23 March 2023

Ms. Brenda Fruchtl, PG
Pennsylvania Department of Environmental Protection
Clean Water Program
Southcentral Regional Office Building
909 Elmerton Avenue
Harrisburg, PA 17110-8200

Re: 2022 Annual Operations Report
Former York Naval Ordnance Plant, York, Pennsylvania
Harley-Davidson NPDES Permit No. PA 0085677

Dear Brenda:

On behalf of Harley-Davidson Motor Company Operations, Inc. (Harley-Davidson), Hydro-Terra Group (HTG) is providing you with a copy of the attached report entitled "Groundwater Extraction and Treatment System Annual Operations Report for the Period January 1, 2022, through December 31, 2022."

Please contact me with any questions or comments.

Respectfully submitted,

HYDRO-TERRA GROUP

Emily M. Wade
Senior Geologist/Project Manager

Attachment

cc: James Rea – PADEP (w/ enclosure)
Robert Kennedy - Harley-Davidson (w/ electronic copy)
Timothy Scripko – Harley-Davidson (w/ electronic copy)
Ralph Golia – AMO Environmental Decisions (w/ electronic copy)
Hamid Rafiee – USACE (w/ electronic copy)
Kristin Koroncai – USEPA (w/ electronic copy)
Greg Norris – NP York 58, LLC (w/ electronic copy)
Deanna Jefferson – NorthPoint Development (w/ electronic copy)
Chris O'Neil – Groundwater Sciences Corporation (w/ electronic copy)
Rodney Myers – HTG (w/ electronic copy)

www.hydro-terra.com

GROUNDWATER EXTRACTION AND TREATMENT SYSTEM ANNUAL OPERATIONS REPORT FOR THE PERIOD JANUARY 1 THROUGH DECEMBER 31, 2022 FORMER YORK NAVAL ORDNANCE PLANT

Prepared for:

former York Naval Ordnance Plant Remediation Team

March 2023

7420 Derry Street, Harrisburg, PA 17111 717.980.5150 fax 717.980.5937

Groundwater Extraction and Treatment System
Annual Operations Report
for the Period
January 1 through December 31, 2022
Former York Naval Ordnance Plant

Prepared for:

former York Naval Ordnance Plant Remediation Team

By:

Hydro-Terra Group
7420 Derry Street
Harrisburg, PA 17111
(717) 980-5150

March 2023

Respectfully submitted,

Emily M. Wade
Senior Geologist/Project Manager

Rodney G. Myers, CHMM
Senior Program Manager

TABLE OF CONTENTS

Page

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

LIST OF ACRONYMS

1,1-DCE	-	1,1-dichloroethene
Act 2	-	Land Recycling and Environmental Remediation Standards Act
cfm	-	cubic feet per minute
cis-1,2-DCE	-	cis-1,2-dichloroethene
DMR	-	Discharge Monitoring Report
EPA	-	United States Environmental Protection Agency
fYNOP	-	former York Naval Ordnance Plant
GAC	-	granular-activated carbon
GIS	-	Global Information Services
gpd	-	gallons per day
gpm	-	gallons per minute
GSC	-	Groundwater Sciences Corporation
GWTS	-	groundwater extraction and treatment system
Harley-Davidson	-	Harley-Davidson Motor Company Operations, Inc.
HDPE	-	high density polyethylene
HTG	-	Hydro-Terra Group
lbs/day	-	pounds per day
NB4	-	North Building 4
NPBA	-	Northeast Property Boundary Area
NPDES	-	National Pollutant Discharge Elimination System
NP York	-	NP York 58, LLC
O&M	-	operation and maintenance
PADEP	-	Pennsylvania Department of Environmental Protection
PCE	-	tetrachloroethene
PLC	-	programmable logic controller
ppm	-	parts per million
PTA	-	packed tower aerator
SPBA	-	Southern Property Boundary Area
SRBC	-	Susquehanna River Basin Commission
TCA	-	1,1,1-trichloroethane
TCE	-	trichloroethene
µg/L	-	micrograms per liter
VFD	-	variable frequency drive
VOCs	-	volatile organic compounds
WPL	-	West Parking Lot

EXECUTIVE SUMMARY

This report presents a summary of the groundwater extraction and treatment system (GWTS) operations and maintenance (O&M) and groundwater extraction well monitoring during 2022 at the former York Naval Ordnance Plant (fYNOP). The fYNOP GWTS is located at the Harley-Davidson Motor Company Operations, Inc. (Harley-Davidson) facility in York, Pennsylvania. The fYNOP GWTS has been in operation for over 30 years (since November 1990) and consists of numerous collection wells in two areas (the West Parking Lot (WPL) and Southern Property Boundary Area (SPBA)) of fYNOP.

During 2022, three active collection wells (CW-21, CW-22, and CW-23) were operational in the SPBA and five collection wells (CW-9, CW-13, CW-15A, CW-17, and CW-20) in the WPL were off, but remain functional. As part of the approved Site-Wide Cleanup Plan (GSC, 2019a), the collection wells in the WPL were shutdown on August 31, 2021 for attainment testing. The shutdown was approved by the Pennsylvania Department of Environmental Protection (PADEP) on February 28, 2020 as part of the Land Recycling and Environmental Remediation Standards Act (Act 2) and the One Cleanup Program for the site. The United States Environmental Protection Agency (EPA) and PADEP acknowledged plans to extend the WPL shutdown study for a second consecutive year (through August 2023) following a shut-down test update report issued on September 1, 2022. The WPL extraction system will remain off, but functional, pending completion of the shutdown monitoring studies.

Approximately two (2) pounds of volatile organic compounds (VOCs) were removed by the GWTS during 2022. The total amount of groundwater extracted during 2022 was approximately 3 million gallons. Cumulatively, approximately 49,126 pounds of VOCs and 3.88 billion gallons of groundwater have been removed by the GWTS since 1990.

Monthly, quarterly, and annual sampling data were collected in 2022, and site-wide groundwater elevations were collected in September 2022. These data, along with laboratory analytical data, will be presented in the 2022 annual Groundwater and Surface Water Monitoring Report (by Groundwater Sciences Corporation [GSC]).

1.0 INTRODUCTION

This report presents a summary of the operating record for the fYNOP GWTS and includes collection well water quality data obtained during 2022. The fYNOP facility consists of the Harley-Davidson York facility and the West Campus property (as described below). The fYNOP is located in Springettsbury Township, York County, Pennsylvania, as shown on **Figure 1-1**. This report covers the 12-month period from January 1 through December 31, 2022. Hydro-Terra Group (HTG) operated the GWTS during the reporting period.

Harley-Davidson sold 58 acres of the western portion of the fYNOP in June 2012. NP York 58, LLC (NP York) constructed a 755,000 square-foot warehouse in 2016. The parcel is now addressed as 1445 Eden Road, York, Pennsylvania, and extends from west of the current manufacturing operations through the WPL and is identified as the "West Campus". The fYNOP retains responsibility for the cleanup of the West Campus and maintains an easement agreement with the owners to continue remediation, monitoring, and maintenance activities.

The GWTS consists of a groundwater extraction system, a groundwater treatment plant, and a force main discharge system. Collectively, the fYNOP GWTS was designed to extract and treat groundwater containing VOCs of concern that consist of trichloroethene (TCE), tetrachloroethene (PCE), 1,1,1-trichloroethane (TCA), and their degradation products, including cis-1,2-dichloroethene (cis-1,2-DCE) and 1,1-dichloroethene (1,1-DCE).

During 2022, groundwater was extracted from three (3) collection wells (CW-21, CW-22, and CW-23) operating in the SPBA. As part of the approved Pennsylvania Act 2 Site-Wide Cleanup Plan (Groundwater Sciences Corporation [GSC], 2019a), the WPL collection wells were shutdown at midnight on August 31, 2021 and are anticipated to be off to evaluate the impact on Codorus Creek surface water quality through August 2023. The WPL collection wells will remain off, but functional, pending the completion of the shutdown monitoring studies. The collection systems are shown on **Figure 1-2.**

All extracted groundwater is piped to the groundwater treatment building (Building 41A) for processing through a packed tower aerator (PTA) prior to discharge to the Codorus Creek, designated as Outfall No. 003 (see **Figures 1-1** and **1-2**).

Figure 1-3 presents a schematic flow diagram for the treatment system. A chemical sequestering agent (Redux 525) injection system reduces mineral fouling of the GWTS PTA, effluent discharge pumps, and components. This sequestrant chemical injection system continued to operate throughout 2022. PTA off-gases are treated by a vapor phase, granular-activated carbon (GAC) filter system for removal of VOCs prior to emitting to the atmosphere.

Treated groundwater is collected in a wet well pump station located immediately north of Building 41A and pumped from the wet well through a force main, to Outfall 003 near the confluence of Johnsons Run and Codorus Creek (refer to **Figure 1-2**).

The treatment system operates and discharges under a National Pollutant Discharge Elimination System (NPDES) permit No. PA0085677 issued by PADEP. The permit is effective through November 20, 2024. The GWTS operated in full compliance with the NPDES permit during 2022.

