Detailed information on continued monitoring of groundwater and surface water, evaluation of data, and reporting will be presented in the Act 2 Final Report.

1 INTRODUCTION

This report documents results of groundwater and surface water monitoring conducted in January through December 2022 at the former York Naval Ordnance Plant (fYNOP or Site). The fYNOP is in Springettsbury Township, York County, Pennsylvania (**Figure 1.0-1)**. Site features and area designations at the fYNOP are illustrated on **Figure 1.0-2**.

1.1 Regulatory Framework

Site-wide groundwater and surface water monitoring activities for 2022 were conducted in accordance with the Site-Wide Cleanup Plan (Cleanup Plan) submitted to the United States Environmental Protection Agency (USEPA) and the Pennsylvania Department of Environmental Protection (PADEP) in November 2019 (Groundwater Sciences Corporation [GSC], 2019a). The Cleanup Plan, approved by PADEP in February 2020, and the Final Decision and Response to Comments (FDRTC) for fYNOP prepared by USEPA in February 2020 (USEPA, 2020), combines engineering controls, institutional controls, and other remedial actions and obligations as the selected remedies for Site closure. Groundwater and surface water monitoring are components of the Cleanup Plan and FDRTC necessary to address requirements of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) and Federal Resource Conservation Recovery Act (RCRA), under the One Cleanup Program established by a Memorandum of Agreement between USEPA Region 3 and PADEP.

The Cleanup Plan designated two Technical Impracticability (TI) Areas or Zones because groundwater restoration to cleanup standards is not practicable due to Site conditions and nature of the contaminant. **Figure 1.1-1** shows the two TI Areas: TI Area 1 covers portions of the East and West Campuses, and TI Area 2 contains an area along the eastern side of the East Campus extending into the Southern Property Boundary Area (SPBA). These two TI Areas were included in the USEPA FDRTC.

The scope of required groundwater and surface water monitoring activities completed in 2022 is contained in Section 10 of the Cleanup Plan that describes post-remediation care activities as follows:

- Conduct groundwater and extraction system monitoring in the SPBA to verify that a groundwater gradient exists from off-Site wells located along Canterbury Lane toward on-Site wells located in the SPBA;
- Conduct groundwater monitoring in the Northern Property Boundary Area (NPBA), Eastern Site Perimeter (ESP), South-Central Site Area (SCSA), SPBA, South Plume Area (SPA), Codorus Creek Levee Area (Levee Area), West Side of Codorus Creek, and Northern Site Perimeter (NSP) to demonstrate monitored natural attenuation (MNA) progress outside of TI Area boundaries at the Site;
- Conduct groundwater monitoring to verify no off-Site migration of constituents of concern (COCs) above established limits from the NPBA; and
- Conduct surface water monitoring in Codorus Creek to demonstrate compliance with applicable surface water quality criteria (AWQC) during West Parking Lot (WPL) extraction system shutdown.

The scope and procedure for sampling, analysis, data evaluation, and reporting contained in this report will be used until the Act 2 Final Report for the Site is approved.

1.2 Scope of Report

The scope of 2022 monitoring activities described in this report includes recording water levels, sampling groundwater and surface water, analyzing samples, and evaluating and reporting collected data. The report presents monitoring objectives and results.

1.3 Groundwater and Surface Water Monitoring Objectives

Groundwater and surface water monitoring objectives focus on periodic tracking of COC concentrations, COC movement in groundwater and surface water, and performance of the groundwater extraction and treatment system at the Site. Activities provided in the Cleanup Plan to meet monitoring objectives include collecting and evaluating water level elevation, laboratory, and flow data to determine performance of the groundwater extraction and treatment system; assessing plume migration; and evaluating MNA status by comparing annual COC concentrations to baseline concentrations established in the Part 2 Supplemental Remedial Investigation (SRI) Groundwater Report (Part 2 SRI) (GSC, 2018). Surface water monitoring is required to verify continued compliance with AWQC in the portion of Codorus Creek affected by diffuse groundwater from fYNOP discharging to Codorus Creek.

Groundwater substances considered Site COCs were established in the Part 2 SRI based on magnitude of chemical concentration, frequency of detection, and potential for off-Site migration. Baseline concentrations of COCs using the most recent comprehensive sampling data set (2008 through 2015) contained in the Part 2 SRI are compared to 2022 MNA data in this report. Site COCs for the MNA portion of the groundwater remedy are chlorinated volatile organic compounds (CVOCs) consisting of tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis12DCE), vinyl chloride (VC), 1,1-dichloroethane (11DCA), 1,1-dichloroethene (11DCE), 1,2-dichloroethane (12DCA), and 1,1,1-trichloroethane (TCA). Additional COCs evaluated for MNA include benzene, methyl tertiary-butyl ether (MTBE), and cyanide. COCs in surface water are determined by magnitude of chemical concentration and frequency of detection. The surface water COCs are PCE, TCE, cis12DCE, and VC.

1.4 Report Organization

This report is organized into six sections. The results of the 2022 groundwater and surface water monitoring are presented in Section 2. Section 3 provides an evaluation of the groundwater and surface water monitoring results. Conclusions are provided in Section 4. Section 5 includes the laboratory data quality assessment performed on the analytical data and Section 6 is a list of references.

2 GROUNDWATER AND SURFACE WATER MONITORING RESULTS

This Section presents results of Site-wide groundwater and surface water monitoring conducted in January through December 2022. Groundwater monitoring activities were conducted in the NPBA, ESP, SCSA, SPBA, WPL, SPA, Levee Area, West Side of Codorus Creek, and NSP. Surface water monitoring was performed at specific locations in Codorus Creek. These activities meet the monitoring requirements defined in the Cleanup Plan. Groundwater and surface water monitoring procedures used to collect and analyze data are described in the Field Sampling Plan (FSP) (GSC, 2012) and Quality Assurance Project Plan (QAPP) (GSC, 2020a). Copies of the FSP and QAPP are available on the public website, https://yorksiteremedy.com.

2.1 Site-Wide Groundwater Elevations

Water level data were collected to provide information regarding Site-wide groundwater flow gradients and performance of the groundwater extraction system. Vertical and lateral groundwater gradients and groundwater chemistry are used to evaluate COC migration and groundwater containment objectives.

Water levels were measured on September 22, 2022, at 197 wells and three surface water locations at the Site. Water level measurement locations, measurement points of reference, and calculated water level elevations for the most recent four years of monitoring (2019 through 2022) are provided on **Table 2.1-1**. The 2022 data were used to develop potentiometric surface contours for the Site shown on **Plate 2.1-1**. At locations with multiple well-screen depths, only the groundwater elevation from the shallowest well was used to generate the contours. Water levels collected from wells screened below the shallow portion of the aquifer were not used because these data do not represent the water table surface elevation in the aquifer beneath the Site.

As shown on **Plate 2.1-1**, the shallow groundwater gradient across most of the Site trends westward toward Codorus Creek from a groundwater elevation "high" of approximately 530 feet above mean sea level (amsl) to a groundwater elevation "low" of approximately 340 feet amsl that is similar to the surface water elevation in the creek. In the southeastern area of the fYNOP, the groundwater gradient is south toward the SPBA and then southwest from the SPBA toward U.S. Route 30.

Consistent with groundwater elevations measured previously (GSC, 2018), the gradient in the sandstone bedrock aquifer beneath the eastern portion of the Site is relatively steep and the gradient in the carbonate bedrock aquifer in the western portion of the Site is relatively flat. Water levels measured in most wells in 2022 were lower than those measured in 2021 (**Table 2.1-1**).

On August 31, 2021, the WPL groundwater extraction system was shut down to evaluate water quality in Codorus Creek under natural groundwater flow conditions in accordance with the Cleanup Plan. Therefore, potentiometric surface contours shown on **Plate 2.1-1** represent non-pumping conditions from the WPL.

Based on the September 2022 potentiometric surface contours shown on **Plate 2.1-1**, pumping of SPBA wells CW-21, CW-22, and CW-23 continued to maintain a groundwater gradient in the SPBA that slopes from off-Site wells located along Canterbury Lane toward the Site.

The September 2022 potentiometric surface contour configuration in the NPBA is similar to those generated from data collected in 2014 through 2021 (GSC, 2019b, 2019c, 2020b, 2021, and 2022a). The lateral gradient in shallow groundwater in the NPBA is southwest from a groundwater elevation of approximately 530 feet amsl to an elevation of approximately 370 feet amsl.

Vertical gradients like those observed in 2021 were measured in multi-level well pairs in 2022 (**Table 2.1-2)**. Upward gradients were calculated in 22 well pairs in the former Central Plant Area (CPA), Levee Area, Eastern Landfill, former North End of Test Track (NETT), NPBA, SPA, SPBA, and WPL. Artesian flow occurs in NPBA well MW-16D and well pair MW-18S and MW-18D. Downward gradients are evident from elevation data in 17 well pairs located in the CPA, Levee Area, Eastern Landfill, former NETT, former North Plant Area (NPA), NPBA, SPA, SPBA, and WPL.

2.2 Groundwater Sampling and Analysis

Analytical results of 2022 groundwater samples are summarized on **Table 2.2-1** (Volatile Organic Compounds [VOCs] – Outside TI Areas), **Table 2.2-2** (VOCs – Inside TI Areas), and **Table 2.2-3** (total and available cyanide – Outside TI Areas). **Tables 2.2-1** and **2.2-3** include USEPA maximum contaminant levels (MCLs), USEPA tap water regional screening levels (RSLs) that correspond to a cancer risk level of $1x10^{-6}$ and a hazard quotient (HQ) of 1.0, and PADEP Statewide health standard (SHS) residential and non-residential medium-specific concentrations (MSCs) for comparison. The

USEPA aquifer restoration goal for groundwater outside of TI Areas at the Site is to meet MCLs that are equivalent to SHS residential MSCs via MNA. For COCs that do not have a MCL, RSLs are considered the groundwater cleanup goal.

In 2022, monitoring and extraction wells were not sampled in TI Area 1. Five monitoring wells were sampled around the boundary of TI Area 1 in 2022, as discussed in Section 2.3. Three extraction wells in TI Area 2 (CW-21, CW-22, and CW-23) were sampled to gauge performance of the SPBA groundwater extraction and treatment system.

A total of 123 groundwater samples were collected in 2022 during monthly, quarterly, and annual monitoring. Samples from 50 wells were analyzed for VOCs and a sample from one well was analyzed for cyanide. This 50 well total includes sampling of 44 MNA area wells, three SPBA extraction wells, and three NPBA plume migration assessment wells (MW-142S/D and RW-1 (Folk)) shown on **Figure 2.2-1**. **Table 2.2-4** provides physical data for wells sampled (i.e., type, depth, construction, geology, and sub-areas at the Site). Purge logs for sampling are in **Appendix A**.

Groundwater samples were analyzed for the project analyte list of VOCs in the QAPP using SW-846 Method 8260D. The sample from MW-2 was analyzed for total and available cyanide using USEPA Method 9014 and OIA-1677, respectively. Laboratory analytical reports for 2022 samples are in **Appendix B**. The laboratory data quality assessment (DQA) is described in Section 5.

2.2.1 SPBA Extraction System

COC concentrations in groundwater were quantified using two sampling intervals (monthly and quarterly) during 2022 SPBA extraction and treatment system operation. Samples were collected monthly from combined extraction system inflow prior to treatment, and monthly/quarterly from individual wells that comprise the extraction system (CW-21, CW-22, and CW-23). **Table 2.2-1** identifies the monthly and quarterly samples from the collection wells. Quarterly sampling in December 2022 was postponed to January 2023 because the SPBA extraction system was temporarily shut down to repair the discharge (conveyance) pipeline to the groundwater treatment system (Hydro-Terra Group [HTG], 2023).

Monthly data were used to calculate VOC mass removed from the aquifer by extraction, and quarterly data were used to assess aquifer quality affected by pumping. COCs in SPBA groundwater are TCE and PCE. Discussion of the sample analytical data is presented in Section 3.

Monitoring locations used to gauge SPBA pumping system performance are shown on **Figure 2.2-2**. Sample analytical data from these wells provide information for future: 1) optimization of pumping rates, 2) potential reduction in the number of wells operating, and 3) shutdown of the system.

Total VOC concentrations in 2022 monthly samples collected from the combined groundwater flow from SPBA extraction wells, which predominately consist of PCE and TCE (**Table 2.2-2**), ranged from 87 micrograms per liter (µg/L) to 131 µg/L. As shown on **Table 2.2-5**, highest and lowest total VOC concentrations were detected in the January/February and November 2022 samples, respectively.

PCE and TCE concentrations in 2022 SPBA monthly/quarterly samples from extraction wells CW-21, CW-22, and CW-23 ranged from 32 µg/L to 170 µg/L and 0.3 J µg/L to 1.6 µg/L, respectively (**Figure 2.2-3**). Consistent with historical sampling results, CW-21 and CW-22 groundwater samples contained higher PCE and TCE concentrations than those measured in CW-23 samples. PCE was detected at concentrations one to two orders of magnitude higher than TCE concentrations.

PCE and TCE concentrations in 2022 monthly/quarterly samples from Canterbury Lane monitoring wells MW-166, MW-167, and MW-168 ranged from undetected (at 1 µg/L) to 39 µg/L and 0.33 J µg/L to 3 µg/L, respectively.

2.2.2 MNA Areas

A yearly evaluation of the status of MNA of COCs in groundwater at fYNOP consists of annual sampling of 44 wells in MNA areas and assessment of laboratory analytical results. This assessment, presented in Section 3, compares analytical data from the annual samples collected in September and October 2022 (**Table 2.2-1**) to both regulatory MCLs and RSLs and baseline concentrations established in the Part 2 SRI (GSC, 2018).

Areas where MNA status is evaluated consist of NPBA, ESP, SCSA, SPBA, SPA, Levee Area, West Side of Codorus Creek, and NSP. Wells sampled and analyzed for VOCs and cyanide (MW-2) in

MNA areas during annual monitoring in 2022 are listed on **Table 2.2-4** and shown on **Figure 2.2-1** as follows:

- NPBA – Twelve wells: MW-3, MW-9, MW-12, MW-16S, MW-18S/D, MW-20S/M, MW-143S/D, CW-1A, and CW-2;
- ESP – Three wells: MW-2, MW-14, and MW-65S;
- SCSA – Eight wells: MW-67S/D, MW-69, MW-79, MW-111, MW-112, MW-115, and MW-88;
- SPBA – Seven wells: MW-22, MW-165, MW-108S/D, MW-166, MW-167, and MW-168;
- SPA – Six wells: MW-43D, MW-12 (Cole Steel), MW-150, GM-1D, Cole D, and MW-110;
- Levee Area – Two wells: MW-101S and MW-101D;
- West Side of Codorus Creek – Two wells: Waterloo™ multilevel well MW-148A (two sample ports); and
- NSP – Four wells: MW-5, MW-6, MW-82, and MW-186.

COCs in NPBA groundwater consist of TCE, PCE, cis12DCE, and VC. Analytical results for COCs in the 2022 annual groundwater samples from 12 NPBA wells are as follows:

- TCE concentrations range from undetected (at 1 µg/L) to 64 µg/L (MW-12);
- PCE concentrations range from 0.59 J µg/L (MW-143S) to 2.9 (MW-12);
- The cis12DCE concentrations range from 0.52 J µg/L (MW-3) to 63 µg/L (MW-12); and
- VC concentrations range from undetected (at 1 µg/L) to 0.37 J µg/L (MW-9).

COCs in ESP groundwater consist of TCE, PCE, and cyanide. Analytical results for COCs in the 2022 annual groundwater samples from three ESP wells are as follows:

- TCE concentrations range from 0.47 J µg/L (MW-14) to 6.4 µg/L (MW-65S) and
- PCE concentrations range from 2.1 µg/L (MW-65S) to 68 µg/L (MW-2).

As shown on **Table 2.2-3**, both total cyanide and available cyanide (i.e., free cyanide and complexes that easily dissociate) were detected in the sample from MW-2 located in the southcentral portion of the ESP. The concentration of available cyanide in this sample (9.7 µg/L) was less than the MCL of 200 µg/L; there is not an MCL/RSL for total cyanide.

COCs in SCSA groundwater consist of TCE, PCE, cis12DCE, VC, 11DCA, 11DCE, TCA, benzene, and MTBE. Analytical results for COCs in the annual 2022 groundwater samples from eight SCSA wells are as follows:

- TCE concentrations range from 0.44 J µg/L (MW-88) to 4.8 µg/L (MW-69);
- PCE concentrations range from 0.30 J µg/L (MW-67D) to 1.5 µg/L (MW-67S);
- The cis12DCE concentrations range from 0.33 J µg/L (MW-67S) to 98 µg/L (MW-115);
- VC concentrations range from undetected (at 1 µg/L) to 79 µg/L (MW-115);
- 11DCA concentrations range from undetected (at 1 µg/L) to 13 µg/L (MW-115);
- 11DCE concentrations range from 0.64 J µg/L (MW-111) to 1.9 µg/L (MW-115);
- TCA concentrations range from undetected (at 1 µg/L) to 3.6 µg/L (MW-67S);
- Benzene concentrations range from undetected (at 1 µg/L) to 7.3 µg/L (MW-115); and
- MTBE concentrations range from undetected (at 1 µg/L) to 22 µg/L (MW-115).

COCs in SPBA groundwater consist of TCE and PCE. Analytical results for COCs in the annual 2022 groundwater samples from seven SPBA wells are as follows:

- TCE concentrations range from 0.5 J µg/L (MW-167) to 2.3 µg/L (MW-22) and
- PCE concentrations range from undetected (at 1 µg/L) to 5.5 µg/L (MW-22).

COCs in SPA groundwater consist of TCE, PCE, cis12DCE, and 11DCE. Analytical results for COCs in the annual 2022 groundwater samples from six SPA wells are as follows:

- TCE concentrations range from 0.43 J µg/L (MW-110) to 30 µg/L (MW-150);
- PCE concentrations range from 0.41 J µg/L (GM-1D) to 18 µg/L (MW-110);
- The cis12DCE concentrations range from undetected (at 1 µg/L) to 40 µg/L (MW-150); and
- 11DCE concentrations range from undetected (at 1 µg/L) to 0.52 J µg/L (MW-150).

COCs in Levee Area groundwater at well pair MW-101S/D consist of TCE, PCE, and cis12DCE. TCE and PCE concentrations in the annual 2022 groundwater samples from this well pair range from 0.76 J µg/L (MW-101S) to 4.5 µg/L (MW-101D), and from 3.8 µg/L (MW-101S) to 3.9 µg/L (MW-101D), respectively. Cis12DCE concentrations range from 0.65 J µg/L (MW-101S) to 8.9 µg/L (MW-101D).

Along the West Side of Codorus Creek at Waterloo™ multilevel well MW-148A, no VOCs were detected in the annual 2022 groundwater samples from the two sample ports.

COCs in NSP groundwater consist of TCE, PCE, and cis12DCE. Analytical results for COCs in the annual 2022 groundwater samples from four NSP wells are as follows:

- TCE concentrations range from 0.32 J µg/L (MW-5) to 1.2 µg/L (MW-82);
- PCE concentrations range from undetected (at 1 µg/L) to 1.8 µg/L (MW-82); and
- The cis12DCE concentrations range from undetected (at 1 µg/L) to 3.9 µg/L (MW-5).

2.2.3 TI Area 1 Perimeter

According to the Cleanup Plan, after two years of concurrent WPL groundwater extraction system operation and Codorus Creek sampling, the system was turned off while sampling continued in the creek. Operation of the WPL extraction system was discontinued on August 31, 2021. Although the Cleanup Plan does not provide a requirement for groundwater monitoring during shutdown, fYNOP decided to proactively measure water levels and collect groundwater samples from monitoring wells along the boundary of TI Area 1 to assess potential changes in groundwater chemistry under non-pumping conditions. To accomplish this, fYNOP sampled groundwater from wells MW-5, MW-6, and MW-88 and well pair MW-101S/D (**Figure 2.2-1**) in March, June, September, and December 2022. Monitoring in these wells will continue quarterly during the shutdown test and annually as part of the MNA area evaluation.

COCs in groundwater around TI Area 1 consist of TCE, PCE, and cis12DCE. As shown on **Table 2.2-1**, the highest concentrations of TCE and cis12DCE were detected in the MW-101D sample along the southwest boundary of TI Area 1 and the highest PCE concentration was detected in groundwater from MW-88 along the southern boundary. Analytical results for COCs in quarterly 2022 groundwater samples from the five wells are as follows:

- TCE concentrations range from 0.32 J µg/L (MW-5) to 6.1 µg/L (MW-101D);
- PCE concentrations range from 0.89 J µg/L (MW-88) to 11 µg/L (MW-88); and
- The cis12DCE concentrations range from 0.3 J µg/L (MW-101S) to 9.1 µg/L (MW-101D).

2.3 Surface Water Monitoring

Surface water monitoring is performed in accordance with the Cleanup Plan to determine potential impacts from COCs migrating from fYNOP to the creek, during both WPL groundwater extraction system operation and shutdown. The first two years of monthly surface water monitoring with the WPL system operating was completed in August 2021. Results of monitoring, documented in the Surface Water Compliance Report (GSC, 2022b), verified compliance with AWQC in the creek under pumping conditions.

In September 2021, monthly surface water monitoring was continued with the WPL extraction system off. Results of monitoring in September through December 2021, documented in the Groundwater and Surface Water Monitoring Report for 2021 (GSC, 2022a), verified compliance with AWQC in the creek under non-pumping conditions. The results of Codorus Creek monitoring in January through December 2022 are included herein. A comprehensive evaluation of surface water monitoring results will be documented in the Act 2 Final Report.

Monthly surface water samples from twelve locations in Codorus Creek were collected in 2022 (144 samples). Three focused diffuse groundwater discharge locations (COD-SW-15, COD-SW-17, and COD-SW-26) and nine surface water sampling locations downstream of diffuse discharge locations (COD-SW-6, COD-SW-7, COD-SW-8, COD-SW-9, COD-SW-13, COD-SW-16, COD-SW-27, COD-SW-28, and COD-SW-29) were sampled at the locations shown on **Figure 2.4-1**. The COCs in Codorus Creek are PCE, TCE, cis12DCE, and VC.

Surface water samples were analyzed for the project analyte list of VOCs in the QAPP using SW-846 Method 8260D. Laboratory analytical reports for 2022 samples are in **Appendix B**. The laboratory DQA is described in Section 5.

Codorus Creek samples were collected during varying stream flow rates. **Table 2.3-1** provides the average daily flows in Codorus Creek based on published creek flow data from United States Geological Survey (USGS) Codorus Creek Gaging Station for each recorded sampling date. Stream flow during sampling in 2022 ranged from 87 to 336 cubic feet per second (cfs). The calculated average daily harmonic mean flow (Qh) for the 12-month sampling period in 2022 was 152 cfs.

Table 2.3-2 contains the COC analytical results for monthly surface water samples. Detected COC concentrations at the three discharge locations are as follows:

- TCE concentrations range from 0.093 J µg/L to 6.3 µg/L;
- PCE concentrations range from 1.4 µg/L to 88 µg/L;
- The cis12DCE concentrations range from 0.053 J µg/L to 4.7 µg/L; and
- VC concentrations range from undetected (at 0.5 µg/L) to 0.18 J µg/L.

Detected COC concentrations at the nine downstream locations are as follows:

- TCE concentrations range from 0.064 J µg/L to 0.24 J µg/L;
- PCE concentrations range from 0.061 J µg/L to 1.8 µg/L;
- The cis12DCE concentrations range from 0.058 J µg/L to 0.23 J µg/L; and
- VC concentrations were undetected (at 0.5 µg/L).

3 EVALUATION OF GROUNDWATER AND SURFACE WATER MONITORING RESULTS

This section contains an evaluation of 2022 data that includes water level measurements and laboratory analysis results of groundwater and surface water to evaluate the following:

- Performance of SPBA groundwater extraction system;
- Status of MNA of COCs in groundwater in designated areas of the Site;
- Migration of the COC plume in the NPBA; and
- Quality of surface water in Codorus Creek.

Groundwater extraction and treatment system performance is evaluated based on objectives stated in the Cleanup Plan. For purposes of the annual evaluation of the SPBA system, performance is compared to historical flows and gradients induced by pumping.

The SPBA groundwater pump and treatment system extracts groundwater containing TCE and PCE at a rate to maintain a hydraulic gradient from off-Site areas toward the Site. This pumping rate is provided in the SPBA Effectiveness Report and approximates a 7.1 gallon per minute (gpm) annual average recharge rate (GSC, 2019d).

The objective of the treatment component for the SPBA system is to remove VOCs in the influent to meet National Pollutant Discharge Elimination System (NPDES) discharge permit requirements. In addition, data concerning VOC removal from the aquifer at specific extraction rates provide information for future evaluation of pumping-rate optimization, reduction in the number of wells operating, recommendations for well rehabilitation or replacement, and shutdown of pumping systems, when applicable.

Ongoing MNA is proposed as the remedy in the Cleanup Plan for areas outside of the TI Area boundaries at the Site. The USEPA aquifer restoration goal is to meet MCLs that are equivalent to SHS residential MSCs. For COCs that do not have a MCL, RSLs are considered the groundwater cleanup goal.

The Cleanup Plan requires an annual comparison of COC analytical data from MNA well samples to baseline concentrations from samples collected between 2008 and 2015 reported in the Part 2 SRI.

The long-term MNA metric will be discussed in the Act 2 Final Report and consists of evaluating and reporting groundwater sampling data annually to verify progress of MNA for resource restoration in areas of fYNOP outside of the TI Area boundaries.

Groundwater elevation and analytical data from the NPBA is used to confirm that off-Site migration of COCs at unacceptable concentrations does not occur. This is accomplished by assessing groundwater quality data and flow gradients to evaluate plume migration.

Data collected for surface water quality in a section of Codorus Creek was evaluated to verify compliance with AWQC at locations specified in the Cleanup Plan. The first two years of monthly monitoring with the WPL system operating was completed at the end of August 2021. The monitoring results were evaluated and documented in the Surface Water Compliance Report (GSC, 2022b). The results of continued monthly surface water sampling during shutdown in 2022 are summarized herein and a comprehensive evaluation of the results will be documented in the Act 2 Final Report.

3.1 SPBA Extraction and Treatment System Performance

As stated in the Cleanup Plan, performance of the SPBA groundwater extraction system meets the design intent when the groundwater gradient maintained by pumping slopes from off-Site wells located along Canterbury Lane toward on-Site wells located in the SPBA. The treatment system objective is sufficient removal of VOC mass to meet NPDES permit requirements. A detailed evaluation of yearly performance for the SPBA system is presented in the 2022 Annual Operations Report for the Period of January 1 through December 31, 2022 (HTG, 2023). The 2022 Annual Operations Report compared results of sampling and analysis of the combined flow from extraction wells and the effluent from the treatment system to calculate mass of VOCs removed during treatment system operation. A sufficient mass of VOCs must be removed to meet the discharge requirements in the NPDES permit for the treatment system.

The SPBA system has operated continuously with few off periods since November 2018. The SPBA extraction and treatment system layout is shown on **Figure 3.1-1**.

3.1.1 Groundwater Gradients Developed by Pumping

The Cleanup Plan objective for SPBA groundwater extraction system performance was met in 2022. Performance was evaluated using water level elevation data measured from January to September 2022 from SPBA wells on **Table 3.1-1**. The September 22, 2022, data was used to generate potentiometric surface contours on **Figures 3.1-2**, **3.1-3**, and **3.1-4**. These contours indicate that the water table slopes from off-Site toward the fYNOP. Graphs showing water levels for wells in the SPBA are contained in **Appendix C**.

The flow lines with arrows on **Figures 3.1-2**, **3.1-3**, and **3.1-4** represent conceptual flow paths of groundwater intercepted by pumping within the SPBA. Based on groundwater elevation contour data, a coalesced cone of depression has developed around extraction wells CW-21 and CW-22. This is shown by the closed 330-foot, 340-foot, and 350-foot amsl contours on **Figure 3.1-4**. Well CW-23 is in a less transmissive portion of the aquifer and therefore the pumping influence at CW-23 is less pronounced.

Further evaluation of SPBA pumping system influence includes comparing data from paired wells (on-Site extraction well with a down-gradient, off-Site sentinel well) to gauge pumping effects (GSC, 2019d and 2021). Using this approach, graphed 2022 water level elevation data from well groupings CW-21 and MW-166, CW-22 and MW-167, and CW-23 and MW-168 (during pumping) verify that off-Site groundwater levels are sloping toward the SPBA as follows:

- **Figure 3.1-5** shows a higher water table elevation in off-Site well MW-166 than in on-Site wells influenced by pumping CW-21, except in residuum wells MPE-1 and MW-64S. These residuum wells are constructed in localized zones of low permeability not well-connected to the surrounding aquifer. Flow in this portion of the aquifer is generally downward into the underlying bedrock as shown on **Figure 3.1-3** (GSC, 2019d).
- **Figure 3.1-6** shows a higher water table elevation in off-Site well MW-167 than in wells influenced by pumping CW-22.
- **Figure 3.1-7** shows a higher water table elevation in off-Site well MW-168 than in all but one well (MW-163) influenced by pumping CW-23; however, this well is still in the zone of groundwater capture of pumping well CW-23. Well MW-163 is a bedrock well north of MW-168. At MW-163, an upward groundwater flow component is observed causing higher water level elevations than those measured at MW-168 (GSC, 2019d).

These results are consistent with historical results and verify that the groundwater gradient objective for SPBA groundwater extraction system performance was met in 2022.

3.1.2 Extraction Well Pumping Rates

Recorded pumping rates indicate the SPBA system operated as intended. **Table 3.1-2** presents average monthly pumping rates for CW-21, CW-22, and CW-23 in 2022 that were calculated based on flow meter readings for each extraction well. The average rates ranged from 3.0 to 4.4 gpm, 1.4 to 2.0 gpm, and 0.4 to 1.0 gpm, respectively. In 2022, the system pumped 3.3 million gallons (MG) of groundwater at an average rate of 6.2 gpm; the average monthly rates ranged from 4.8 gpm to 7.5 gpm. The average rate in 2022 is approximately 13 percent less than the annual average recharge rate of 7.1 gpm established during the monitored startup of the extraction system (GSC, 2019d). However, the objective of the pumping system was still met with these lower pumping rates.

Figure 3.1-8 presents average daily pumping rates for CW-21, CW-22, and CW-23 and the system in 2022. Total gallons pumped, average pumping rates, precipitation amounts, and temporary shutdown of the system are included in **Appendix D**. These data provide information for potential system optimization and rehabilitation, if necessary.

3.1.3 VOC Mass Removal

The VOC mass removal objective for the SPBA, to comply with monthly NPDES permit discharge requirements for the SPBA system, was met in 2022. The 2022 performance data for the SPBA system operation is shown on **Table 2.2-5**. The table presents monthly sample collection dates, total VOC concentrations in the combined groundwater flow from SPBA extraction wells, and metered groundwater volume extracted. These data were used to calculate VOC mass removed from the aquifer by the SPBA extraction system.

As shown on the bar graph on **Figure 3.1-9**, the rate of VOC mass removed from the aquifer by the SPBA extraction system from January through December 2022 ranged from 0.2 to 0.3 pounds per month. A total of 3.0 pounds of VOCs were removed by the extraction system while pumping 3.3 MG of groundwater in 2022. The graph shows monthly VOCs removed ranging from 0.7 to 1.1 pounds per million gallons (pounds/MG) pumped. The volume of groundwater pumped was consistent at approximately 0.2 to 0.3 MG/month. Therefore, the range in VOC mass removed is due primarily to

fluctuations in VOC concentrations in groundwater samples from extraction wells and not variable pumping rates.

3.1.4 SPBA Groundwater Monitoring Results

In December 2021, sampling results for PCE and TCE in Canterbury Lane monitoring well MW-166 yielded values of 70 µg/L and 4.9 µg/L, respectively (GSC, 2022a). These concentrations were higher than previously detected concentrations at this location. PCE and TCE concentrations in samples from the nearby Canterbury Lane monitoring wells (MW-167 and MW-168) and active extraction wells (CW-21, CW-22, and CW-23) did not increase. Although the exact causes for the spike in PCE and TCE concentrations in groundwater around well MW-166 are not known, a possible contributing factor is that more than 16 inches of rainfall occurred between mid-August and early September 2021 resulting in a groundwater elevation rise in this area of more than 10 feet. An increase in COC concentrations did not occur in other parts of the aquifer near MW-166 and this appears to be a localized condition.

More frequent sampling of groundwater at wells MW-166, MW-167, MW-168, and active extraction wells (CW-21, CW-22, and CW-23) was performed in 2022 to determine if this was a transient, short-term condition or part of a longer-term trend. As shown on **Figure 2.2-3**, concentrations of TCE and PCE in samples from MW-166 have substantially decreased. From December 2021 through September 2022, sample analytical results for MW-166 show a steady decline in PCE concentrations (70 µg/L to 2.2 µg/L) and TCE concentrations (4.9 µg/L to 0.54 J µg/L). Concentrations in the other monitoring and extraction wells were consistent with previous results. These sampling results, along with the declining trend in PCE and TCE concentrations suggest that the concentration increase at MW-166 in December 2021 was a localized and transient event and likely the result of excessive rainfall between mid-August and early September 2021.

3.2 MNA Areas

The MNA requirements in the Cleanup Plan were met in 2022 by comparing COC concentrations in groundwater from 44 MNA Area wells (**Plate 2.1-2**) to baseline concentrations established in the Part 2 SRI, and to MCLs/RSLs shown on **Table 3.2-1**. Using this comparison criteria, the following is reported for 2022 sample analytical results:

- COC concentrations in NPBA groundwater samples are less than or equal to baseline concentrations in samples from nine of twelve wells. A fewer number of 2022 groundwater samples than in the baseline data set contained COC concentrations above the MCL (seven versus nine).
- COC concentrations in 2022 groundwater samples from two of three ESP wells are less than or equal to baseline concentrations. Samples from the three ESP wells contain COC concentrations exceeding the MCL.
- COC concentrations in 2022 groundwater samples from SCSA wells are less than or equal to baseline concentrations in groundwater from seven of the eight wells sampled. A fewer number of 2022 samples than in the baseline data set is reported with COC concentrations above the MCL/RSL (one versus six).
- COC concentrations in 2022 groundwater samples from SPBA wells are less than or equal to the baseline concentrations in the seven wells sampled. A fewer number of 2022 samples than baseline samples were reported with COC concentrations above the MCL (one versus three).
- PCE and TCE concentration increases were recorded in 2022 groundwater from three of six SPA wells. The greatest PCE increase above the baseline concentration was reported in well Cole D (3.8 µg/L to 17 µg/L) and the greatest TCE increases were reported in wells MW-150 (6.4 µg/L to 30 µg/L) and MW-12 Cole Steel (0.9 J µg/L to 15 µg/L). However, the 2022 PCE and TCE concentrations in these wells are similar to the concentrations detected in 2021 (Cole D – 17 µg/L versus 20 µg/L; MW-150 – 30 µg/L versus 32 µg/L; and MW-12 Cole Steel – 15 µg/L versus 16 µg/L). A higher number of 2022 samples than baseline samples were reported with COC concentrations above the MCL (five versus four). A more in-depth analysis of the concentration trends in groundwater at these wells and plan to address the results will be presented in the Act 2 Final Report.
- COC concentrations in 2022 groundwater samples from two Levee Area wells (MW-101S/D) and two sample ports from well MW-148A located on the west side of Codorus Creek are less than or equal to baseline concentrations and MCLs.
- No COCs were reported above either the baseline concentrations or the MCL in samples from four wells in the NSP.

COC concentrations in 2022 groundwater declined or remained the same compared to baseline concentrations from 36 of the 44 MNA wells. Three of the six SPA wells continue to show increased COC concentrations relative to baseline. A fewer number of 2022 samples than in the baseline data set is reported with COC concentrations above the MSC (17 versus 27). A statistical trend analysis of COC concentrations at these wells will be presented in the Act 2 Final Report.

3.3 Plume Migration Assessment in NPBA

The evaluation of 2022 groundwater flow gradients and chemistry data determined that migration of COCs did not occur north and west of the NPBA boundary. Annual monitoring for off-Site migration is conducted because a northern gradient was reported in the vicinity of well RW-2 during a period of abnormally high precipitation in 2018 (GSC, 2019b). Even though a northern gradient was observed in 2018, groundwater samples from wells RW-2 and RW-4 had no change in chemistry from 2017 concentrations. Annual monitoring of the flow gradient existing around MW-18S and MW-18D at the western boundary of the NPBA is also assessed (GSC, 2019b). Therefore, the Cleanup Plan requires an annual evaluation of the plume in these two areas of the Site.

Prior to the start of the 22-year operation of the NPBA groundwater extraction and treatment system in 1990, COCs were detected in off-Site residential supply wells, including RW-2 north of the fYNOP property boundary along Paradise Road. Potable use of RW-2 and RW-4 ceased (the municipal water supply was extended to the area by fYNOP), and the wells were used in the fYNOP monitoring network for this area. In August 2021, RW-2 was abandoned and is no longer available for monitoring.