2.0 GEOLOGY AND HYDROGEOLOGY

Two geologic rock formations underlie the site. Solution-prone (karst) gray carbonate bedrock (limestone and dolostone) underlies the flat lowland (western) portion of the site (i.e. the WPL extraction area). Quartzitic sandstone underlies the more steeply sloping hills or upland area present on the eastern part of the site. The SPBA extraction area lies near a contact between the quartzitic sandstone and limestone geologic formations. Natural groundwater flow is generally westward, from the upland area at the eastern part of the site towards Codorus Creek. A detailed discussion of the regional and site geology and hydrogeology is included in the revised report entitled "Supplemental Remedial Investigation Groundwater Report (Part 2)." (GSC, 2018).

3.0 SITE-WIDE GROUNDWATER AND SURFACE WATER MONITORING

The groundwater monitoring program at the fYNOP site in 2022 consisted of:

- Measuring depth to water in all available monitoring and observation wells one time.
- Sampling and chemical analysis of groundwater from the collection wells throughout the year (see results summary in **Table A-1 in Appendix A**).
- Sampling and chemical analysis of GWTS influent from the combined active collection wells throughout the year (see results summary in **Table A-2 in Appendix A**).
- Site-wide groundwater and surface water sampling (onsite and offsite wells, and Codorus Creek) was conducted monthly, quarterly, or annually during 2022 following the program detailed in the fYNOP Site-Wide Cleanup Plan (GSC, 2019a).
- The results of this monitoring and sampling program, including evaluation of groundwater extraction goals, will be provided and discussed in a separate annual groundwater monitoring report.

4.0 GROUNDWATER TREATMENT SYSTEM

4.1 System Description

Collection wells within the WPL groundwater extraction area and the SPBA remove groundwater by means of electric submersible pumps. The pumping water level within each collection well in the WPL is maintained by liquid level probes and control circuitry between the "on" and "off" probes. The pumping water level is controlled by a transducer in the SPBA wells. The groundwater extraction portion of the system consists of eight (8) potentially active wells (CW-9, CW-13, CW-15A, CW-17, CW-20, CW-21, CW-22, and CW-23). The WPL wells were shutdown in 2022. An average of 6.2 gpm is extracted by the SPBA wells. The extracted groundwater is conveyed via underground piping to the treatment system where the dissolved VOCs are removed from the groundwater.

The GWTS is housed in Building 41A. The process flow diagram for the system is presented on **Figure 1-3**. The treatment system consists of a 2,600-gallon equalization tank; a PTA capable of treating up to 400 gallons per minute (gpm) of groundwater; and a 10,000-pound vapor-phase GAC unit for PTA off-gas treatment. Operation of the GWTS was modified from continuous treatment to batch treatment when the WPL wells were shutdown in 2022. In batch treatment mode the PTA will cycle on and off in response to the equalization tank level. The PTA remains off until the equalization tank fills to a level of 100 inches. Then the influent/transfer pump will activate, once the blower has established adequate airflow, and extracted groundwater will be pumped out of the equalization tank and through the PTA until the tank level reaches 25 inches, the influent/transfer pump will cycle off, and the blower will continue to run for three minutes before cycling off.

Extracted groundwater is pumped from the equalization tank through the PTA for treatment. Redux 525 sequestering agent is injected into this flow at a rate of approximately 20 parts per million (ppm) to prevent calcium scale deposits on the packing material and effluent pumping system. Simultaneous with the downward flow of contaminated water, a 4,000-cubic-foot-per-minute (cfm) centrifugal blower directs fresh air into the lower section of the tower, and up through the packing material. VOCs present in the influent groundwater are "stripped" from the water, transferred into the air, and then adsorbed to the GAC in the air-phase. The treated groundwater flows by gravity to a wet well (effluent pump station) on the north side of Building 41A. It is then pumped approximately 1,600 feet via an 8-inch underground force main to Outfall No. 003 and discharged to Codorus Creek (see **Figure 1-2**).

Automated monitoring and control of the GWTS are facilitated through a series of control panels, Allen-Bradley programmable logic controllers (PLCs) and patented operator software packages called RS View® and Factory View Talk®. Remote computer terminals monitor collection well pumping rates and treatment processes, and the collection wells may be

remotely adjusted. System operational data, recorded in an Excel® database during 2022, are provided in **Appendix B**.

4.2 System Maintenance and Modifications

One preventive maintenance inspection and one general maintenance visit are completed each month when the GWTS is operating. These inspections ensure effective operation of the system. A summary of O&M data recorded during these visits is included in **Appendix C**. Inspections include the following:

- Check for system alarms and address as required.
- Inspect control panels for proper conditions and settings.
- Check water conveyance line pressures.
- Check pressure differential across the stripping tower.
- Check piping and pumps for leaks.
- Clean Y-strainers of buildup, etc., as necessary.
- Check and record amperage draw on all motors (quarterly).
- Record flow rates on recovery wells and transfer pump.

The GWTS operated under normal conditions in 2022, except for the following interruptions:

- Brief shutdowns occurred on May 3, October 7, and November 7 to remove the primary and secondary effluent pumps for routine annual maintenance.
- Brief shutdowns occurred on August 19 and November 4, due to a PTA blower fault. The blown fuses were replaced and the GWTS was restarted within 24 hours.
- A brief shutdown occurred on October 7 when the secondary effluent pump was pulled for maintenance. The spare pump was installed and caused VFD faults. The secondary effluent pump was reinstalled, and maintenance was completed on the spare pump.
- A brief shutdown occurred on October 28 to complete GWTS annual maintenance checks.
- A shutdown occurred on October 29 for a planned site-wide plant power outage.
- A shutdown occurred on December 9 when the primary and spare SPBA conveyance lines were broken during unrelated excavation work. The GWTS was restarted on December 16, after the lines were repaired.

Several noteworthy treatment system maintenance, repairs, or modifications were identified and addressed during 2022. A brief summary is presented below:

- Three GWTS effluent discharge pumps were removed for annual routine inspection, cleaning, and repair (as needed).
- Annual pH meter calibration was completed.

- Five-year certification of the influent, CW-21, CW-23, and CW-23 flow meters were completed by a third party.
- Annual maintenance was completed to clean the PTA tower windows, remove debris from the PTA sump pit, calibrate the influent pH meter, check PTA tower plumbness, exercise effluent pump valves, and verify that the sequestrant (Redux 525) chemical pump is dosing at 20 ppm.
- PTA duct drain valve was replaced.
- A temperature transmitter was installed in Building 41A to remotely monitor the building temperature.

4.3 Groundwater Withdrawal and VOC Removal

Table 4-1 presents the recorded monthly and annual groundwater withdrawals and VOC mass removals by the GWTS. A system-wide total of approximately 49,126 pounds of VOCs were removed since the GWTS began operation in November 1990.

The total amount of groundwater extracted during 2022 was approximately 3.37 million gallons (an average of 9,237 gallons per day [gpd] or 6.4 gpm) using the PTA totalizer. The 2022 extraction volumes are lower than the previous year (2021) when the flows were approximately 80 million gallons (or 219,053 gpd, or 152 gpm). The primary reason for reduced treatment systems flows during 2022 are a result of the previously discussed shut down of the WPL system. Approximately 237,000 gallons of groundwater were treated as part of other remedial activities that are ongoing at the site. A graphical comparison of groundwater volumes treated is presented on **Figure 4-1**. The treated groundwater was only extracted from the SPBA system and as part of other on-site remedial activities conducted in 2022.

Quarterly PTA influent (untreated) analyses (shown in **Table A-2, Appendix A**), along with the measured extraction volumes, are used to calculate the mass of VOCs removed from site groundwater during the reporting period. Quarterly influent samples were collected in January, April, July, and October 2022. These samples represent combined flow-weighted sampling of the three active collection wells in the SPBA (CW-21, CW-22, and CW-23).

The untreated influent samples contained total VOCs ranging in concentrations from 65 micrograms per liter (µg/L) to 82 µg/L during 2022. Using these data, the total estimated mass of VOCs removed from January through December 2022 was approximately 2 pounds. The calculated VOC mass removal rates (pounds per day [lbs/day]) extracted by the GWTS for the last five calendar years are shown below:

- 2022 – 0.005 lbs/day
- 2021 Average – 1.1 lbs/day
    - 2021 January through August - 1.7 lbs/day
    - 2021 September through December - 0.007 lbs/day

- 2020 – 1.9 lbs/day
- 2019 – 2.3 lbs/day
- 2018 – 2.3 lbs/day

The predominant VOCs identified in the PTA influent samples have historically included TCE, TCA, and PCE (see **Figure 4-2)**. Levels of influent total VOCs were somewhat stable over the last few years but have decreased during this reporting period. The predominant influent VOC was PCE with traces of TCE and cis 1,2 DCE in the last five years (see **Figure 4-2**).

4.4 Groundwater System Inspection and Reporting

Groundwater system compliance reporting includes routine monthly and quarterly NPDES permit required Discharge Monitoring Reports (DMRs), and an annual operations report for the GWTS. Additionally, PADEP requires an annual Chapter 110 (formerly Act 220) groundwater withdrawal report for this facility.

In accordance with the NPDES permit, the PTA effluent was sampled and reported quarterly in 2022. Analytical testing results for the 2022 PTA effluent and influent sampling is presented in **Table A-2 (Appendix A)**. The treatment system effluent has maintained non-detectable concentrations of target VOCs during this reporting period.

The Susquehanna River Basin Commission (SRBC) requires submittal of quarterly groundwater withdrawal reports regarding non-consumptive groundwater withdrawals identified in SRBC docket No. 19980901-1. Docket 19980901-1 includes the active WPL extraction wells and the SPBA extraction wells. Information provided to the SRBC includes daily groundwater withdrawal totals (i.e., groundwater volumes extracted) from all collection wells identified in the respective dockets.

5.0 WEST PARKING LOT GROUNDWATER EXTRACTION SYSTEM

Four (4) groundwater collection wells (CW-9, CW-13, CW-17, and CW-20) are in the WPL Area of the West Campus. One additional collection well (CW-15A) is located in a trailer parking area of the West Campus (formerly NB4 area).

Groundwater extraction from the five WPL wells is conducted via underground piping to the GWTS in Building 41A. The wells are individually piped to the GWTS so that flow control, flow measurements, and water samples may be obtained for each well at this central location. Water is piped the following distances from the wells to the treatment plant: CW-20 (1,600 feet), CW-9 (1,400 feet), CW-13 (890 feet), CW-15A (310 feet), and CW-17 (590 feet).

The WPL wells were shutdown at midnight on August 31, 2021, for testing, as discussed previously. The WPL wells remained off in 2022, but functional, pending the completion of the shutdown monitoring studies.

5.1 Maintenance

No maintenance activities were completed in the WPL during 2022.

5.2 Groundwater Chemistry

Groundwater samples were not collected from the WPL collection wells in 2022.

6.0 SPBA GROUNDWATER EXTRACTION SYSTEM

The SPBA groundwater extraction system captures shallow groundwater containing PCE and TCE from the fine-grained residual soil and bedrock along the eastern-most portion of the south fYNOP property boundary. Three SPBA collection wells (CW-21, CW-22, CW-23) were installed, and the SPBA collection wells pumping started on October 31, 2018. Following startup, an effectiveness report concluded "the SPBA groundwater extraction system is currently operating as designed and meets the objective of pumping to establish a groundwater gradient that slopes from off-Site wells located along Canterbury Lane toward on-Site wells located in the SPBA" (GSC, 2019c). The effectiveness of the SPBA system is evaluated quarterly and status updates are provided to PADEP and EPA via e-mail communications (R. Golia, personal communication).

Each SPBA collection well is fitted with an electric submersible pump controlled by variable frequency drives (VFDs) and a submersible level transducer to maintain design drawdown conditions. Groundwater extracted from the SPBA wells is conducted via underground piping from the well heads to the SPBA control building (located in the SPBA). The SPBA control building houses the PLC, control panel, and separate pressure and flow transmitters, piping and valves for each of the extraction wells. The wells are individually piped to the SPBA control building so that flow control, flow measurements, and water samples may be obtained for each well at this central location. Untreated groundwater is combined into a manifold in the SPBA control building, and then discharged together via a single conveyance pipe that extends approximately 3,900 feet to the treatment plant in Building 41A.

The SPBA collection well pumping rates generally range from 0.5 to 6 gpm among the three wells. Approximately 3,272,000 gallons of groundwater were extracted from the SPBA Area during 2022 (see **Table 5-1**).

6.1 Maintenance

A brief summary of maintenance actions for the SPBA Area in 2022 is presented below:

- The SPBA system experienced brief electrical shutdowns in February, April, June, July, September, and December due to storms in the area.
- Annual maintenance was completed on the collection wells in May. The CW-22 and CW-23 pump assemblies were pulled and inspected for damage and mineral fouling, the transducer setting was verified, and the high-pressure switch was tested.
- The primary and spare conveyance lines were broken during excavation work on December 9, requiring shutdown of the SPBA collection wells. Underground piping repairs were completed on December 16, and the SPBA collection wells were restarted.

6.2 Groundwater Chemistry

The groundwater quality analytical data from the 2022 collection well sampling is presented in **Table A-1 (Appendix A)**. Samples were collected in January, February, March, April, May, June, and September. The concentrations and trends of the dominant VOCs (TCE, PCE, TCA, and cis-1,2-DCE) are also illustrated in **Figures 6-1 through 6-3** for CW-21, CW-22, and CW-23, respectively. Generally stable VOC trends were observed at SPBA collection wells CW-21 and CW-23 during 2022. CW-22 exhibited a slightly decreasing trend for PCE during 2022.

7.0 REFERENCES

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

GSC, 2019a. Site-Wide Cleanup Plan, Former York Naval Ordnance Plant, 1425 Eden Road, Springettsbury Township, York Pennsylvania, November 25.

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 9.

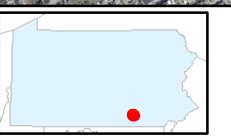
GSC, 2019c. Southern Property Boundary Area Groundwater Extraction System Operation Effectiveness Report, Former York Naval Ordnance Plant. October 28.

FIGURES

Legend

Property Boundary (Former York Naval Ordnance Plant; Approximately 229 Acres)

West Campus Boundary



N

0 1,000 2,000 4,000

Feet

Former York Naval Ordnance Plant

1425 Eden Road
York, Pennsylvania

Hydro-Terra Group
www.hydro-terra.com

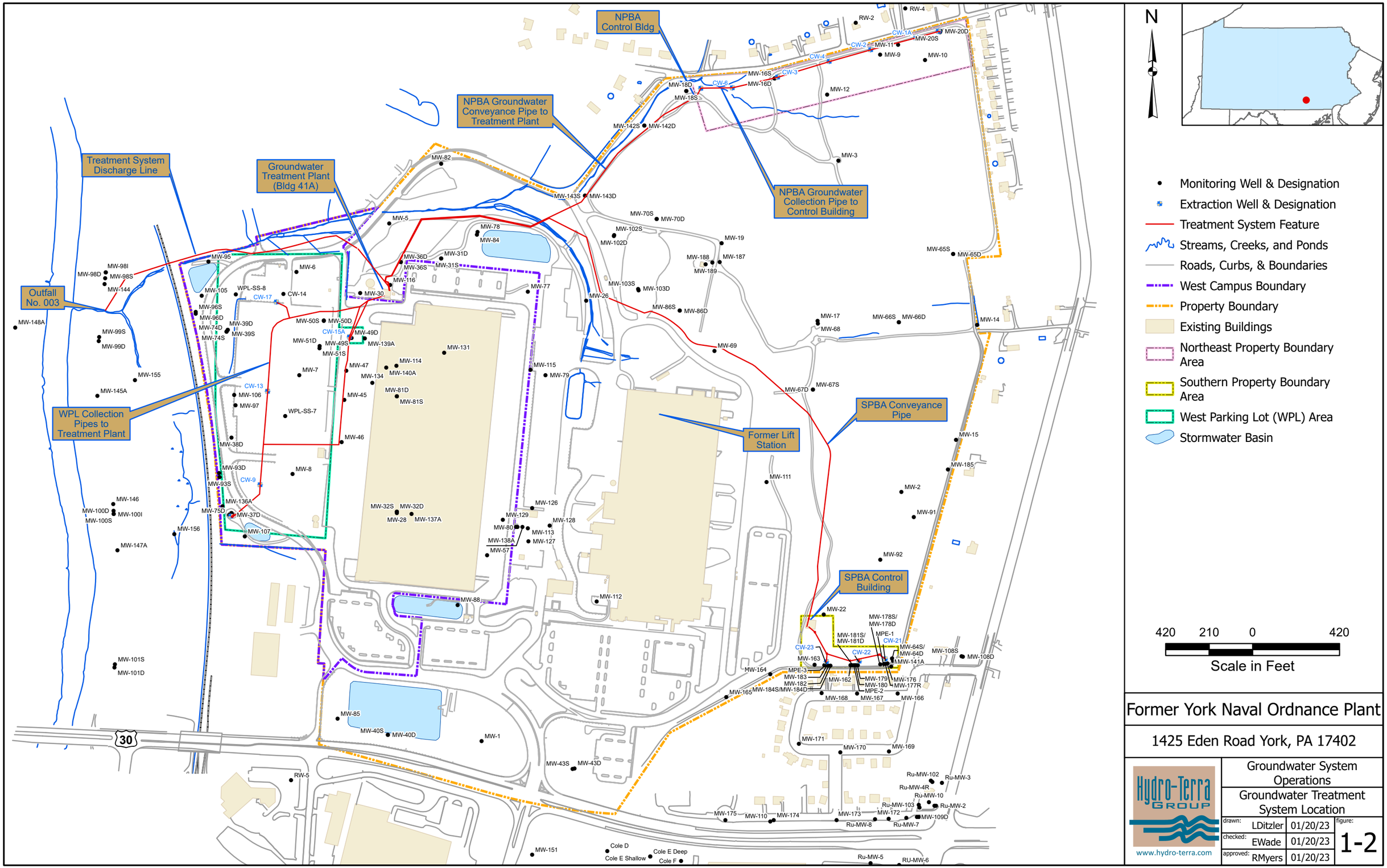
Groundwater Systems Operations

Site Location Map

drawn:	LPD	03/18/21	figure: 1-1
checked:	EMW	03/18/21	
approved:	RGM	03/18/21	

Document Path: J:\Harley-Davidson\Maps\HD-Site Location Map_20210218.mxd

Coordinate System: NAD 1983 2011 StatePlane Pennsylvania South FIPS 3702 Ft US



Former York Naval Ordnance Plant

1425 Eden Road York, PA 17402

Groundwater System Operations

Groundwater Treatment System Location

drawn:	LDitzler	01/20/23
checked:	EWade	01/20/23
approved:	RMyers	01/20/23

figure: 1-2

Hydro-Terra GROUP
www.hydro-terra.com

Coordinate System: NAD 1983 2011 StatePlane Pennsylvania South FIPS 3702 Ft US

J:\Harley-Davidson\Job - 2023 Groundwater System Operations Report\Maps\Report Figures.aprx