3.3.1 Northern Plume Migration Assessment

In 2022, just as in 2019, 2020, and 2021, the northern groundwater flow gradient documented in 2018 was not observed. Groundwater flow was to the southwest consistent with data plotted prior to and after 2018. Plotted potentiometric contours on **Figure 3.3-1** show a steep gradient from CW-2 (526.58 feet amsl) and MW-9 (526.09 feet amsl) to CW-4 (516.59 feet amsl) and MW-12 (501.22 feet amsl), indicating flow away from RW-2 and RW-4 and toward the Site.

Groundwater analytical data from this area support the flow direction shown on **Figure 3.3-1**. The groundwater sample from up-gradient, off-Site well RW-2 showed neither an increasing trend nor a spike in COC concentrations since 2016. As shown on **Figure 3.3-1**, COC concentrations in RW-2 samples from 2013 through 2020 were similar (below the MCL of 5 µg/L). No COCs have been detected at RW-4 throughout its monitoring history.

3.3.2 Western Plume Migration Assessment

Figure 3.3-1 illustrates south-southwestern groundwater flow around MW-18S/D in the western part of the NPBA. This flow path, shown by the arrow on **Figure 3.3-1**, is nearly parallel to the property line in the vicinity of well pairs MW-18S/D, MW-142S/D, and MW-143S/D.

Plume migration westward off the Site is not occurring at levels of concern based on low COC concentrations (less than 1 µg/L) in groundwater from wells MW-142S/D and MW-143S/D, directly downgradient of wells MW-18S/D along the western NPBA boundary. Groundwater from on-Site wells MW-18S/D, analyzed in September 2022, contains approximately 2 µg/L of TCE. COC analytical results from samples in MW-142S/D and MW-143S/D reported no detection of TCE.

3.4 Quarterly TI Area 1 Perimeter Groundwater Monitoring

Quarterly groundwater sampling in 2022 shows non-pumping COC concentrations are similar to concentrations during WPL extraction system pumping in wells MW-5, MW-6, MW-88, MW-101S, and MW-101D around the TI Area 1 boundary. The analytical data for samples collected during pumping and non-pumping conditions are shown on the time versus concentration graphs in **Appendix E**.

3.5 Surface Water Monitoring

Surface water monitoring was conducted monthly (January through December 2022), in accordance with the Cleanup Plan, with the WPL groundwater extraction system off. COCs were detected at all sampling locations at concentrations ranging from 0.064 J µg/L to 6.3 µg/L for TCE, 0.061 J µg/L to 88 µg/L for PCE, and 0.053 J µg/L to 4.7 µg/L for cis12DCE. VC was only detected in one sample (COD-SW-17 at 0.18 J µg/L).

Table 3.5-1 presents a comparison of AWQC with the COC analytical results at points of application in Codorus Creek. Reported COC concentrations were below the AWQC at each sampling location in 2022. The result of this comparison indicates that compliance was maintained for all surface water COCs at all sample locations with the WPL groundwater extraction system shut down.

Continued monthly monitoring of surface water quality in Codorus Creek with the WPL extraction system off will be conducted. A comprehensive evaluation of the surface water monitoring results will be documented in the Act 2 Final Report.

4 CONCLUSIONS

Monitoring in 2022 was completed consistent with the requirements in the Cleanup Plan and FDRTC. Performance goals for the SPBA groundwater extraction and treatment system were met as follows:

- Groundwater elevation contours and flow directions from 2022 during SPBA pumping confirm a groundwater gradient that slopes from off-Site wells located along Canterbury Lane toward on-Site wells located in the SPBA.
- Although the average pumping rate in 2022 for the SPBA system is less than the calculated annual average recharge rate in this area (6.2 gpm versus 7.1 gpm), required groundwater gradients and plume influence were achieved by pumping operations.
- The SPBA groundwater extraction and treatment system removed VOC mass from the combined flow from extraction wells and the monthly and quarterly NPDES permit requirements in 2022 were met. In January through December 2022, SPBA system operation removed 3.0 pounds of VOCs from the aquifer.

Groundwater sampling during 2022 SPBA extraction system operation was performed at monitoring wells MW-166, MW-167, and MW-168 located along Canterbury Lane. The December 2021 sample from MW-166 showed higher PCE and TCE concentrations than previously detected. Actions were taken to address the MW-166 analytical results that consisted of notifying PADEP and USEPA, reviewing system performance data, and increasing the frequency of groundwater monitoring and reporting. The results of increased sampling and analysis at MW-166 documented a steady decline in PCE and TCE concentrations from January to September 2022. Concentrations in the other monitoring and extraction wells were consistent with previous results. These sampling results, along with the declining trend in PCE and TCE concentrations suggest that the concentration increase at MW-166 in December 2021 was a localized and transient event and likely the result of excessive rainfall between mid-August and early September 2021.

COC concentrations in annual samples (September through October 2022) indicate a general improvement of groundwater quality in MNA Areas. In 36 of the 44 samples from MNA wells, COC concentrations are less than or equal to baseline concentrations. A fewer number of 2022 sample locations than baseline locations were reported with COC concentrations above the MCL/RSL (17 versus 27).

The greatest increases in COC concentrations between 2022 and baseline data were reported in the SPA where 2022 PCE concentrations exceed baseline concentrations in groundwater from one well (Cole D – 17 µg/L versus 3.8 µg/L) and TCE concentrations exceed baseline concentrations in two wells (MW-150 – 30 µg/L versus 6.4 µg/L and MW-12 (Cole Steel) – 15 µg/L versus 0.9 J µg/L). Note that the 2022 PCE and TCE concentrations in these wells are similar to the 2021 concentrations (Cole D PCE – 17 µg/L versus 20 µg/L; MW-150 TCE – 30 µg/L versus 32 µg/L; and MW-12 Cole Steel TCE – 15 µg/L versus 16 µg/L). A more in-depth statistical analysis of the concentration trends in groundwater at these wells will be presented in the Act 2 Final Report.

Groundwater elevation data indicate that the plume is not migrating north or west off the Site in the NPBA. This is based on the plotted groundwater flow gradients and low COC concentrations in groundwater from wells downgradient of the northern and western NPBA boundaries.

A shutdown test of the WPL groundwater extraction system began in September 2021. Quarterly groundwater sampling in 2022 with the WPL extraction well pumps off document non-pumping COC concentrations are similar to concentrations during pumping in wells MW-5, MW-6, MW-88, MW-101S, and MW-101D around the TI Area 1 boundary.

Monthly surface water monitoring with the WPL groundwater extraction system off reported COC concentrations were below AWQC at each sampling location in 2022. A comprehensive evaluation of the surface water monitoring results will be presented in the Act 2 Final Report.

5 LABORATORY DATA QUALITY ASSESSMENT AND VALIDATION

The electronic data deliverables (EDDs) from the laboratory (Eurofins) are entered into the fYNOP database during the process of managing environmental chemistry data at the fYNOP. GSC reviewed the data packages provided by the laboratory for groundwater and surface water samples in accordance with the QAPP (GSC, 2020a) and qualified individual sample results as necessary in the fYNOP database.

5.1 Data Quality Assessment

The DQA was performed by GSC on laboratory analytical data generated for samples from January through December 2022 as follows:

- Annual MNA area groundwater samples;
- Quarterly TI Area 1 perimeter groundwater monitoring samples;
- Quarterly and monthly SPBA groundwater extraction system performance monitoring samples; and
- Monthly surface water samples.

Forty-two (42) sample delivery groups (SDGs) were generated for 351 samples that were collected from January 11 through December 21, 2022. The total includes 56 quality control (QC) blank samples consisting of five equipment rinse blanks, five field blanks, and 32 trip blanks. Fourteen (14) duplicate samples were also collected and are included in the total. All samples were analyzed for VOCs by SW-846 Method 8260D and one sample was analyzed for total and available cyanide using USEPA Method 9014 and OIA-1677, respectively.

GSC systematically reviewed the 42 SDGs for compliance with QC criteria in accordance with Section B.2.8 of the QAPP. The GSC data validator conducted a complete data validation on these SDGs using USEPA National Functional Guidelines for Organic Superfund Methods Data Review (USEPA-540-R-2017-002) and the validation and verification methods described in Section D.2 of the QAPP. The following criteria were reviewed:

1. Review and verification of the laboratory case narrative;
2. Verification of sample reanalysis and secondary dilutions;
3. Holding time limits;

4. Surrogate (System Monitoring Compound) percent recoveries (%R) for organic methods;
5. Internal standard (IS) area counts and retention times for organic methods;
6. Blank contamination (in method, field, equipment rinse, and trip blanks);
7. Relative response factors (RRFs) in initial calibration and continuing calibrations, percent relative standard deviation (%RSD) in initial calibrations, and percent difference (%D) in continuing calibrations;
8. Matrix spike and matrix spike duplicate (MS/MSD), %R, and relative percent difference (RPD); and
9. Laboratory control sample and laboratory control sample duplicate (LCS/LCSD), %R, and RPD.

The laboratory case narratives were also reviewed for the SDGs. The contents of the data packages and quality assurance/quality control (QA/QC) results were compared to the requirements of the analytical methods. QC data reported by the laboratory were evaluated against required precision and accuracy limits established in Table A-2 of the QAPP. The data validation report that was generated is presented in **Appendix F** and includes qualifiers added by the data validator.

Consistent with the data quality requirements as defined by the data quality indicators (DQIs) described in Section A.7.2 of the QAPP, project data and associated QC data were evaluated on these categories and qualified according to the outcome of the review. During the review, laboratory-applied data qualifiers were evaluated and explained. During verification, individual sample results were qualified as necessary to designate usability of the data toward meeting project objectives. The qualifiers that were used are defined as follows:

U – The analyte was analyzed for but was not detected above the reported sample quantitation limit. These results are qualitatively acceptable.

J – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. Although estimated, these results are qualitatively acceptable.

UJ – The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to measure accurately and precisely the analyte in the sample. Although estimated, these results are qualitatively acceptable.

R – The analyte result was rejected due to serious deficiencies in the ability to analyze the sample and/or meet QC criteria. The presence or absence of the analyte cannot be verified.

Data qualifiers were applied based on deviations from the measurement performance criteria identified in USEPA-540-R-2017-002 and Table A-2 of the QAPP.

A secondary stage of validation occurred following completion of the initial validation for a discrete sampling event. Individual equipment rinse blanks, trip blanks, and field blanks were associated with the corresponding environmental samples. These field QC blanks were evaluated using the same criteria as method blanks, and the associated environmental samples were qualified accordingly.

The following sections address the laboratory chemical analysis program implemented for the 2022 sampling events. The project DQIs are summarized in the following sections and include a review of precision, bias, representativeness, comparability, completeness, and sensitivity.

5.1.1 Precision

Precision was assessed using the analysis of LCS/LCSDs and duplicate samples. The MS/MSDs were also evaluated but data was not qualified based solely on MS/MSD results, except for the specific environmental sample that was spiked for the MS/MSD analysis.

LCS/LCSDs were evaluated based on %R results. The %R for nine reported analytes was outside LCS/LCSD control limits, and a portion of the results for 46 samples from various media were qualified "J" or "UJ" based on LCS/LCSD %R acceptance criteria.

MS/MSD results greater than the upper control limit (UCL) or less than the lower control limit (LCL) affected two analytes in two media samples (i.e., one analyte from each sample). The results were qualified as estimated ("J" or "UJ"); however, as noted above, data for this project was not qualified based solely on MS/MSD results.

Field duplicate samples were used to assess intralaboratory precision and were collected by filling multiple sample containers from the same sampling device during sampling events at a frequency of at least one duplicate sample per 20 media samples. Twelve (12) duplicate surface water samples were collected from location COD-SW-17, which represents approximately eight percent of the 144 unique surface water samples that were collected from January through December 2022. Two duplicate groundwater samples were collected, one each from wells MW-9 and MW-112, which represents approximately four percent of the 47 unique groundwater samples that were collected

during the comprehensive sampling event in September and October 2022. The duplicate samples were assigned blind field identification numbers by the sampler and were analyzed by SW-846 Method 8260D.

Comparative results for PCE, TCE, and cis12DCE in the 14 duplicate samples are shown on the following table. In accordance with Section A.7.2.1 of the QAPP, RPDs between the results for the primary sample and duplicate sample were calculated. None of the calculated RPD results exceeds the data quality objective (DQO) for precision (<50 RPD) in the volatile organics analysis of a field duplicate sample. This DQO is specified on Table A-2 of the QAPP.

Comparison of Intralaboratory Duplicate Sample Results (for PCE, TCE, and cis12DCE only)

Location	Date	Parameter	Primary Result, S (µg/L)	Duplicate Result, D (µg/L)	Absolute Difference (µg/L)	Relative Percent Difference
COD-SW-17	1/27/22	PCE	80	94	14	16%
		TCE	6.3	6.1	0.2	3%
		cis12DCE	4.7	4.6	0.1	2%
COD-SW-17	2/22/22	PCE	84	86	2	2%
		TCE	5.4	5.4	0	0%
		cis12DCE	4.4	4.4	0	0%
COD-SW-17	3/24/22	PCE	88	87	1	1%
		TCE	5	5	0	0%
		cis12DCE	4.2	4.2	0	0%
COD-SW-17	4/26/22	PCE	77	77	0	0%
		TCE	4.8	4.8	0	0%
		cis12DCE	3.9	3.9	0	0%
COD-SW-17	5/25/22	PCE	28	29	1	4%
		TCE	2.4	2.4	0	0%
		cis12DCE	3.4	3.3	0.1	3%
COD-SW-17	6/21/22	PCE	76	77	1	1%
		TCE	6.1	6.1	0	0%
		cis12DCE	4.3	4.2	0.1	2%
COD-SW-17	7/28/22	PCE	34	40	6	16%
		TCE	3.2	3.1	0.1	3%
		cis12DCE	3.8	3.8	0	0%
COD-SW-17	8/25/22	PCE	78	79	1	1%
		TCE	6.1	5.9	0.2	3%
		cis12DCE	4.3	4.1	0.2	5%

Comparison of Intralaboratory Duplicate Sample Results (for PCE, TCE, and cis12DCE only)						
COD-SW-17	9/23/22	PCE	66	65	1	2%
		TCE	4.6	4.6	0	0%
		cis12DCE	2.9	3	0.1	3%
COD-SW-17	10/27/22	PCE	71	68	3	4%
		TCE	3.7	3.8	0.1	3%
		cis12DCE	3	3	0	0%
COD-SW-17	11/18/22	PCE	65	67	2	3%
		TCE	4.3	4.1	0.2	5%
		cis12DCE	3.4	3.3	0.1	3%
COD-SW-17	12/21/22	PCE	69	70	1	1%
		TCE	4.4	4.4	0	0%
		cis12DCE	3.5	3.7	0.2	6%
MW-9	9/29/22	PCE	1.0 U	1.0 U	NA	NA
		TCE	10	10	0	0%
		cis12DCE	34	34	0	0%
MW-112	10/7/22	PCE	0.3 J	1.0 U	NA	NA
		TCE	0.74 J	0.68 J	0.06	8%
		cis12DCE	1.0 U	1.0 U	NA	NA

Absolute Difference = |S - D|

Relative Percent Difference = (|S - D| / (S + D)/2) x 100

NA = Not applicable; cannot be calculated due to one result being a non-detect ("U" or "UJ").

Based on criteria including the results of the calculations, the parameters analyzed and reported, the absolute differences given sample dilutions, concentration levels, and professional judgment, the duplicate results do not show variations that indicate a lack of precision in the analytical results.

Based on an evaluation of %R for LCS/LCSDs and RPDs for duplicate samples, the overall precision of samples collected for the project appears to be acceptable. As a result, the laboratory DQO for precision was met.

5.1.2 Bias

Bias is the systematic or persistent distortion of a measurement process causing errors in one direction. Data conditions that imply a potential for high bias in the sample result include:

1. Detection of a target compound in an associated method blank, trip blank, field blank, or equipment rinse blank;

2. A surrogate recovery (%R) greater than the acceptable range for a specific compound's analytical analogue;
3. A continuing calibration verification (CCV) sample recovery greater than the acceptable range for a specific compound; and
4. An LCS/LCSD or MS/MSD recovery greater than the acceptable range for a specific compound.

Similarly, data conditions that imply a potential for low bias in the sample result include:

1. Analysis of the sample outside the holding time (i.e., 14 days for preserved VOCs);
2. A CCV sample recovery less than the acceptable range for a specific compound; and
3. An LCS/LCSD or MS/MSD recovery less than the acceptable range for a specific compound.

High analytical bias was evaluated by reviewing blank detections, low analytical bias was evaluated by reviewing holding times, and both high and low analytical biases were evaluated by analysis of LCS/LCSD and MS/MSD samples, CCV sample recoveries, and surrogate recoveries. The laboratory analyzed LCS/LCSD samples for each SDG and analyzed MS/MSD samples at a frequency of at least one per 20 unique groundwater and surface water samples (QAPP, Section B.1.5). Acceptance criteria for LCS/LCSD and MS/MSD measurements are expressed as a %R and are specified in Table A-2 of the QAPP.

Results for acetone in 39 surface water samples were qualified "U" (not detected) due to trip blank contamination with the potential for high bias. Results for toluene in 11 surface water samples were qualified "U" (not detected) due to trip blank contamination with the potential for high bias. Results for carbon disulfide and chloromethane in two surface water samples were also qualified "U" (not detected) due to trip blank contamination with the potential for high bias.

As noted in the discussion of precision, the LCS/LCSD results were within the QC limits except for nine analytes in 46 samples that were qualified as estimated. MS/MSD results outside the QC limits for VOCs resulted in the qualification of two analytes in two surface water samples due to the potential for high bias where the MS/MSD results were greater than the UCL, and the potential for low bias where the MS/MSD results were less than the LCL.

Results for TCA, 11DCE, and carbon disulfide in three surface water samples were qualified as estimated ("J") or not detected and estimated ("UJ") based on CCV criteria with the potential for high

or low bias. Results for chloromethane in six groundwater samples were qualified as not detected and estimated ("UJ") based on CCV criteria with the potential for high or low bias.

Based on a review of the results, the data conditions implying a potential for low or high bias in a sample have been addressed by validation and resulting qualification of the analytical data using the following flags: "U", "J", and "UJ". Note: "UJ" is a unique validation qualifier whereas "U" and "J" can be either laboratory qualifiers or validation qualifiers.

5.1.3 Representativeness

Representativeness was satisfied by verifying that the QAPP was properly followed, that proper sampling techniques were used, that proper analytical procedures were followed, and that analytical holding times of the samples were not exceeded. If holding times are greater than two times the method-required holding time, then the sample results are rejected ("R") for non-detects and are qualified as estimated ("J") for detects. VOC results were not qualified due to holding time exceedances, and no sample results were rejected due to missed holding times. Based on an evaluation of sample precision and accuracy, the samples collected in 2022 are representative of the environmental conditions at the time of sampling.

5.1.4 Comparability

Comparability expresses the confidence with which one data set can be compared to another data set measuring the same property. Comparability is achieved by using established and approved sample collection techniques and analytical methods, consistency in the basis of analysis (wet weight vs. dry weight, volume vs. mass, etc.), consistency in reporting units, and analysis of standard reference materials.

Data comparability is achieved by using standard units of measure. The use of USEPA-approved methods to collect and analyze samples, along with instruments calibrated against Standard Analytical Reference Materials (SARM), which are National Institute for Standards and Technology (NIST)-traceable standards, also aids comparability.

Based on the precision and accuracy assessment presented above and the use of USEPA-approved methods, the data collected during the 2022 sampling events are comparable to data collected using similar USEPA-approved methods.

5.1.5 Completeness

Completeness measures the quantity of valid data generated from the laboratory analysis and sampling processes. For data to be valid, all acceptance criteria must be fulfilled, including accuracy and precision, analytical methods must be followed, and each data point must be validated satisfactorily. None of the results from the 2022 sampling events have been qualified for reasons of completeness. The DQOs (Table A-2 of the QAPP) were set at 90 percent for analytical laboratory completeness. Based on the evaluation of the laboratory QC results, the data exceeded 90 percent completeness and are deemed useful for assessing results and developing recommendations.

Results that have been flagged or qualified "U", "UJ", or "J" for various reasons encountered minor analytical problems and have limited impact on the data quality.

5.1.6 Sensitivity

Sensitivity requirements were specified as the minimum required reporting levels for VOCs listed in Table A-4 of the QAPP. Several surface water samples required serial dilution due to elevated concentrations of target compounds. Accordingly, a review of non-detect reporting limit data for surface water COCs (PCE, TCE, cis12DCE, and VC) indicates that AWQC were not exceeded except for VC in the duplicate analysis of the surface water sample collected from COD-SW-17 in January 2022. In that case, the laboratory reporting limit (5 µg/L) for the non-detect exceeded the AWQC for VC (0.5 µg/L) due to the ten times serial dilution of the duplicate sample. The laboratory reporting limit for VC in the companion sample was 0.5 µg/L, so the sensitivity requirement was met for the January 2022 surface water sample from COD-SW-17. Otherwise, the reporting limit criteria and the analytical DQI for sensitivity were met.

5.2 Summary

The analytical results were acceptable as reported by the analytical laboratory with exceptions as follows:

- Results for acetone in 39 surface water samples, for toluene in 11 surface water samples, and for carbon disulfide and chloromethane in two surface water samples were qualified "U" (not detected) due to trip blank contamination with the potential for high bias.
- The %R for nine reported analytes was outside LCS/LCSD control limits, and a portion of the results for 46 samples from various media were qualified "J" or "UJ" based on LCS/LCSD %R acceptance criteria.
- MS/MSD results outside the QC limits for VOCs resulted in the qualification ("UJ") of two analytes in two surface water samples due to the potential for high bias where the MS/MSD results were greater than the UCL, and the potential for low bias where the MS/MSD results were less than the LCL.
- Results for TCA, 11DCE, and carbon disulfide in three surface water samples were qualified as estimated ("J") or not detected and estimated ("UJ") based on CCV criteria with the potential for high or low bias. Results for chloromethane in six groundwater samples were qualified as not detected and estimated ("UJ") based on CCV criteria with the potential for high or low bias.

6 REFERENCES

Groundwater Sciences Corporation (GSC), 2012. Field Sampling Plan for Part 2 of the Supplemental Groundwater Remedial Investigation at the former York Naval Ordnance Plant in York, Pennsylvania, April.

GSC, 2018. Supplemental Remedial Investigation Groundwater Report (Part 2) Former York Naval Ordnance Plant, August 2016 and Revised March 2018.

GSC, 2019a. Site-Wide Cleanup Plan, Former York Naval Ordnance Plant, 1425 Eden Road, Springettsbury Township, York, Pennsylvania, November.

GSC, 2019b. 2018 Annual Monitoring Progress Report for the NPBA Extraction System Shutdown, Former York Naval Ordnance Plant, 1425 Eden Road, Springettsbury Township, York, Pennsylvania, April.

GSC, 2019c. Comprehensive Groundwater Monitoring Report for 2018, Former York Naval Ordnance Plant, 1425 Eden Road, Springettsbury Township, York, Pennsylvania, April.

GSC, 2019d. Southern Property Boundary Area Groundwater Extraction System Operation Effectiveness Report, Former York Naval Ordnance Plant, 1425 Eden Road, York, PA 17402, October.

GSC, 2020a. Quality Assurance Project Plan, Former York Naval Ordnance Plant, 1425 Eden Road, York, Pennsylvania, Rev. 2, November.

GSC, 2020b. Groundwater and Surface Water Monitoring Report for 2019, Former York Naval Ordnance Plant, 1425 Eden Road, Springettsbury Township, York, Pennsylvania, July.

GSC, 2021. Groundwater and Surface Water Monitoring Report for 2020, Former York Naval Ordnance Plant, 1425 Eden Road, Springettsbury Township, York, Pennsylvania, June.

GSC, 2022a. Groundwater and Surface Water Monitoring Report for 2021, Former York Naval Ordnance Plant, 1425 Eden Road, Springettsbury Township, York, Pennsylvania, July.

GSC, 2022b. Surface Water Compliance Report, Former York Naval Ordnance Plant, 1425 Eden Road, Springettsbury Township, York, Pennsylvania, January.

Hydro-Terra Group (HTG), 2023. 2022 Annual Operations Report, Former York Naval Ordnance Plant, York Pennsylvania, Harley-Davidson NPDES Permit No. PA 0085677, March.

United States Environmental Protection Agency (USEPA), 2020. United States Environmental Protection Agency, Region III, Final Decision and Response to Comments, Former York Naval Ordnance Plant, 1425 Eden Road, York, Pennsylvania, EPA ID No. PAD 001643691, February.

Tables

TABLE 2.1-1
Site-Wide Water Level and Elevation Data (2019-2022)
Former York Naval Ordnance Plant - York, PA

		Site-Wide Water Levels											
		9/17/19			9/24/20			9/21/21			9/22/22		
Location	Site Type	MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev
CW-1	Collection Well	570.07	41.85	528.22	570.07	40.85	529.22	570.07	36.01	534.06	570.07	42.69	527.38
CW-1A	Collection Well	568.28	38.28	530.00	568.28	37.50	530.78	568.28	32.56	535.72	568.28	39.52	528.76
CW-2	Collection Well	556.95	30.87	526.08	556.95	30.14	526.81	556.95	23.97	532.98	556.95	30.37	526.58
CW-3	Collection Well	518.66	15.70	502.96	518.66	14.80	503.86	518.66	12.87	505.79	518.66	15.01	503.65
CW-4	Collection Well	541.55	24.92	516.63	541.55	24.26	517.29	541.55	21.22	520.33	541.55	24.96	516.59
CW-5	Collection Well	470.34	19.06	451.28	470.34	18.72	451.62	470.34	17.78	452.56	470.34	18.95	451.39
CW-6	Collection Well	484.67	8.15	476.52	484.67	8.17	476.50	484.67	6.99	477.68	484.67	9.23	475.44
CW-7	Collection Well	573.78	40.37	533.41	573.78	39.09	534.69	573.78	47.27	526.51	573.78	41.93	531.85
CW-7A	Collection Well	573.91	43.08	530.83	573.91	42.20	531.71	573.91	36.83	537.08	573.91	44.44	529.47
CW-8	Abandoned Collection Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
CW-9	Collection Well	356.82	25.95	330.87	356.82	25.15	331.67	356.82	13.30	343.52	356.82	16.15	340.67
CW-13	Collection Well	358.85	35.58	323.27	358.85	34.53	324.32	358.85	14.49	344.36	358.85	17.56	341.29
CW-14	Monitoring Well	361.63	29.96	331.67	361.63	27.60	334.03	361.63	16.25	345.38	361.63	21.27	340.36
CW-15	Abandoned Collection \Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
CW-15A	Collection Well	360.11	35.15	324.96	360.11	34.42	325.69	360.11	12.72	347.39	360.11	17.17	342.94
CW-16	Abandoned Collection Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
CW-17	Collection Well	358.70	27.12	331.58	358.70	24.79	333.91	358.70	15.31	343.39	358.70	18.38	340.32
CW-18	Abandoned Collection Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
CW-19	Abandoned Collection Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
CW-20	Collection Well	361.49	26.86	334.63	361.49	29.90	331.59	361.49	18.53	342.96	361.49	20.19	341.30
CW-21	Collection Well	415.72	93.39	322.33	415.72	94.83	320.89	415.72	86.00	329.72	415.72	94.69	321.03
CW-22	Collection Well	415.71	96.82	318.89	415.71	96.79	318.92	415.71	87.59	328.12	415.71	96.70	319.01
CW-23	Collection Well	418.11	56.70	361.41	418.11	56.72	361.39	418.11	55.84	362.27	418.11	55.89	362.22
MPE-1	Monitoring Well	D	D	D	D	D	D	415.88	48.30	367.58	D	D	D
MPE-2	Monitoring Well	D	D	D	415.15	67.32	347.83	415.15	65.77	349.38	D	D	D
MPE-3	Monitoring Well	417.65	43.32	374.33	417.65	43.35	374.30	417.65	42.16	375.49	417.65	43.37	374.28
MW-1	Monitoring Well	380.73	39.74	340.99	380.73	39.42	341.31	380.73	35.31	345.42	380.73	39.13	341.60
MW-2	Monitoring Well	508.88	68.74	440.14	508.88	67.92	440.96	508.88	77.82	431.06	508.88	68.69	440.19
MW-3	Monitoring Well	541.10	66.65	474.45	541.10	66.31	474.79	541.10	63.58	477.52	541.10	67.13	473.97
MW-5	Monitoring Well	369.71	25.92	343.79	369.71	25.38	344.33	369.71	21.01	348.70	369.71	25.50	344.21
MW-6	Monitoring Well	359.62	20.30	339.32	359.62	19.96	339.66	359.62	12.36	347.26	359.62	18.05	341.57
MW-7	Monitoring Well	359.48	27.00	332.48	359.48	24.92	334.56	359.48	16.09	343.39	359.48	19.15	340.33
MW-8	Monitoring Well	358.09	23.52	334.57	358.09	23.05	335.04	358.09	14.10	343.99	358.09	17.29	340.80
MW-9	Monitoring Well	558.78	32.11	526.67	558.78	31.29	527.49	558.78	27.41	531.37	558.78	32.69	526.09
MW-10	Monitoring Well	567.80	40.46	527.34	567.80	39.52	528.28	567.80	34.89	532.91	567.80	41.37	526.43
MW-11	Monitoring Well	563.08	27.30	535.78	563.08	27.08	536.00	563.08	23.45	539.63	563.08	28.13	534.95
MW-12	Monitoring Well	535.93	33.87	502.06	535.93	33.55	502.38	535.93	31.68	504.25	535.93	34.71	501.22
MW-14	Monitoring Well	519.54	34.26	485.28	519.54	33.69	485.85	519.54	30.71	488.83	519.54	34.00	485.54
MW-15	Monitoring Well	523.95	61.50	462.45	523.95	61.42	462.53	523.95	60.90	463.05	523.95	61.20	462.75
MW-16D	Monitoring Well	516.73	-2.36	519.09A	516.73	-3.37	520.10A	516.73	-7.30	524.03A	516.73	-1.78	518.51A
MW-16S	Monitoring Well	516.60	5.92	510.68	516.60	4.59	512.01	NM	NM	NM	516.60	4.00	512.60
MW-17	Monitoring Well	456.86	14.92	441.94	456.86	14.55	442.31	456.86	12.73	444.13	456.86	15.11	441.75
MW-18D	Monitoring Well	464.52	-8.82	473.34A	464.52	-5.39	469.91A	464.52	-8.72	473.24A	464.52	-6.04	470.56A
MW-18S	Monitoring Well	464.52	-6.32	470.84A	464.52	-2.43	466.95A	464.52	-4.76	469.28A	464.52	-3.12	467.64A
MW-19	Monitoring Well	427.36	23.40	403.96	427.36	23.17	404.19	427.36	21.69	405.67	427.36	23.61	403.75
MW-20D	Monitoring Well	573.85	33.25	540.60	573.85	31.63	542.22	573.85	24.87	548.98	573.85	34.99	538.86
MW-20M	Monitoring Well	574.19	43.17	531.02	574.19	42.11	532.08	574.19	36.87	537.32	574.19	44.32	529.87
MW-20S	Monitoring Well	574.05	47.31	526.74	574.05	42.43	531.62	574.05	37.02	537.03	574.05	44.73	529.32
MW-22	Monitoring Well	447.57	64.10	383.47	447.57	62.25	385.32	447.57	57.23	390.34	447.57	65.07	382.50
MW-26	Monitoring Well	379.44	27.88	351.56	379.44	27.72	351.72	379.44	22.91	356.53	379.44	28.19	351.25
MW-27	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-28	Monitoring Well	366.78	26.32	340.46	366.78	26.03	340.75	366.78	25.56	341.22	366.78	25.25	341.53
MW-29	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-30	Monitoring Well	362.26	17.53	344.73	362.26	17.02	345.24	362.26	11.03	351.23	362.26	16.31	345.95
MW-31D	Monitoring Well	369.30	19.73	349.57	369.30	19.48	349.82	369.30	15.31	353.99	369.30	20.51	348.79
MW-31S	Monitoring Well	369.28	19.41	349.87	369.28	19.47	349.81	369.28	15.35	353.93	369.28	20.41	348.87
MW-32D	Monitoring Well	366.65	26.15	340.50	366.65	25.80	340.85	366.65	21.34	345.31	366.65	25.00	341.65
MW-32S	Monitoring Well	366.62	26.08	340.54	366.62	25.86	340.76	366.62	21.41	345.21	366.62	25.10	341.52
MW-33	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-34D	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-34S	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-35D	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-35S	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-36D	Monitoring Well	370.96	26.57	344.39	370.96	26.56	344.40	370.96	21.91	349.05	370.96	26.51	344.45
MW-36S	Monitoring Well	370.95	26.93	344.02	370.95	26.09	344.86	370.95	21.38	349.57	370.95	26.16	344.79
MW-37D	Monitoring Well	359.11	25.70	333.41	359.11	24.50	334.61	359.11	15.66	343.45	359.11	18.48	340.63
MW-37S	Monitoring Well	359.13	24.01	335.12	359.13	23.86	335.27	359.13	15.90	343.23	359.13	18.55	340.58
MW-38D	Monitoring Well	358.62	23.08	335.54	358.62	23.44	335.18	358.62	14.84	343.78	358.62	17.93	340.69
MW-39D	Monitoring Well	360.21	23.61	336.60	360.21	22.72	337.49	360.21	17.29	342.92	360.21	20.10	340.11
MW-39S	Monitoring Well	360.14	23.54	336.60	360.14	22.62	337.52	360.14	17.20	342.94	360.14	20.02	340.12
MW-40D	Monitoring Well	374.65	33.51	341.14	374.65	33.07	341.58	374.65	28.84	345.81	374.65	32.82	341.83
MW-40S	Monitoring Well	374.69	33.62	341.07	374.69	32.97	341.72	374.69	28.75	345.94	374.69	32.77	341.92
MW-43D	Monitoring Well	380.08	37.05	343.03	380.08	36.30	343.78	380.08	30.16	349.92	380.08	36.72	343.36
MW-43S	Monitoring Well	379.76	36.79	342.97	379.76	36.23	343.53	379.76	29.23	350.53	379.76	36.54	343.22
MW-45	Monitoring Well	360.57	20.28	340.29	360.57	19.92	340.65	360.57	15.14	345.43	360.57	18.90	341.67
MW-46	Monitoring Well	360.24	21.65	338.59	360.24	20.38	339.86	360.24	15.12	345.12	360.24	18.83	341.41
MW-47	Monitoring Well	360.45	22.57	337.88	360.45	21.60	338.85	360.45	15.11	345.34	360.45	18.88	341.57

TABLE 2.1-1
Site-Wide Water Level and Elevation Data (2019-2022)
Former York Naval Ordnance Plant - York, PA