FIGURE 1-3
GROUNDWATER TREATMENT SYSTEM FLOW DIAGRAM
former York Naval Ordnance Plant

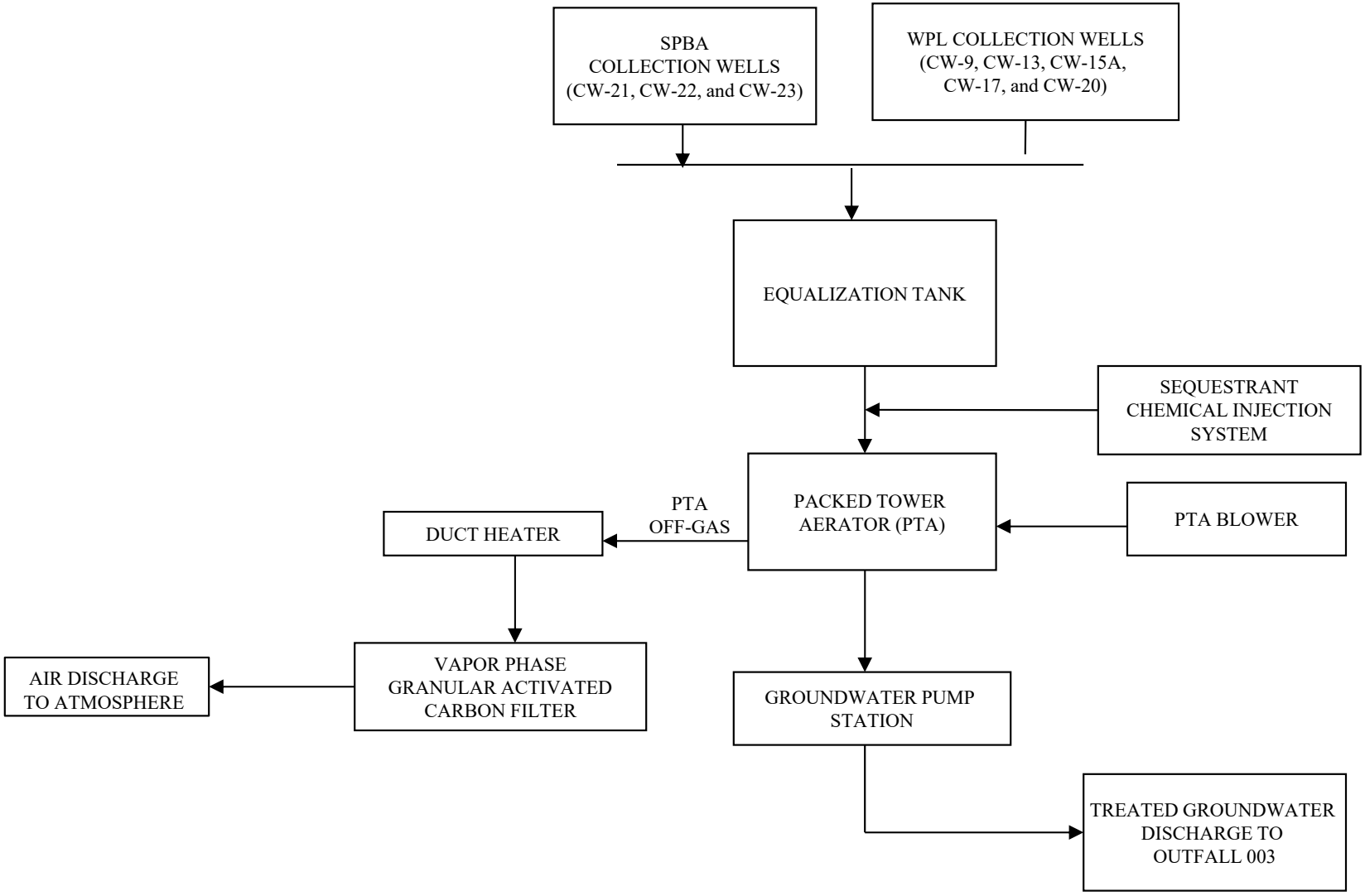
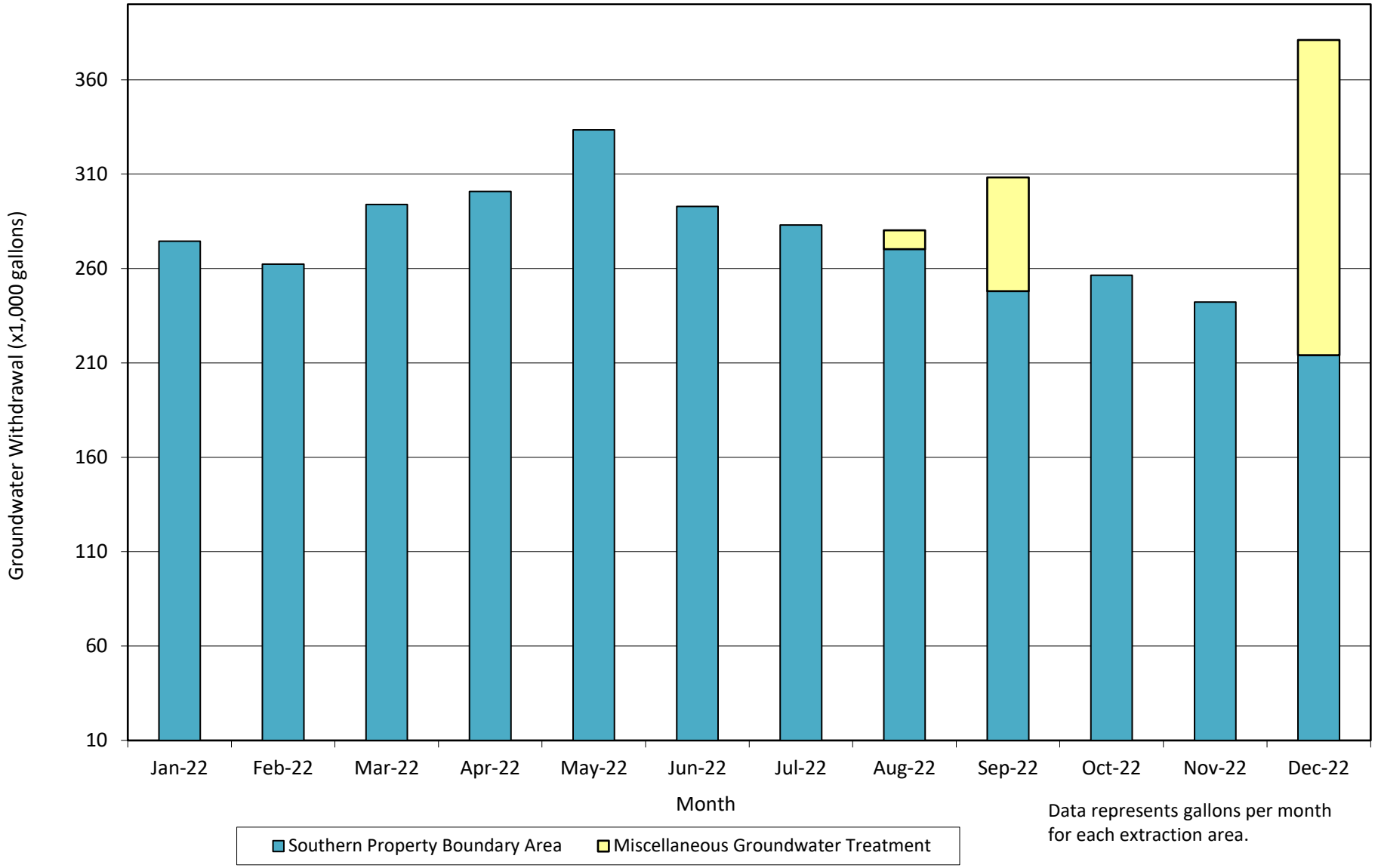


Figure 4-1
2022 Groundwater Withdrawals
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402



Data represents gallons per month for each extraction area.

Figure 4-2
Packed Tower Aerator Influent Chemistry
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

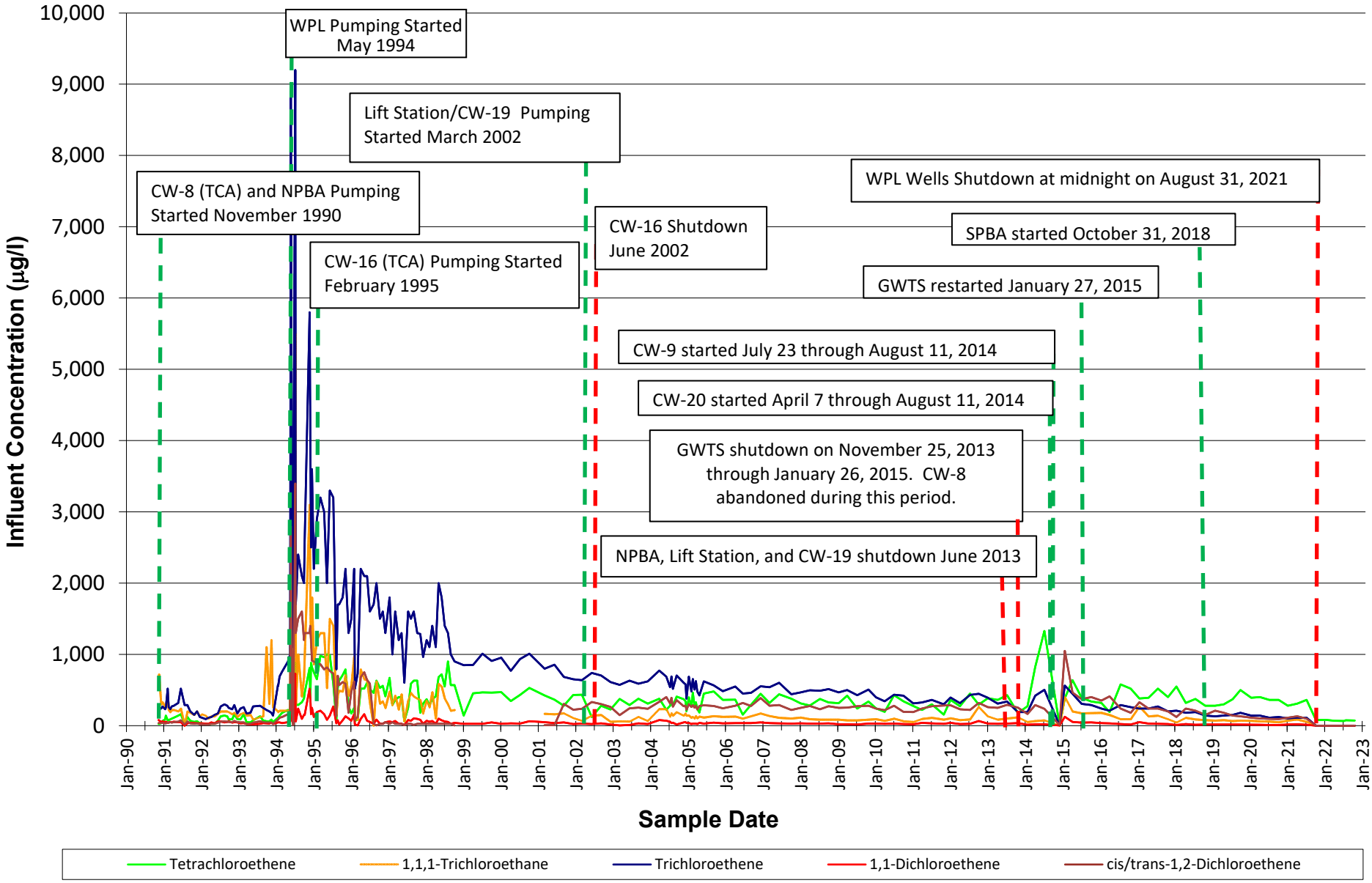


Figure 6-1
Predominate VOC Concentrations - Collection Well CW-21
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

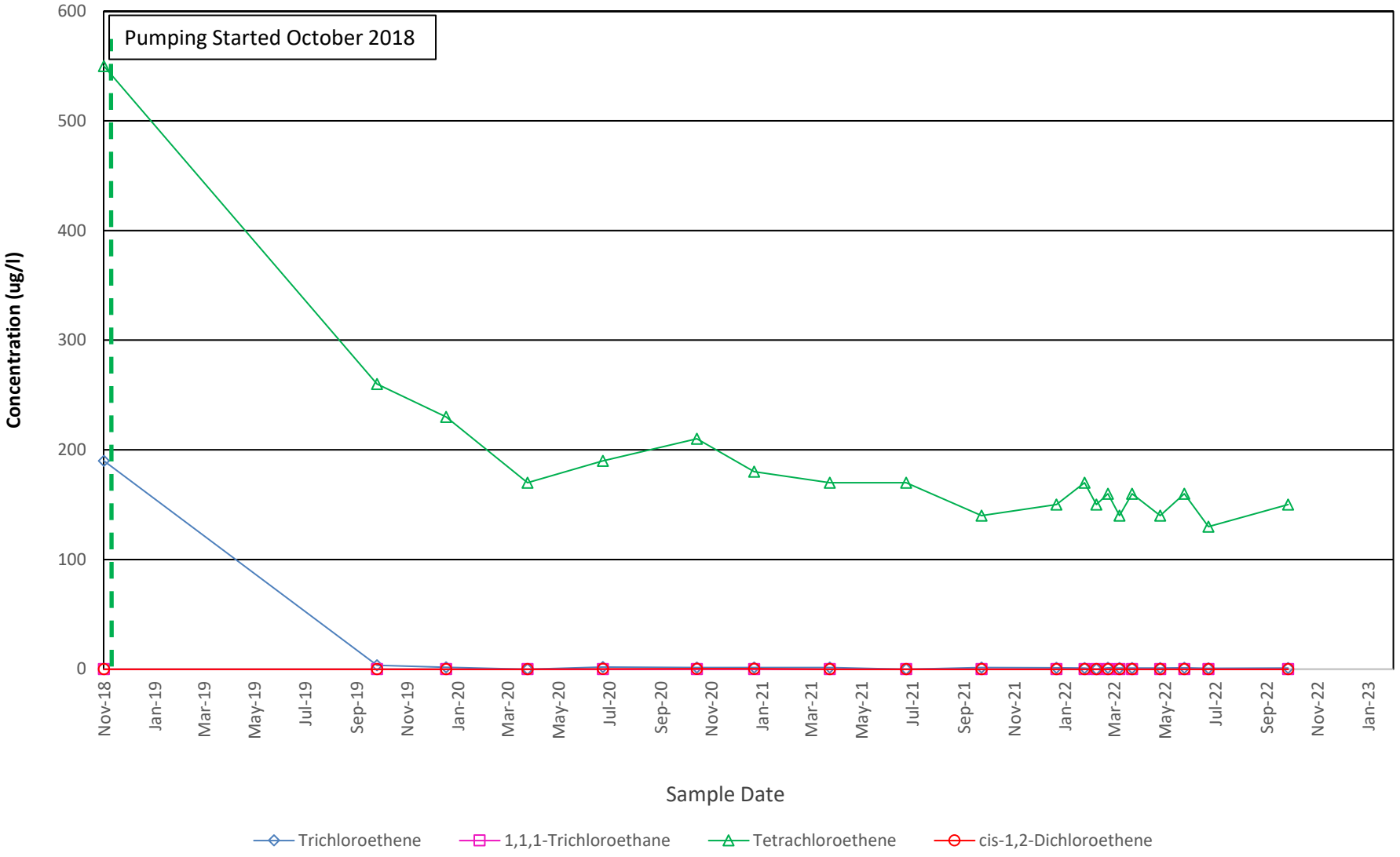


Figure 6-2
Predominate VOC Concentrations - Collection Well CW-22
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