		Site-Wide Water Levels											
		9/17/19			9/24/20			9/21/21			9/22/22		
Location	Site Type	MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev
MW-49D	Monitoring Well	360.45	18.96	341.49	360.45	18.47	341.98	360.45	13.34	347.11	360.45	17.64	342.81
MW-49S	Monitoring Well	360.44	18.60	341.84	360.44	18.46	341.98	360.44	13.37	347.07	360.44	17.56	342.88
MW-50D	Monitoring Well	363.36	25.81	337.55	363.36	24.67	338.69	363.36	19.19	344.17	363.36	22.42	340.94
MW-50S	Monitoring Well	363.42	26.90	336.52	363.42	25.70	337.72	363.42	15.96	347.46	363.42	21.62	341.80
MW-51D	Monitoring Well	363.11	28.26	334.85	363.11	25.85	337.26	363.11	19.63	343.48	363.11	21.78	341.33
MW-51S	Monitoring Well	363.20	29.81	333.39	363.20	28.08	335.12	363.20	19.58	343.62	363.20	22.76	340.44
MW-53	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-54	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-55	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-56	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-57	Monitoring Well	362.30	20.73	341.57	362.30	20.50	341.80	362.30	15.98	346.32	362.30	20.21	342.09
MW-64D	Monitoring Well	416.43	64.80	351.63	416.43	63.71	352.72	416.43	58.69	357.74	416.43	64.86	351.57
MW-64S	Monitoring Well	416.34	40.32	376.02	416.34	38.53	377.81	416.34	42.19	374.15	416.34	41.06	375.28
MW-65D	Monitoring Well	546.80	49.08	497.72	546.80	48.80	498.00	546.80	47.42	499.38	546.80	49.24	497.56
MW-65S	Monitoring Well	546.82	50.10	496.72	546.82	49.87	496.95	546.82	48.69	498.13	546.82	50.30	496.52
MW-66D	Monitoring Well	506.92	40.98	465.94	506.92	40.63	466.29	506.92	38.49	468.43	506.92	41.43	465.49
MW-66S	Monitoring Well	506.73	39.79	466.94	506.73	39.44	467.29	506.73	37.46	469.27	506.73	40.00	466.73
MW-67D	Monitoring Well	446.26	0.32	445.94	446.26	0.30	445.96	446.26	-0.16	446.42A	446.26	0.65	445.61
MW-67S	Monitoring Well	446.26	12.65	433.61	446.26	11.78	434.48	446.26	9.50	436.76	446.26	13.18	433.08
MW-68	Monitoring Well	458.06	7.23	450.83	458.06	7.00	451.06	458.06	5.60	452.46	458.06	7.48	450.58
MW-69	Monitoring Well	411.90	14.32	397.58	411.90	13.58	398.32	411.90	8.36	403.54	411.90	13.79	398.11
MW-70D	Monitoring Well	416.31	25.32	390.99	416.31	24.82	391.49	416.31	20.56	395.75	416.31	25.51	390.80
MW-70S	Monitoring Well	416.21	24.96	391.25	416.21	24.55	391.66	416.21	20.54	395.67	416.21	24.89	391.32
MW-74D	Monitoring Well	359.79	21.83	337.96	359.79	21.32	338.47	359.79	17.37	342.42	359.79	19.79	340.00
MW-74S	Monitoring Well	359.85	22.05	337.80	359.85	21.48	338.37	359.85	17.25	342.60	359.85	19.77	340.08
MW-75D	Monitoring Well	359.85	27.00	332.85	359.85	26.67	333.18	359.85	16.36	343.49	359.85	19.23	340.62
MW-75S	Monitoring Well	359.03	25.38	333.65	359.03	25.12	333.91	359.03	15.68	343.35	359.03	18.44	340.59
MW-77	Monitoring Well	379.48	27.17	352.31	379.48	27.09	352.39	379.48	22.51	356.97	379.48	26.77	352.71
MW-78	Monitoring Well	375.32	23.91	351.41	375.32	23.60	351.72	375.32	19.62	355.70	375.32	24.89	350.43
MW-79	Monitoring Well	375.84	25.58	350.26	375.84	25.43	350.41	375.84	20.97	354.87	375.84	26.03	349.81
MW-80	Monitoring Well	370.29	28.10	342.19	370.29	27.68	342.61	370.29	22.93	347.36	370.29	27.33	342.96
MW-81D	Monitoring Well	366.92	26.15	340.77	366.92	25.73	341.19	366.92	20.98	345.94	366.92	24.96	341.96
MW-81S	Monitoring Well	366.90	26.30	340.60	366.90	25.96	340.94	366.90	21.25	345.65	366.90	25.16	341.74
MW-82	Monitoring Well	382.18	38.37	343.81	382.18	37.71	344.47	382.18	33.51	348.67	382.18	37.96	344.22
MW-83	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-84	Monitoring Well	376.53	26.20	350.33	376.53	25.84	350.69	376.53	21.63	354.90	376.53	26.91	349.62
MW-85	Monitoring Well	371.54	14.10	357.44	371.54	11.00	360.54	371.54	2.41	369.13	371.54	14.28	357.26
MW-86D	Monitoring Well	406.56	10.48	396.08	406.56	10.06	396.50	406.56	8.13	398.43	406.56	10.22	396.34
MW-86S	Monitoring Well	406.50	11.65	394.85	406.50	11.05	395.45	406.50	7.69	398.81	406.50	11.43	395.07
MW-87	Monitoring Well	370.64	28.50	342.14	370.64	28.09	342.55	370.64	23.38	347.26	370.64	27.81	342.83
MW-88	Monitoring Well	367.93	27.06	340.87	367.93	26.77	341.16	367.93	22.71	345.22	367.93	26.32	341.61
MW-91	Monitoring Well	501.18	60.01	441.17	501.18	51.97	449.21	501.18	69.06	432.12	501.18	59.83	441.35
MW-92	Monitoring Well	476.87	89.15	387.72	476.87	87.54	389.33	476.87	82.15	394.72	476.87	89.76	387.11
MW-93D	Monitoring Well	360.14	24.60	335.54	360.14	24.52	335.62	360.14	16.96	343.18	360.14	19.61	340.53
MW-93S	Monitoring Well	360.76	25.36	335.40	360.76	25.25	335.51	360.76	17.43	343.33	360.76	20.19	340.57
MW-94	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-95	Monitoring Well	358.72	21.17	337.55	358.72	20.49	338.23	358.72	15.97	342.75	358.72	18.64	340.08
MW-96D	Monitoring Well	361.00	23.72	337.28	361.00	22.99	338.01	361.00	18.26	342.74	361.00	20.95	340.05
MW-96S	Monitoring Well	361.21	23.96	337.25	361.21	23.26	337.95	361.21	18.45	342.76	361.21	21.20	340.01
MW-97	Monitoring Well	357.39	20.82	336.57	357.39	20.34	337.05	357.39	14.23	343.16	357.39	17.17	340.22
MW-98D	Monitoring Well	361.41	22.12	339.29	361.41	21.99	339.42	361.41	20.40	341.01	361.41	21.77	339.64
MW-98I	Monitoring Well	360.78	22.42	338.36	360.78	22.29	338.49	360.78	20.96	339.82	360.78	22.14	338.64
MW-98S	Monitoring Well	360.77	22.41	338.36	360.77	22.22	338.55	360.77	20.46	340.31	360.77	21.92	338.85
MW-99D	Monitoring Well	359.91	21.04	338.87	359.91	21.00	338.91	359.91	19.36	340.55	359.91	20.69	339.22
MW-99S	Monitoring Well	360.37	21.50	338.87	360.37	21.43	338.94	360.37	19.81	340.56	360.37	21.17	339.20
MW-100D	Monitoring Well	362.14	23.73	338.41	362.14	23.07	339.07	362.14	21.14	341.00	362.14	22.73	339.41
MW-100I	Monitoring Well	361.81	23.48	338.33	361.81	22.81	339.00	361.81	20.90	340.91	361.81	22.40	339.41
MW-100S	Monitoring Well	362.28	23.89	338.39	362.28	23.09	339.19	362.28	21.31	340.97	362.28	22.85	339.43
MW-101D	Monitoring Well	356.22	17.59	338.63	356.22	17.04	339.18	356.22	16.01	340.21	356.22	17.03	339.19
MW-101S	Monitoring Well	356.54	17.13	339.41	356.54	17.29	339.25	356.54	16.37	340.17	356.54	17.47	339.07
MW-102D	Monitoring Well	405.23	19.69	385.54	405.23	14.16	391.07	405.23	9.84	395.39	405.23	14.76	390.47
MW-102S	Monitoring Well	405.41	41.95	363.46	405.41	41.37	364.04	405.41	35.92	369.49	405.41	43.07	362.34
MW-103D	Monitoring Well	401.61	21.21	380.40	401.61	20.81	380.80	401.61	17.25	384.36	401.61	21.22	380.39
MW-103S	Monitoring Well	402.00	19.02	382.98	402.00	18.55	383.45	402.00	15.12	386.88	402.00	18.82	383.18
MW-104	Abandoned Monitoring Well	428.72	29.49	399.23	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-105	Monitoring Well	362.05	23.73	338.32	362.05	23.74	338.31	362.05	19.28	342.77	362.05	22.03	340.02
MW-106	Monitoring Well	360.15	24.73	335.42	360.15	23.70	336.45	360.15	17.00	343.15	360.15	20.02	340.13
MW-107	Monitoring Well	363.56	24.81	338.75	363.56	24.77	338.79	363.56	20.54	343.02	363.56	23.04	340.52
MW-108D	Monitoring Well	426.35	25.13	401.22	426.35	20.59	405.76	426.35	13.74	412.61	426.35	20.29	406.06
MW-108S	Monitoring Well	425.46	34.38	391.08	425.46	28.37	397.09	425.46	18.30	407.16	425.46	27.61	397.85
MW-109D	Monitoring Well	389.12	37.10	352.02	389.12	36.22	352.90	389.12	31.61	357.51	389.12	37.21	351.91
MW-109S	Monitoring Well	388.39	37.37	351.02	388.39	36.51	351.88	388.39	31.90	356.49	388.39	37.48	350.91
MW-110	Monitoring Well	378.36	27.60	350.76	378.36	26.73	351.63	378.36	22.03	356.33	378.36	27.63	350.73
MW-111	Monitoring Well	433.63	27.13	406.50	433.63	25.23	408.40	433.63	18.85	414.78	433.63	28.68	404.95
MW-112	Monitoring Well	393.52	51.75	341.77	393.52	51.45	342.07	393.52	46.80	346.72	393.52	50.74	342.78
MW-113	Monitoring Well	371.02	28.38	342.64	371.02	28.41	342.61	371.02	23.48	347.54	371.02	28.10	342.92
MW-114	Monitoring Well	366.88	25.91	340.97	366.88	25.50	341.38	366.88	20.61	346.27	366.88	24.70	342.18
MW-115	Monitoring Well	373.30	24.83	348.47	373.30	23.89	349.41	373.30	20.38	352.92	373.30	24.49	348.81
MW-116	Monitoring Well	364.59	20.67	343.92	364.59	20.05	344.54	364.59	15.35	349.24	364.59	19.85	344.74
MW-117	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB

TABLE 2.1-1
Site-Wide Water Level and Elevation Data (2019-2022)
Former York Naval Ordnance Plant - York, PA

		Site-Wide Water Levels											
		9/17/19			9/24/20			9/21/21			9/22/22		
Location	Site Type	MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev
MW-118	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-119	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-120	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-121	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-122	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-123	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-124	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-125	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-126	Monitoring Well	371.42	28.50	342.92	371.42	28.28	343.14	371.42	23.60	347.82	371.42	28.08	343.34
MW-127	Monitoring Well	371.55	29.39	342.16	371.55	28.94	342.61	371.55	24.24	347.31	371.55	28.63	342.92
MW-128	Monitoring Well	370.58	28.38	342.20	370.58	28.01	342.57	370.58	23.28	347.30	370.58	27.73	342.85
MW-129	Monitoring Well	361.20	19.20	342.00	361.20	18.88	342.32	361.20	14.05	347.15	361.20	18.69	342.51
MW-130	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-131	Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-132	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-133	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-134	Monitoring Well	362.18	21.15	341.03	NM	NM	NM	362.18	15.80	346.38	362.18	19.91	342.27
MW-135	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-136A	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-136A (270-348)	Waterloo Monitoring Well	359.78	10.45	349.33	NM	NM	NM	359.78	12.19	347.59	359.78	12.20	347.58
MW-136A (356-356.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-136A (372.5-373)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-136A (434-434.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-136A (459.5-460)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	359.78	24.56	335.22
MW-137A	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-137A (270-306)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-137A (295.5-296)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-137A (343-343.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-137A (374.5-375)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-137A (420-420.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-137A (434.5-435)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-138A	Monitoring Well	370.82	26.91	343.91	370.82	25.93	344.89	370.82	23.22	347.60	370.82	26.10	344.72
MW-139A	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-139A (270-285)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-139A (305-305.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-139A (333.5-334)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-139A (365-365.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-139A (421.5-422)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-139A (454-454.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-140A	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-140A (209.5-210)	Waterloo Monitoring Well	361.20	7.50	353.70	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-140A (285-285.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-140A (323.5-324)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-140A (372-372.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-140A (407.5-408)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-141A	Monitoring Well	416.96	50.43	366.53	416.96	47.81	369.15	416.96	42.19	374.77	416.96	48.31	368.65
MW-142D	Monitoring Well	437.78	15.68	422.10	437.78	15.41	422.37	437.78	12.84	424.94	437.78	16.37	421.41
MW-142S	Monitoring Well	437.44	3.33	434.11	437.44	3.21	434.23	437.44	1.42	436.02	437.44	3.84	433.60
MW-143D	Monitoring Well	403.71	9.96	393.75	403.71	9.39	394.32	403.71	5.07	398.64	403.71	11.53	392.18
MW-143S	Monitoring Well	403.56	36.02	367.54	403.56	35.05	368.51	403.56	29.28	374.28	403.56	38.20	365.36
MW-144	Monitoring Well	361.52	23.82	337.70	361.52	22.68	338.84	361.52	20.98	340.54	361.52	22.40	339.12
MW-145A	Monitoring Well	362.44	24.01	338.43	362.44	21.90	340.54	362.44	21.50	340.94	362.44	22.92	339.52
MW-146	Monitoring Well	362.39	23.16	339.23	362.39	23.07	339.32	362.39	21.31	341.08	362.39	22.76	339.63
MW-147A	Monitoring Well	361.25	21.91	339.34	361.25	23.22	338.03	361.25	19.84	341.41	361.25	21.52	339.73
MW-148A (72.5-73)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-148A (136-136.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-148A (218-218.5)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-150	Monitoring Well	366.80	11.66	355.14	366.80	16.65	350.15	366.80	9.96	356.84	366.80	12.68	354.12
MW-151	Monitoring Well	374.11	28.84	345.27	374.11	27.20	346.91	374.11	21.52	352.59	374.11	22.76	351.35
MW-152 (0-10)	Waterloo Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-152 (23-23.5)	Waterloo Monitoring Well	358.92	9.55	349.37	358.92	14.44	344.48	358.92	13.69	345.23	358.92	14.41	344.51
MW-152 (137.5-138)	Waterloo Monitoring Well	358.92	16.11	342.81	358.92	16.30	342.62	358.92	13.97	344.95	358.92	16.67	342.25
MW-155	Monitoring Well	359.92	21.01	338.91	359.92	20.80	339.12	359.92	18.66	341.26	359.92	20.22	339.70
MW-156	Monitoring Well	353.53	15.65	337.88	353.53	14.89	338.64	353.53	11.69	341.84	353.53	13.52	340.01
MW-160	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-161	Monitoring Well	415.92	64.32	351.60	415.92	63.28	352.64	D	D	D	415.92	64.40	351.52
MW-162	Abandoned Monitoring Well	415.78	49.38	366.40	AB	AB	AB	AB	AB	AB	AB	AB	AB
MW-162R	Monitoring Well	NM	NM	NM	415.76	69.77	345.99	415.76	62.84	352.92	415.76	70.51	345.25
MW-163	Monitoring Well	419.41	37.83	381.58	419.41	35.89	383.52	419.41	31.71	387.70	419.41	38.92	380.49
MW-164	Monitoring Well	424.50	43.52	380.98	424.50	41.58	382.92	424.50	36.90	387.60	424.50	44.69	379.81
MW-165	Monitoring Well	419.41	47.00	372.41	419.41	45.45	373.96	419.41	38.73	380.68	419.41	48.30	371.11
MW-166	Monitoring Well	402.03	43.54	358.49	402.03	41.62	360.41	402.03	35.23	366.80	402.03	43.78	358.25
MW-167	Monitoring Well	399.07	34.01	365.06	399.07	33.93	365.14	399.07	20.04	379.03	399.07	38.04	361.03
MW-168	Monitoring Well	395.19	23.43	371.76	395.19	21.14	374.05	395.19	14.08	381.11	395.19	24.00	371.19
MW-169	Monitoring Well	389.43	33.11	356.32	NM	NM	NM	389.43	20.72	368.71	389.43	34.50	354.93
MW-170	Monitoring Well	385.60	28.58	357.02	385.60	26.40	359.20	385.60	16.08	369.52	385.60	29.84	355.76
MW-171	Monitoring Well	386.75	35.76	350.99	386.75	34.93	351.82	386.75	30.14	356.61	386.75	35.86	350.89
MW-172	Monitoring Well	NM	NM	NM	385.03	30.74	354.29	385.03	22.52	362.51	385.03	32.38	352.65
MW-173	Monitoring Well	381.57	21.72	359.85	NM	NM	NM	381.57	13.47	368.10	381.57	23.74	357.83
MW-174	Monitoring Well	378.31	27.28	351.03	378.31	26.43	351.88	378.31	21.57	356.74	378.31	27.46	350.85

TABLE 2.1-1
Site-Wide Water Level and Elevation Data (2019-2022)
Former York Naval Ordnance Plant - York, PA

		Site-Wide Water Levels											
		9/17/19			9/24/20			9/21/21			9/22/22		
Location	Site Type	MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev	MRP	DTW	GW Elev
MW-175	Monitoring Well	376.18	26.48	349.70	376.18	25.56	350.62	376.18	20.48	355.70	376.18	26.53	349.65
MW-176	Monitoring Well	D	D	D	D	D	D	D	D	D	D	D	D
MW-177R	Monitoring Well	415.33	65.99	349.34	415.33	65.87	349.46	415.33	58.25	357.08	415.33	65.91	349.42
MW-178D	Monitoring Well	414.81	80.92	333.89	414.81	83.43	331.38	414.81	81.92	332.89	414.81	83.30	331.51
MW-178S	Monitoring Well	415.11	80.18	334.93	D	D	D	D	D	D	D	D	D
MW-179	Monitoring Well	D	D	D	D	D	D	414.74	60.85	353.89	D	D	D
MW-180	Monitoring Well	D	D	D	D	D	D	414.36	61.72	352.64	D	D	D
MW-181D	Monitoring Well	414.91	58.49	356.42	414.91	57.52	357.39	414.91	52.77	362.14	414.91	58.65	356.26
MW-181S	Monitoring Well	414.86	70.44	344.42	414.86	70.56	344.30	414.86	65.55	349.31	414.86	70.70	344.16
MW-182	Monitoring Well	D	D	D	D	D	D	416.41	45.04	371.37	D	D	D
MW-183	Monitoring Well	417.14	46.25	370.89	417.14	46.04	371.10	417.14	42.79	374.35	417.14	46.83	370.31
MW-184D	Monitoring Well	416.29	35.92	380.37	416.29	43.51	372.78	416.29	44.28	372.01	416.29	49.21	367.08
MW-184S	Monitoring Well	416.19	50.90	365.29	416.19	45.35	370.84	416.19	46.37	369.82	416.19	50.80	365.39
MW-185	Monitoring Well	514.13	70.84	443.29	514.13	70.37	443.76	514.13	66.55	447.58	514.13	70.68	443.45
MW-186	Monitoring Well	NM	NM	NM	375.11	17.30	357.81	375.11	13.97	361.14	375.11	18.99	356.12
Cole B	Monitoring Well	363.75	15.05	348.70	363.75	14.51	349.24	363.75	10.62	353.13	363.75	15.07	348.68
Cole D	Monitoring Well	370.15	20.35	349.80	370.15	19.44	350.71	370.15	12.00	358.15	370.15	20.50	349.65
Cole E deep	Monitoring Well	369.17	20.22	348.95	369.17	19.40	349.77	369.17	14.29	354.88	369.17	20.23	348.94
Cole E shallow	Monitoring Well	369.54	20.60	348.94	369.54	19.81	349.73	369.54	14.68	354.86	369.54	20.66	348.88
Cole F	Monitoring Well	370.39	21.48	348.91	370.39	26.12	344.27	370.39	15.75	354.64	370.39	21.41	348.98
Cole (Flush)	Monitoring Well	361.92	14.17	347.75	361.92	13.20	348.72	361.92	9.12	352.80	361.92	13.79	348.13
GM-1D	Monitoring Well	366.11	17.72	348.39	366.11	16.98	349.13	366.11	12.73	353.38	366.11	17.58	348.53
MW-4 (Cole)	Monitoring Well	367.21	18.98	348.23	367.21	18.26	348.95	367.21	13.98	353.23	367.21	18.95	348.26
Cole Steel MW-12	Monitoring Well	360.79	13.15	347.64	360.79	12.49	348.30	NM	NM	NM	NM	NM	NM
Ru-MW-1	Monitoring Well	389.05	36.66	352.39	389.05	35.69	353.36	389.05	29.02	360.03	NM	NM	NM
Ru-MW-2	Monitoring Well	390.72	39.83	350.89	390.72	38.95	351.77	390.72	34.29	356.43	NM	NM	NM
Ru-MW-3	Monitoring Well	395.23	44.33	350.90	395.23	43.47	351.76	395.23	38.83	356.40	NM	NM	NM
Ru-MW-4	Abandoned Monitoring Well	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
Ru-MW-4R	Monitoring Well	394.07	43.24	350.83	394.07	42.34	351.73	394.07	36.61	357.46	NM	NM	NM
Ru-MW-5	Monitoring Well	378.11	27.20	350.91	378.11	26.36	351.75	NM	NM	NM	NM	NM	NM
Ru-MW-6	Monitoring Well	382.68	31.77	350.91	382.68	30.97	351.71	NM	NM	NM	NM	NM	NM
Ru-MW-7	Monitoring Well	386.34	35.43	350.91	386.34	34.60	351.74	386.34	29.94	356.40	NM	NM	NM
Ru-MW-8	Monitoring Well	384.10	33.26	350.84	NM	NM	NM	NM	NM	NM	NM	NM	NM
Ru-MW-9	Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Ru-MW-10	Monitoring Well	390.15	39.18	350.97	390.15	38.22	351.93	390.15	33.39	356.76	NM	NM	NM
Ru-MW-100	Monitoring Well	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Ru-MW-101	Monitoring Well	390.60	39.69	350.91	390.60	38.84	351.76	390.60	34.20	356.40	NM	NM	NM
Ru-MW-102	Monitoring Well	393.87	42.94	350.93	393.87	42.10	351.77	393.87	37.46	356.41	NM	NM	NM
Ru-MW-103	Monitoring Well	389.28	38.31	350.97	389.28	37.41	351.87	389.28	32.76	356.52	NM	NM	NM
Herman (S-7)	Spring	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
TATE (S-6)	Spring	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
TATE (S-6) Staff Gauge	Abandoned Staff Gage	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
CODORUS 1	Bridge Surface Gaging Point	379.69	38.92	340.77	379.69	40.37	339.32	379.69	40.80	338.89	379.69	39.28	340.41
CODORUS 2	Staff Gage	341.15	0.10	341.05	D	D	D	NM	NM	NM	NM	NM	NM
JOHNSON 1	Surface Water	380.32	6.23	374.09	380.32	6.17	374.15	380.32	6.18	374.14	380.32	6.24	374.08
JOHNSON 2	Surface Water	376.79	5.61	371.18	376.79	5.44	371.35	376.79	5.28	371.51	376.79	6.04	370.75
SCP MP-1 (High)	Water Level Measuring Point	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
SCP MP-1 (Low)	Water Level Measuring Point	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
RW-2 (Flinchbaugh)	Abandoned Residential Well	548.27	22.03	526.24	548.27	21.31	526.96	AB	AB	AB	AB	AB	AB
RW-4 (Folk)	Residential Well	575.93	39.65	536.28	575.93	38.91	537.02	575.93	33.32	542.61	575.93	41.33	534.60
RW-5 (Giambolvo)	Monitoring Well	375.54	33.34	342.20	375.54	33.21	342.33	375.54	29.32	346.22	375.54	32.91	342.63
RW-6 (Kinsley Well)	Monitoring Well	NM	NM	NM	465.83	71.89	393.94	465.83	71.36	394.47	D	D	D
SOFTAIL LIFT STATION	Abandoned Lift Station	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
WPL-SS-7	Monitoring Well	357.78	23.28	334.50	357.78	22.14	335.64	357.78	13.36	344.42	357.78	16.61	341.17
WPL-SS-8	Monitoring Well	364.40	26.76	337.64	364.40	25.55	338.85	364.40	20.25	344.15	364.40	23.10	341.30

Notes:
Gage measurements represent the water level on the gage.
A - Artesian
AB - Abandoned
D - Dry (no water in well)
DTW - Depth to water measurement
NM - Not Measured
MRP - Measurement reference point elevation in feet above mean sea level (AMSL)
GW Elev - Water level elevation in feet above mean sea level (AMSL)

TABLE 2.1-2
Vertical Groundwater Gradient Data for September 22, 2022
Former York Naval Ordnance Plant - York, PA

Well Identification	Elevation TOC (Feet AMSL)	Open Interval (Feet)	Mid-Point Screened Interval (Feet)	Mid-Point Elevation (Feet AMSL)	Difference Between Mid-Points (Feet)	Depth to Water (Feet)	Water Level Elevation (Feet AMSL)	Difference Between Water Level Elevations (Feet)	Vertical Gradient (Feet/Foot)
Former Central Plant Area (CPA)									
MW-32S	366.62	133-148	140.50	226.12	-67.47	25.10	341.52	-0.13	0.002
MW-32D	366.65	196-220	208.00	158.65		25.00	341.65		
MW-49S	360.44	134-158	146.00	214.44	-64.49	17.56	342.88	0.07	-0.001
MW-49D	360.45	201-220	210.50	149.95		17.64	342.81		
MW-81S	366.90	28-43	35.50	331.40	-23.48	25.16	341.74	-0.22	0.009
MW-81D	366.92	52-66	59.00	307.92		24.96	341.96		
Codorus Creek Levee									
MW-98S	360.77	58-68	63.00	297.77	-38.49	21.92	338.85	0.21	-0.005
MW-98I	360.78	98-105	101.50	259.28	-47.37	22.14	338.64	-1.00	0.021
MW-98D	361.41	128-171	149.50	211.91		21.77	339.64		
MW-99S	360.37	57.8-74.3	66.05	294.32	-68.16	21.17	339.20	-0.02	0.000
MW-99D	359.91	125.5-142	133.75	226.16		20.69	339.22		
MW-100S	362.28	45-51	48.00	314.28	-15.47	22.85	339.43	0.02	-0.001
MW-100I	361.81	60-66	63.00	298.81	-40.17	22.40	339.41	0.00	0.000
MW-100D	362.14	93-114	103.50	258.64		22.73	339.41		
MW-101S	356.54	18-40	29.00	327.54	-66.82	17.47	339.07	-0.12	0.002
MW-101D	356.22	76-115	95.50	260.72		17.03	339.19		
Eastern Landfill Area									
MW-65S	546.82	71.3-86	78.65	468.17	-17.37	50.30	496.52	-1.04	0.060
MW-65D	546.80	89-103	96.00	450.80		49.24	497.56		
MW-66S	506.73	47.2-61.6	54.40	452.33	-36.11	40.00	466.73	1.24	-0.034
MW-66D	506.92	81.4-100	90.70	416.22		41.43	465.49		
MW-67S	446.26	12.8-31	21.90	424.36	-42.60	13.18	433.08	-12.53	0.294
MW-67D	446.26	58-71	64.50	381.76		0.65	445.61		
Former North End of Test Track (NETT)									
MW-70S	416.21	15.8-35	25.40	390.81	-51.00	24.89	391.32	0.52	-0.010
MW-70D	416.31	68-85	76.50	339.81		25.51	390.80		
MW-86S	406.50	10-32.5	21.25	385.25	-61.44	11.43	395.07	-1.27	0.021
MW-86D	406.56	67-98.5	82.75	323.81		10.22	396.34		
MW-102S	405.41	41-65	53.00	352.41	-34.18	43.07	362.34	-28.13	0.823
MW-102D	405.23	75-99	87.00	318.23		14.76	390.47		
MW-103S	402.00	62.3-87.5	74.90	327.10	-26.19	18.82	383.18	2.79	-0.107
MW-103D	401.61	94.7-106.7	100.70	300.91		21.22	380.39		
Former North Plant Area									
MW-31S	369.28	12-36	24.00	345.28	-49.48	20.41	348.87	0.08	-0.002
MW-31D	369.30	66-81	73.50	295.80		20.51	348.79		
MW-36S	370.95	18-41	29.50	341.45	-45.49	26.16	344.79	0.34	-0.007
MW-36D	370.96	67-83	75.00	295.96		26.51	344.45		
Northern Property Boundary Area (NPBA)									
MW-16S	516.60	98-110	104.00	412.60	-91.37	4.00	512.60	-5.91	0.065
MW-16D	516.73	190-201	195.50	321.23		-1.78	518.51		
MW-18S	464.52	45-65	55.00	409.52	-80.00	-3.12	467.64	-2.92	0.037
MW-18D	464.52	130-140	135.00	329.52		-6.04	470.56		
MW-20S	574.05	28-61	44.50	529.55	-33.86	44.73	529.32	-0.55	0.016
MW-20M	574.19	72-85	78.50	495.69	-80.84	44.32	529.87	-8.99	0.111
MW-20D	573.85	153-165	159.00	414.85		34.99	538.86		
MW-142S	437.44	56-70	63.00	374.44	-70.36	3.84	433.60	12.19	-0.173
MW-142D	437.78	122-145.4	133.70	304.08		16.37	421.41		
MW-143S	403.56	24-54.5	39.25	364.31	-86.30	38.20	365.36	-26.82	0.311
MW-143D	403.71	117.4-134	125.70	278.01		11.53	392.18		

TABLE 2.1-2
Vertical Groundwater Gradient Data for September 22, 2022
Former York Naval Ordnance Plant - York, PA

Well Identification	Elevation TOC (Feet AMSL)	Open Interval (Feet)	Mid-Point Screened Interval (Feet)	Mid-Point Elevation (Feet AMSL)	Difference Between Mid-Points (Feet)	Depth to Water (Feet)	Water Level Elevation (Feet AMSL)	Difference Between Water Level Elevations (Feet)	Vertical Gradient (Feet/Foot)
South Plume Area (SPA)									
MW-40S	374.69	26-47	36.50	338.19	-54.04	32.77	341.92	0.09	-0.002
MW-40D	374.65	78-103	90.50	284.15		32.82	341.83		
MW-43S	379.76	19-48	33.50	346.26	-51.68	36.54	343.22	-0.14	0.003
MW-43D	380.08	79-92	85.50	294.58		36.72	343.36		
MW-152S	358.92	10-30	20.00	338.92	-141.25	14.41	344.51	2.26	-0.016
MW-152D	358.92	122.5-200	161.25	197.67		16.67	342.25		
Southern Property Boundary Area (SPBA)									
MW-64S	416.34	33-42	37.50	378.84	-34.91	41.06	375.28	23.71	-0.679
MW-64D	416.43	68-77	72.50	343.93		64.86	351.57		
MW-108S	425.46	22.9-55.1	39.00	386.46	-70.61	27.61	397.85	-8.21	0.116
MW-108D	426.35	72-149	110.50	315.85		20.29	406.06		
MW-109S	388.39	42.9-65	53.95	334.44	-39.32	37.48	350.91	-1.00	0.025
MW-109D	389.12	88-100	94.00	295.12		37.21	351.91		
MW-178S	415.11	72-84	78.00	337.11	-17.30	D	D	NA	NA
MW-178D	414.81	90-100	95.00	319.81		83.30	331.51		
MW-181S	414.86	61-71	66.00	348.86	-30.45	70.70	344.16	-12.10	0.397
MW-181D	414.91	93-100	96.50	318.41		58.65	356.26		
MW-184S	416.19	51-59	55.00	361.19	-14.90	50.80	365.39	-1.69	0.113
MW-184D	416.29	66-74	70.00	346.29		49.21	367.08		
Northern - West Parking Lot (WPL)									
MW-39S	360.14	3-30	16.50	343.64	-59.93	20.02	340.12	0.01	0.000
MW-39D	360.21	53-100	76.50	283.71		20.10	340.11		
MW-50S	363.42	104-125	114.50	248.92	-49.06	21.62	341.80	0.86	-0.018
MW-50D	363.36	157-170	163.50	199.86		22.42	340.94		
MW-51S	363.20	34-51	42.50	320.70	-61.59	22.76	340.44	-0.89	0.014
MW-51D	363.11	88-120	104.00	259.11		21.78	341.33		
MW-74S	359.85	175-201	188.00	171.85	-47.06	19.77	340.08	0.08	-0.002
MW-74D	359.79	220-250	235.00	124.79		19.79	340.00		
MW-96S	361.21	27-39	33.00	328.21	-48.46	21.20	340.01	-0.04	0.001
MW-96D	361.00	75-87.5	81.25	279.75		20.95	340.05		
Southern - West Parking Lot (WPL)									
MW-37S	359.13	11-33	22.00	337.13	-111.02	18.55	340.58	-0.05	0.000
MW-37D	359.11	125-141	133.00	226.11		18.48	340.63		
MW-75S	359.03	151-190	170.50	188.53	-37.18	18.44	340.59	-0.03	0.001
MW-75D	359.85	200-217	208.50	151.35		19.23	340.62		
MW-93S	360.76	24-45	34.50	326.26	-113.47	20.19	340.57	0.04	0.000
MW-93D	360.14	134.7-160	147.35	212.79		19.61	340.53		

Notes:
A calculated negative vertical gradient value indicates a downward vertical gradient.
A calculated positive vertical gradient value indicates an upward vertical gradient.
Depth to water data collected on September 22, 2022.
AMSL: Above mean sea level.
D: Dry (no water in well).
NA: Not applicable.
TOC: Top of well casing.

TABLE 2.2-1
Groundwater Analytical Data Summary - Volatile Organic Compounds (VOCs) - MNA Area Wells - 2022
Former York Naval Ordnance Plant - York, PA

Location/Identification Depth (feet) Sample Date Sample Description	PADEP MSC UA R (µg/L)	PADEP MSC UA NR (µg/L)	USEPA MCL (µg/L)	USEPA RSL (µg/L)	MW-2 10/4/22 [1]	MW-3 9/29/22 [1]	MW-5 3/23/22 [2]	MW-5 6/22/22 [2]	MW-5 9/27/22 [1/2]	MW-5 12/20/22 [2]	MW-6 3/23/22 [2]	MW-6 6/22/22 [2]	MW-6 9/26/22 [1/2]	MW-6 12/20/22 [2]	MW-9 Dup 9/29/22 [1]	MW-9 9/29/22 [1]	MW-12 9/29/22 [1]	MW-14 9/27/22 [1]	MW-16S 9/29/22 [1]	MW-18D 9/30/22 [1]	MW-18S 9/30/22 [1]	MW-20M 9/29/22 [1]	MW-20S 9/29/22 [1]	MW-22 9/30/22 [1]	MW-43D 10/6/22 [1]	MW-65S 9/29/22 [1]	MW-67D 10/3/22 [1]	MW-67S 9/30/22 [1]	MW-69 10/13/22 [1]	MW-79 10/4/22 [1]	MW-82 10/7/22 [1]	MW-88 3/23/22 [2]	MW-88 6/22/22 [2]	MW-88 9/27/22 [1/2]	MW-88 12/20/22 [2]	MW-101D 3/23/22 [2]	MW-101D 6/22/22 [2]	MW-101D 9/27/22 [1/2]
Volatile Organic Compound																																									
1,1,1,2-Tetrachloroethane	70	70		0.57	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	200	200	200	800	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3.6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	0.84	4.3		0.076	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	5	5	5	0.041	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	31	160		2.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7	7	7	28	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.94 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	0.05	0.05	0.05	0.0075	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	5	5	5	0.17	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	5	5	5	0.82	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	4000	4000		560	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	63	260		3.8	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	2800	7800		630	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	31000	88000		1800	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Benzene	5	5	5	0.46	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	90	90		8.3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	80	80		0.13	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	80	80		3.3	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Bromomethane	10	10		0.75	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	1500	6200		81	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.33 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	5	5	5	0.46	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	100	100	100	7.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	80	80		0.87	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	21000	88000		830	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	80	80		0.22	1 U	1.1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.92 J	1 U	1 U	1 U	0.39 J	0.62 J	1 U	1 U	1.2	1.1	0.88 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.35 J	0.39 J	0.42 J
Chloromethane	30	30		19	2 U	2 U	1 U	1 U	2 U	2 U	1 U	1 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U	2 UJ	2 U	2 U	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	2 U	2 U	1 U	1 U	2 U
cis-1,2-Dichloroethene	70	70	70	2.5	1 U	0.52 J	3.4	2.3	3.9	6	1 U	1 U	1 U	1 U	34	34	63	1 U	5.2	12	12	1 U	1 U	1 U	4.6	1 U	0.34 J	0.33 J	4.7	1	1.3	0.78 J	1.8	1 U	0.78 J	8	9.1	8.9
cis-1,3-Dichloropropene	6.5	27		0.47	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	700	700	700	1.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl tert-butyl ether	20	20		14	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	5	5		11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	100	100	100	120	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5	5	5	4.1	68	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.9	5.6	0.74 J	1 U	1 U	0.73 J	1.4	5.5	5.4	2.1	0.3 J	1.5	1 U	1 U	1.8	4.6	11	0.89 J	4.9	4.1	4.1	3.9
Toluene	1000	1000	1000	110	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	100	100	100	6.8	2 U	2 U	1 U	1 U	2 U	2 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	2 U	2 U	1 U	1 U	2 U
trans-1,3-Dichloropropene	6.5	27		0.47	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5	5	5	0.28	0.7 J	2	1 U	1 U	0.32 J	0.43 J	1 U	1 U	1 U	1 U	10	10	64	0.47 J	16	1.9	1.7	18	11	2.3	3.1	6.4	0.92 J	1.4	4.8	0.35 J	1.2	1.3	2.4	0.44 J	0.85 J	5.3	6.1	4.5
Vinyl Chloride	2	2	2	0.019	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.38 J	0.37 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (Total)	10000	10000	10000	19	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:
µg/L - Micrograms per liter
Dup - Duplicate sample
U - Not Detected. Results are shown as the laboratory Reporting Limit (RL) followed by "U".

J - Estimated. Detected concentration between the laboratory RL and the Method Detection Limit (MDL) shown as the approximate concentration reported by the laboratory followed by "J". These "J" concentrations were positively identified in the sample and are qualitatively acceptable.

PADEP MSC - Pennsylvania Department of Environmental Protection Statewide health standard Medium-Specific Concentration
UA R - Used Aquifer Residential
UA NR - Used Aquifer Non-Residential
USEPA MCL - United States Environmental Protection Agency Maximum Contaminant Level
USEPA RSL - United States Environmental Protection Agency Tap Water Regional Screening Level (TR = $1x10^{-6}$ and THQ=1.0)

Color shaded cell denotes reported concentration greater than regulatory level

[1] - Annual monitored natural attenuation (MNA) area sample
[2] - Quarterly Technical Impracticability (TI) Area 1 sample
[3] - Supplemental Southern Property Boundary Area (SPBA) extraction system performance monitoring sample
[4] - Quarterly SPBA extraction system performance monitoring sample

TABLE 2.2-1
Groundwater Analytical Data Summary - Volatile Organic Compounds (VOCs) - MNA Area Wells - 2022
Former York Naval Ordnance Plant - York, PA

Location/Identification Depth (feet) Sample Date Sample Description	PADEP MSC UA R (µg/L)	PADEP MSC UA NR (µg/L)	USEPA MCL (µg/L)	USEPA RSL (µg/L)	MW-101D 12/20/22 [2]	MW-101S 3/23/22 [2]	MW-101S 6/22/22 [2]	MW-101S 9/27/22 [1/2]	MW-101S 12/20/22 [2]	MW-108D 9/26/22 [1]	MW-108S 9/28/22 [1]	MW-110 10/5/22 [1]	MW-111 10/6/22 [1]	MW-112 Dup 10/7/22 [1]	MW-112 10/7/22 [1]	MW-115 10/6/22 [1]	MW-142D 9/30/22 [1]	MW-142S 9/29/22 [1]	MW-143D 10/3/22 [1]	MW-143S 10/4/22 [1]	MW-148A 72.5-73 10/11/22 [1]	MW-148A 136-136.5 10/11/22 [1]	MW-150 10/5/22 [1]	MW-165 9/28/22 [1]	MW-166 1/11/22 [3]	MW-166 1/27/22 [3]	MW-166 2/8/22 [3]	MW-166 2/22/22 [3]	MW-166 3/8/22 [3]	MW-166 3/23/22 [3/4]	MW-166 4/26/22 [3]	MW-166 5/25/22 [3]	MW-166 9/27/22 [4]	MW-167 1/27/22 [3]	MW-167 2/8/22 [3]	MW-167 2/22/22 [3]	MW-167 3/8/22 [3]
Volatile Organic Compound																																							
1,1,1,2-Tetrachloroethane	70	70		0.57	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	200	200	200	800	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	0.84	4.3		0.076	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	5	5	5	0.041	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	31	160		2.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	13	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7	7	7	28	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.64 J	1 U	1 U	1.9	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.52 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	0.05	0.05	0.05	0.0075	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	5	5	5	0.17	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	5	5	5	0.82	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	4000	4000		560	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	63	260		3.8	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	2800	7800		630	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	31000	88000		1800	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	1.1 J	20 U	2.6 J	3 J	20 U	20 U	20 U	20 U	20 U	20 U
Benzene	5	5	5	0.46	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	7.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	90	90		8.3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	80	80		0.13	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	80	80		3.3	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Bromomethane	10	10		0.75	1 UJ	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
Carbon Disulfide	1500	6200		81	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	5	5	5	0.46	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	100	100	100	7.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	80	80		0.87	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	21000	88000		830	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.64 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
Chloroform	80	80		0.22	0.47 J	1 U	1 U	1 U	1 U	0.39 J	0.39 J	0.73 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.48 J	0.35 J	0.47 J	0.58 J	0.48 J	0.55 J	0.45 J	0.55 J	0.65 J	1 U	1 U	1 U
Chloromethane	30	30		19	2 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	2 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	70	70	70	2.5	8.8	0.34 J	0.3 J	0.65 J	0.48 J	1 U	1 U	1 U	7.7	1 U	1 U	98	0.51 J	6.2	2.7	1 U	1 U	1 U	1 U	40	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	6.5	27		0.47	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	700	700	700	1.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl tert-butyl ether	20	20		14	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	22	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	5	5		11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	100	100	100	120	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5	5	5	4.1	5.6	2	1.9	3.8	4.2	1 U	1 U	18	1 U	0.3 J	1 U	1 U	1 U	1 U	1 U	0.59 J	1 U	1 U	1 U	2.8	39	14	13	9.3	8.5	7.2	4.8	3.2	2.2	2	1.6	1.5	1.4
Toluene	1000	1000	1000	110	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	100	100	100	6.8	2 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.88 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	6.5	27		0.47	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5	5	5	0.28	5.3	0.42 J	0.38 J	0.76 J	0.64 J	1 U	1 U	0.43 J	1.2	0.74 J	0.68 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	30	1.2	3	1.2	1.3	0.98 J	0.93 J	0.85 J	0.75 J	0.51 J	0.54 J	0.45 J	0.33 J	1 U	0.33 J
Vinyl Chloride	2	2	2	0.019	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	79	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U
Xylenes (Total)	10000	10000	10000	19	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:
µg/L - Micrograms per liter
Dup - Duplicate sample
U - Not Detected. Results are shown as the laboratory Reporting Limit (RL) followed by "U".

J - Estimated. Detected concentration between the laboratory RL and the Method Detection Limit (MDL) shown as the approximate concentration reported by the laboratory followed by "J". These "J" concentrations were positively identified in the sample and are qualitatively acceptable.

PADEP MSC - Pennsylvania Department of Environmental Protection Statewide health standard Medium-Specific Concentration
UA R - Used Aquifer Residential
UA NR - Used Aquifer Non-Residential
USEPA MCL - United States Environmental Protection Agency Maximum Contaminant Level
USEPA RSL - United States Environmental Protection Agency Tap Water Regional Screening Level (TR = $1x10^{-6}$ and THQ=1.0)

Color shaded cell denotes reported concentration greater than regulatory level

[1] - Annual monitored natural attenuation (MNA) area sample
[2] - Quarterly Technical Impracticability (TI) Area 1 sample
[3] - Supplemental Southern Property Boundary Area (SPBA) extraction system performance monitoring sample
[4] - Quarterly SPBA extraction system performance monitoring sample

TABLE 2.2-1
Groundwater Analytical Data Summary - Volatile Organic Compounds (VOCs) - MNA Area Wells - 2022
Former York Naval Ordnance Plant - York, PA

Location/Identification Depth (feet) Sample Date Sample Description	PADEP MSC UA R (µg/L)	PADEP MSC UA NR (µg/L)	USEPA MCL (µg/L)	USEPA RSL (µg/L)	MW-167 3/23/22 [3/4]	MW-167 4/26/22 [3]	MW-167 5/25/22 [3]	MW-167 9/27/22 [4]	MW-168 1/27/22 [3]	MW-168 2/8/22 [3]	MW-168 2/22/22 [3]	MW-168 3/8/22 [3]	MW-168 3/23/22 [3/4]	MW-168 4/26/22 [3]	MW-168 5/25/22 [3]	MW-168 9/27/22 [4]	MW-186 10/13/22 [1]	Cole D 10/5/22 [1]	MW-12 (Cole Steel) 10/7/22 [1]	CW-1A 9/28/22 [1]	CW-2 9/28/22 [1]	GM-1D 10/7/22 [1]	RW-4 (Folk) 10/13/22 [1]
Volatile Organic Compound																							
1,1,1,2-Tetrachloroethane	70	70		0.57	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	200	200	200	800	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	0.84	4.3		0.076	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	5	5	5	0.041	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	31	160		2.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7	7	7	28	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	0.05	0.05	0.05	0.0075	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	5	5	5	0.17	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	5	5	5	0.82	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	4000	4000		560	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	63	260		3.8	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	2800	7800		630	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	31000	88000		1800	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Benzene	5	5	5	0.46	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	90	90		8.3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	80	80		0.13	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	80	80		3.3	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Bromomethane	10	10		0.75	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	1500	6200		81	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	5	5	5	0.46	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	100	100	100	7.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	80	80		0.87	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	21000	88000		830	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	80	80		0.22	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	30	30		19	1 U	1 UJ	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	70	70	70	2.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	18	1 U	2.4	1 U	1 U
cis-1,3-Dichloropropene	6.5	27		0.47	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	700	700	700	1.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl tert-butyl ether	20	20		14	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	5	5		11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	100	100	100	120	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5	5	5	4.1	1.2	1	1	1.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	17	0.87 J	1.8	0.98 J	0.41 J	1 U
Toluene	1000	1000	1000	110	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	100	100	100	6.8	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
trans-1,3-Dichloropropene	6.5	27		0.47	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5	5	5	0.28	1 U	1 U	1 U	0.5 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.5 J	15	20	7.1	1 U	1 U
Vinyl Chloride	2	2	2	0.019	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (Total)	10000	10000	10000	19	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:
µg/L - Micrograms per liter
Dup - Duplicate sample
U - Not Detected. Results are shown as the laboratory Reporting Limit (RL) followed by "U".

J - Estimated. Detected concentration between the laboratory RL and the Method Detection Limit (MDL) shown as the approximate concentration reported by the laboratory followed by "J". These "J" concentrations were positively identified in the sample and are qualitatively acceptable.

PADEP MSC - Pennsylvania Department of Environmental Protection Statewide health standard Medium-Specific Concentration
UA R - Used Aquifer Residential
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USEPA MCL - United States Environmental Protection Agency Maximum Contaminant Level
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Color shaded cell denotes reported concentration greater than regulatory level

[1] - Annual monitored natural attenuation (MNA) area sample
[2] - Quarterly Technical Impracticability (TI) Area 1 sample
[3] - Supplemental Southern Property Boundary Area (SPBA) extraction system performance monitoring sample
[4] - Quarterly SPBA extraction system performance monitoring sample

TABLE 2.2-2
Groundwater Analytical Data Summary- Volatile Organic Compounds (VOCs) - Wells Inside Technical Impracticability (TI) Boundary- 2022
Former York Naval Ordnance Plant - York, PA

Location/Identification	CW-21	CW-21	CW-21	CW-21	CW-21	CW-21	CW-21	CW-21	CW-21	CW-22	CW-22	CW-22	CW-22	CW-22	CW-22	CW-22	CW-22	CW-22	CW-22	CW-23	CW-23	CW-23	CW-23	CW-23	CW-23	CW-23	CW-23	CW-23	SPBA Effluent	SPBA Effluent	SPBA Effluent	SPBA Effluent	SPBA Effluent	SPBA Effluent	SPBA Effluent	SPBA Effluent	SPBA Effluent	SPBA Effluent	SPBA Effluent
Sample Date	1/25/22	2/8/22	2/22/22	3/8/22	3/23/22	4/26/22	5/25/22	6/23/22	9/27/22	1/25/22	2/8/22	2/22/22	3/8/22	3/23/22	4/26/22	5/25/22	6/23/22	9/27/22	1/25/22	2/8/22	2/22/22	3/8/22	3/23/22	4/26/22	5/25/22	6/23/22	9/27/22	1/25/22	2/22/22	3/23/22	4/26/22	5/25/22	6/23/22	7/25/22	8/22/22	9/27/22	10/24/22	11/21/22	12/20/22
Sample Description	[1]	[1]	[1]	[1]	[2]	[1]	[1]	[2]	[2]	[1]	[1]	[1]	[1]	[2]	[1]	[1]	[2]	[2]	[1]	[1]	[1]	[2]	[1]	[1]	[1]	[2]	[2]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]
Volatile Organic Compound																																								
1,1,1,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.7 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.97 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	7.1 J	2.2 J	6.5 J	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	2.8 J	20 U	20 U	20 U	20 U	20 U	20 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U
Carbon Disulfide	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	0.39 J	0.43 J	0.43 J	0.36 J	0.42 J	0.37 J	0.48 J	0.37 J	0.52 J	0.53 J	0.59 J	0.58 J	0.53 J	0.61 J	0.56 J	0.58 J	0.63 J	0.7 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.3 J	0.46 J	0.41 J	0.48 J	0.46 J	0.43 J	0.45 J	0.39 J	0.44 J	0.55 J	0.51 J	0.56 J	0.44 J	0.43 J
Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	2 U	1 U	1 U	1 U	1 UJ	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl tert-butyl ether	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	170	150	160	140	160	140	160	130	150	73	73	79	71	75	72	82	62	71	34	33	38	33	37	32	35	30	41	130	130	120	100	120	93	100	120	120	100	86	100
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	0.88 J	1	1.1	0.9 J	0.96 J	0.87 J	1.1	0.8 J	0.85 J	1.2	1.3	1.4	1.3	1.3	1.3	1.6	1.3	1.2	0.51 J	0.52 J	0.52 J	0.53 J	0.49 J	0.3 J	0.62 J	0.43 J	0.59 J	0.97 J	1 U	1.1	1	1.1	0.87 J	0.91 J	0.88 J	0.96 J	0.88 J	0.81 J	1.1
Vinyl Chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (Total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:
All samples are representative of technical impracticability (TI) Area 2
SPBA - Southern Property Boundary Area
Results are reported in micrograms per liter (µg/L)
U - Not Detected. Results are shown as the laboratory Reporting Limit (RL) followed by "U".
J - Estimated. Detected concentration between the laboratory RL and the Method Detection Limit (MDL) shown as the approximate concentration reported by the laboratory followed by "J".
These "J" concentrations were positively identified in the sample and are qualitatively acceptable.
[1] - Supplemental SPBA extraction system performance monitoring sample
[2] - Quarterly SPBA extraction system performance monitoring sample
[3] - Monthly combined extraction system flow from CW-21, CW-22, and CW-23 prior to treatment

TABLE 2.2-3
Groundwater Analytical Data Summary - Total and Available Cyanide (MW-2) - 2022
Former York Naval Ordnance Plant - York, PA

Location/Identification Sample Date Parameter	PADEP MSC UA R (µg/L)	PADEP MSC UA NR (µg/L)	USEPA MCL (µg/L)	USEPA RSL (µg/L)	MW-2 10/4/22
Cyanide					
Cyanide, Free (Available)	200	200	200	1.5	9.7
Cyanide, Total					35

Notes:
µg/L - Micrograms per liter
PADEP MSC - Pennsylvania Department of Environmental Protection Statewide health standard Medium-Specific Concentration
UA R - Used Aquifer Residential
UA NR - Used Aquifer Non-Residential
USEPA MCL - United States Environmental Protection Agency Maximum Contaminant Level
USEPA RSL - United States Environmental Protection Agency Tap Water Regional Screening Level (TR = $1x10^{-6}$ and THQ=1.0)
Color shaded cell denotes reported concentration greater than regulatory level

TABLE 2.2-4
Physical Well and Surface Water Data Table
Former York Naval Ordnance Plant - York, PA

Well/Surface Water Identification	Type	Status	Depth to Top of Open Interval (feet bgs)	Depth to Base of Open Interval (feet bgs)	Open Interval Length (feet)	Open Interval in Overburden or Bedrock	Site Location	Located Inside Technical Impracticability Boundary (yes/no)	X = 2022 Groundwater and Surface Water Monitoring Locations and Objectives			
									Monitored Natural Attenuation Area Wells	Plume Migration Assessment in NPBA	SPBA Groundwater Extraction System Performance	Surface Water
CW-1A	Collection Well	Inactive	29.0	74.0	45.0	Bedrock	NPBA	No	X			
CW-2	Collection Well	Inactive	48.0	150.0	102.0	Bedrock	NPBA	No	X			
CW-9	Collection Well	Inactive	47.0	50.0	3.0	Bedrock	SW-WPL	Yes				
CW-13	Collection Well	Inactive	59.6	70.0	10.4	Bedrock	WPL	Yes				
CW-15A	Collection Well	Inactive	18.0	68.0	50.0	Overburden and Bedrock	WPL	Yes				
CW-17	Collection Well	Inactive	32.0	65.0	33.0	Bedrock	NW-WPL	Yes				
CW-20	Collection Well	Inactive	205.0	215.0	10.0	Bedrock	SW-WPL	Yes				
CW-21	Collection Well	Active	49.5	100.0	50.5	Bedrock	SPBA	Yes			X	
CW-22	Collection Well	Active	64.0	100.0	36.0	Bedrock	SPBA	Yes			X	
CW-23	Collection Well	Active	34.0	61.0	27.0	Bedrock	SPBA	Yes			X	
MPE-1	Monitoring Well	Active	32.0	50.0	18.0	Overburden	SPBA	Yes				
MPE-2	Monitoring Well	Active	35.0	66.0	31.0	Overburden	SPBA	Yes				
MPE-3	Monitoring Well	Active	27.0	43.0	16.0	Overburden	SPBA	Yes				
MW-2	Monitoring Well	Active	46.0	121.0	75.0	Bedrock	Eastern Site Perimeter	No	X			
MW-3	Monitoring Well	Active	50.0	102.0	52.0	Bedrock	NPBA	No	X	X		
MW-5	Monitoring Well	Active	10.0	53.0	43.0	Overburden and Bedrock	Northern Site Perimeter	No	X			
MW-6	Monitoring Well	Active	7.0	40.0	33.0	Overburden and Bedrock	Northern Site Perimeter	No	X			
MW-7	Monitoring Well	Active	13.0	35.0	22.0	Overburden and Bedrock	WPL	Yes				
MW-8	Monitoring Well	Active	10.0	36.0	26.0	Overburden and Bedrock	WPL	Yes				
MW-9	Monitoring Well	Active	59.0	97.0	38.0	Bedrock	NPBA	No	X	X		
MW-12	Monitoring Well	Active	30.0	100.0	70.0	Bedrock	NPBA	No	X	X		
MW-14	Monitoring Well	Active	18.0	80.0	62.0	Bedrock	Eastern Site Perimeter	No	X			
MW-15	Monitoring Well	Active	40.0	120.0	80.0	Bedrock	EPBA	Yes				
MW-16S	Monitoring Well	Active	98.0	110.0	12.0	Bedrock	NPBA	No	X			
MW-18D	Monitoring Well	Active	130.0	140.0	10.0	Bedrock	NPBA	No	X			
MW-18S	Monitoring Well	Active	45.0	65.0	20.0	Bedrock	NPBA	No	X			
MW-19	Monitoring Well	Active	30.0	120.0	90.0	Bedrock	Former NETT	Yes				
MW-20M	Monitoring Well	Active	72.0	85.0	13.0	Bedrock	NPBA	No	X			
MW-20S	Monitoring Well	Active	28.0	61.0	33.0	Bedrock	NPBA	No	X			
MW-22	Monitoring Well	Active	30.0	100.0	70.0	Bedrock	SPBA	No	X			
MW-26	Monitoring Well	Active	7.0	60.0	53.0	Overburden	Former NETT	Yes				
MW-28	Monitoring Well	Active	8.0	55.0	47.0	Overburden and Bedrock	Former TCA Tank Area	Yes				
MW-30	Monitoring Well	Active	14.0	23.0	10.5	Overburden and Bedrock	West Building 41	Yes				
MW-31D	Monitoring Well	Active	66.0	81.0	15.0	Bedrock	North Building 41	Yes				
MW-32D	Monitoring Well	Active	196.0	220.0	24.0	Bedrock	Former TCA Tank Area	Yes				
MW-32S	Monitoring Well	Active	133.0	148.0	15.0	Bedrock	Former TCA Tank Area	Yes				
MW-36D	Monitoring Well	Active	67.0	83.0	16.0	Bedrock	West Building 41	Yes				
MW-36S	Monitoring Well	Active	18.0	41.0	23.0	Overburden and Bedrock	West Building 41	Yes				
MW-37D	Monitoring Well	Active	125.0	141.0	16.0	Bedrock	SW-WPL	Yes				
MW-37S	Monitoring Well	Active	11.0	33.0	22.0	Overburden and Bedrock	SW-WPL	Yes				
MW-38D	Monitoring Well	Active	80.0	103.0	23.0	Bedrock	WPL	Yes				
MW-39D	Monitoring Well	Active	53.0	100.0	47.0	Bedrock	NW-WPL	Yes				
MW-39S	Monitoring Well	Active	3.0	30.0	27.0	Overburden and Bedrock	NW-WPL	Yes				
MW-43D	Monitoring Well	Active	79.0	92.0	13.0	Bedrock	SPA	No	X			
MW-45	Monitoring Well	Active	6.0	38.0	32.0	Overburden and Bedrock	Former West Building 4	Yes				
MW-46	Monitoring Well	Active	6.0	39.0	33.0	Overburden and Bedrock	Former West Building 4	Yes				
MW-47	Monitoring Well	Active	12.0	56.0	44.0	Overburden	Former West Building 4	Yes				
MW-49D	Monitoring Well	Active	201.0	220.0	19.0	Bedrock	Former North Building 4	Yes				
MW-49S	Monitoring Well	Active	134.0	158.0	24.0	Bedrock	Former North Building 4	Yes				
MW-50D	Monitoring Well	Active	157.0	170.0	13.0	Bedrock	Former North Building 4	Yes				
MW-50S	Monitoring Well	Active	104.0	125.0	21.0	Bedrock	Former North Building 4	Yes				
MW-51D	Monitoring Well	Active	88.0	120.0	32.0	Bedrock	Former North Building 4	Yes				
MW-51S	Monitoring Well	Active	34.0	51.0	17.0	Bedrock	Former North Building 4	Yes				
MW-57	Monitoring Well	Active	25.0	35.0	10.0	Overburden	Former Building 58	Yes				
MW-64D	Monitoring Well	Active	68.0	77.0	9.0	Bedrock	SPBA	Yes				
MW-64S	Monitoring Well	Active	33.0	42.0	9.0	Overburden	SPBA	Yes				

TABLE 2.2-4
Physical Well and Surface Water Data Table
Former York Naval Ordnance Plant - York, PA

Well/Surface Water Identification	Type	Status	Depth to Top of Open Interval (feet bgs)	Depth to Base of Open Interval (feet bgs)	Open Interval Length (feet)	Open Interval in Overburden or Bedrock	Site Location	Located Inside Technical Impracticability Boundary (yes/no)	X = 2022 Groundwater and Surface Water Monitoring Locations and Objectives			
									Monitored Natural Attenuation Area Wells	Plume Migration Assessment in NPBA	SPBA Groundwater Extraction System Performance	Surface Water
MW-65S	Monitoring Well	Active	71.3	86.0	14.7	Bedrock	Eastern Site Perimeter	No	X			
MW-67D	Monitoring Well	Active	58.0	71.0	13.0	Bedrock	South-Central Site Area	No	X			
MW-67S	Monitoring Well	Active	12.8	31.0	18.2	Overburden	South-Central Site Area	No	X			
MW-69	Monitoring Well	Active	77.0	126.0	49.0	Bedrock	South-Central Site Area	No	X			
MW-70D	Monitoring Well	Active	68.0	85.0	17.0	Bedrock	Former NETT	Yes				
MW-70S	Monitoring Well	Active	15.8	35.0	19.2	Overburden	Former NETT	Yes				
MW-74D	Monitoring Well	Active	220.0	250.0	30.0	Bedrock	NW-WPL	Yes				
MW-74S	Monitoring Well	Active	175.0	201.0	26.0	Bedrock	NW-WPL	Yes				
MW-75D	Monitoring Well	Active	200.0	217.0	17.0	Bedrock	SW-WPL	Yes				
MW-75S	Monitoring Well	Active	151.0	190.0	39.0	Bedrock	SW-WPL	Yes				
MW-77	Monitoring Well	Active	35.0	67.0	32.0	Overburden	Petroleum Plume Area	Yes				
MW-79	Monitoring Well	Active	17.0	42.0	25.0	Overburden	South-Central Site Area	No	X			
MW-80	Monitoring Well	Active	17.5	41.0	23.5	Overburden	Former Building 58	Yes				
MW-81S	Monitoring Well	Active	28.0	43.0	15.0	Overburden and Bedrock	Former CPA	Yes				
MW-81D	Monitoring Well	Active	52.0	66.0	14.0	Bedrock	Former CPA	Yes				
MW-82	Monitoring Well	Active	53.5	76.0	22.5	Bedrock	Northern Site Perimeter	No	X			
MW-87	Monitoring Well	Active	67.0	98.0	31.0	Overburden and Bedrock	Former Building 58	Yes				
MW-88	Monitoring Well	Active	30.0	50.0	20.0	Bedrock	South-Central Site Area	No	X			
MW-91	Monitoring Well	Active	50.0	75.0	25.0	Bedrock	EPBA	Yes				
MW-92	Monitoring Well	Active	50.0	100.5	50.5	Bedrock	EPBA	Yes				
MW-93D	Monitoring Well	Active	134.7	160.0	25.3	Bedrock	SW-WPL	Yes				
MW-93S	Monitoring Well	Active	24.0	45.0	21.0	Bedrock	SW-WPL	Yes				
MW-96D	Monitoring Well	Active	75.0	87.5	12.5	Bedrock	NW-WPL	Yes				
MW-96S	Monitoring Well	Active	27.0	39.0	12.0	Bedrock	NW-WPL	Yes				
MW-97	Monitoring Well	Active	66.0	80.0	14.0	Bedrock	WPL	Yes				
MW-98D	Monitoring Well	Active	128.0	171.0	43.0	Bedrock	Levee Area	Yes				
MW-98I	Monitoring Well	Active	98.0	105.0	7.0	Bedrock	Levee Area	Yes				
MW-98S	Monitoring Well	Active	58.0	68.0	10.0	Bedrock	Levee Area	Yes				
MW-99D	Monitoring Well	Active	125.5	142.0	16.5	Bedrock	Levee Area	Yes				
MW-99S	Monitoring Well	Active	57.8	74.3	16.5	Bedrock	Levee Area	Yes				
MW-100D	Monitoring Well	Active	93.0	114.0	21.0	Bedrock	Levee Area	Yes				
MW-100I	Monitoring Well	Active	60.0	66.0	6.0	Bedrock	Levee Area	Yes				
MW-100S	Monitoring Well	Active	45.0	51.0	6.0	Bedrock	Levee Area	Yes				
MW-101D	Monitoring Well	Active	76.0	115.0	39.0	Bedrock	Levee Area	No	X			
MW-101S	Monitoring Well	Active	18.0	40.0	22.0	Overburden and Bedrock	Levee Area	No	X			
MW-102D	Monitoring Well	Active	75.0	99.0	24.0	Bedrock	Former NETT	Yes				
MW-102S	Monitoring Well	Active	41.0	65.0	24.0	Overburden	Former NETT	Yes				
MW-103D	Monitoring Well	Active	94.7	106.7	12.0	Bedrock	Former NETT	Yes				
MW-103S	Monitoring Well	Active	62.3	87.5	25.2	Overburden	Former NETT	Yes				
MW-106	Monitoring Well	Active	15.0	28.0	13.0	Overburden	WPL	Yes				
MW-107	Monitoring Well	Active	11.0	23.0	12.0	Overburden	SW-WPL	Yes				
MW-108D	Monitoring Well	Active	72.0	149.0	77.0	Bedrock	SPBA	No	X			
MW-108S	Monitoring Well	Active	22.9	55.1	32.2	Overburden	SPBA	No	X			
MW-110	Monitoring Well	Active	31.5	44.0	12.5	Bedrock	SPA	No	X			
MW-111	Monitoring Well	Active	82.0	149.0	67.0	Bedrock	South-Central Site Area	No	X			
MW-112	Monitoring Well	Active	97.5	120.0	22.5	Bedrock	South-Central Site Area	No	X			
MW-113	Monitoring Well	Active	125.0	151.0	26.0	Bedrock	Former Building 58	Yes				
MW-114	Monitoring Well	Active	90.0	143.7	53.7	Bedrock	Former CPA	Yes				
MW-115	Monitoring Well	Active	111.5	124.5	13.0	Bedrock	South-Central Site Area	No	X			
MW-116	Monitoring Well	Active	27.0	50.8	23.8	Overburden and Bedrock	North Building 41	Yes				
MW-128	Monitoring Well	Active	49.0	24.0	25.0	Bedrock	Former Building 58	Yes				
MW-129	Monitoring Well	Active	40.0	24.0	16.0	Bedrock	Former Building 58	Yes				
MW-131	Monitoring Well	Active	24.0	22.0	2.0	Overburden and Bedrock	Former CPA	Yes				
MW-134	Monitoring Well	Active	42.0	23.0	19.0	Bedrock	Former West Building 2	Yes				

TABLE 2.2-4
Physical Well and Surface Water Data Table
Former York Naval Ordnance Plant - York, PA

Well/Surface Water Identification	Type	Status	Depth to Top of Open Interval (feet bgs)	Depth to Base of Open Interval (feet bgs)	Open Interval Length (feet)	Open Interval in Overburden or Bedrock	Site Location	Located Inside Technical Impracticability Boundary (yes/no)	X = 2022 Groundwater and Surface Water Monitoring Locations and Objectives			
									Monitored Natural Attenuation Area Wells	Plume Migration Assessment in NPBA	SPBA Groundwater Extraction System Performance	Surface Water
MW-136A (270-348)	Monitoring Well	Active	270.0	348.0	78.0	Bedrock	SW-WPL	Yes				
MW-136A (356-356.5)	Monitoring Well	Active	351.0	365.5	14.5	Bedrock	SW-WPL	Yes				
MW-136A (372.5-373)	Monitoring Well	Active	368.5	378.0	9.5	Bedrock	SW-WPL	Yes				
MW-136A (434-434.5)	Monitoring Well	Active	429.0	438.5	9.5	Bedrock	SW-WPL	Yes				
MW-136A (459.5-460)	Monitoring Well	Active	441.5	467.0	25.5	Bedrock	SW-WPL	Yes				
MW-137A (295.5-296)	Monitoring Well	Active	270.0	306.0	36.0	Bedrock	Former TCA Tank Area	Yes				
MW-137A (343-343.5)	Monitoring Well	Active	340.0	350.5	10.5	Bedrock	Former TCA Tank Area	Yes				
MW-137A (374.5-375)	Monitoring Well	Active	369.5	384.0	14.5	Bedrock	Former TCA Tank Area	Yes				
MW-137A (420-420.5)	Monitoring Well	Active	415.0	426.5	11.5	Bedrock	Former TCA Tank Area	Yes				
MW-137A (434.5-435)	Monitoring Well	Active	429.5	452.0	22.5	Bedrock	Former TCA Tank Area	Yes				
MW-138A	Monitoring Well	Active	260.0	320.0	60.0	Bedrock	Former Building 58	Yes				
MW-139A (305-305.5)	Monitoring Well	Active	295.0	325.5	30.5	Bedrock	Former North Building 4	Yes				
MW-139A (333.5-334)	Monitoring Well	Active	328.5	357.0	28.5	Bedrock	Former North Building 4	Yes				
MW-139A (365-365.5)	Monitoring Well	Active	360.0	370.5	10.5	Bedrock	Former North Building 4	Yes				
MW-139A (421.5-422)	Monitoring Well	Active	416.5	426.0	9.5	Bedrock	Former North Building 4	Yes				
MW-139A (454-454.5)	Monitoring Well	Active	452.0	470.0	18.0	Bedrock	Former North Building 4	Yes				
MW-140A (209.5-210)	Monitoring Well	Active	205.0	215.0	10.0	Bedrock	Former East Building 2	Yes				
MW-140A (285-285.5)	Monitoring Well	Active	278.5	289.3	10.8	Bedrock	Former East Building 2	Yes				
MW-140A (323.5-324)	Monitoring Well	Active	318.5	326.0	7.5	Bedrock	Former East Building 2	Yes				
MW-140A (372-372.5)	Monitoring Well	Active	367.0	378.5	11.5	Bedrock	Former East Building 2	Yes				
MW-140A (407.5-408)	Monitoring Well	Active	402.5	416.0	13.5	Bedrock	Former East Building 2	Yes				
MW-141A	Monitoring Well	Active	200.0	100.0	100.0	Bedrock	SPBA	Yes				
MW-142D	Monitoring Well	Active	122.0	23.4	23.4	Bedrock	NPBA	No		X		
MW-142S	Monitoring Well	Active	56.0	14.0	14.0	Bedrock	NPBA	No		X		
MW-143D	Monitoring Well	Active	117.4	16.6	16.6	Bedrock	NPBA	No	X			
MW-143S	Monitoring Well	Active	24.0	30.5	30.5	Overburden	NPBA	No	X			
MW-145A	Monitoring Well	Active	200.0	50.0	50.0	Bedrock	Levee Area	Yes				
MW-146	Monitoring Well	Active	13.0	12.0	12.0	Overburden	Levee Area	Yes				
MW-147A	Monitoring Well	Active	200.0	50.0	50.0	Bedrock	Levee Area	Yes				
MW-148A (72.5-73)	Monitoring Well	Active	67.0	78.0	11.0	Bedrock	West Side Codorus Creek	No	X			
MW-148A (136-136.5)	Monitoring Well	Active	130.0	140.5	10.5	Bedrock	West Side Codorus Creek	No	X			
MW-150	Monitoring Well	Active	147.5	200.0	52.5	Bedrock	SPA	No	X			
MW-155	Monitoring Well	Active	10.5	24.0	13.5	Bedrock	Levee Area	Yes				
MW-156	Monitoring Well	Active	4.0	22.0	18.0	Overburden	Levee Area	Yes				
MW-161	Monitoring Well	Active	53.0	65.7	12.7	Overburden	SPBA	Yes				
MW-162R	Monitoring Well	Active	30.0	70.0	40.0	Overburden and Bedrock	SPBA	Yes				
MW-163	Monitoring Well	Active	32.8	55.0	22.2	Bedrock	SPBA	Yes				
MW-165	Monitoring Well	Active	47.5	70.5	23.0	Bedrock	SPBA	No	X			
MW-166	Monitoring Well	Active	39.0	52.0	13.0	Overburden	SPBA	No	X		X	
MW-167	Monitoring Well	Active	39.0	52.0	13.0	Overburden	SPBA	No	X		X	
MW-168	Monitoring Well	Active	28.5	42.0	13.5	Overburden	SPBA	No	X		X	
MW-176	Monitoring Well	Active	28.0	51.0	23.0	Overburden	SPBA	Yes				
MW-177R	Monitoring Well	Active	27.5	65.0	37.5	Overburden and Bedrock	SPBA	Yes				
MW-178D	Monitoring Well	Active	90.0	100.0	10.0	Bedrock	SPBA	Yes				
MW-178S	Monitoring Well	Active	72.0	84.0	12.0	Bedrock	SPBA	Yes				
MW-179	Monitoring Well	Active	36.0	66.0	30.0	Overburden	SPBA	Yes				
MW-180	Monitoring Well	Active	36.0	62.0	26.0	Overburden	SPBA	Yes				
MW-181D	Monitoring Well	Active	93.0	100.0	7.0	Bedrock	SPBA	Yes				
MW-181S	Monitoring Well	Active	61.0	71.0	10.0	Bedrock	SPBA	Yes				
MW-182	Monitoring Well	Active	27.0	39.0	12.0	Overburden	SPBA	Yes				
MW-183	Monitoring Well	Active	27.0	40.0	13.0	Overburden	SPBA	Yes				
MW-184D	Monitoring Well	Active	66.0	74.0	8.0	Bedrock	SPBA	Yes				
MW-184S	Monitoring Well	Active	51.0	59.0	8.0	Bedrock	SPBA	Yes				
MW-185	Monitoring Well	Active	55.9	77.5	21.6	Bedrock	EPBA	Yes				
MW-186	Monitoring Well	Active	29.9	63.0	33.1	Bedrock	Northern Site Perimeter	No	X			
MW-187	Monitoring Well	Active	30.0	100.0	70.0	Bedrock	Former NETT	Yes				

TABLE 2.2-4
Physical Well and Surface Water Data Table
Former York Naval Ordnance Plant - York, PA

Well/Surface Water Identification	Type	Status	Depth to Top of Open Interval (feet bgs)	Depth to Base of Open Interval (feet bgs)	Open Interval Length (feet)	Open Interval in Overburden or Bedrock	Site Location	Located Inside Technical Impracticability Boundary (yes/no)	X = 2022 Groundwater and Surface Water Monitoring Locations and Objectives			
									Monitored Natural Attenuation Area Wells	Plume Migration Assessment in NPBA	SPBA Groundwater Extraction System Performance	Surface Water
Cole D	Monitoring Well	Active	25.0	35.0	10.0	Overburden and Bedrock	SPA	No	X			
MW-12 (Cole Steel)	Monitoring Well	Active	16.0	50.0	34.0	Overburden and Bedrock	SPA	No	X			
GM-1D	Monitoring Well	Active	32.0	42.0	10.0	Overburden and Bedrock	SPA	No	X			
RW-2	Residential Well	AB	--	--	--	--	NPBA	No				
RW-4 (Folk)	Residential Well	Active	--	--	--	--	NPBA	No		X		
COD-SW-6	Surface Water	Active	NA	NA	NA	NA	Codorus Creek	No				X
COD-SW-7	Surface Water	Active	NA	NA	NA	NA	Codorus Creek	No				X
COD-SW-8	Surface Water	Active	NA	NA	NA	NA	Codorus Creek	No				X
COD-SW-9	Surface Water	Active	NA	NA	NA	NA	Codorus Creek	No				X
COD-SW-13	Surface Water	Active	NA	NA	NA	NA	Codorus Creek	No				X
COD-SW-15	Surface Water	Active	NA	NA	NA	NA	Codorus Creek	No				X
COD-SW-16	Surface Water	Active	NA	NA	NA	NA	Codorus Creek	No				X
COD-SW-17	Surface Water	Active	NA	NA	NA	NA	Codorus Creek	No				X
COD-SW-26	Surface Water	Active	NA	NA	NA	NA	Codorus Creek	No				X
COD-SW-27	Surface Water	Active	NA	NA	NA	NA	Codorus Creek	No				X
COD-SW-28	Surface Water	Active	NA	NA	NA	NA	Codorus Creek	No				X
COD-SW-29	Surface Water	Active	NA	NA	NA	NA	Codorus Creek	No				X