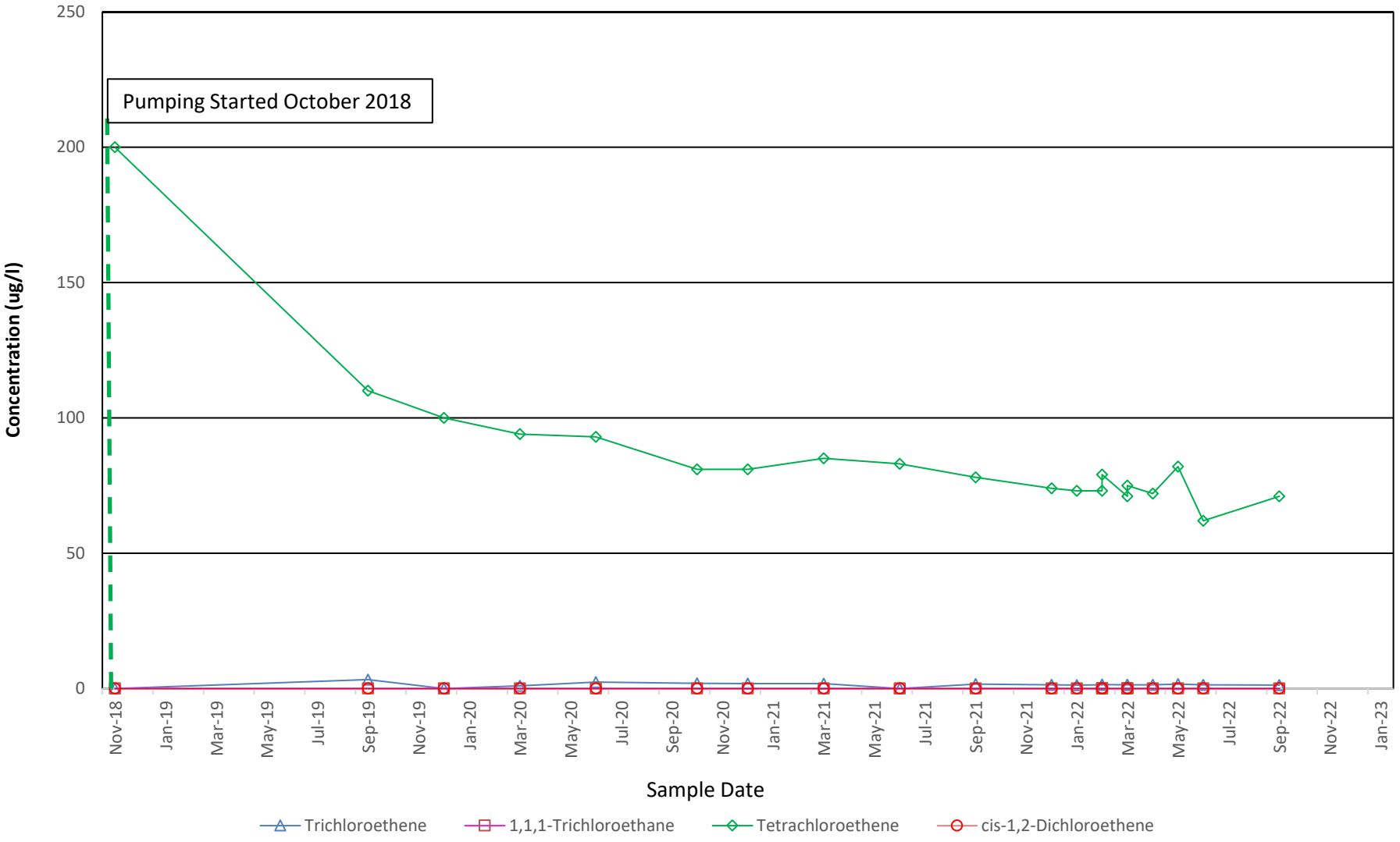
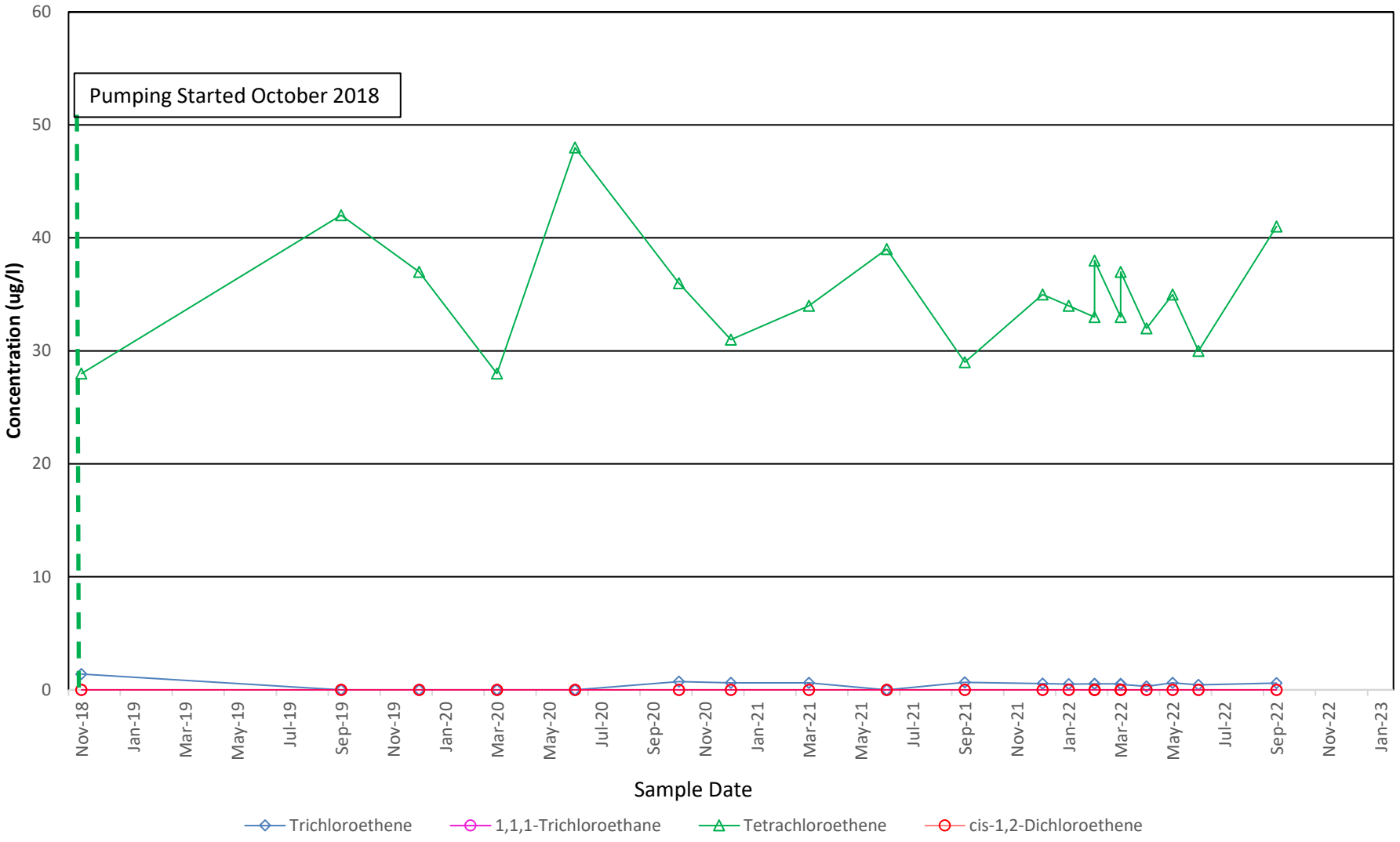


Figure 6-3
Predominate VOC Concentrations - Collection Well CW-23
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402



TABLES

TABLE 4-1
VOCs REMOVED FROM COLLECTED GROUNDWATER
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

JANUARY 1, 2022 - DECEMBER 31, 2022				
DATE	MONTHLY GROUNDWATER WITHDRAWAL (AST Totalizer, gallons)	AVERAGE MONTHLY TOTAL VOCs (ppb)		ESTIMATED MONTHLY VOC REMOVAL (pounds)
Jan-22	268,816	82		0.18
Feb-22	257,924	82	*	0.18
Mar-22	288,701	82	*	0.20
Apr-22	296,250	69		0.17
May-22	333,585	69	*	0.19
Jun-22	288,190	69	*	0.17
Jul-22	278,918	70		0.16
Aug-22	279,254	70	*	0.16
Sep-22	285,566	70	*	0.17
Oct-22	256,222	73		0.16
Nov-22	233,831	73	*	0.14
Dec-22	304,209	73	*	0.19
TOTAL	**3,371,466**	**NA**		**2**

NOTES:

1. * - No sample collected this month; concentration is the most recent
2. NA - Not Applicable
3. As part of the approved Site-Wide Cleanup Plan, the collection wells in the WPL were shutdown on August 31, 2021 for attainment testing.