Notes:
AB - Abandoned
bgs - below ground surface
NA - Not Applicable
-- = Information not available
CPA - Central Plant Area
EPBA - Eastern Property Boundary Area
NPBA - Northern Property Boundary Area
NW-WPL - Northwest West Parking Lot
NETT - North End Test Track
NPA - North Plant Area
SPA - South Plume Area
SPBA - Southern Property Boundary Area
SW-WPL - Southwest West Parking Lot
TCA - 1,1,1-Trichloroethane

TABLE 2.2-5
SPBA Groundwater Extraction System Remedial Action Performance Data for January through December 2022
Former York Naval Ordnance Plant - York, PA

Month/Year	Sample Date	Total Volatile Organic Compound (VOC) Concentration (µg/L)	Volume of Groundwater Pumped per Month (gallons)	Volume of Groundwater Pumped per Month (MG)	Total VOC Mass Removed per Month (pounds)	Removal Efficiency per Month (pounds/MG)
Jan-22	1/25/22	131	274,504	0.3	0.3	1.1
Feb-22	2/22/22	131	262,355	0.3	0.3	1.1
Mar-22	3/23/22	121	293,902	0.3	0.3	1.0
Apr-22	4/26/22	101	300,838	0.3	0.3	0.8
May-22	5/25/22	121	333,470	0.3	0.3	1.0
Jun-22	6/23/22	94	292,843	0.3	0.2	0.8
Jul-22	7/25/22	101	283,077	0.3	0.2	0.8
Aug-22	8/22/22	121	270,211	0.3	0.3	1.0
Sep-22	9/27/22	121	247,982	0.2	0.3	1.0
Oct-22	10/24/22	101	256,430	0.3	0.2	0.8
Nov-22	11/21/22	87	242,195	0.2	0.2	0.7
Dec-22	12/20/22	101	214,103	0.2	0.2	0.8
TOTALS			**3,271,910**		**3.0**	

Notes: µg/L - micrograms per liter
MG - million gallons
Volume of groundwater pumped per month based on flow meter data for extraction wells CW-21, CW-22, and CW-23

TABLE 2.3-1
2022 Surface Water Monitoring Information
Former York Naval Ordnance Plant - York, PA

Surface Water Sample Collection Date	Sample Description[(1)]	Average Daily Stream Gage Discharge on Sample Collection Date (cfs)[(2)]
01/27/22	Month 5	141
02/22/22	Month 6	196
03/24/22	Month 7	207
04/26/22	Month 8	225
05/25/22	Month 9	336
06/21/22	Month 10	124
07/28/22	Month 11	93
08/25/22	Month 12	87
09/23/22	Month 13	91
10/27/22	Month 14	105
11/18/22	Month 15	123
12/21/22	Month 16	283
Notes:	cfs - cubic feet per second	
	(1) Month since west parking lot (WPL) groundwater extraction system was shut down for testing in September 2021	
	(2) Stream Gage Location - USGS 01575500 Codorus Creek near York, PA	

TABLE 2.3-2
Surface Water Analytical Data Summary - Volatile Organic Compounds (VOCs) - 2022
Former York Naval Ordnance Plant - York, PA

Location/Identification	COD-SW-13	COD-SW-13	COD-SW-13	COD-SW-13	COD-SW-13	COD-SW-13	COD-SW-13	COD-SW-13	COD-SW-13	COD-SW-13	COD-SW-13	COD-SW-13	COD-SW-15	COD-SW-15	COD-SW-15	COD-SW-15	COD-SW-15	COD-SW-15	COD-SW-15	COD-SW-15	COD-SW-15	COD-SW-15	COD-SW-15	COD-SW-16	COD-SW-16	COD-SW-16	COD-SW-16
Sample Date	1/27/22	2/22/22	3/24/22	4/26/22	5/25/22	6/21/22	7/28/22	8/25/22	9/23/22	10/27/22	11/18/22	12/21/22	1/27/22	2/22/22	3/24/22	4/26/22	5/25/22	6/21/22	7/28/22	8/25/22	9/23/22	10/27/22	11/18/22	12/21/22	1/27/22	2/22/22	3/24/22	4/26/22
Parameter																											
Volatile Organic Compound																											
1,1,1,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U	0.24 J	0.29 J	0.28 J	0.32 J	0.34 J	0.31 J	0.27 J	0.25 J	0.26 J	0.4 J	0.45 J	0.42 J	0.062 J	0.5 U	0.061 J	0.5 U
1,1,2,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.13 J	0.15 J	0.13 J	0.14 J	0.15 J	0.12 J	0.12 J	0.13 J	0.11 J	0.15 J	0.18 J	0.16 J	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.13 J	0.18 J	0.17 J	0.17 J	0.2 J	0.18 J	0.16 J	0.12 J	0.12 J	0.18 J	0.23 J	0.2 J	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	5 U	5 U	5 U	5 U	5 U	5 U	1.3 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U
4-Methyl-2-Pentanone	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U
Acetone	1.1 J	2 J	1.7 J	1.2 J	2.1 J	5 U	3.3 J	2.4 J	1.1 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1.2 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1.2 J	1.6 J	1.8 J	1.4 J
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Carbon Disulfide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.24 J	0.27 J	0.27 J	0.29 J	0.27 J	0.34 J	0.35 J	0.41 J	0.33 J	0.35 J	0.34 J	0.28 J	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.11 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	0.13 J	0.11 J	0.11 J	0.087 J	0.087 J	0.14 J	0.16 J	0.23 J	0.13 J	0.21 J	0.17 J	0.12 J	1.5	1.9	1.7	1.8	2.1	1.3	1.4	1.4	1.3	2.3	2.2	2.4	0.14 J	0.11 J	0.12 J	0.097 J
cis-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.051 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.67	0.5	0.42 J	0.46 J	0.54	0.76	0.95	0.56	0.92	1.2	0.98	0.47 J	6.1	6.4	6.5	6	6.5	5.7	5	4.8	5.5	5.5	5.8	6.4	0.99	0.74	0.88	0.76
Toluene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.12 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	0.2 J	0.13 J	0.13 J	0.1 J	0.086 J	0.15 J	0.14 J	0.17 J	0.13 J	0.23 J	0.19 J	0.15 J	1.4	1.7	1.7	1.7	1.9	1.6	1.4	1.4	1.2	1.6	1.8	1.9	0.2 J	0.14 J	0.14 J	0.11 J
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylenes (Total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:
Results reported in micrograms per liter (µg/L)
U = Not detected. Results are shown as the laboratory reporting limit (RL)
J = Estimated. Concentration between RL and method detection limit (MDL)
Dup = Duplicate sample

TABLE 2.3-2
Surface Water Analytical Data Summary - Volatile Organic Compounds (VOCs) - 2022
Former York Naval Ordnance Plant - York, PA

Location/Identification	COD-SW-16	COD-SW-16	COD-SW-16	COD-SW-16	COD-SW-16	COD-SW-16	COD-SW-16	COD-SW-16	COD-SW-17	COD-SW-17 Dup	COD-SW-17	COD-SW-17 Dup	COD-SW-17	COD-SW-17 Dup	COD-SW-17	COD-SW-17 Dup	COD-SW-17	COD-SW-17 Dup	COD-SW-17	COD-SW-17 Dup	COD-SW-17	COD-SW-17 Dup	COD-SW-17	COD-SW-17 Dup	COD-SW-17	COD-SW-17	COD-SW-17	COD-SW-17 Dup
Sample Date	5/25/22	6/21/22	7/28/22	8/25/22	9/23/22	10/27/22	11/18/22	12/21/22	1/27/22	1/27/22	2/22/22	2/22/22	3/24/22	3/24/22	4/26/22	4/26/22	5/25/22	5/25/22	6/21/22	6/21/22	7/28/22	7/28/22	8/25/22	8/25/22	9/23/22	9/23/22	10/27/22	10/27/22
Parameter																												
Volatile Organic Compound																												
1,1,1,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	0.5 U	0.5 U	0.12 J	0.5 U	0.086 J	0.13 J	0.1 J	0.5 U	7.1	7	7.1	7.1	7.5	7.4	6.8	6.7	2.8	2.8	7.9	7.9	4	4	6.2	6 J	6	5.9	6.2	6.4
1,1,2,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3	1.2 J	1.2	1.2	1.2	1.2	1.3	1.3	0.58	0.59	1.3	1.3	0.85	0.83	1.4	1.4	1.2	1.2	1.2	1.2
1,1-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.57	5 U	0.57	0.59	0.61	0.61	0.58	0.58	0.27 J	0.28 J	0.68	0.66	0.31 J	0.31 J	0.44 J	0.44 J	0.54	0.57	0.51	0.53
1,2-Dibromoethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	50 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	50 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	2.1 J	5 U	2.9 J	1.6 J	1.3 J	5 U	5 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	2 J	1.7 J	5 U	5 U	2.4 J	2.5 J	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Disulfide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
Carbon Tetrachloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.22 J	5 U	0.25 J	0.24 J	0.24 J	0.23 J	0.25 J	0.25 J	0.1 J	0.1 J	0.29 J	0.3 J	0.16 J	0.16 J	0.36 J	0.34 J	0.3 J	0.3 J	0.31 J	0.31 J
Chloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.11 J	0.5 U
cis-1,2-Dichloroethene	0.086 J	0.13 J	0.18 J	0.17 J	0.15 J	0.22 J	0.21 J	0.12 J	4.7	4.6 J	4.4	4.4	4.2	4.2	3.9	3.9	3.4	3.3	4.3	4.2	3.8	3.8	4.3	4.1	3	2.9	3	3
cis-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.054 J	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.52	0.76	1.6	0.57	1.4	1.8	1.5	0.71	80	94	84	86	88	87	77	77	28	29	76	77	34	40	78	79	65	66	71	68
Toluene	0.092 J	0.5 U	0.5 U	0.11 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	0.081 J	0.14 J	0.18 J	0.17 J	0.14 J	0.22 J	0.21 J	0.16 J	6.3	6.1	5.4	5.4	5	5	4.8	4.8	2.4	2.4	6.1	6.1	3.2	3.1	6.1	5.9	4.6	4.6	3.7	3.8
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.18 J	0.2 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylenes (Total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:
Results reported in micrograms per liter (µg/L)
U = Not detected. Results are shown as the laboratory reporting limit (RL)
J = Estimated. Concentration between RL and method detection limit (MDL)
Dup = Duplicate sample

TABLE 2.3-2
Surface Water Analytical Data Summary - Volatile Organic Compounds (VOCs) - 2022
Former York Naval Ordnance Plant - York, PA

Location/Identification	COD-SW-17	COD-SW-17 Dup	COD-SW-17 Dup	COD-SW-17	COD-SW-26	COD-SW-26	COD-SW-26	COD-SW-26	COD-SW-26	COD-SW-26	COD-SW-26	COD-SW-26	COD-SW-26	COD-SW-26	COD-SW-26	COD-SW-26	COD-SW-27	COD-SW-27	COD-SW-27	COD-SW-27	COD-SW-27	COD-SW-27	COD-SW-27	COD-SW-27	COD-SW-27	COD-SW-27	COD-SW-27
Sample Date	11/18/22	11/18/22	12/21/22	12/21/22	1/27/22	2/22/22	3/24/22	4/26/22	5/25/22	6/21/22	7/28/22	8/25/22	9/23/22	10/27/22	11/18/22	12/21/22	1/27/22	2/22/22	3/24/22	4/26/22	5/25/22	6/21/22	7/28/22	8/25/22	9/23/22	10/27/22	11/18/22	12/21/22
Parameter																											
Volatile Organic Compound																											
1,1,1,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	5.9	5.7	6.3	6.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	1.1	1.1	1.2	1.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	0.51	0.51	0.56 U	0.56	0.11 J	0.1 J	0.097 J	0.11 J	0.074 J	0.19 J	0.17 J	0.1 J	0.13 J	0.12 J	0.17 J	0.13 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.97 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1.3 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	5 U	5 U	5 U	5 U	5 U	5 U	0.9 J	0.95 J	2 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1.1 J	1.6 J	1.5 J	1.6 J	2.8 J	5 U	3 J	2.3 J	1.7 J	5 U	5 U	5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Disulfide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.11 J	1 U	1 U	1 U	1 U
Carbon Tetrachloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	0.29 J	0.3 J	0.27 J	0.25 J	0.69	0.58	0.41 J	0.48 J	0.23 J	0.69	0.71	0.73	0.6	0.49 J	0.59	0.42 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.12 J	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	3.4	3.3	3.7	3.5	0.053 J	0.065 J	0.074 J	0.055 J	0.061 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.082 J	0.1 J	0.1 J	0.072 J	0.081 J	0.09 J	0.12 J	0.14 J	0.5 U	0.23 J	0.2 J	0.11 J
cis-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	65	67	70	69	3.3	2.9	2.3	2.9	1.4	4.2	4.2	3.8	4	3.1	3.8	2.9	0.07 J	0.09 J	0.082 J	0.5 U	0.082 J	0.5 U	0.5 U	0.5 U	0.5 U	0.56	0.2 J	0.5 U
Toluene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.12 J	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	4.3	4.1	4.4	4.4	0.14 J	0.15 J	0.14 J	0.14 J	0.093 J	0.16 J	0.17 J	0.18 J	0.15 J	0.16 J	0.17 J	0.18 J	0.14 J	0.12 J	0.14 J	0.089 J	0.08 J	0.1 J	0.14 J	0.13 J	0.084 J	0.24 J	0.2 J	0.14 J
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylenes (Total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:
Results reported in micrograms per liter (µg/L)
U = Not detected. Results are shown as the laboratory reporting limit (RL)
J = Estimated. Concentration between RL and method detection limit (MDL)
Dup = Duplicate sample

TABLE 2.3-2
Surface Water Analytical Data Summary - Volatile Organic Compounds (VOCs) - 2022
Former York Naval Ordnance Plant - York, PA

Location/Identification	COD-SW-28	COD-SW-28	COD-SW-28	COD-SW-28	COD-SW-28	COD-SW-28	COD-SW-28	COD-SW-28	COD-SW-28	COD-SW-28	COD-SW-28	COD-SW-28	COD-SW-29	COD-SW-29	COD-SW-29	COD-SW-29	COD-SW-29	COD-SW-29	COD-SW-29	COD-SW-29	COD-SW-29	COD-SW-29	COD-SW-29	COD-SW-6	COD-SW-6	COD-SW-6	COD-SW-6
Sample Date	1/27/22	2/22/22	3/24/22	4/26/22	5/25/22	6/21/22	7/28/22	8/25/22	9/23/22	10/27/22	11/18/22	12/21/22	1/27/22	2/22/22	3/24/22	4/26/22	5/25/22	6/21/22	7/28/22	8/25/22	9/23/22	10/27/22	11/18/22	12/21/22	1/27/22	2/22/22	3/24/22	4/26/22
Parameter																											
Volatile Organic Compound																											
1,1,1,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1.7 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	2.1 J	1.8 J	1.8 J	1.8 J	2.9 J	5 U	3 J	5 U	2.1 J	5 U	5 U	5 U	1.5 J	1.7 J	1.9 J	1.5 J	2 J	5 U	5.1	5 U	1.2 J	5 U	5 U	5 U	5 U	1.3 J	1.7 J	1.3 J
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Carbon Disulfide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	0.11 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	0.5 U	0.1 J	0.5 U	0.5 U	0.5 U	0.5 U	0.099 J	0.093 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.12 J	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	0.11 J	0.1 J	0.11 J	0.098 J	0.089 J	0.1 J	0.14 J	0.5 U	0.5 U	0.17 J	0.18 J	0.15 J	0.13 J	0.12 J	0.1 J	0.089 J	0.072 J	0.12 J	0.13 J	0.14 J	0.12 J	0.18 J	0.17 J	0.5 U	0.072 J	0.062 J	0.07 J	0.5 U
cis-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.24 J	0.23 J	0.2 J	0.2 J	0.2 J	0.24 J	0.5 U	0.5 U	0.24 J	0.26 J	0.22 J	0.24 J	0.39 J	0.27 J	0.25 J	0.28 J	0.26 J	0.36 J	0.33 J	0.41 J	0.44 J	0.49 J	0.48 J	0.28 J	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	0.15 J	0.094 J	0.12 J	0.095 J	0.087 J	0.5 U	0.5 U	0.11 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.074 J	0.098 J	0.071 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	0.16 J	0.13 J	0.13 J	0.11 J	0.088 J	0.11 J	0.15 J	0.5 U	0.084 J	0.17 J	0.17 J	0.15 J	0.19 J	0.14 J	0.12 J	0.11 J	0.082 J	0.12 J	0.1 J	0.15 J	0.13 J	0.19 J	0.17 J	0.14 J	0.11 J	0.064 J	0.088 J	0.5 U
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylenes (Total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:
Results reported in micrograms per liter (µg/L)
U = Not detected. Results are shown as the laboratory reporting limit (RL)
J = Estimated. Concentration between RL and method detection limit (MDL)
Dup = Duplicate sample

TABLE 2.3-2
Surface Water Analytical Data Summary - Volatile Organic Compounds (VOCs) - 2022
Former York Naval Ordnance Plant - York, PA

Location/Identification	COD-SW-6	COD-SW-6	COD-SW-6	COD-SW-6	COD-SW-6	COD-SW-6	COD-SW-6	COD-SW-6	COD-SW-7	COD-SW-7	COD-SW-7	COD-SW-7	COD-SW-7	COD-SW-7	COD-SW-7	COD-SW-7	COD-SW-7	COD-SW-7	COD-SW-7	COD-SW-8	COD-SW-8	COD-SW-8	COD-SW-8	COD-SW-8	COD-SW-8	COD-SW-8	COD-SW-8	COD-SW-8	COD-SW-8
Sample Date	5/25/22	6/21/22	7/28/22	8/25/22	9/23/22	10/27/22	11/18/22	12/21/22	1/27/22	2/22/22	3/24/22	4/26/22	5/25/22	6/21/22	7/28/22	8/25/22	9/23/22	10/27/22	11/18/22	12/21/22	1/27/22	2/22/22	3/24/22	4/26/22	5/25/22	6/21/22	7/28/22	8/25/22	9/23/22	10/27/22	11/18/22
Parameter																													
Volatile Organic Compound																													
1,1,1,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1.6 J	5 U	5 U	5 U
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	2.4 J	5 U	3.2 J	1.3 J	1 J	5 U	5 U	5 U	5 U	1.6 J	1.6 J	1.3 J	2.6 J	5 U	3.1 J	1.7 J	1.2 J	5 U	5 U	5 U	0.94 U	1.9 J	1.8 J	1.1 J	2.2 J	5 U	3.5 J	2.1 J	1.3 J	5 U	5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Disulfide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.092 J	0.15 J	0.1 J	0.5 U	0.093 J	0.11 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.11 J	0.5 U	0.5 U
cis-1,2-Dichloroethene	0.058 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.094 J	0.083 J	0.1 J	0.073 J	0.062 J	0.085 J	0.13 J	0.15 J	0.087 J	0.18 J	0.18 J	0.099 J	0.12 J	0.12 J	0.11 J	0.094 J	0.088 J	0.12 J	0.14 J	0.15 J	0.14 J	0.19 J	0.17 J
cis-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.062 J	0.061 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.52	0.43 J	0.41 J	0.35 J	0.39 J	0.34 J	0.32 J	0.33 J	0.51	0.7	0.66
Toluene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.078 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.16 J	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	0.5 U	0.5 U	0.081 J	0.5 U	0.5 U	0.5 U	0.5 U	0.097 J	0.16 J	0.12 J	0.13 J	0.082 J	0.5 U	0.085 J	0.14 J	0.16 J	0.1 J	0.2 J	0.2 J	0.14 J	0.18 J	0.13 J	0.12 J	0.099 J	0.093 J	0.12 J	0.13 J	0.14 J	0.12 J	0.2 J	0.18 J
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylenes (Total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:
Results reported in micrograms per liter (µg/L)
U = Not detected. Results are shown as the laboratory reporting limit (RL)
J = Estimated. Concentration between RL and method detection limit (MDL)
Dup = Duplicate sample

TABLE 2.3-2
Surface Water Analytical Data Summary - Volatile Organic Compounds (VOCs) - 2022
Former York Naval Ordnance Plant - York, PA

Location/Identification	COD-SW-8	COD-SW-9	COD-SW-9	COD-SW-9	COD-SW-9	COD-SW-9	COD-SW-9	COD-SW-9	COD-SW-9	COD-SW-9	COD-SW-9	COD-SW-9	COD-SW-9
Sample Date	12/21/22	1/27/22	2/22/22	3/24/22	4/26/22	5/25/22	6/21/22	7/28/22	8/25/22	9/23/22	10/27/22	11/18/22	12/21/22
Parameter													
Volatile Organic Compound													
1,1,1,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	5 U	1.8 J	1.7 J	2.2 J	2.2 J	3.5 J	5 U	2.9 J	3.3 J	2.3 J	5 U	5 U	5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Disulfide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.096 J	0.098 J	0.5 U	0.5 U	0.095 J	0.5 U
Chloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	0.13 J	0.093 J	0.11 J	0.11 J	0.1 J	0.091 J	0.085 J	0.11 J	0.084 J	0.083 J	0.15 J	0.14 J	0.12 J
cis-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.39 J	0.2 J	0.21 J	0.22 J	0.23 J	0.21 J	0.21 J	0.5 U	0.5 U	0.21 J	0.28 J	0.23 J	0.5 U
Toluene	0.5 U	0.09 J	0.082 J	0.097 J	0.1 J	0.086 J	0.5 U	0.091 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	0.15 J	0.13 J	0.11 J	0.12 J	0.11 J	0.096 J	0.093 J	0.11 J	0.1 J	0.086 J	0.5 U	0.14 J	0.13 J
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylenes (Total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:
Results reported in micrograms per liter (µg/L)
U = Not detected. Results are shown as the laboratory reporting limit (RL)
J = Estimated. Concentration between RL and method detection limit (MDL)
Dup = Duplicate sample

TABLE 3.1-1
SPBA Water Level Measurement and Elevation Data for 2022
Former York Naval Ordnance Plant - York, PA

Location	Measurement Reference Point Elevation (feet AMSL)	Pumping Conditions											
		1/25/22		2/21/22		3/22/22		4/27/22		5/23/22		9/22/22	
		DTW (feet btoc)	GW Elevation (feet AMSL)	DTW (feet btoc)	GW Elevation (feet AMSL)	DTW (feet btoc)	GW Elevation (feet AMSL)	DTW (feet btoc)	GW Elevation (feet AMSL)	DTW (feet btoc)	GW Elevation (feet AMSL)	DTW (feet btoc)	GW Elevation (feet AMSL)
MW-2	508.88	63.65	445.23	63.38	445.50	62.69	446.19	61.65	447.23	61.27	447.61	68.69	440.19
MW-15	523.95	54.14	469.81	60.52	463.43	53.94	470.01	50.78	473.17	50.28	473.67	61.20	462.75
MW-22	447.57	58.94	388.63	58.00	389.57	57.25	390.32	55.65	391.92	54.77	392.80	65.07	382.50
MW-64S	416.34	38.74	377.60	36.72	379.62	36.70	379.64	35.58	380.76	34.78	381.56	41.06	375.28
MW-64D	416.43	64.50	351.93	63.85	352.58	63.65	352.78	61.95	354.48	59.56	356.87	64.86	351.57
MW-91	501.18	54.40	446.78	54.88	446.30	52.86	448.32	52.96	448.22	51.64	449.54	59.83	441.35
MW-92	476.87	84.31	392.56	82.88	393.99	81.94	394.93	79.98	396.89	78.95	397.92	89.76	387.11
MW-108S	425.46	29.68	395.78	26.75	398.71	25.88	399.58	21.80	403.66	17.90	407.56	27.61	397.85
MW-108D	426.35	20.90	405.45	19.18	407.17	18.60	407.75	15.85	410.50	12.95	413.40	20.29	406.06
MW-109S	388.39	36.80	351.59	36.55	351.84	36.38	352.01	35.14	353.25	32.68	355.71	37.48	350.91
MW-109D	389.12	36.49	352.63	36.28	352.84	36.02	353.10	34.84	354.28	32.38	356.74	37.21	351.91
MW-110	378.36	26.95	351.41	26.73	351.63	26.55	351.81	24.32	354.04	22.81	355.55	27.63	350.73
MW-141A	416.96	47.15	369.81	46.30	370.66	46.00	370.96	44.37	372.59	42.35	374.61	48.31	368.65
MW-161	415.92	63.98	351.94	63.38	352.54	63.18	352.74	61.35	354.57	58.99	356.93	64.40	351.52
MW-162R	415.76	70.31	345.45	69.28	346.48	67.39	348.37	63.47	352.29	61.56	354.20	70.51	345.25
MW-163	419.41	32.78	386.63	32.28	387.13	31.86	387.55	31.16	388.25	30.60	388.81	38.92	380.49
MW-164	424.50	37.74	386.76	37.15	387.35	36.90	387.60	36.20	388.30	NM	-	44.69	379.81
MW-165	419.41	39.89	379.52	39.58	379.83	39.12	380.29	38.55	380.86	37.76	381.65	48.30	371.11
MW-166	402.03	43.18	358.85	42.45	359.58	41.37	360.66	45.68	356.35	36.67	365.36	43.78	358.25
MW-167	399.07	35.86	363.21	33.54	365.53	33.11	365.96	28.24	370.83	21.44	377.63	38.04	361.03
MW-168	395.19	18.38	376.81	19.20	375.99	18.33	376.86	16.67	378.52	13.58	381.61	24.00	371.19
MW-169	389.43	33.80	355.63	32.89	356.54	NM	-	NM	-	NM	-	34.50	354.93
MW-170	385.60	28.98	356.62	27.95	357.65	27.30	358.30	26.36	359.24	19.59	366.01	29.84	355.76
MW-171	386.75	35.15	351.60	34.90	351.85	34.69	352.06	33.42	353.33	30.97	355.78	35.86	350.89
MW-172	385.03	30.98	354.05	30.78	354.25	30.50	354.53	28.64	356.39	NM	-	32.38	352.65
MW-173	381.57	18.50	363.07	17.70	363.87	NM	-	15.00	366.57	13.45	368.12	23.74	357.83
MW-174	378.31	26.82	351.49	26.50	351.81	26.22	352.09	24.32	353.99	23.55	354.76	27.46	350.85
MW-175	376.18	25.52	350.66	25.31	350.87	25.18	351.00	23.87	352.31	20.88	355.30	26.53	349.65
MW-176	415.46	DRY	NM	DRY	-	DRY	-	DRY	-	DRY	-	DRY	-
MW-177R	415.33	65.89	349.44	63.63	351.70	62.74	352.59	59.86	355.47	57.55	357.78	65.91	349.42
MW-178S	415.11	DRY	NM	DRY	-	DRY	-	DRY	-	81.47	333.64	DRY	-
MW-178D	414.81	84.09	330.72	83.44	331.37	83.48	331.33	82.53	332.28	81.12	333.69	83.30	331.51
MW-179	414.74	DRY	NM	DRY	-	DRY	-	62.50	352.24	58.67	356.07	DRY	-
MW-180	414.36	DRY	NM	DRY	-	DRY	-	63.25	351.11	59.80	354.56	DRY	-
MW-181S	414.86	70.47	344.39	69.88	344.98	69.44	345.42	66.41	348.45	64.04	350.82	70.70	344.16
MW-181D	414.91	56.75	358.16	56.33	358.58	55.58	359.33	54.24	360.67	52.33	362.58	58.65	356.26
MW-182	416.41	DRY	NM	DRY	-	45.51	370.90	DRY	-	44.37	372.04	DRY	-
MW-183	417.14	43.55	373.59	42.85	374.29	42.86	374.28	44.65	372.49	42.31	374.83	46.83	370.31
MW-184S	416.19	48.38	367.81	47.71	368.48	47.11	369.08	46.50	369.69	45.72	370.47	50.80	365.39
MW-184D	416.29	46.23	370.06	45.60	370.69	45.22	371.07	44.32	371.97	43.60	372.69	49.21	367.08
MW-185	514.13	66.25	447.88	66.71	447.42	65.74	448.39	65.00	449.13	64.64	449.49	70.68	443.45
MPE-1	415.88	DRY	NM	DRY	-	DRY	-	DRY	-	47.69	368.19	DRY	-
MPE-2	415.15	DRY	NM	DRY	-	DRY	-	66.22	348.93	64.33	350.82	DRY	-
MPE-3	417.65	43.34	374.31	42.10	375.55	41.97	375.68	41.66	375.99	41.30	376.35	43.37	374.28
CW-21	415.72	95.00	320.72	95.00	320.72	94.65	321.07	94.60	321.12	94.55	321.17	94.69	321.03
CW-22	415.71	96.70	319.01	96.45	319.26	96.18	319.53	96.20	319.51	96.50	319.21	96.70	319.01
CW-23	418.11	55.29	362.82	55.76	362.35	54.78	363.33	55.78	362.33	55.48	362.63	55.89	362.22

Notes:

AB = Abandoned

NM = Not measured

- = Groundwater elevation not calculated

DTW = Depth to water

btoc = Below top of casing

GW = Groundwater

AMSL = Above mean sea level

DRY = No water in well. Groundwater elevation < total well depth in feet AMSL (MW-176 <363.51, MW-178S <331.73, MW-179 <346.79, MW-180 <346.85, MW-182 <370.34, MPE-1 <366.77, and MPE-2 <347.70)

TABLE 3.1-2

SPBA Groundwater Extraction System Pumping Data for January through December 2022

Former York Naval Ordnance Plant - York, PA

Month/Year	CW-21 Average Monthly Pumping Rate (gpm)	CW-22 Average Monthly Pumping Rate (gpm)	CW-23 Average Monthly Pumping Rate (gpm)	Total SPBA Average Monthly Pumping Rate (gpm)	Total Monthly Precipitation (Inches)
Jan-22	3.9	1.7	0.5	6.1	2.2
Feb-22	3.9	1.8	0.7	6.5	2.2
Mar-22	3.9	1.9	0.8	6.6	2.9
Apr-22	4.2	1.9	0.9	7.0	2.8
May-22	4.4	2.0	1.0	7.5	5.4
Jun-22	4.0	2.0	0.8	6.8	1.8
Jul-22	3.8	1.9	0.7	6.3	4.1
Aug-22	3.6	1.9	0.6	6.1	0.6
Sep-22	3.5	1.8	0.4	5.7	2.8
Oct-22	3.6	1.8	0.4	5.7	3.1
Nov-22	3.5	1.8	0.4	5.6	2.5
Dec-22	3.0	1.4	0.4	4.8	3.6
Average Monthly 2022	3.8	1.8	0.6	6.2	2.8

Notes:

SPBA - Southern Property Boundary Area

gpm - gallons per minute

Average monthly pumping rates are based on extraction well totalizing flow meter readings

Monthly precipitation data were obtained from the PA State Climatologist website: http://www.climate.psu.edu/data/ (York, PA airport weather station).

TABLE 3.2-1
Comparison of 2022 Annual MNA Area Well Groundwater Sample Analytical Results to Baseline Results in Part 2 SRI
Former York Naval Ordnance Plant - York, PA

MNA Area Well Identification	2022 Annual Monitored Natural Attenuation (MNA) Area Groundwater Sample Analytical Results (September - October 2022)					Baseline Groundwater Sample Analytical Results from Part 2 Supplemental Remedial Investigation (SRI) Report (2008 - 2015)		
	COC Exceeded in Sample	Detected Concentration (µg/L)	Regulatory Level (µg/L)	Detected Concentration is Less Than or Equal to Regulatory Level	Detected Concentration is Greater Than Regulatory Level	Sample Date	COC Exceeded in Sample	Detected Concentration (µg/L)
Northern Property Boundary Area (NPBA)								
MW-3	No Exceedance	-	-	✓	-	9/21/15	TCE	31
MW-9	TCE	10	5	-	✓	9/22/15	TCE	29
	VC	0.37 J	2	✓	-		VC	5
MW-12	PCE	2.9	5	✓	-	9/22/15	PCE	6.4
	TCE	64	5	-	✓		TCE	120
MW-16S	PCE	0.74 J	5	✓	-	9/23/15	PCE	6.7
	TCE	16	5	-	✓		TCE	5.6
MW-18S	No Exceedance	-	-	✓	-	9/25/15	TCE	11
MW-18D	No Exceedance	-	-	✓	-	9/24/15	TCE	9.5
MW-20S	PCE	1.4	5	✓	-	9/24/15	PCE	3.8
	TCE	11	5	-	✓	9/24/15	TCE	81
MW-20M	TCE	18	5	-	✓	9/30/15	TCE	13
MW-143S	No Exceedance	-	-	✓	-	9/30/15	No Exceedance	-
MW-143D	No Exceedance	-	-	✓	-	9/30/15	No Exceedance	-
CW-1A	TCE	20	5	-	✓	10/6/15	TCE	28
CW-2	TCE	7.1	5	-	✓	10/7/15	No Exceedance	-
Eastern Site Perimeter (ESP)								
MW-2	PCE	68	5	-	✓	10/14/14	PCE	69
	TCE	0.7 J	5	✓	-		TCE	8.8
MW-14	PCE	5.6	5	-	✓	4/24/08	No Exceedance	-
MW-65S	TCE	6.4	5	-	✓	5/8/08	TCE	99
South-Central Site Area (SCSA)								
MW-67S	No Exceedance	-	-	✓	-	5/6/08	TCE	29
MW-67D	No Exceedance	-	-	✓	-	5/6/08	TCE	40
MW-69	No Exceedance	-	-	✓	-	7/2/09	TCE	3.3 J
MW-79	No Exceedance	-	-	✓	-	6/22/09	No Exceedance	-
MW-88	No Exceedance	-	-	✓	-	9/28/15	PCE	26
							TCE	16
MW-111	No Exceedance	-	-	✓	-	6/30/10	TCE	30
MW-112	No Exceedance	-	-	✓	-	6/23/10	TCE	6.3
MW-115	Benzene	7.3	5	-	✓	7/1/10	Benzene	1.5 J
	cis12DCE	98	70	-	✓		cis12DCE	240
	11DCA	13	2.8	-	✓		11DCA	97
	11DCE	1.9	7	✓	-		11DCE	10
	MTBE	22	14	-	✓		MTBE	10 U
	VC	79	2	-	✓		VC	50

TABLE 3.2-1
Comparison of 2022 Annual MNA Area Well Groundwater Sample Analytical Results to Baseline Results in Part 2 SRI
Former York Naval Ordnance Plant - York, PA

MNA Area Well Identification	2022 Annual Monitored Natural Attenuation (MNA) Area Groundwater Sample Analytical Results (September - October 2022)					Baseline Groundwater Sample Analytical Results from Part 2 Supplemental Remedial Investigation (SRI) Report (2008 - 2015)		
	COC Exceeded in Sample	Detected Concentration (µg/L)	Regulatory Level (µg/L)	Detected Concentration is Less Than or Equal to Regulatory Level	Detected Concentration is Greater Than Regulatory Level	Sample Date	COC Exceeded in Sample	Detected Concentration (µg/L)
Southern Property Boundary Area (SPBA)								
MW-22	PCE	5.5	5	-	✓	9/29/15	PCE	13
	TCE	2.3	5	✓	-		TCE	13
MW-108S	No Exceedance	-	-	✓	-	10/22/14	No Exceedance	-
MW-108D	No Exceedance	-	-	✓	-	10/21/14	No Exceedance	-
MW-165	No Exceedance	-	-	✓	-	4/10/15	PCE	7.4 J
							TCE	16 J
MW-166	No Exceedance	-	-	✓	-	10/2/15	No Exceedance	-
MW-167	No Exceedance	-	-	✓	-	10/2/15	PCE	7.4
							TCE	1 U
MW-168	No Exceedance	-	-	✓	-	10/2/15	No Exceedance	-
South Plume Area (SPA)								
MW-43D	PCE	5.4	5	-	✓	10/23/14	PCE	7.6
	TCE	3.1	5	✓	-		TCE	12
Cole D	PCE	17	5	-	✓	10/24/14	PCE	3.8
MW-12 (Cole Steel)	TCE	15	5	-	✓	10/24/14	TCE	0.9 J
GM-1D	No Exceedance	-	-	✓	-	10/21/14	PCE	9.7
MW-110	PCE	18	5	-	✓	10/1/15	PCE	80
MW-150	TCE	30	5	-	✓	10/27/14	TCE	6.4
Codorus Creek Levee Area								
MW-101S	No Exceedance	-	-	✓	-	10/13/14	PCE	5.4
							TCE	6.8
MW-101D	No Exceedance	-	-	✓	-	10/13/14	PCE	2.4
							TCE	6.8
							VC	2.4
West Side of Codorus Creek								
MW-148A (72.5-73)	No Exceedance	-	-	✓	-	10/28/14	No Exceedance	-
MW-148A (136-136.5)	No Exceedance	-	-	✓	-	10/28/14	No Exceedance	-
Northern Site Perimeter (NSP)								
MW-5	No Exceedance	-	-	✓	-	6/18/09	No Exceedance	-
MW-6	No Exceedance	-	-	✓	-	6/16/09	No Exceedance	-
MW-82	No Exceedance	-	-	✓	-	9/28/15	TCE	8.3
MW-186	No Exceedance	-	-	✓	-	Installed in 2020	-	-

Notes:

COC - constituent of concern

U - Not Detected. Results are shown as the laboratory Reporting Limit (RL) followed by "U".