ANNUAL TOTALS		
YEAR	GROUNDWATER WITHDRAWAL (gallons)	ESTIMATED VOC REMOVAL (pounds)
1990 (NOV & DEC)	12,954,886	92
1991	62,458,393	357
1992	66,081,120	322
1993	72,198,940	421
1994	88,387,251	3,905
1995	141,357,856	5,572
1996	152,168,899	3,631
1997	150,246,400	2,675
1998	157,461,800	2,795
1999	133,687,100	1,464
2000	152,839,477	1,785
2001	134,557,249	1,659
2002	121,290,897	1269
2003	153,097,508	1,599
2004	140,725,167	1,786
2005	134,503,508	1,550
2006	125,192,364	1,295
2007	149,331,940	1,734
2008	155,341,655	1,560
2009	161,171,721	1,584
2010	159,042,802	1,388
2011	154,368,351	1,196
2012	153,624,656	1,519
2013	145,516,783	1,321
2014	17,300,548	262
2015	105,746,121	1,501
2016	113,974,022	1,058
2017	112,873,883	1,041
2018	121,853,402	856
2019	127,551,117	821
2020	121,622,926	694
2021	79,954,253	413
2022	3,371,466	2
Total	**3,881,854,461**	**49,126**

TABLE 5-1
2022 RECORD OF GROUNDWATER WITHDRAWALS
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

MONTH	West Parking Lot (WPL) Wells (gallons)[1]						Southern Property Boundary Area (SPBA) Wells (gallons)[2]				Miscellaneous Groundwater Treatment (gallons)	Monthly[3] TOTAL (gallons)
	CW-9	CW-13	CW-15A	CW-17	CW-20	SUBTOTAL	CW-21	CW-22	CW-23	SUBTOTAL		
Jan-22	0	0	0	0	0	0	172,873	77,929	23,702	274,504	0	274,504
Feb-22	0	0	0	0	0	0	159,084	73,463	29,808	262,355	0	262,355
Mar-22	0	0	0	0	0	0	176,062	83,033	34,807	293,902	0	293,902
Apr-22	0	0	0	0	0	0	179,462	82,980	38,396	300,838	0	300,838
May-22	0	0	0	0	0	0	198,197	89,569	45,704	333,470	0	333,470
Jun-22	0	0	0	0	0	0	173,068	84,265	35,510	292,843	0	292,843
Jul-22	0	0	0	0	0	0	167,683	84,765	30,629	283,077	0	283,077
Aug-22	0	0	0	0	0	0	162,416	83,165	24,630	270,211	10,067	280,278
Sep-22	0	0	0	0	0	0	152,765	77,729	17,488	247,982	60,310	308,292
Oct-22	0	0	0	0	0	0	159,860	79,268	17,302	256,430	0	256,430
Nov-22	0	0	0	0	0	0	150,566	75,904	15,725	242,195	0	242,195
Dec-22	0	0	0	0	0	0	135,366	62,197	16,540	214,103	166,987	381,090
TOTALS	0	0	0	0	0	0	1,987,402	954,267	330,241	3,271,910	237,364	3,509,274

Notes:

[1] As part of the approved Site-Wide Cleanup Plan, the collection wells in the WPL were shutdown on August 31, 2021 for attainment testing.

[2] SPBA collection wells pumping started October 31. 2018.

[3] Monthly groundwater withdrawal value from Table 4-1 differs slightly from the monthly total. The value in Table 4-1 is taken from the PTA totalizer. The monthly total is the sum of the individual well totalizers.

APPENDIX A

Data Tables

Table A-1.
2022 Groundwater Data Summary - Collection Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

					SPBA Collection Wells																							
Location/ID	**MSC**	**MSC**	**Federal**	**EPA RSL**	CW-21		CW-22		CW-23		CW-21		CW-22		CW-23		CW-21		CW-22		CW-23		CW-21		CW-22	
Sample Date	**UA R**	**UA NR**	**MCL**	**Tap Water**	1/25/2022		1/25/2022		1/25/2022		2/8/2022		2/8/2022		2/8/2022		2/22/2022		2/22/2022		2/22/2022		3/8/2022		3/8/2022	
Parameter	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**		Qual		Qual		Qual		Qual		Qual		Qual		Qual		Qual		Qual		Qual		Qual		Qual
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
1,1,1-Trichloroethane	200	200	200	8000	1	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
1,1,2-Trichloroethane	5	5	5	0.28	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-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
1,1-Dichloroethene	7	7	7	280	1	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
1,2-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
1,2-Dichloropropane	5	5	5	0.44	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		5600	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	2.7	J		
2-Hexanone	63	260		38	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	3300	9300		6300	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U		
Acetone	38000	110000		14000	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		
Bromochloromethane	90	90		83	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		
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		
Bromomethane	10	10		7.5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	UJ		
Carbon Disulfide	1500	6200		810	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		
Chlorobenzene	100	100	100	78	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		
Chloroethane	250	1200		21000	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	0.39	J	0.53	J	1	U	0.43	J	0.59	J	1	U	0.43	J	0.58	J	1	U	0.36	J	0.53	J		
Chloromethane	30	30		190	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
cis-1,2-Dichloroethene	70	70	70	36	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	7.3	34		0.47	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		
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		
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		
Styrene	100	100	100	1200	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	11	170		73		34		150		73		33		160		79		38		140		71			
Toluene	1000	1000	1000	1100	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	360	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		
trans-1,3-Dichloropropene	7.3	34		0.47	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	0.49	0.88	J	1.2		0.51	J	1		1.3		0.52	J	1.1		1.4		0.52	J	0.9	J	1.3			
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		
Xylenes (Total)	10000	10000	10000	190	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U		

Total VOC

U - Indicates the analyte was analyzed for but not detected.

J - Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

Table A-1.
2022 Groundwater Data Summary - Collection Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

					SPBA Collection Wells																					
Location/ID Sample Date Parameter	MSC UA R (ug/L)	MSC UA NR (ug/L)	Federal MCL (ug/L)	EPA RSL Tap Water (ug/L)	CW-23 3/8/2022	Qual	CW-21 3/23/2022	Qual	CW-22 3/23/2022	Qual	CW-23 3/23/2022	Qual	CW-21 4/26/2022	Qual	CW-22 4/26/2022	Qual	CW-23 4/26/2022	Qual	CW-21 5/25/2022	Qual	CW-22 5/25/2022	Qual	CW-23 5/25/2022	Qual
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
1,1,1-Trichloroethane	200	200	200	8000	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
1,1,2-Trichloroethane	5	5	5	0.28	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
1,1-Dichloroethene	7	7	7	280	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
1,2-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
1,2-Dichloropropane	5	5	5	0.44	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone	4000	4000		5600	0.97	J	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone	63	260		38	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-Methyl-2-Pentanone	3300	9300		6300	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Acetone	38000	110000		14000	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
Bromochloromethane	90	90		83	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
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
Bromomethane	10	10		7.5	1	UJ	1	U	1	U	1	U	1	U	1	U	1	UJ	1	U	1	U	1	U
Carbon Disulfide	1500	6200		810	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
Chlorobenzene	100	100	100	78	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
Chloroethane	250	1200		21000	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	0.42	J	0.61	J	1	U	0.37	J	0.56	J	1	U	0.48	J	0.58	J	1	U
Chloromethane	30	30		190	1	U	1	U	1	U	1	U	1	U	1	U	1	UJ	1	U	1	U	1	U
cis-1,2-Dichloroethene	70	70	70	36	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene	7.3	34		0.47	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
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
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
Styrene	100	100	100	1200	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Tetrachloroethene	5	5	5	11	33		160		75		37		140		72		32		160		82		35	
Toluene	1000	1000	1000	1100	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	360	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	7.3	34		0.47	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	5	5	0.49	0.53	J	0.96	J	1.3		0.49	J	0.87	J	1.3		0.3	J	1.1		1.6		0.62	J
Vinyl Chloride	2	2	2	0.019	1	U	1	U	1	U	1	U	1	U	1	U	1	UJ	1	U	1	U	1	U
Xylenes (Total)	10000	10000	10000	190	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

Total VOC

U - Indicates the analyte was analyzed for but not detected.

J - Result is less than the reporting limit but greater than or equal to the method detection limit and

Table A-1.
2022 Groundwater Data Summary - Collection Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

					SPBA Collection Wells											
Location/ID	**MSC**	**MSC**	**Federal**	**EPA RSL**	CW-21		CW-22		CW-23		CW-21		CW-22		CW-23	
Sample Date	**UA R**	**UA NR**	**MCL**	**Tap Water**	6/23/2022		6/23/2022		6/23/2022		9/27/2022		9/27/2022		9/27/2022	
Parameter	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**		Qual		Qual		Qual		Qual		Qual		Qual
1,1,1,2-Tetrachloroethane	70	70		0.57	1	U	1	U	1	U	1	U	1	U	1	U
1,1,1-Trichloroethane	200	200	200	8000	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
1,1,2-Trichloroethane	5	5	5	0.28	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
1,1-Dichloroethene	7	7	7	280	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
1,2-Dichloroethane	5	5	5	0.17	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane	5	5	5	0.44	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone	4000	4000		5600	10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone	63	260		38	10	U	10	U	10	U	10	U	10	U	10	U
4-Methyl-2-Pentanone	3300	9300		6300	10	U	10	U	10	U	10	U	10	U	10	U
Acetone	38000	110000		14000	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
Bromochloromethane	90	90		83	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
Bromoform	80	80		3.3	4	U	4	U	4	U	4	U	4	U	4	U
Bromomethane	10	10		7.5	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide	1500	6200		810	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
Chlorobenzene	100	100	100	78	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
Chloroethane	250	1200		21000	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform	80	80		0.22	0.37	J	0.63	J	0.3	J	0.52	J	0.7	J	0.46	J
Chloromethane	30	30		190	1	U	1	U	1	U	2	U	2	U	2	U
cis-1,2-Dichloroethene	70	70	70	36	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene	7.3	34		0.47	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
Methyl tert-butyl ether	20	20		14	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
Styrene	100	100	100	1200	5	U	5	U	5	U	5	U	5	U	5	U
Tetrachloroethene	5	5	5	11	130		62		30		150		71		41	
Toluene	1000	1000	1000	1100	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	100	100	100	360	1	U	1	U	1	U	2	U	2	U	2	U
trans-1,3-Dichloropropene	7.3	34		0.47	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	5	5	0.49	0.8	J	1.3		0.43	J	0.85	J	1.2		0.59	J
Vinyl Chloride	2	2	2	0.019	1	U	1	U	1	U	1	U	1	U	1	U
Xylenes (Total)	10000	10000	10000	190	1	U	1	U	1	U	1	U	1	U	1	U

Total VOC

U - Indicates the analyte was analyzed for but not detected.