J - Estimated. Detected concentration between the laboratory RL and the Method Detection Limit (MDL) shown as the approximate concentration reported by the laboratory followed by "J". These "J" concentrations were positively identified in the sample and are qualitatively acceptable.

µg/L - micrograms per liter

Regulatory Level - United States Environmental Protection Agency (USEPA) maximum contaminant level (MCL), equivalent to the Pennsylvania Department of Environmental Protection (PADEP) Statewide health standard medium-specific concentration (MSC), or the USEPA tap water regional screening level (RSL) for regulated substances that do not have an MCL. COCs for MNA are tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis12DCE), vinyl chloride (VC), 1,1-dichloroethane (11DCA), 1,1-dichloroethene (11DCE), benzene, and methyl tertiary-butyl ether (MTBE)

TABLE 3.5-1
2022 Monthly Surface Water Sampling Results
Former York Naval Ordnance Plant - York, PA

Sample Location	Sample Date	Constituent of Concern Result in Micrograms Per Liter (µg/L)[1]				PADEP Surface Water Quality Criteria in µg/L											
						Fish and Aquatic Life								Human Health			
						AFC	AFC	AFC	AFC	CFC	CFC	CFC	CFC	CRL	CRL	H	CRL
		TCE	PCE	cis12DCE	VC	TCE=2,300	PCE=700	cis12DCE=NE	VC=NE	TCE=450	PCE=140	cis12DCE=NE	VC=NE	TCE=0.60	PCE=10	cis12DCE=12	VC=0.02
COD-SW-26	01/27/22	**0.14J**	**3.3**	**0.053J**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	02/22/22	**0.15J**	**2.9**	**0.065J**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	03/24/22	**0.14J**	**2.3**	**0.074J**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	04/26/22	**0.14J**	**2.9**	**0.055J**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	05/25/22	**0.093J**	**1.4**	**0.061J**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	06/21/22	**0.16J**	**4.2**	0.5U	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	07/28/22	**0.17J**	**4.2**	0.5U	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	08/25/22	**0.18J**	**3.8**	0.5U	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	09/23/22	**0.15J**	**4.0**	0.5U	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/22	**0.16J**	**3.1**	0.5U	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/18/22	**0.17J**	**3.8**	0.5U	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/21/22	**0.18J**	**2.9**	0.5U	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
COD-SW-6	01/27/22	**0.11J**	0.5U	**0.072J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	02/22/22	**0.064J**	0.5U	**0.062J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	03/24/22	**0.088J**	0.5U	**0.070J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	04/26/22	0.5U	0.5U	0.5U	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	05/25/22	0.5U	0.5U	**0.058J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	06/21/22	0.5U	0.5U	0.5U	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	07/28/22	**0.081J**	0.5U	0.5U	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	08/25/22	0.5U	0.5U	0.5U	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	09/23/22	0.5U	0.5U	0.5U	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	10/27/22	0.5U	0.5U	0.5U	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	11/18/22	0.5U	0.5U	0.5U	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	12/21/22	**0.097J**	0.5U	0.5U	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
COD-SW-7	01/27/22	**0.16J**	**0.062J**	**0.094J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	02/22/22	**0.12J**	**0.061J**	**0.083J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	03/24/22	**0.13J**	0.5U	**0.10J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	04/26/22	**0.082J**	0.5U	**0.073J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	05/25/22	0.5U	0.5U	**0.062J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	06/21/22	**0.085J**	0.5U	**0.085J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	07/28/22	**0.14J**	0.5U	**0.13J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	08/25/22	**0.16J**	0.5U	**0.15J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	09/23/22	**0.10J**	0.5U	**0.087J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	10/27/22	**0.20J**	0.5U	**0.18J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	11/18/22	**0.20J**	0.5U	**0.18J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	12/21/22	**0.14J**	0.5U	**0.099J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
COD-SW-17	01/27/22	**6.3**	**80.0**	**4.7**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	02/22/22	**5.4**	**84.0**	**4.4**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	03/24/22	**5.0**	**88.0**	**4.2**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	04/26/22	**4.8**	**77.0**	**3.9**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	05/25/22	**2.4**	**28.0**	**3.4**	**0.18J**	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	06/21/22	**6.1**	**76.0**	**4.3**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	07/28/22	**3.2**	**34.0**	**3.8**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	08/25/22	**6.1**	**78.0**	**4.3**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	09/23/22	**4.6**	**66.0**	**2.9**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/22	**3.7**	**71.0**	**3.0**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/18/22	**4.3**	**65.0**	**3.4**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/21/22	**4.4**	**69.0**	**3.5**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TABLE 3.5-1
2022 Monthly Surface Water Sampling Results
Former York Naval Ordnance Plant - York, PA

Sample Location	Sample Date	Constituent of Concern Result in Micrograms Per Liter (µg/L)[1]				PADEP Surface Water Quality Criteria in µg/L											
						Fish and Aquatic Life								Human Health			
						AFC	AFC	AFC	AFC	CFC	CFC	CFC	CFC	CRL	CRL	H	CRL
		TCE	PCE	cis12DCE	VC	TCE=2,300	PCE=700	cis12DCE=NE	VC=NE	TCE=450	PCE=140	cis12DCE=NE	VC=NE	TCE=0.60	PCE=10	cis12DCE=12	VC=0.02
COD-SW-16	01/27/22	**0.20J**	**0.99**	**0.14J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	02/22/22	**0.14J**	**0.74**	**0.11J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	03/24/22	**0.14J**	**0.88**	**0.12J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	04/26/22	**0.11J**	**0.76**	**0.097J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	05/25/22	**0.081J**	**0.52**	**0.086J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	06/21/22	**0.14J**	**0.76**	**0.13J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	07/28/22	**0.18J**	**1.6**	**0.18J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	08/25/22	**0.17J**	**0.57**	**0.17J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	09/23/22	**0.14J**	**1.4**	**0.15J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	10/27/22	**0.22J**	**1.8**	**0.22J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	11/18/22	**0.21J**	**1.5**	**0.21J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	12/21/22	**0.16J**	**0.71**	**0.12J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
COD-SW-27	01/27/22	**0.14J**	**0.070J**	**0.082J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	02/22/22	**0.12J**	**0.090J**	**0.10J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	03/24/22	**0.14J**	**0.082J**	**0.10J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	04/26/22	**0.089J**	0.5U	**0.072J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	05/25/22	**0.080J**	**0.082J**	**0.081J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	06/21/22	**0.10J**	0.5U	**0.090J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	07/28/22	**0.14J**	0.5U	**0.12J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	08/25/22	**0.13J**	0.5U	**0.14J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	09/23/22	**0.084J**	0.5U	0.5U	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	10/27/22	**0.24J**	**0.56**	**0.23J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	11/18/22	**0.20J**	**0.20J**	**0.20J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	12/21/22	**0.14J**	0.5U	**0.11J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
COD-SW-15	01/27/22	**1.4**	**6.1**	**1.5**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	02/22/22	**1.7**	**6.4**	**1.9**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	03/24/22	**1.7**	**6.5**	**1.7**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	04/26/22	**1.7**	**6.0**	**1.8**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	05/25/22	**1.9**	**6.5**	**2.1**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	06/21/22	**1.6**	**5.7**	**1.3**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	07/28/22	**1.4**	**5.0**	**1.4**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	08/25/22	**1.4**	**4.8**	**1.4**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	09/23/22	**1.2**	**5.5**	**1.3**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/22	**1.6**	**5.5**	**2.3**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/18/22	**1.8**	**5.8**	**2.2**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/21/22	**1.9**	**6.4**	**2.4**	0.5U	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
COD-SW-13	01/27/22	**0.20J**	**0.67**	**0.13J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	02/22/22	**0.13J**	**0.50**	**0.11J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	03/24/22	**0.13J**	**0.42J**	**0.11J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	04/26/22	**0.10J**	**0.46J**	**0.087J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	05/25/22	**0.086J**	**0.54**	**0.087J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	06/21/22	**0.15J**	**0.76**	**0.14J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	07/28/22	**0.14J**	**0.95**	**0.16J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	08/25/22	**0.17J**	**0.56**	**0.23J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	09/23/22	**0.13J**	**0.92**	**0.13J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	10/27/22	**0.23J**	**1.20**	**0.21J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	11/18/22	**0.19J**	**0.98**	**0.17J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	12/21/22	**0.15J**	**0.47J**	**0.12J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A

TABLE 3.5-1
2022 Monthly Surface Water Sampling Results
Former York Naval Ordnance Plant - York, PA

Sample Location	Sample Date	Constituent of Concern Result in Micrograms Per Liter (µg/L)[1]				PADEP Surface Water Quality Criteria in µg/L											
						Fish and Aquatic Life								Human Health			
						AFC	AFC	AFC	AFC	CFC	CFC	CFC	CFC	CRL	CRL	H	CRL
		TCE	PCE	cis12DCE	VC	TCE=2,300	PCE=700	cis12DCE=NE	VC=NE	TCE=450	PCE=140	cis12DCE=NE	VC=NE	TCE=0.60	PCE=10	cis12DCE=12	VC=0.02
COD-SW-28	01/27/22	**0.16J**	**0.24J**	**0.11J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	02/22/22	**0.13J**	**0.23J**	**0.10J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	03/24/22	**0.13J**	**0.20J**	**0.11J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	04/26/22	**0.11J**	**0.20J**	**0.098J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	05/25/22	**0.088J**	**0.20J**	**0.089J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	06/21/22	**0.11J**	**0.24J**	**0.10J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	07/28/22	**0.15J**	0.5U	**0.14J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	08/25/22	0.5U	0.5U	0.5U	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	09/23/22	**0.084J**	**0.24J**	0.5U	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	10/27/22	**0.17J**	**0.26J**	**0.17J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	11/18/22	**0.17J**	**0.22J**	**0.18J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	12/21/22	**0.15J**	**0.24J**	**0.15J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
COD-SW-8	01/27/22	**0.18J**	**0.52**	**0.12J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	02/22/22	**0.13J**	**0.43J**	**0.12J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	03/24/22	**0.12J**	**0.41J**	**0.11J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	04/26/22	**0.099J**	**0.35J**	**0.094J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	05/25/22	**0.093J**	**0.39J**	**0.088J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	06/21/22	**0.12J**	**0.34J**	**0.12J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	07/28/22	**0.13J**	**0.32J**	**0.14J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	08/25/22	**0.14J**	**0.33J**	**0.15J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	09/23/22	**0.12J**	**0.51**	**0.14J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	10/27/22	**0.20J**	**0.70**	**0.19J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	11/18/22	**0.18J**	**0.66**	**0.17J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	12/21/22	**0.15J**	**0.39J**	**0.13J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
COD-SW-9	01/27/22	**0.13J**	**0.20J**	**0.093J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	02/22/22	**0.11J**	**0.21J**	**0.11J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	03/24/22	**0.12J**	**0.22J**	**0.11J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	04/26/22	**0.11J**	**0.23J**	**0.10J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	05/25/22	**0.096J**	**0.21J**	**0.091J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	06/21/22	**0.093J**	**0.21J**	**0.085J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	07/28/22	**0.11J**	0.5U	**0.11J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	08/25/22	**0.10J**	0.5U	**0.084J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	09/23/22	**0.086J**	**0.21J**	**0.083J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	10/27/22	0.5U	**0.28J**	**0.15J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	11/18/22	**0.14J**	**0.23J**	**0.14J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
	12/21/22	**0.13J**	0.5U	**0.12J**	0.5U	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A
COD-SW-29	01/27/22	**0.19J**	**0.39J**	**0.13J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	02/22/22	**0.14J**	**0.27J**	**0.12J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	03/24/22	**0.12J**	**0.25J**	**0.10J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	04/26/22	**0.11J**	**0.28J**	**0.089J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	05/25/22	**0.082J**	**0.26J**	**0.072J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	06/21/22	**0.12J**	**0.36J**	**0.12J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	07/28/22	**0.10J**	**0.33J**	**0.13J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	08/25/22	**0.15J**	**0.41J**	**0.14J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	09/23/22	**0.13J**	**0.44J**	**0.12J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	10/27/22	**0.19J**	**0.49J**	**0.18J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	11/18/22	**0.17J**	**0.48J**	**0.17J**	0.5U	X	X	X	X	X	X	X	X	X	X	X	X
	12/21/22	**0.14J**	**0.28J**	0.5U	0.5U	X	X	X	X	X	X	X	X	X	X	X	X

TABLE 3.5-1
2022 Monthly Surface Water Sampling Results
Former York Naval Ordnance Plant - York, PA

Sample Location	Sample Date	Constituent of Concern Result in Micrograms Per Liter (µg/L)[1]				PADEP Surface Water Quality Criteria in µg/L											
						Fish and Aquatic Life								Human Health			
						AFC	AFC	AFC	AFC	CFC	CFC	CFC	CFC	CRL	CRL	H	CRL
		TCE	PCE	cis12DCE	VC	TCE=2,300	PCE=700	cis12DCE=NE	VC=NE	TCE=450	PCE=140	cis12DCE=NE	VC=NE	TCE=0.60	PCE=10	cis12DCE=12	VC=0.02

Notes:

cis12DCE - cis-1,2-Dichloroethene

PCE - Tetrachloroethene

TCE - Trichloroethene

VC - Vinyl Chloride

(1) Non-detect results are shown as the laboratory Reporting Limit (RL) followed by "U". Detected concentrations between the laboratory RL and the Method Detection Limit (MDL) are shown as the approximate concentration reported by the laboratory followed by "J". These "J" concentrations were positively identified in the sample and are qualitatively acceptable. The PADEP surface water quality criteria of 0.02 µg/L for VC is lower than can be reliably achieved using Pennsylvania-certified analytical methods. However, the analytical method quantitation limit (QL) and RL for VC is acceptable for criteria comparison.

Bold font indicates analyte detected in sample

Surface water quality criteria from 25 Pa. Code Chapter 93 - Water Quality Standards (Table 5 - Water Quality Criteria for Toxic Substances).

AFC - Acute Fish Criteria or Criteria Maximum Concentration

CFC - Chronic Fish Criteria or Criteria Continuous Concentration

CRL - Cancer Risk Level at $1x10^{-6}$

H - Threshold human health criteria

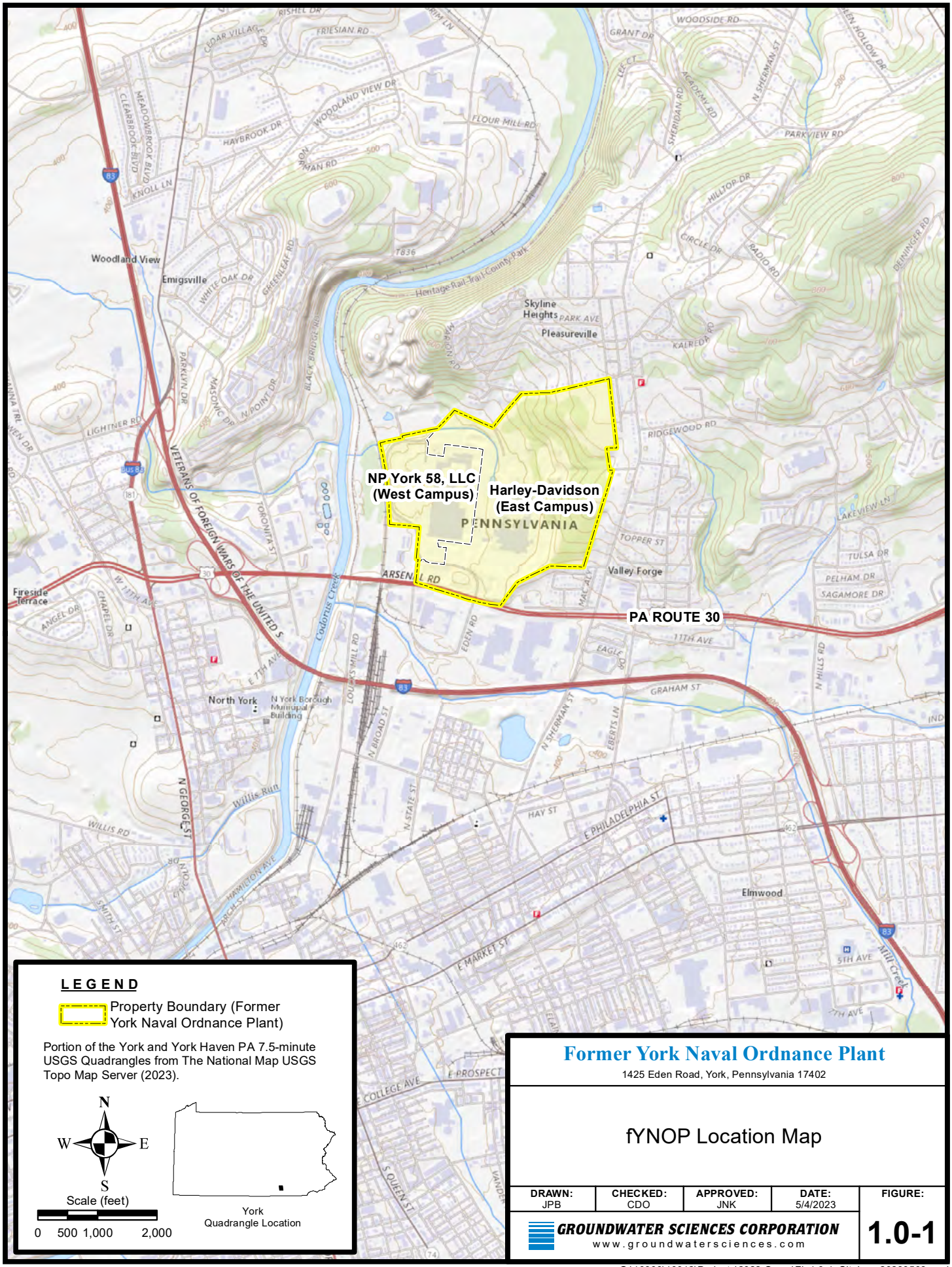
NE - Criterion not established

N/A - Criterion does not apply to samples from this location

X - Criterion applies to samples collected from this location

Blue colored highlight indicates sample result is less than applicable criterion

Figures



LEGEND

Property Boundary (Former York Naval Ordnance Plant)

Portion of the York and York Haven PA 7.5-minute USGS Quadrangles from The National Map USGS Topo Map Server (2023).

N
W E
S

Scale (feet)

0 500 1,000 2,000

York Quadrangle Location

Former York Naval Ordnance Plant

1425 Eden Road, York, Pennsylvania 17402

fYNOP Location Map

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	CDO	JNK	5/4/2023	1.0-1

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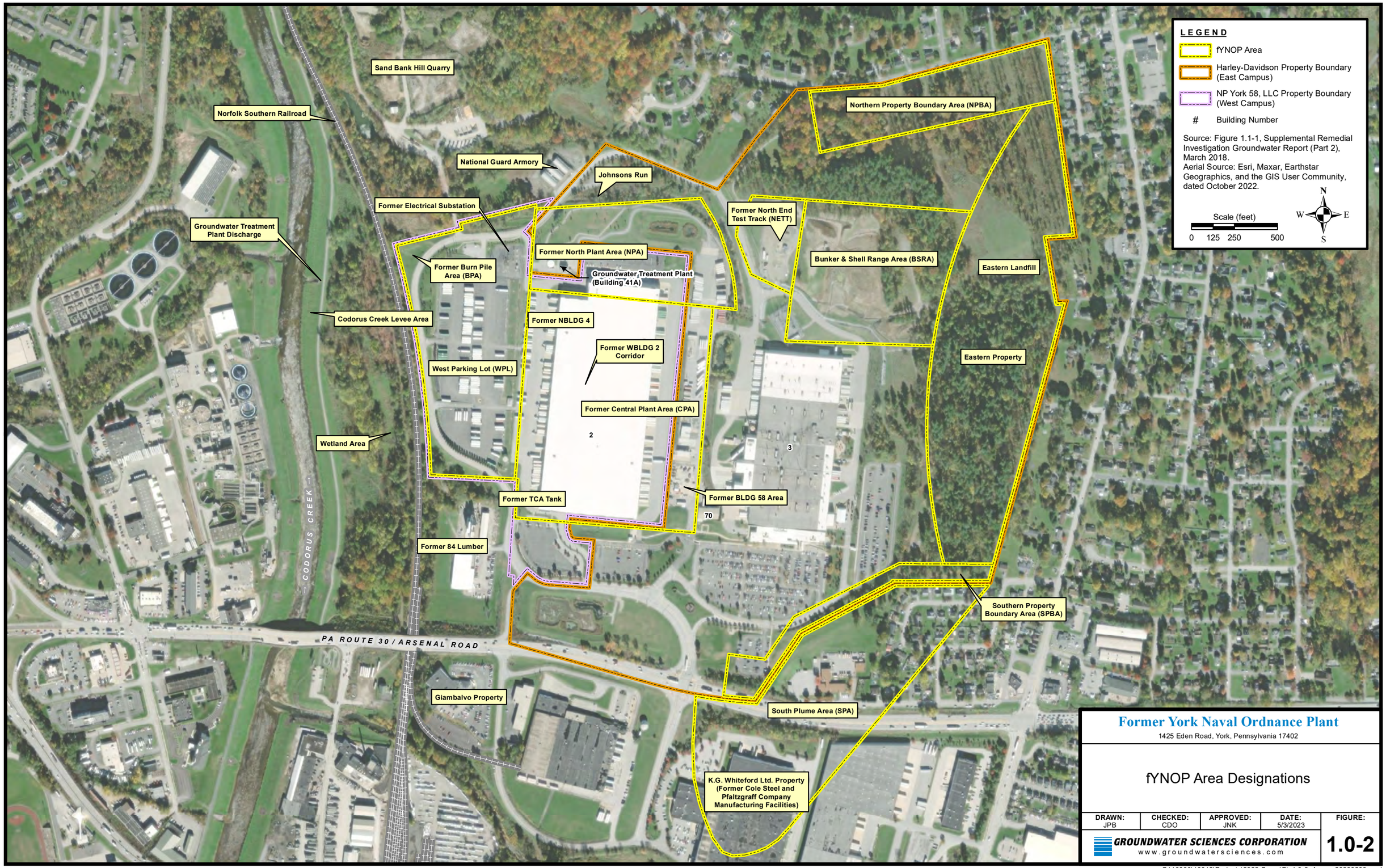

Former York Naval Ordnance Plant

1425 Eden Road, York, Pennsylvania 17402

fYNOP Area Designations

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	CDO	JNK	5/3/2023	1.0-2

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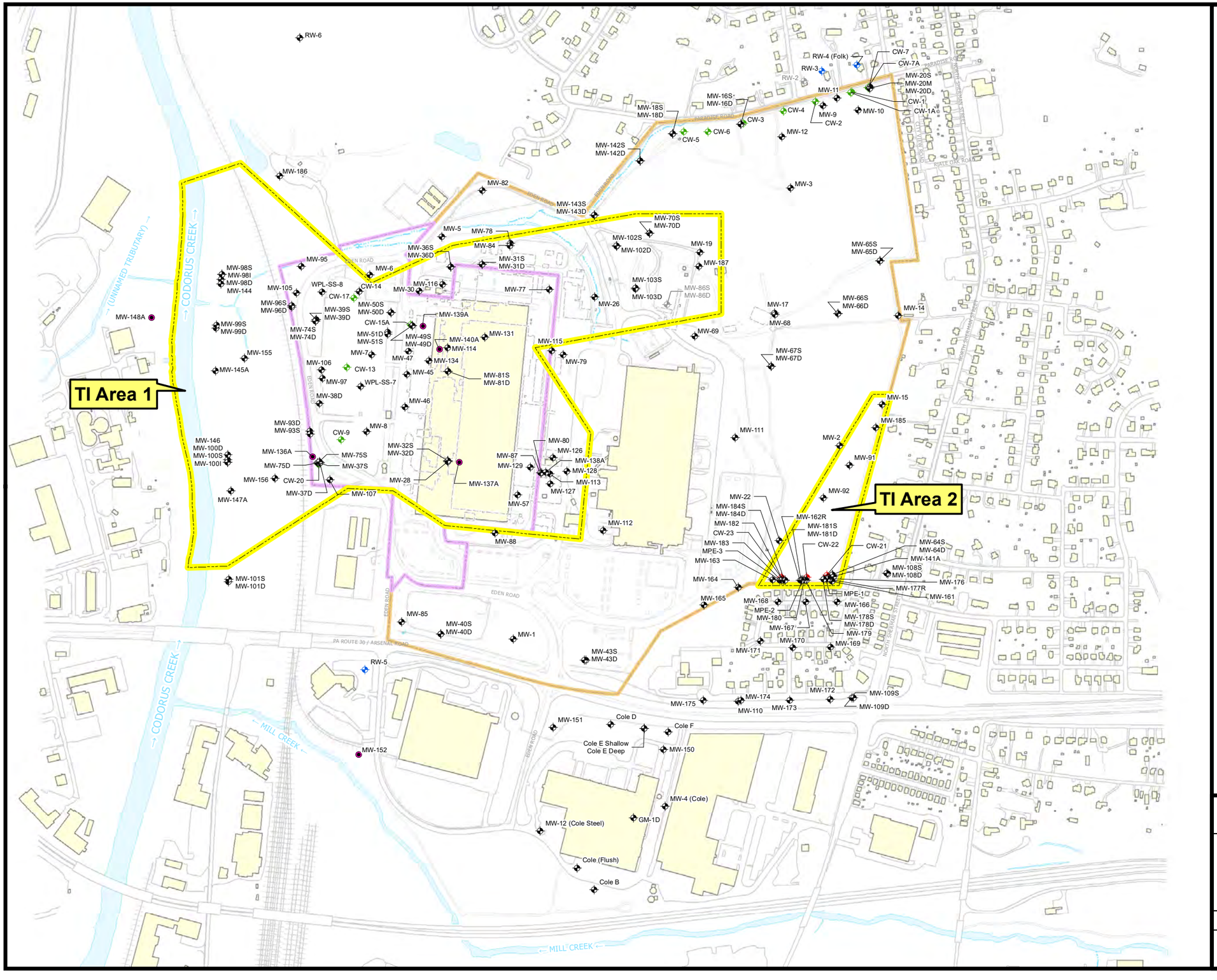

N
W E
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LEGEND

- Active Extraction Well
- Inactive Extraction Well
- Monitoring Well
- Residential Well
- Waterloo™ Monitoring Well
- Abandoned Well
- Technical Impracticability (TI) Area Boundary
- NP York 58, LLC Property Boundary (West Campus)
- Harley-Davidson Property Boundary (East Campus)
- Existing Building
- Building Demolished/Slab Removed
- Existing Stream
- Existing Water Feature
- Road, Curb or Walkway
- Fenceline
- Railroad

Scale (feet)

0 150 300 600

Former York Naval Ordnance Plant

1425 Eden Road, York, Pennsylvania 17402

Technical Impracticability (TI) Areas for Groundwater

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	CDO	JNK	5/22/2023	1.1-1

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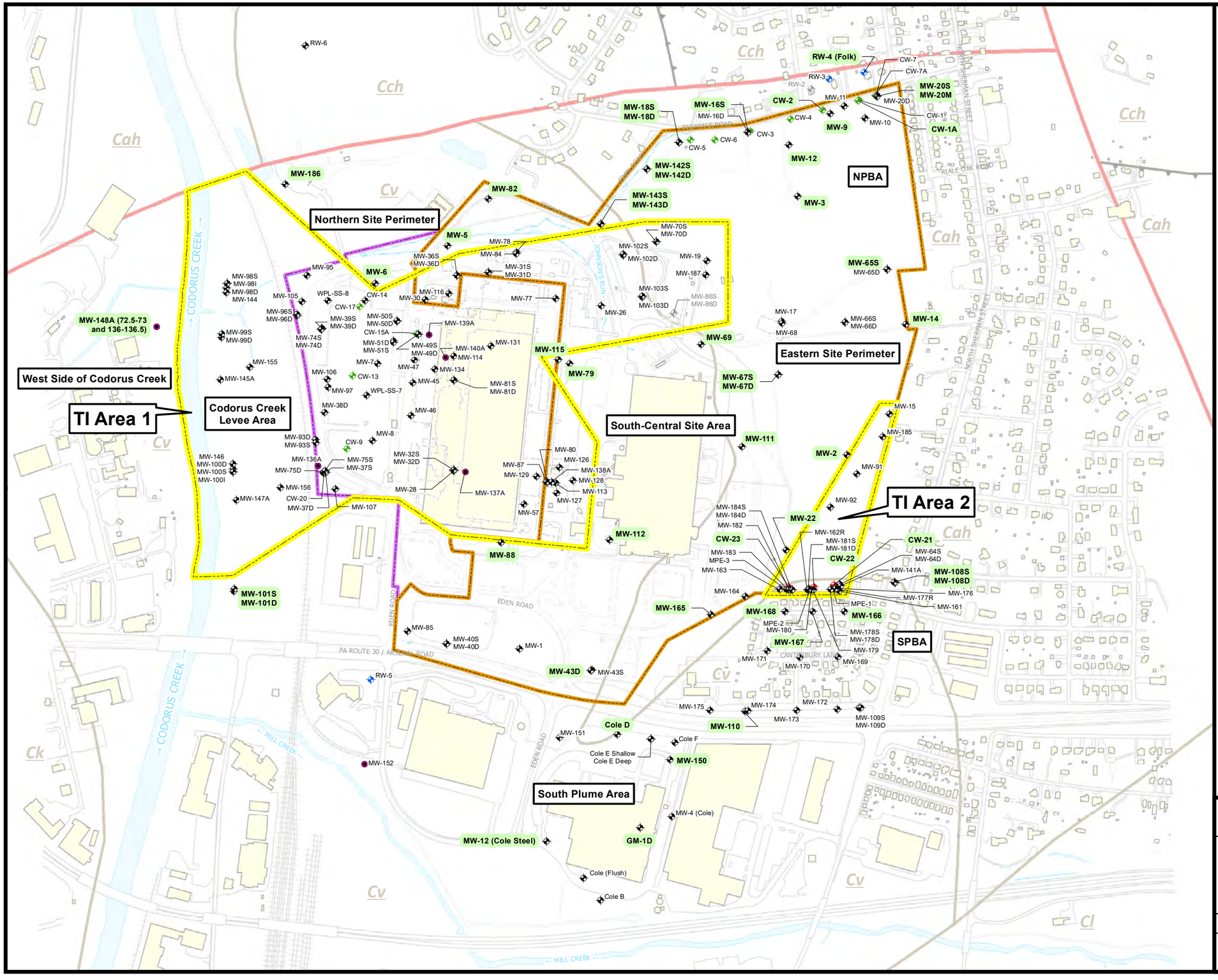

LEGEND

- Active Extraction Well
- Inactive Extraction Well
- Monitoring Well
- Residential Well
- Waterloo™ Monitoring Well
- Abandoned Well
- Technical Impracticability (TI) Area Boundary
- Harley-Davidson Property Boundary (East Campus)
- NP York 58, LLC Property Boundary (West Campus)
- Existing Building
- Building Demolished/Slab Removed
- Block Fault
- Thrust Fault
- Ledger Formation (Cl)
- Kinzers Formation (Ck)
- Vintage Formation (Cv)
- Antietam & Harpers Formation, undiv. (Cah)
- Chickies Formation (Cch)
- Existing Stream
- Existing Water Feature
- Road, Curb or Walkway
- Fenceline
- Railroad
- MW-112 2022 Groundwater Sampling Locations

NOTE: Open intervals for monitoring well MW-148A sample ports are shown in feet below ground surface.

Scale (feet)

0 150 300 600

Former York Naval Ordnance Plant

1425 Eden Road, York, Pennsylvania 17402

2022 Groundwater Sampling Locations

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	CDO	JNK	5/23/2023	2.2-1

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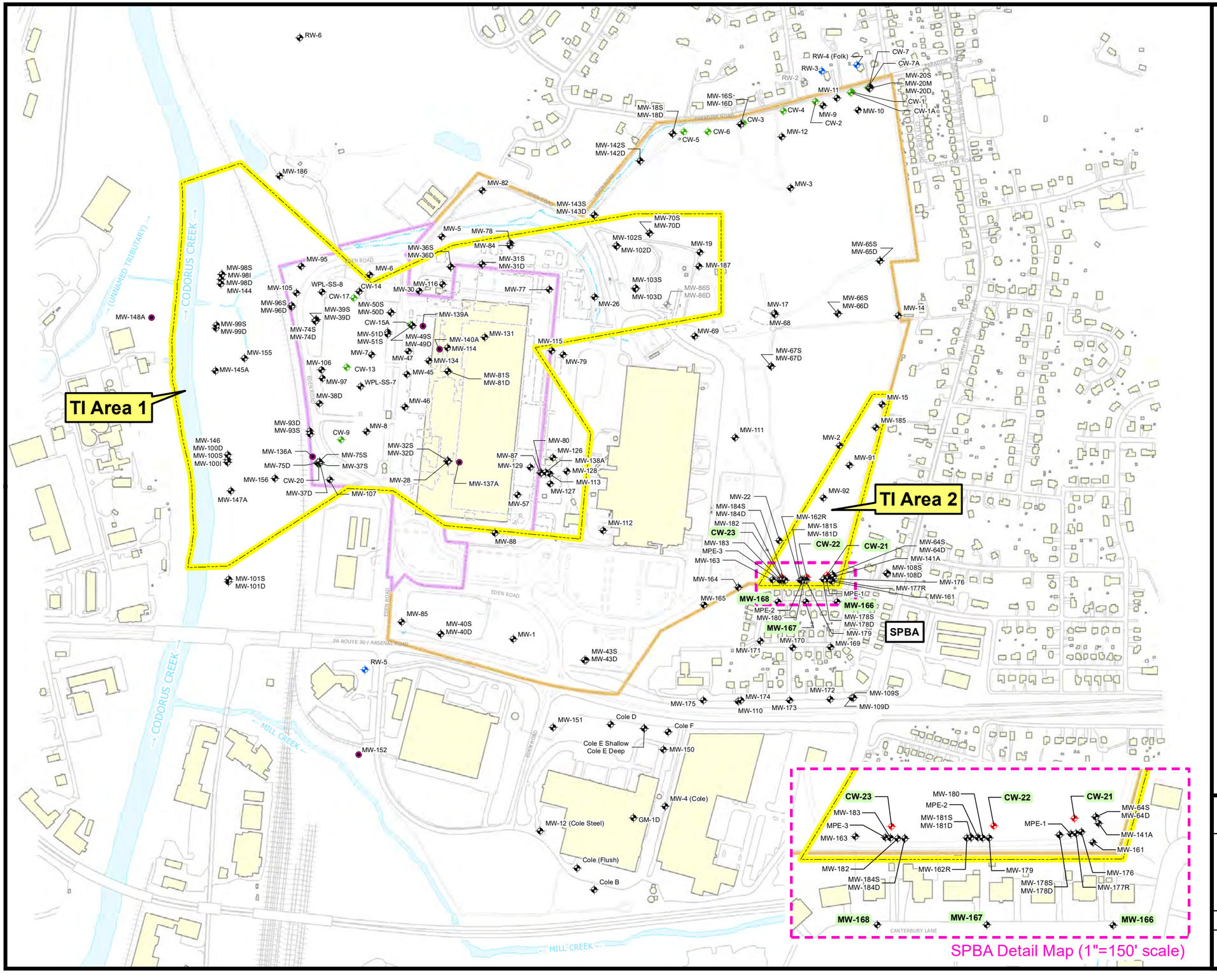

N
W E
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LEGEND

- Active Extraction Well
- Inactive Extraction Well
- Monitoring Well
- Residential Well
- Waterloo™ Monitoring Well
- Abandoned Well
- Technical Impracticability (TI) Area Boundary
- NP York 58, LLC Property Boundary (West Campus)
- Harley-Davidson Property Boundary (East Campus)
- Existing Building
- Building Demolished/Slab Removed
- Existing Stream
- Existing Water Feature
- Road, Curb or Walkway
- Fenceline
- Railroad
- MW-168 SPBA Performance Monitoring Sample Locations

Scale (feet)

0 150 300 600

Former York Naval Ordnance Plant

1425 Eden Road, York, Pennsylvania 17402

Monitoring Locations for SPBA Groundwater Extraction System Performance

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	CDO	JNK	5/22/2023	2.2-2

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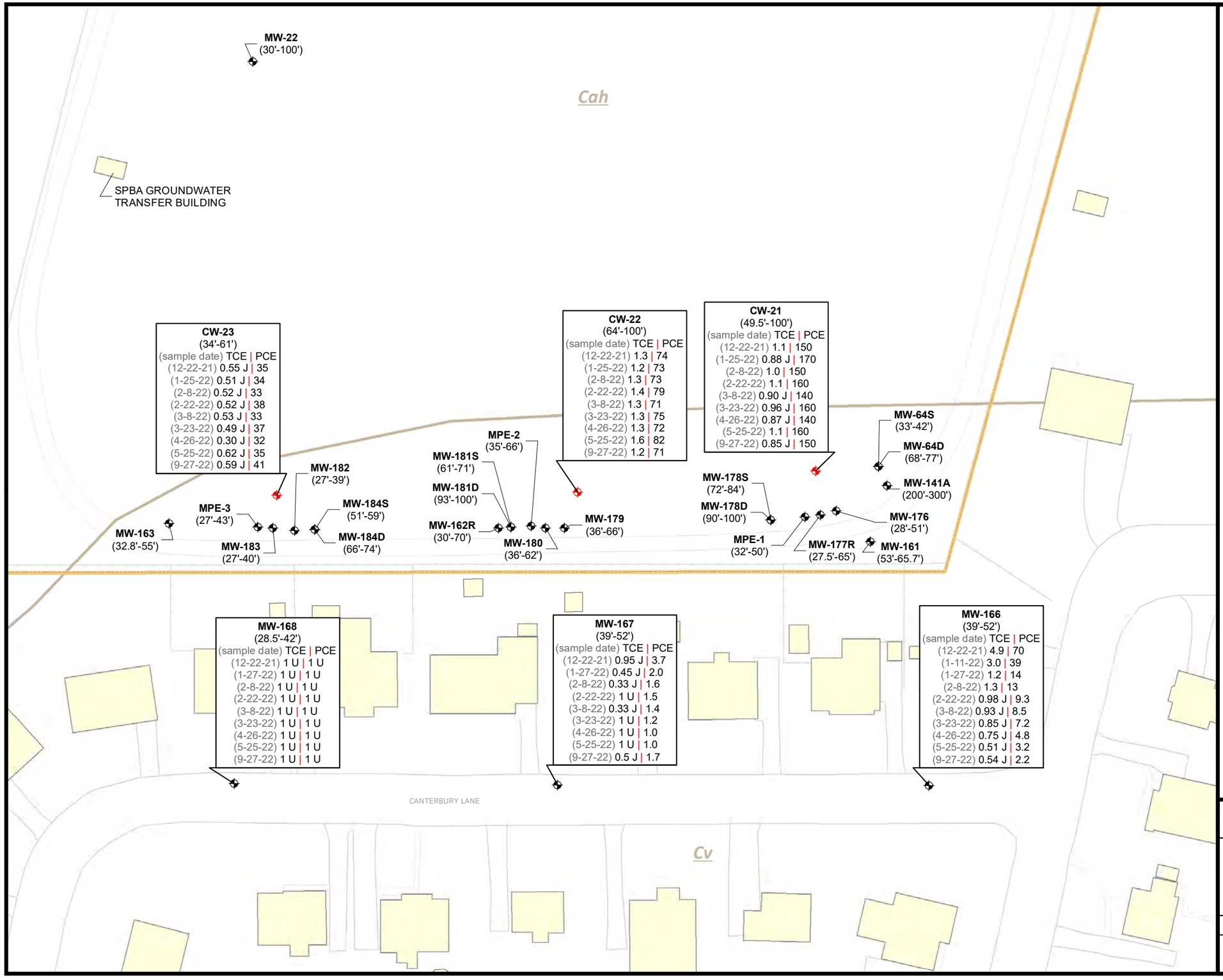

N
W E
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LEGEND

- Collection Well
- Monitoring Well
- Harley-Davidson Property Boundary (East Campus)
- Existing Building
- Antietam & Harpers Formation, undiv. (Cah)
- Vintage Formation (Cv)
- Road, Curb or Walkway
- Fenceline

MW-64S Location ID
(33'-42') Screened or Open Interval (Feet BGS)

NOTE:
1) Open intervals are shown below well designations in feet below ground surface.
2) TCE and PCE results are posted in the callout boxes for the wells sampled on the dates indicated in micrograms per liter (µg/L).
3) J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
4) U = The analyte was analyzed for but was not detected above the reported sample quantitation limit.

Scale (feet)
0 12.5 25 50

Former York Naval Ordnance Plant
1425 Eden Road, York, Pennsylvania 17402

SPBA TCE/PCE Analytical Results

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	CDO	JNK	5/8/2023	2.2-3

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COD-SW-29

→ CODORUS CREEK →

COD-SW-9

COD-SW-8

COD-SW-28

COD-SW-13

← JOHNSONS RUN ←

MOUTH OF JOHNSONS RUN

COD-SW-15

COD-SW-27

COD-SW-16

COD-SW-17

PA ROUTE 30 / ARSENAL ROAD

COD-SW-7

COD-SW-6

→ CODORUS CREEK →

COD-SW-26

INTERSTATE 83

LEGEND

- Surface Water Sampling Location
- Focused Diffuse Groundwater Discharge Location
- Harley-Davidson Property Boundary (East Campus)
- NP York 58, LLC Property Boundary (West Campus)
- Surface Water Sampling Location Downstream of Focused Diffuse Groundwater Discharge Location
- Existing Stream

Aerial Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community, dated October 2022.

Scale (feet)

0 125 250 500

N W E S

Former York Naval Ordnance Plant

1425 Eden Road, York, Pennsylvania 17402

Surface Water Monitoring Locations

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	CDO	JNK	5/3/2023	2.4-1

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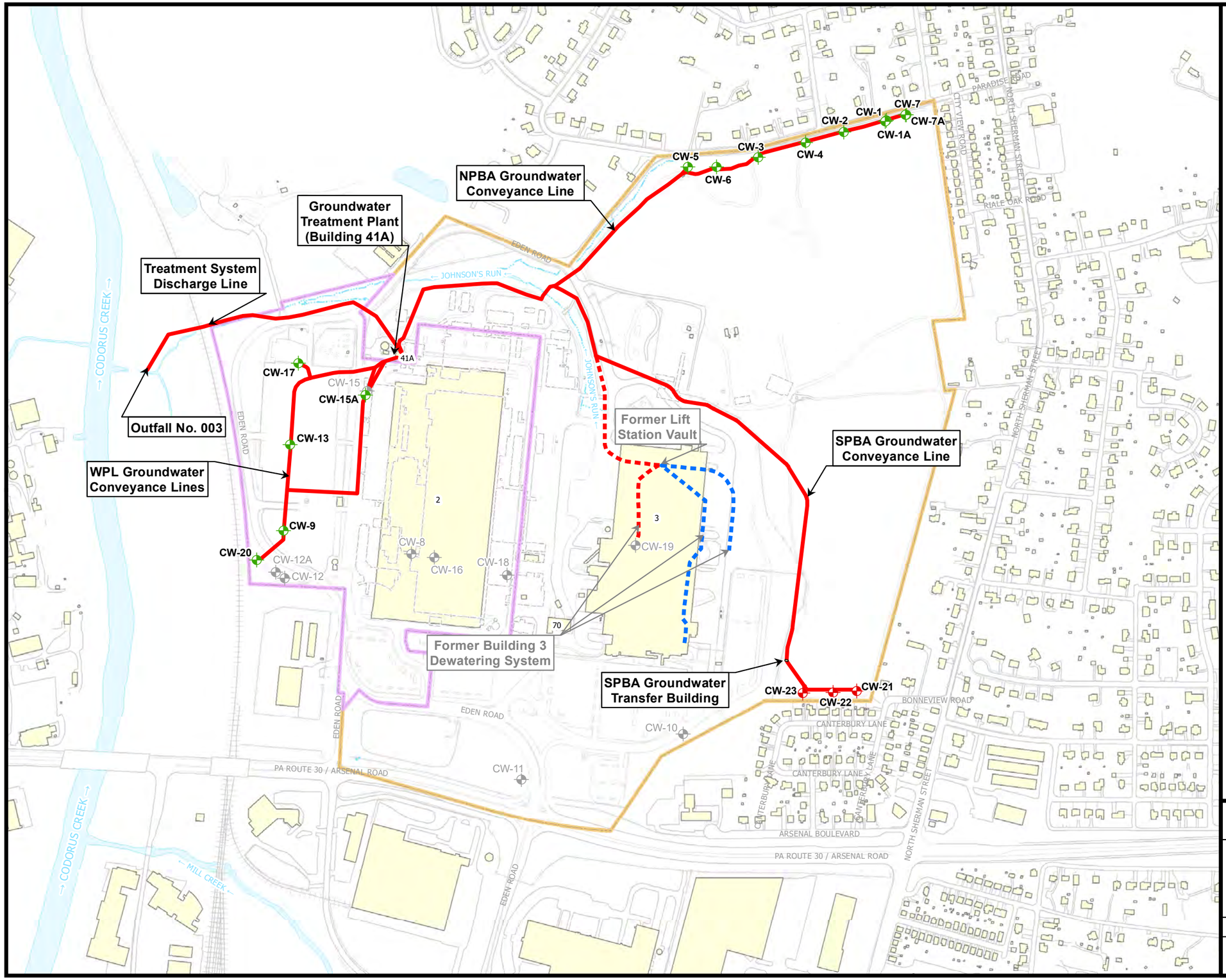

N
W E
S

LEGEND

- Extraction Well
- Inactive Extraction Well
- Abandoned Extraction Well
- Groundwater Treatment System Conveyance Line
- Former Groundwater Treatment System Conveyance Line
- Former Building 3 Groundwater Dewatering System Interceptor Trench (Abandoned)
- NP York 58, LLC Property Boundary (West Campus)
- Harley-Davidson Property Boundary (East Campus)
- Existing Building
- Building Demolished/Slab Removed
- Existing Stream
- Existing Water Feature
- Road, Curb or Walkway
- Fenceline
- Railroad

NOTES:
1) The Building 3 lift station vault and the dashed portions of the Building 3 dewatering system lines have been abandoned.
2) On September 1, 2021 a shutdown test of the WPL groundwater extraction system was initiated in accordance with the Cleanup Plan (system not operated in 2022).

Map Sources:
Harley-Davidson Motor Company Operations, Inc. (York, PA; "New Factory York Site Utility Plan", dated Oct. 5, 2011).
Hydro-Terra Group (Westminster, MD; HD-SPBA-GW SITE PLAN - GSC.dwg, undated).
Leidos (Reston, VA; "Groundwater Treatment System Location", dated Feb. 13, 2011, updated Jan. 5, 2017).

Scale (feet)
0 130 260 520

Former York Naval Ordnance Plant
1425 Eden Road, York, Pennsylvania 17402

fYNOP Groundwater Extraction and Treatment System Map

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	CDO	JNK	5/8/2023	3.1-1

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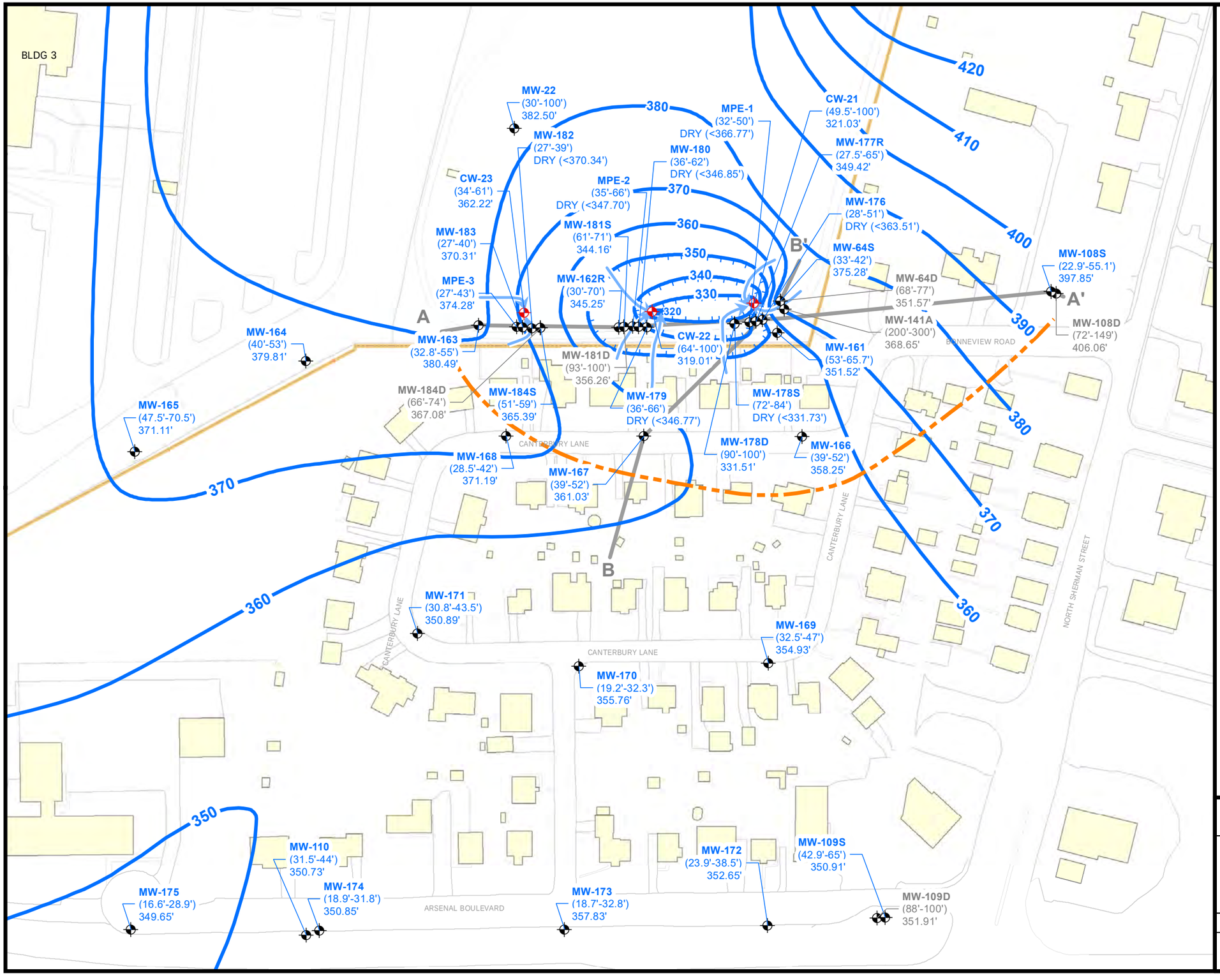

N
W E
S

LEGEND

- Extraction Well
- Monitoring Well
- Groundwater Contour (10-Foot Interval; Feet AMSL)
- Groundwater Depression (10-Foot Interval; Feet AMSL)
- Limit of Capture
- Inferred Direction of Groundwater Flow
- Cross Section Transect
- Harley-Davidson Property Boundary (East Campus)
- Existing Building
- Road, Curb or Walkway
- Fenceline

MW-64S (33'-42') 375.28' — Location ID; Screened or Open Interval (Feet BGS); Groundwater Elevation (Feet AMSL); Used in Contouring

MW-64D (68'-77') 351.57' — Location ID; Screened or Open Interval (Feet BGS); Groundwater Elevation (Feet AMSL); Not Used in Contouring

NOTE:
1) Water levels measured on 9/22/2022.
2) Groundwater elevations are in feet above mean sea level (AMSL).
3) NM = water level not measured.
4) DRY = no water in well.
5) Open intervals are shown below well designations in feet below ground surface.
6) Extraction well pumping rates in gallons per minute (gpm) on September 22, 2022 were: CW-21 (3.3 gpm), CW-22 (1.7 gpm), and CW-23 (0.4 gpm).

Scale (feet)
0 30 60 120

Former York Naval Ordnance Plant
1425 Eden Road, York, Pennsylvania 17402

SPBA Water Table Contour Map for Pumping Conditions on September 22, 2022

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	CDO	JNK	5/8/2023	3.1-2

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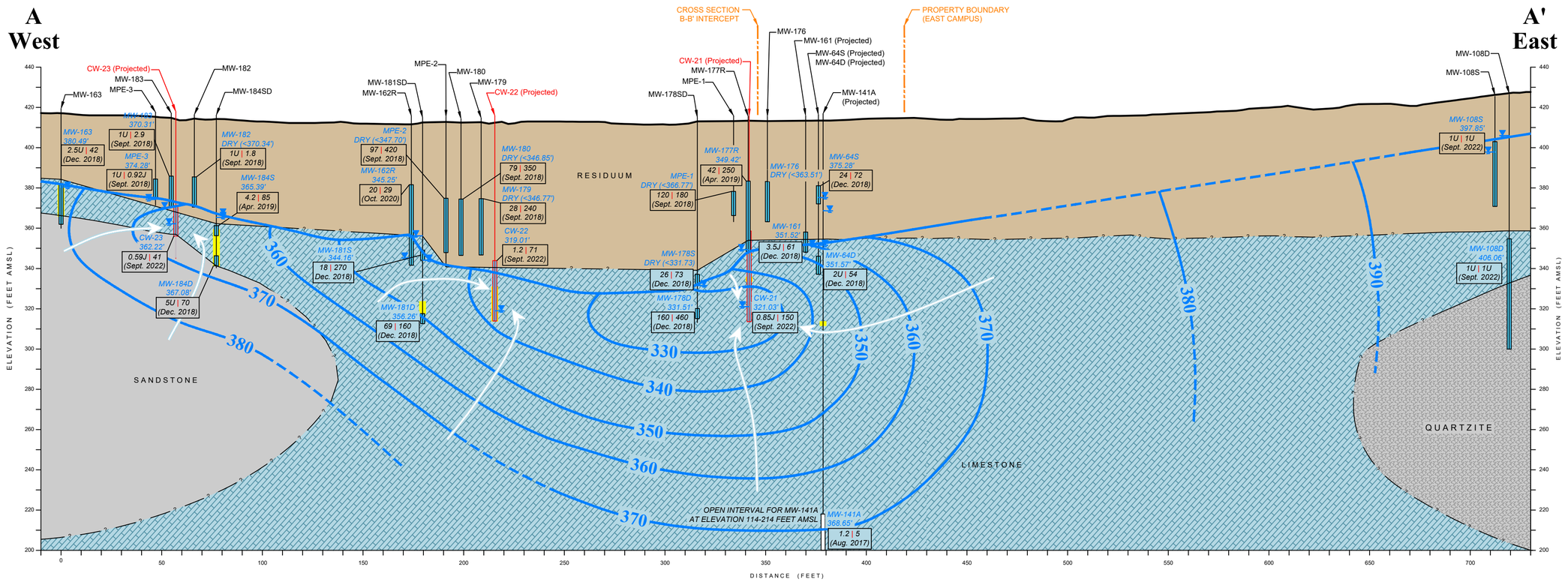

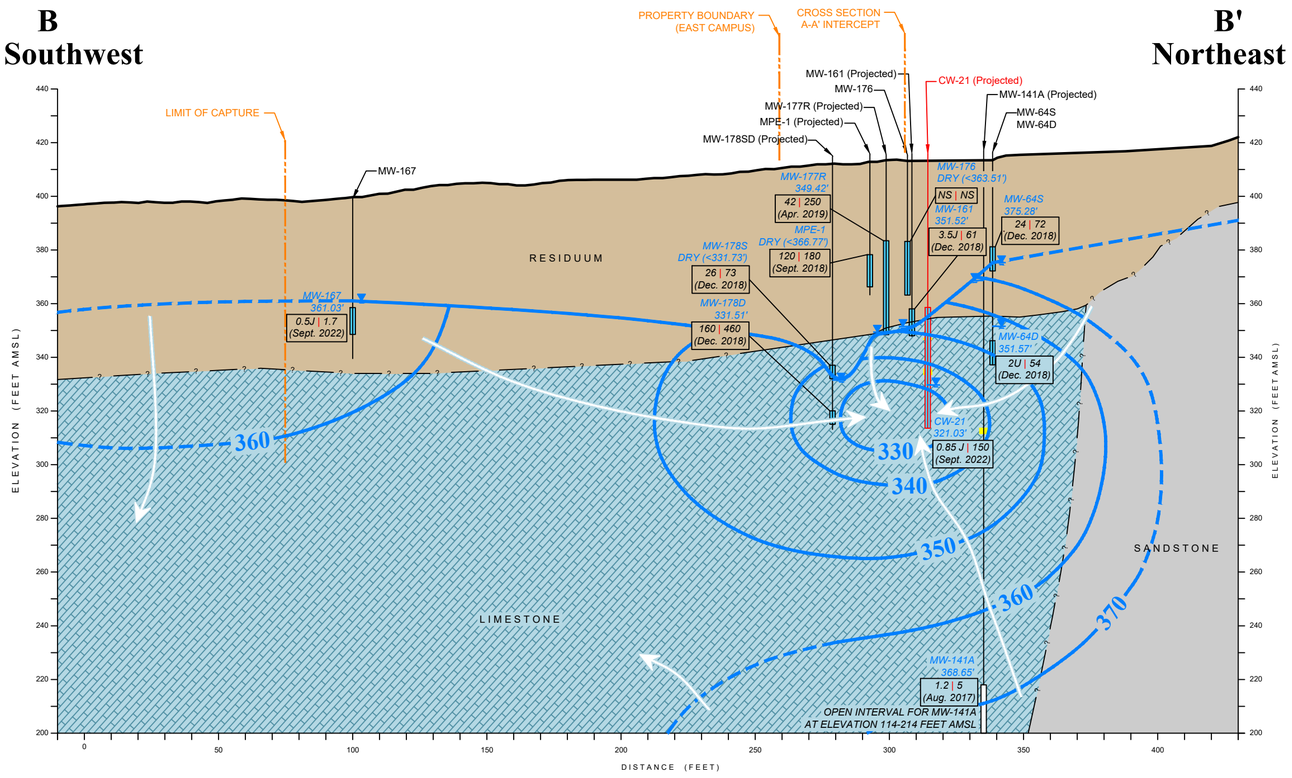

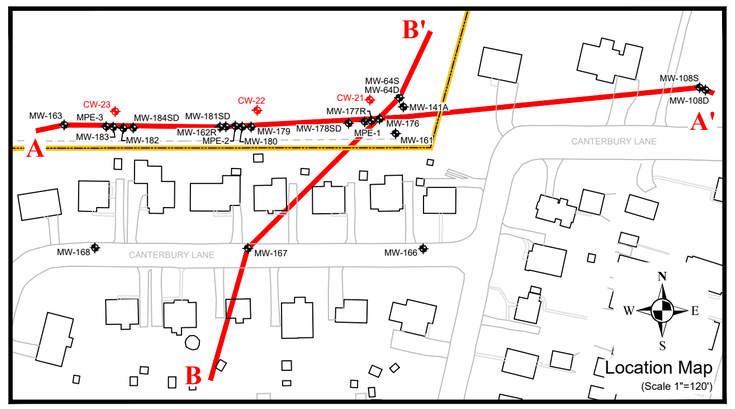

LEGEND

- Existing Grade
- Monitoring Well
- Screened Interval
- Inferred Stratigraphy
- Piezometric Level (Feet AMSL) (DRY = No Water In Well)
- Water Level Elevation and Contour (Feet AMSL) (Dashed Where Inferred)
- Direction of Groundwater Flow (Inferred)
- Void

LOCATION MAP LEGEND

- Active Groundwater Extraction Well
- Monitoring Well
- Property Boundary (East Campus)
- Cross Section Transect

NOTES:

1. MW-161 is projected from 25' south, and does not encounter limestone as depicted on the sections.
2. TCE | PCE concentrations are posted in boxes in micrograms per liter (µg/L) with date sampled.
3. J = analyte was positively identified; the associated numerical valve is the approximate concentration of the analyte in the sample.
4. U = analyte as analyzed for but was not detected above the reported sample authorization limit.
5. NS = sample not collected for analysis
6. Average daily pumping rates for CW-21, 22, and 23 on 9/22/22 were 3.3, 1.7, and 0.4 gpm, respectively.

Horizontal Scale 0 20' 40'

Vertical Scale 0 20' 40'

No Vertical Exaggeration

Former York Naval Ordnance Plant

1425 Eden Road, York, Pennsylvania 17402

SPBA Cross Sections A-A' and B-B' Showing Piezometric Contours for Pumping Conditions (September 22, 2022) and TCE/PCE Analytical Results

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	CDO	JNK	5/8/2023	3.1-3

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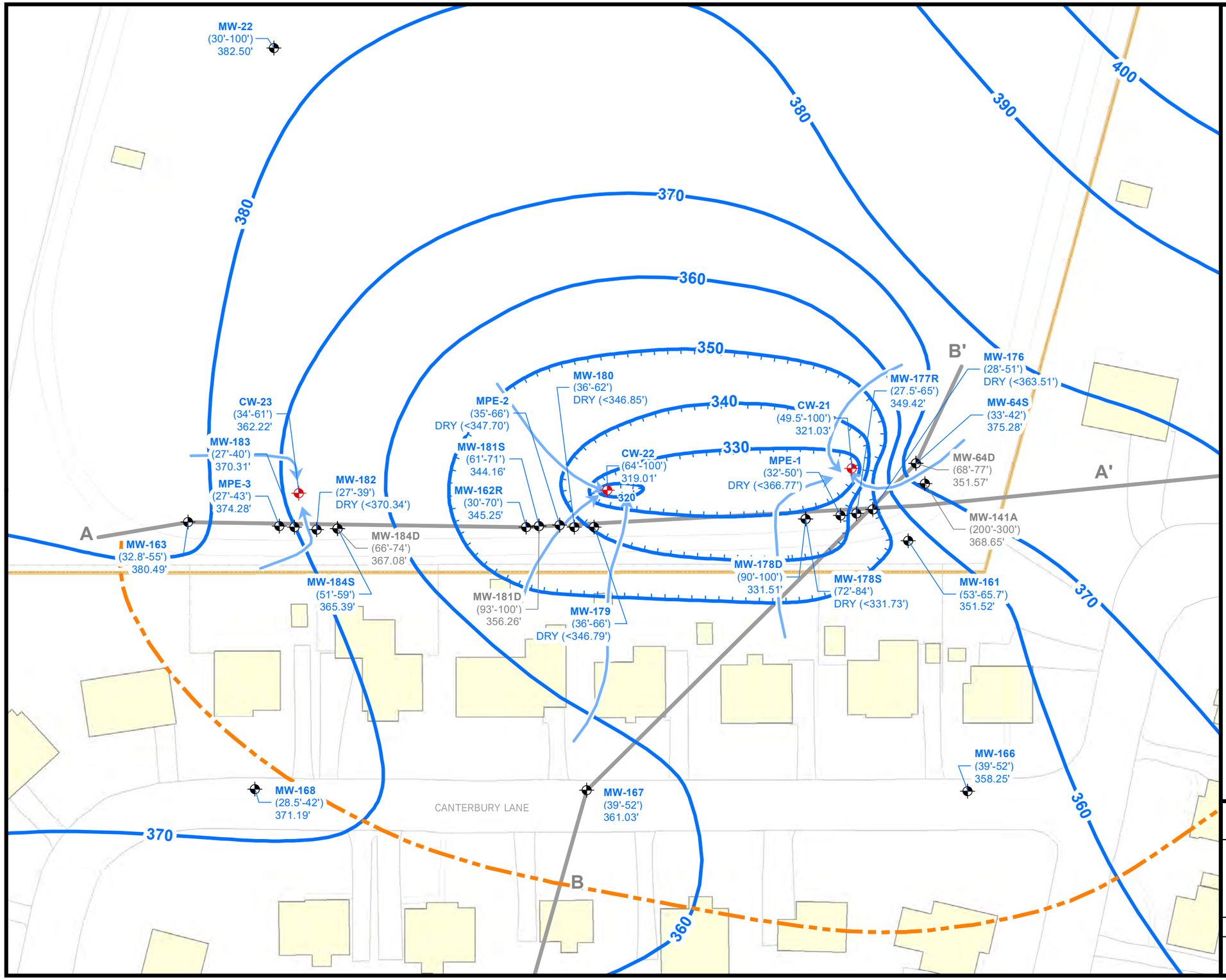

N
W E
S

LEGEND

- Extraction Well
- Monitoring Well
- Groundwater Contour (10-Foot Interval; Feet AMSL)
- Groundwater Depression (10-Foot Interval; Feet AMSL)
- Limit of Capture
- Inferred Direction of Groundwater Flow
- Cross Section Transect
- Harley-Davidson Property Boundary (East Campus)
- Existing Building
- Road, Curb or Walkway
- Fenceline

MW-64S (33'-42') 375.28' — Location ID; Screened or Open Interval (Feet BGS); Groundwater Elevation (Feet AMSL); Used in Contouring

MW-64D (68'-77') 351.57' — Location ID; Screened or Open Interval (Feet BGS); Groundwater Elevation (Feet AMSL); Not Used in Contouring

NOTE:
1) Water levels measured on 9/22/2022.
2) Groundwater elevations are in feet above mean sea level (AMSL).
3) NM = water level not measured.
4) DRY = no water in well.
5) Open intervals are shown below well designations in feet below ground surface.
6) Extraction well pumping rates in gallons per minute (gpm) on September 22, 2022 were: CW-21 (3.3 gpm), CW-22 (1.7 gpm), and CW-23 (0.4 gpm).

Scale (feet)
0 12.5 25 50

Former York Naval Ordnance Plant
1425 Eden Road, York, Pennsylvania 17402

SPBA Water Table Contour Map (September 22, 2022)

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	CDO	JNK	5/8/2023	3.1-4

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Figure 3.1-5
SPBA Water Level Elevation Tracking - CW-21 Area Wells (Pumping Conditions)
Former York Naval Ordnance Plant - York, PA

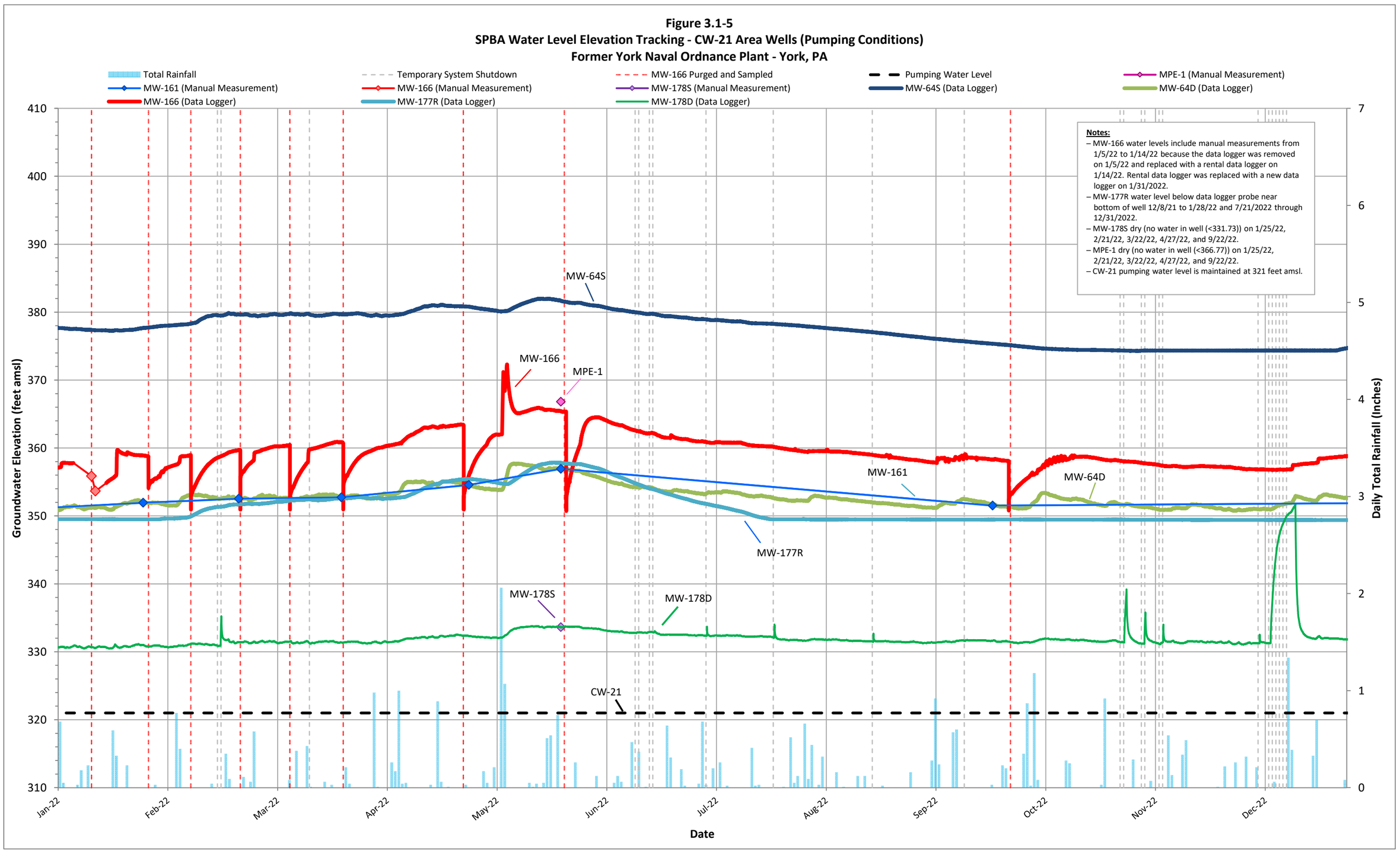


Figure 3.1-6
SPBA Water Level Elevation Tracking - CW-22 Area Wells (Pumping Conditions)
Former York Naval Ordnance Plant - York, PA

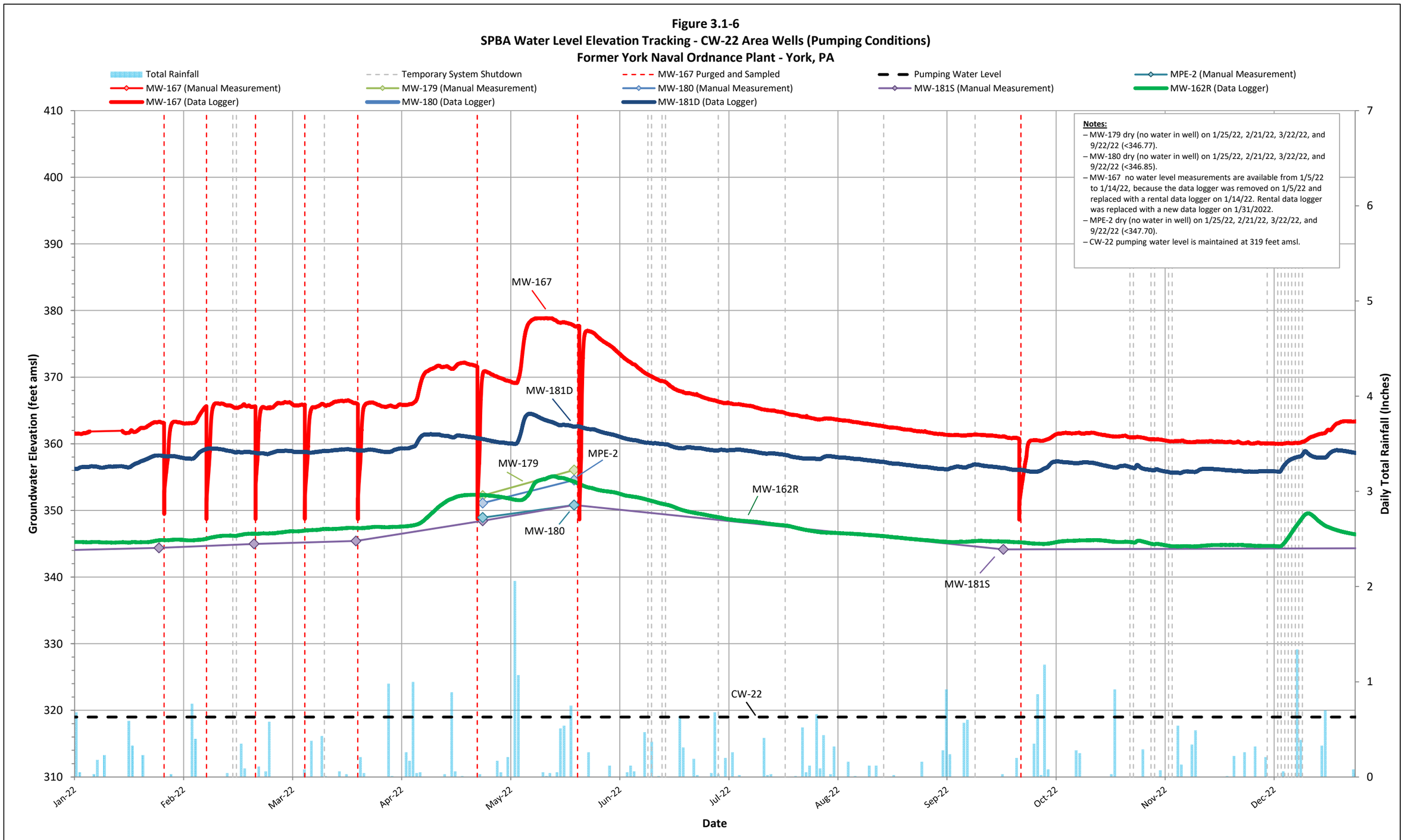


Figure 3.1-7
SPBA Water Level Elevation Tracking - CW-23 Area Wells (Pumping Conditions)
Former York Naval Ordnance Plant - York, PA

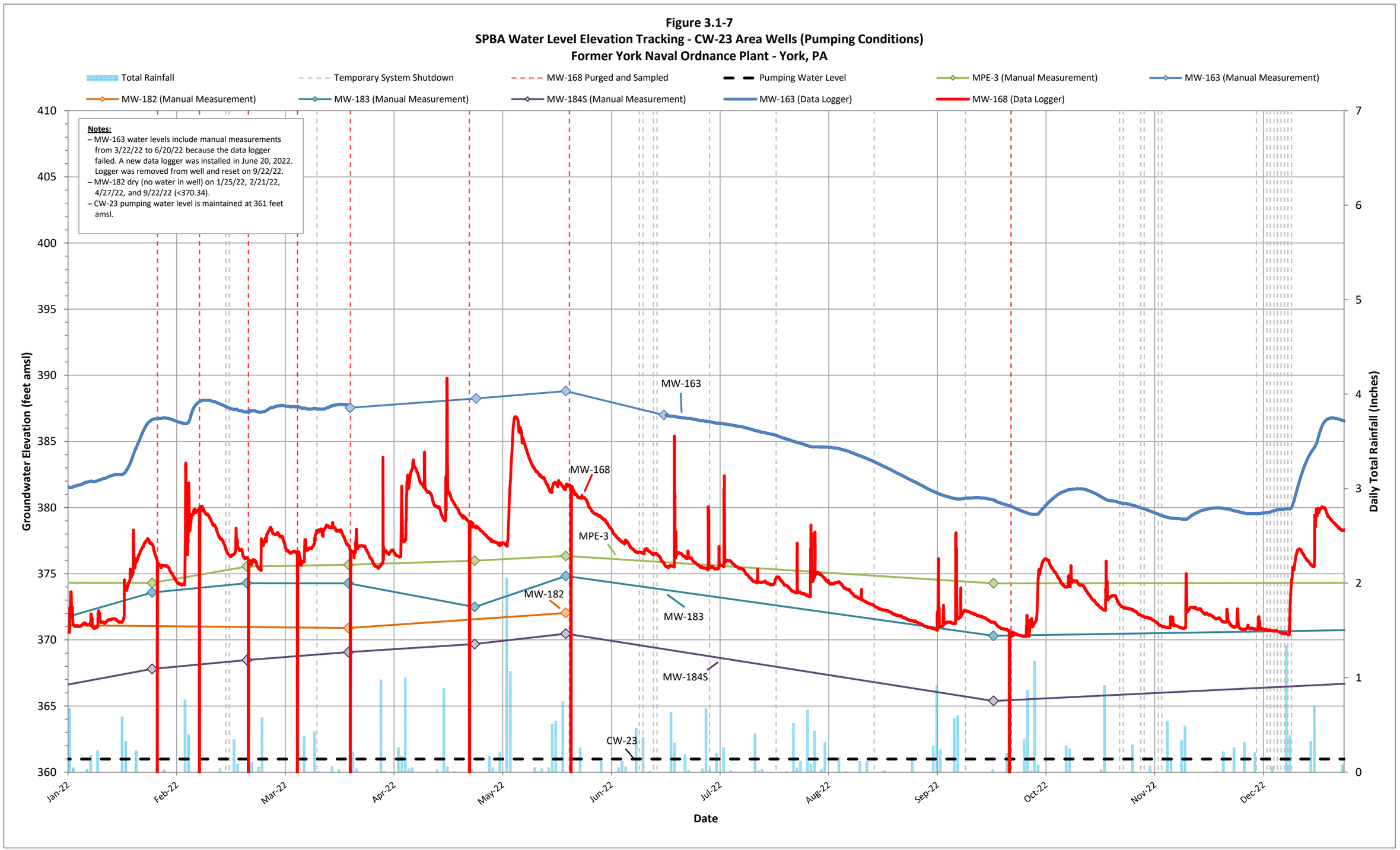


Figure 3.1-8
SPBA Groundwater Extraction System Average Daily Flow Rates for January through December 2022
Former York Naval Ordnance Plant - York, PA

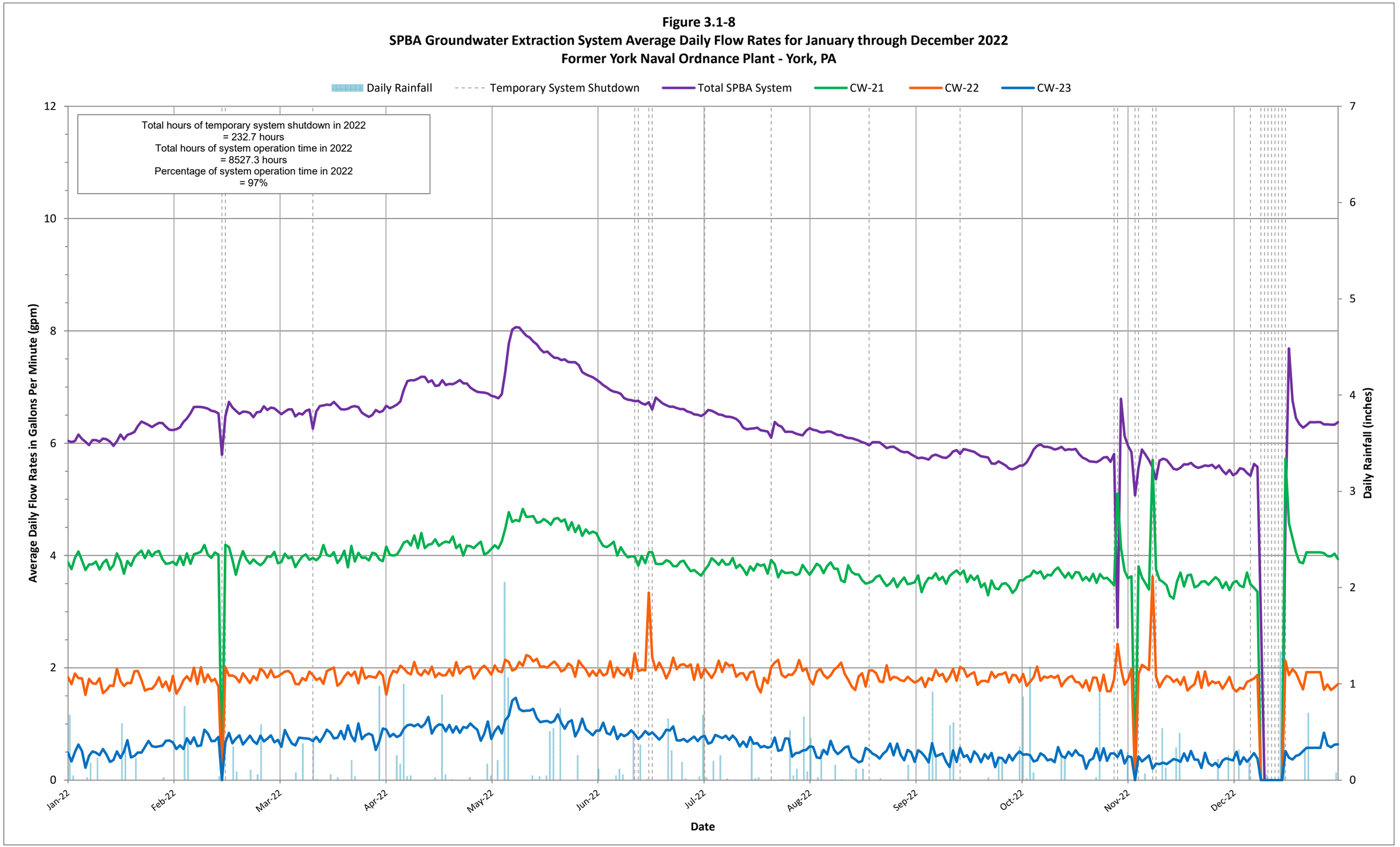
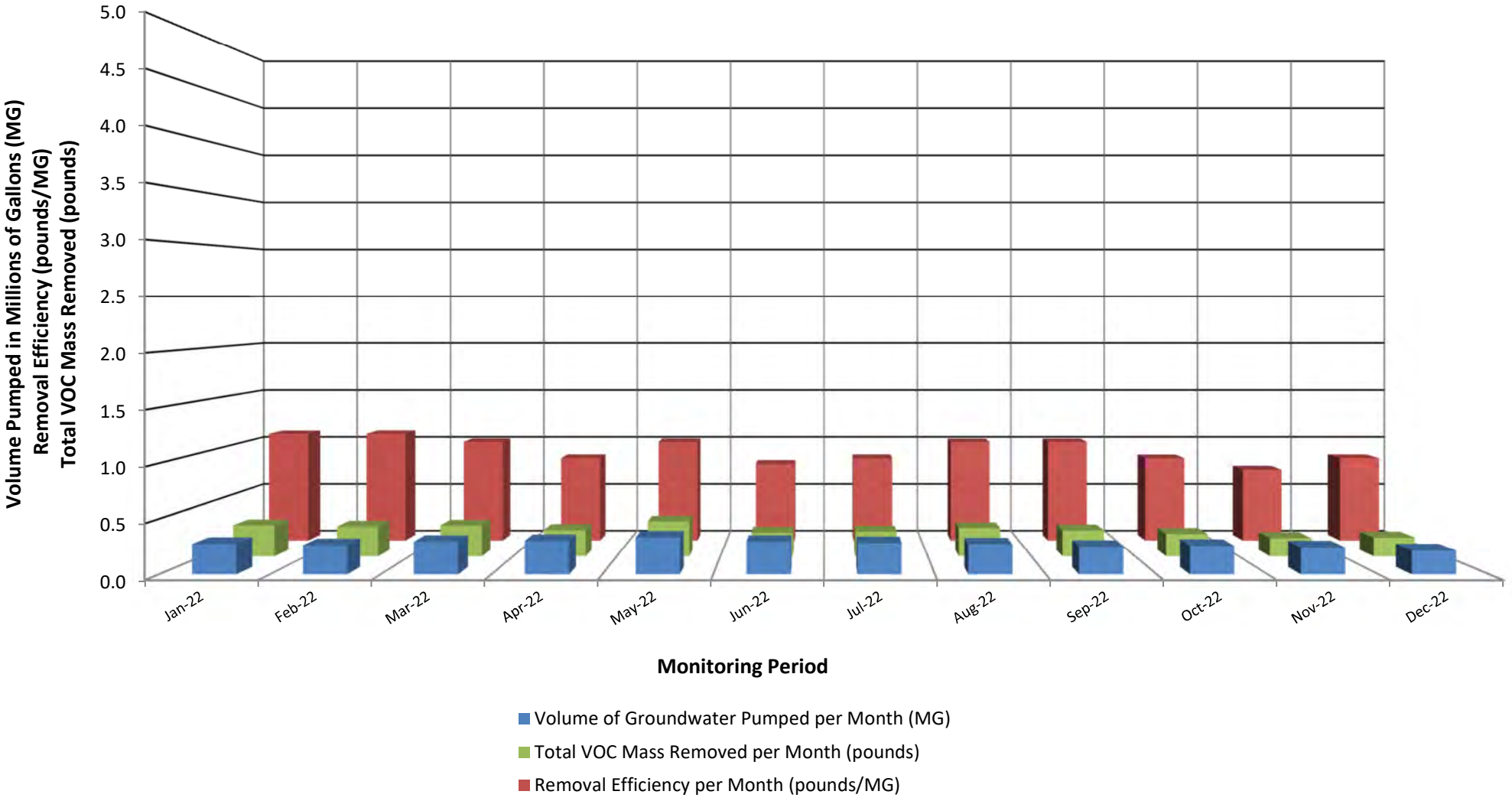


Figure 3.1-9
SPBA Remedial Action Performance Data for January through December 2022
Former York Naval Ordnance Plant - York, PA



(Well)
Location ID
Top of Open Interval FtBGS - Bottom of Open Interval FtBGS (Open Interval Thickness)
Groundwater Elevation in FtAMSL (September 2022) Used for Contouring
Groundwater Elevation in FtAMSL (September 2022) Not Used for Contouring
NM = Water level not measured
AB = Abandoned
Trichloroethene (TCE) and Tetrachloroethylene (PCE)
2008 RI Round 1 Event
2013 Comprehensive Sampling Event
2014 Comprehensive Sampling Event
2015 Comprehensive Sampling Event
2016 Comprehensive Sampling Event
2017 Comprehensive Sampling Event
2018 Comprehensive Sampling Event
2019 Comprehensive Sampling Event
2020 Comprehensive Sampling Event
2021 Comprehensive Sampling Event
2022 Comprehensive Sampling Event
NS = Not Sampled
AB = Abandoned
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
(-) = Open interval unknown.

MW-18S
45'-65' (20')
467.64A'
TCE | PCE
1200 | 50 U
45 | 5 U
5.5 | 1 U
11 | 1 U
1.2 | 1 U
4.1 | 1 U
6.8 | 1 U
3.7 J | 1 U
2.7 | 1 U
2.4 | 1 U
1.7 | 1 U

MW-18D
130'-140' (10')
470.56A'
TCE | PCE
1400 | 1.3
42 | 5 U
8.1 | 1 U
9.5 | 1 U
5.5 | 1 U
3.8 | 1 U
6.6 | 1 U
3 | 1 U
3.6 | 1 U
2.9 | 1 U
1.9 | 1 U

MW-16S
98'-110' (12')
512.60A'
TCE | PCE
19 J | 310
19 J | 450
9.3 | 110
5.6 | 6.7
6.2 | 48
7.7 J | 1.7 J
20 | 1.1
15 | 1 U
17 | 1.9
18 | 1 U
16 | 0.74 J

CW-2
48'-150' (102')
526.58'
TCE | PCE
22 | 0.89 J
6.3 | 3
14 | 1.4
4.9 | 3.2
15 | 0.97 J
10 | 0.91 J
12 | 1.3
6.8 | 1.1
6 | 1
0.62 J | 2.4
7.1 | 0.98 J

RW-2
(-)
AB
TCE | PCE
2 | 1 U
1.9 | 1 U
3.1 | 1 U
3.8 | 1 U
3.7 | 1 U
3.4 | 1 U
2.2 | 1 U
3.9 | 1 U
4 | 1 U
AB in 2021

CW-1A
29'-74' (45')
528.76'
TCE | PCE
52 | 0.79 J
26 | 1.7
31 | 2.8
28 | 1.9
56 | 2.3
53 | 1.8
41 | 1.8
36 J | 1.5 J
32 | 1.2
9.3 | 0.65 J
20 | 1.8

RW-4 (Folk)
(-)
534.60'
TCE | PCE
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
NS | NS
1 U | 1 U

MW-20S
28'-61' (33')
529.32'
TCE | PCE
950 | 29
90 | 2.7 J
110 J | 5.8 J
81 | 3.8
48 | 4.3
32 | 2.6
130 | 17
14 | 2.8
17 | 2.2
68 | 16
11 | 1.4

MW-20M
72'-85' (13')
529.87'
TCE | PCE
30 | 0.36 J
18 | 1 U
0.85 J | 1 U
13 | 0.30 J
4.6 | 0.52 J
32 J | 0.48 J
20 | 0.74 J
21 | 2 U
25 | 0.49 J
21 | 0.39 J
18 | 0.73 J

MW-82
53.5'-76' (22.5')
344.22'
TCE | PCE
33 | 1.7
8.5 | 1.7
7.3 | 1.9
8.3 | 1.9
6.7 | 1.8
5.4 | 1.3
5.8 | 1.5 J
1.9 | 1.1
1.3 | 1.4
1.3 | 1.5
1.2 | 1.8

MW-143S
24'-54.5' (30.5')
365.36'
TCE | PCE
NS | NS
3 | 1.1
1.9 | 0.84 J
2.2 | 1 U
1.3 | 0.76 J
1.1 | 0.57 J
1.1 | 0.55 J
1 U | 0.51 J
0.47 J | 1.1
0.46 J | 0.83 J
1 U | 0.59 J

MW-143D
117.4'-134' (16.6')
392.18'
TCE | PCE
NS | NS
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U

MW-142D
122'-145.4' (23.4')
421.41'
TCE | PCE
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U

MW-142S
56'-70' (14')
433.60'
TCE | PCE
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U
1 U | 1 U

MW-12
30'-100' (70')
501.22'
TCE | PCE
56 | 2.1
130 | 4.7 J
90 J | 5.4 J
120 | 6.4
93 | 4.3
61 | 2.7
67 | 4.1
57 | 3.0 J
80 | 3.6
75 | 3.9
64 | 2.9

MW-9
59'-97' (38')
526.09'
TCE | PCE
150 | 2.2 J
44 | 5 U
41 J | 0.22 J
29 | 1 U
19 | 1 U
20 | 1 U
27 | 1 U
5.6 J | 1 U
5.4 | 1 U
4.2 | 1 U
10 | 1 U

MW-3
50'-102' (52')
473.97'
TCE | PCE
39 | 0.35 J
32 | 0.47 J
31 | 0.33 J
31 | 0.39 J
28 | 0.54 J
32 | 1 U
18 | 1 U
4.2 | 1 U
2.8 | 0.31 J
3.1 | 0.3 J
2 | 1 U

MW-65S
71.3'-86' (14.7')
496.52'
TCE | PCE
99 | 3.1
NS | NS
NS | NS
NS | NS
40 | 3
NS | NS
NS | NS
17 | 1.9
12 | 2.2
12 | 2.4
6.4 | 2.1

S-6 (Tate Spring)
NM

S-7 (Herman Spring)
NM

MW-78
(7.5'-39')
350.43'

MW-84
(67'-98')
349.62'

MW-31S
(12'-36')
348.87'

MW-31D
(66'-81')
348.79'

MW-102S
(41'-65')
362.34'

MW-102D
(75'-99')
390.47'

MW-70S
(15.8'-35')
391.32'

MW-70D
(68'-85')
390.80'

MW-19
(30'-120')
403.75'

Johnson 2
370.75'

MW-4
MW-52
MW-53
MW-71S
MW-71D
MW-104

CW-5
(18.5'-83')
451.39'

CW-6
(30'-145')
475.44'

CW-3
(20'-203')
503.65'

CW-4
(63'-150')
516.59'

MW-16D
(190'-201')
518.51'A

RW-1

MW-11
(20'-74')
534.95'

CW-1
(68'-175')
527.38'

CW-7A
(34'-66')
529.47'

MW-10
(78'-120')
526.43'

MW-20D
(153'-165')
538.86'

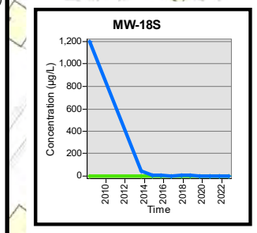
CW-7
(61'-150')
531.85'

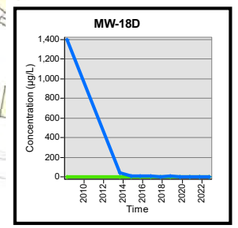
CITY VIEW ROAD

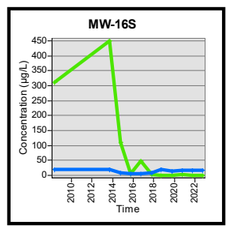
RIALE OAK ROAD

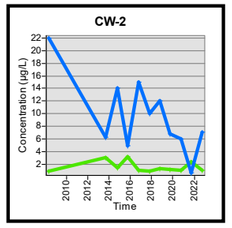
MW-65D
(89'-103')
497.56'

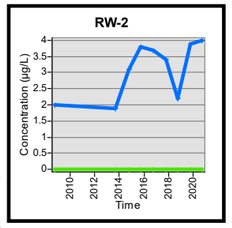
450 460 470 480 490 500 510 520 530 440 430 420 410 400 390 380 370 360

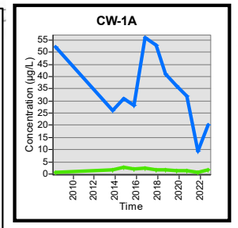


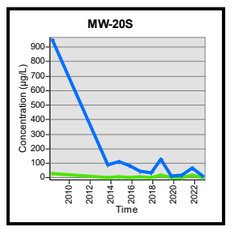


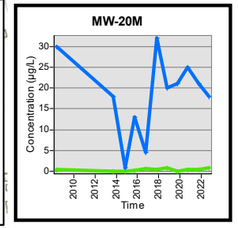


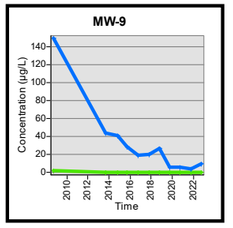


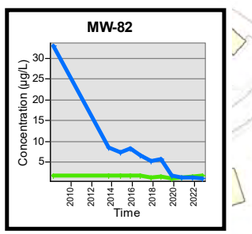


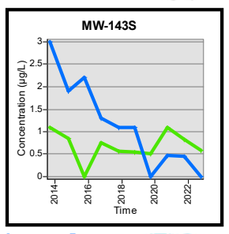


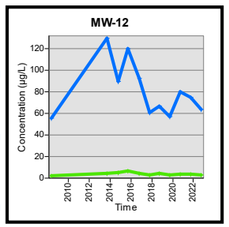


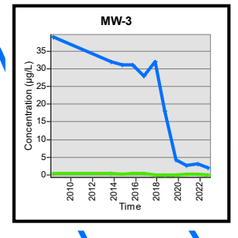


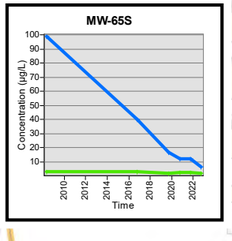












LEGEND

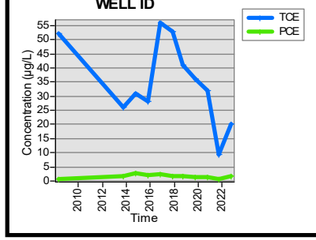
- Extraction Well
- Inactive Extraction Well
- Monitoring Well
- Residential Well
- Abandoned Well
- Spring
- Surface Water
- Groundwater Contour (10-Foot Interval; Feet AMSL)
- Groundwater Contour (2-Foot Interval; Feet AMSL)
- Groundwater Flow Path (Isotropic Aquifer)
- Technical Impracticability (TI) Area 1 Boundary
- NP York 58, LLC Property Boundary (West Campus)
- Harley-Davidson Property Boundary (East Campus)
- Existing Building
- Building Demolished/Slab Removed
- Existing Stream
- Existing Water Feature
- Road, Curb or Walkway
- Fenceline
- CW-7A (34'-66') 529.47' — Location ID; Screened or Open Interval (Feet BGS); Groundwater Elevation (Feet AMSL) Used in Contouring
- CW-7 (61'-150') 531.85' — Location ID; Screened or Open Interval (Feet BGS); Groundwater Elevation (Feet AMSL) Not Used in Contouring

NOTES:
A - Artesian
AMSL - Above Mean Sea Level
BGS - Below Ground Surface
Well screen intervals shown as (-) are unknown.
RW-2 abandoned in August 2021.

Scale (feet)
0 50 100 200

N W E S

WELL ID



Former York Naval Ordnance Plant
1425 Eden Road, York, Pennsylvania 17402

NPBA Water Table Contour Map and TCE/PCE Analytical Results

DRAWN:	CHECKED:	APPROVED:	DATE:	FIGURE:
JPB	CDO	JNK	5/4/2023	3.3-1

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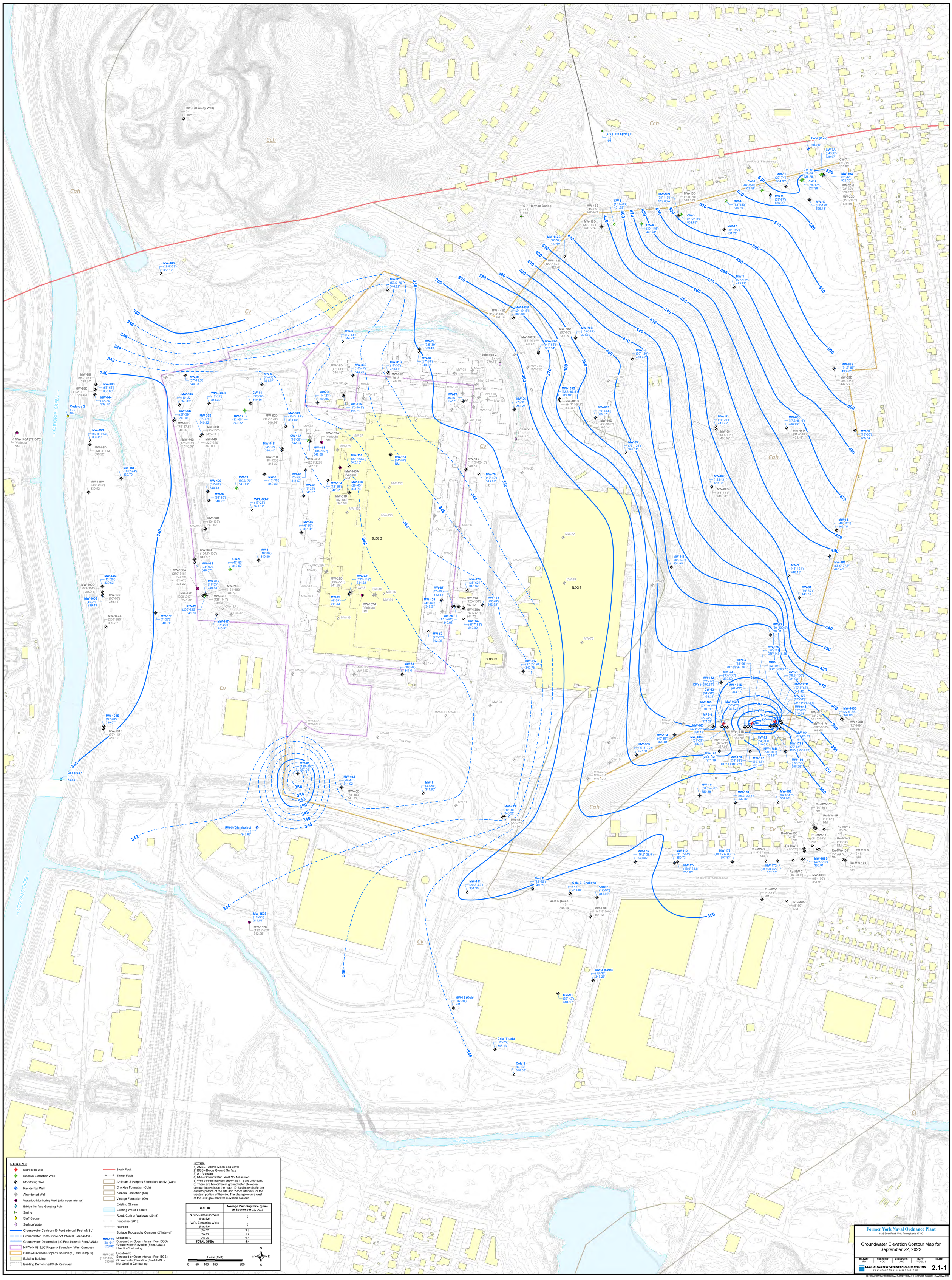
Plates



LEGEND

- Extraction Well
- Inactive Extraction Well
- Monitoring Well
- Residential Well
- Abandoned Well
- Waterloo Monitoring Well (with open interval)
- Bridge Surface Gauging Point
- Spring
- Staff Gauge
- Surface Water
- Groundwater Contour (10-Foot Interval; Feet AMSL)
- Groundwater Contour (2-Foot Interval; Feet AMSL)
- Groundwater Depression (10-Foot Interval; Feet AMSL)
- NP York 5B, LLC Property Boundary (West Campus)
- Harley-Davidson Property Boundary (East Campus)
- Existing Building
- Building Demolished/Slab Removed
- Block Fault
- Thrust Fault
- Antietam & Harpers Formation, undiv. (Cah)
- Chickies Formation (Cch)
- Kinzers Formation (Ck)
- Vintage Formation (Cv)
- Existing Stream
- Existing Water Feature
- Road, Curb or Walkway (2019)
- Fenceline (2019)
- Railroad
- Surface Topography Contours (2' Interval)
- MW-20S (28'-61') 529.32' — Location ID; Screened or Open Interval (Feet BGS); Groundwater Elevation (Feet AMSL); Used in Contouring
- MW-20D (153'-165') 538.86' — Location ID; Screened or Open Interval (Feet BGS); Groundwater Elevation (Feet AMSL); Not Used in Contouring

NOTES:
1) AMSL - Above Mean Sea Level
2) BGS - Below Ground Surface
3) A - Artesian
4) NM - Groundwater Level Not Measured
5) Well screen intervals shown as (-) are unknown.
6) There are two different groundwater elevation contour intervals on the map; 10-foot intervals for the eastern portion of the site and 2-foot intervals for the western portion of the site. The change occurs west of the 350' groundwater elevation contour.

Well ID	Average Pumping Rate (gpm) on September 22, 2022
NPBA Extraction Wells (Inactive)	0
WPL Extraction Wells (Inactive)	0
CW-21	3.3
CW-22	1.7
CW-23	0.4
TOTAL SPBA	**5.4**

Scale (feet)
0 50 100 150 300

N W E S

Former York Naval Ordnance Plant
1425 Eden Road, York, Pennsylvania 17402

Groundwater Elevation Contour Map for September 22, 2022

DRAWN:	CHECKED:	APPROVED:	DATE:	PLATE:
JPB	CDO	JNK	7/13/2023	2.1-1

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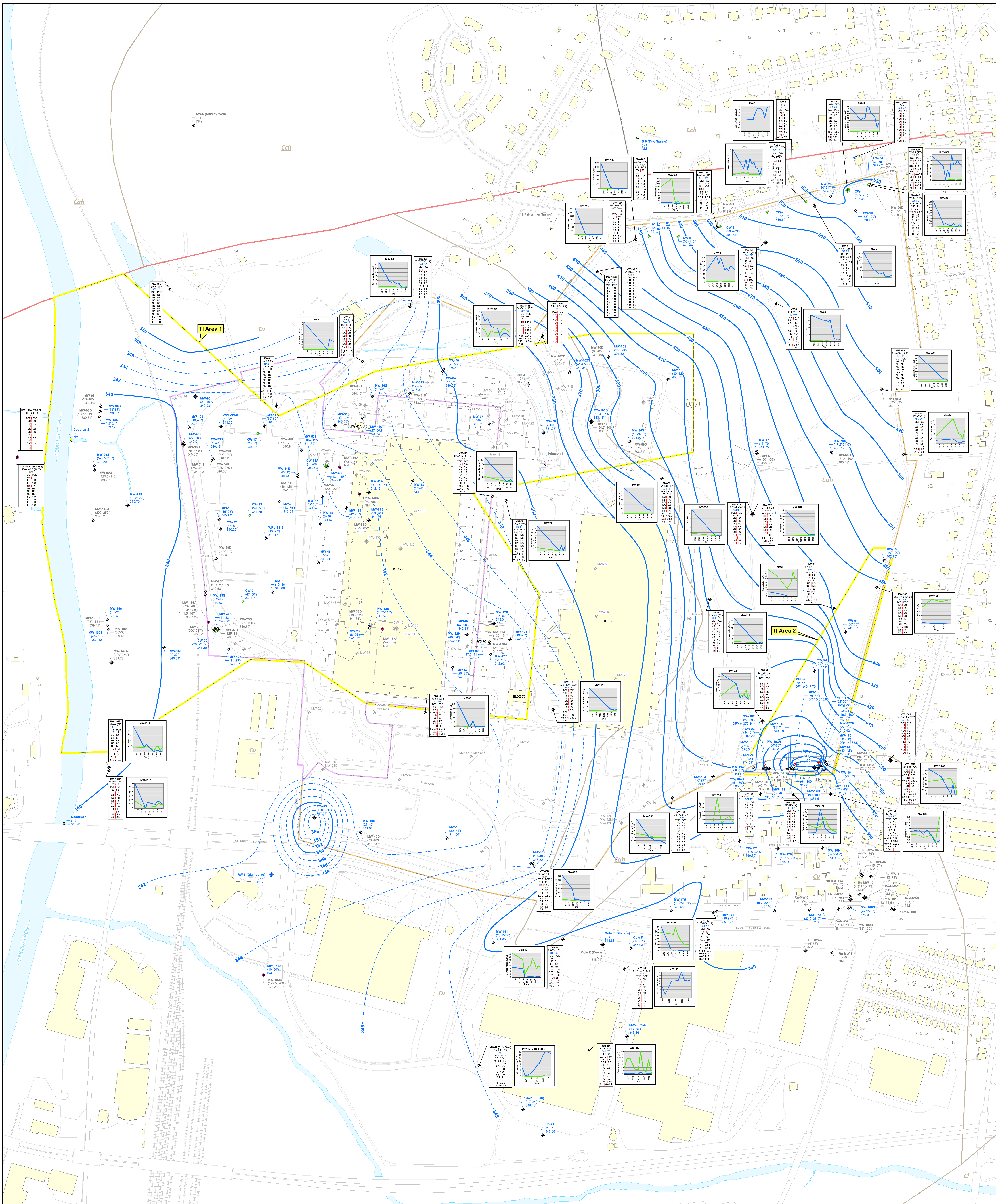

LEGEND

- Extraction Well
- Inactive Extraction Well
- Monitoring Well
- Residential Well
- Abandoned Well
- Waterloo Monitoring Well (with open interval)
- Bridge Surface Gauging Point
- Spring
- Staff Gauge
- Surface Water
- Groundwater Contour (10-Foot Interval; Feet AMSL)
- Groundwater Contour (2-Foot Interval; Feet AMSL)
- Groundwater Depression (10-Foot Interval; Feet AMSL)
- Technical Impracticability (TI) Area 1 Boundary
- NP York 58, LLC Property Boundary (West Campus)
- Harley-Davidson Property Boundary (East Campus)
- Existing Building
- Building Demolished/Slab Removed
- Block Fault
- Thrust Fault
- Antietam & Harpers Formation, undiv. (Cah)
- Chickies Formation (Cch)
- Kinzers Formation (Ck)
- Vintage Formation (Cv)
- Existing Stream
- Existing Water Feature
- Road, Curb or Walkway (2019)
- Fenceline (2019)
- Railroad

MW-20S / (28'-61') / 531.67' — Location ID / Screened or Open Interval (Feet BGS) / Groundwater Elevation (Feet AMSL) Used in Contouring

MW-20M / (72'-85') / 532.33' — Location ID / Screened or Open Interval (Feet BGS) / Groundwater Elevation (Feet AMSL) Not Used in Contouring

Scale (feet): 0 50 100 150 300

NOTES:
1) AMSL - Above Mean Sea Level
2) BGS - Below Ground Surface
3) A - Artesian
4) NM - Groundwater Level Not Measured
5) Well screen intervals shown as (-) are unknown.
6) There are two different groundwater elevation contour intervals on the map: 10-foot intervals for the eastern portion of the site and 2-foot intervals for the western portion of the site. The change occurs west of the 350' groundwater elevation contour.

Well ID	Average Pumping Rate (gpm) on September 22, 2022
NPBA Extraction Wells (Inactive)	0
WPL Extraction Wells (Inactive)	0
CW-21	3.3
CW-22	1.7
CW-23	0.4
TOTAL SPBA	**5.4**

WELL ID — Concentration (µg/L) vs. Time; TCE, PCE

Location Identification
Top of Open Interval Feet BGS - Bottom of Open Interval Feet BGS (Open Interval Thickness)
Groundwater Elevation in Feet AMSL (September 2022) Used for Contouring
Groundwater Elevation in Feet AMSL (September 2022) Not Used for Contouring
NM = Water level not measured
AB = Abandoned
Trichloroethene (TCE) and Tetrachloroethylene (PCE)
2008 RI Round 1 Event
2013 Comprehensive Sampling Event
2014 Comprehensive Sampling Event
2015 Comprehensive Sampling Event
2016 Comprehensive Sampling Event
2017 Comprehensive Sampling Event
2018 Comprehensive Sampling Event
2019 Comprehensive Sampling Event
2020 Comprehensive Sampling Event
2021 Comprehensive Sampling Event
2022 Comprehensive Sampling Event
NS = Not Sampled
AB = Abandoned
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
(-) = Open interval unknown.

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TCE and PCE Groundwater Sampling Results in MNA Areas

DRAWN:	CHECKED:	APPROVED:	DATE:	PLATE:
JPB	CDO	JNK	7/13/2023	2.1-2

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Appendix A

Groundwater and Surface Water Sampling Documentation*

** - in portable document format (PDF) on the fYNOP public website at https://yorksiteremedy.com*

Appendix B

Laboratory Analytical Reports for 2022 Samples*

** - in portable document format (PDF) on the fYNOP public website at https://yorksiteremedy.com*

Appendix C

SPBA Water Level Elevation Graphs*

** - in portable document format (PDF) on the fYNOP public website at https://yorksiteremedy.com*

Appendix D

SPBA Groundwater Extraction Pumping Data*

** - in portable document format (PDF) on the fYNOP public website at https://yorksiteremedy.com*

Appendix E

Chemistry Graphs for Wells Around the TI Area 1 Boundary

Appendix F

Data Validation Report*

** - in portable document format (PDF) on the fYNOP public website at https://yorksiteremedy.com*