J - Result is less than the reporting limit but greater than or equal to the method detection limit and

TABLE A-2

WATER QUALITY ANALYSES

2022 PACKED TOWER AERATOR SAMPLES SUMMARY

Former York Naval Ordnance Plant

1425 Eden Road, York PA 17402

Sample ID Lab ID Sample Date Parameter	Units	Outfall #003 410-69994-1 1/18/2022	Outfall #003 410-78616-2 4/5/2022	Outfall #003 410-90173-3 7/7/2022	Outfall #003 410-92346-1 7/25/2022	Outfall #003 410-58063-2 10/18/2022
1,1-DICHLOROETHENE	ug/l	N.D. @0.2	N.D. @0.2	N.D. @0.3	N.D. @0.3	N.D. @0.2
CIS 1,2-DICHLOROETHENE	ug/l	N.D. @ 0.2	N.D. @ 0.2	N.D. @ 0.3	N.D. @ 0.2	N.D. @ 0.2
TETRACHLOROETHENE	ug/l	N.D. @0.3	N.D. @0.3	N.D. @0.3	N.D. @0.3	N.D. @0.3
TRICHLOROETHENE	ug/l	N.D. @0.2	N.D. @0.2	N.D. @0.3	N.D. @0.2	N.D. @0.2
VINYL CHLORIDE	ug/l	N.D. @0.3	N.D. @0.3	N.D. @0.2	N.D. @0.3	N.D. @0.3
TOTAL VOCs	ug/l	0	0	0	0	0

Sample ID Lab ID Sample Date Parameter	Units	Influent to #003 [1] 410-69994-3 1/18/2022	Influent to #003 [1] 410-78616-1 4/5/2022	Influent to #003 [1] 410-90173-1 7/7/2022	Influent to #003 [1] 410-92346-2 7/25/2022	Influent to #003 [1] 410-102256-1 10/18/2022
1,1,2-TRICHOLORETHANE	ug/L	N.D. @ 0.3	N.D. @ 0.5	NA	N.D. @ 0.3	N.D. @ 0.3
1,1,1-TRICHLOROETHANE	ug/l	N.D. @ 0.3	N.D. @ 0.5	NA	N.D. @ 0.3	N.D. @ 0.3
1,1-DICHLOROETHANE	ug/l	N.D. @ 0.3	N.D. @ 0.5	NA	N.D. @ 0.3	N.D. @ 0.3
1,1-DICHLOROETHENE	ug/l	N.D. @ 0.3	N.D. @ 0.5	N.D. @ 0.3	N.D. @ 0.3	N.D. @ 0.3
1,2-DICHLOROETHANE	ug/l	N.D. @ 0.3	N.D. @ 0.5	NA	N.D. @ 0.3	N.D. @ 0.3
CHLOROBENZENE	ug/l	N.D. @ 0.3	N.D. @ 0.5	NA	N.D. @ 0.3	N.D. @ 0.3
CHLOROFORM	ug/l	0.39 J	0.40 J	NA	0.41 J	0.47 J
METHYLENE CHLORIDE	ug/l	N.D. @ 0.3	N.D. @ 0.5	NA	N.D. @ 0.3	N.D. @ 0.3
TETRACHLOROETHENE	ug/l	82	68	65	75	73
TRICHLOROETHENE	ug/l	0.86 J	0.79	0.70 J	0.69 J	N.D. @ 0.2
VINYL CHLORIDE	ug/l	N.D. @ 0.3	N.D. @ 0.5	N.D. @ 0.3	N.D. @ 0.2	N.D. @ 0.2
CIS 1,2-DICHLOROETHENE	ug/l	N.D. @ 0.3	0.11 J	N.D. @ 0.2	N.D. @ 0.3	N.D. @ 0.3
TRANS 1,2-DICHLOROETHENE	ug/l	N.D. @ 0.3	N.D. @ 0.5	NA	N.D. @ 0.7	N.D. @ 0.7
TOTAL VOCs	ug/l	82	68.79	65.0	75	73

Notes:

All Analysis Performed by Eurofins Lancaster Laboratories Environmental (ELLE) - Lancaster, PA

ug/l - micrograms per liter

J - Estimated value ≥ the Method Detection Limit (MDL) N.D. < the Limit of Quantitation (LOQ or RL)

N.D. @0.3 - not detected at indicated concentration

PTA Infl. - Official sample name is "influent to #003 GWTS"

PTA Effl. - Official sample name is "outfall #003 GWTS"

1 The West Parking Lot (WPL) area wells were shutdown at midnight on August 31, 2021 for testing, which is anticipated to continue for one year. The shutdown plan was approved by Pennsylvania Department of Environmental Protection (PADEP) on February 28, 2020 as part of the Land Recycling and Environmental Remediation Standards Act (Act 2) and the One Cleanup Program for this site. The West Campus/WPL pumping wells will remain off, but functional, pending completion and approval of the shutdown monitoring studies.

APPENDIX B

2022 Excel® Database Summary
Groundwater Treatment Plant Operations

Table B-1
2022 Groundwater Treatment Plant Operations Summary
Former York Naval Ordnance Plant
1425 Eden Road, York, PA 17402

Date	AST Blower Cycles	AST Blower Hours	AST Pump Cycles	AST Pump Hours	Discharge Flow (gallons)	Influent pH (S.U.)	GWTS KWH	Effluent Pump P1 Cycles	Effluent Pump P2 Cycles	Effluent Pump P1 Hours	Effluent Pump P2 Hours
1/1/2022	1	1.3	7	0.9	8,825	7.164	206	4	3	0.5	0.4
1/2/2022	1	1.3	7	0.9	8,867	7.165	239	3	4	0.4	0.5
1/3/2022	1	1.1	6	0.8	7,587	7.227	553	3	3	0.4	0.4
1/4/2022	1	1.3	7	0.9	8,831	7.240	546	4	3	0.5	0.4
1/5/2022	1	1.3	7	0.9	8,849	7.220	482	3	4	0.4	0.5
1/6/2022	1	1.3	7	0.9	8,864	7.119	559	4	3	0.5	0.4
1/7/2022	1	1.1	6	0.8	7,606	7.159	592	3	3	0.4	0.4
1/8/2022	1	1.3	7	0.9	8,882	7.155	582	3	4	0.4	0.5
1/9/2022	1	1.3	7	0.9	8,886	7.117	567	4	3	0.5	0.4
1/10/2022	1	1.1	6	0.8	7,611	7.188	578	3	3	0.4	0.4
1/11/2022	1	1.3	7	0.9	8,880	7.169	600	3	4	0.4	0.5
1/12/2022	1	1.3	7	0.9	8,897	7.160	574	4	3	0.5	0.4
1/13/2022	1	1.3	7	0.9	8,900	7.112	424	3	4	0.4	0.5
1/14/2022	1	1.1	6	0.8	7,598	7.176	488	3	3	0.4	0.4
1/15/2022	1	1.3	7	0.9	8,878	7.164	612	4	3	0.5	0.4
1/16/2022	1	1.3	7	0.9	8,888	7.135	627	3	4	0.4	0.5
1/17/2022	1	1.2	7	0.9	8,431	7.123	592	4	3	0.4	0.4
1/18/2022	1	1.2	7	0.8	7,748	7.171	564	4	3	0.4	0.4
1/19/2022	1	1.3	7	0.9	8,899	7.144	411	3	4	0.4	0.5
1/20/2022	1	1.3	7	0.9	8,903	7.138	530	4	3	0.5	0.4
1/21/2022	1	1.3	7	0.9	8,899	7.130	608	3	4	0.4	0.5
1/22/2022	1	1.3	7	0.9	8,906	7.129	594	4	3	0.5	0.4
1/23/2022	1	1.3	7	0.9	8,915	7.131	562	3	4	0.4	0.5
1/24/2022	1	1.3	7	0.9	8,912	7.143	539	4	3	0.5	0.4
1/25/2022	1	1.3	7	0.9	8,914	7.111	528	3	4	0.4	0.5
1/26/2022	1	1.3	7	0.9	8,904	7.128	582	4	3	0.5	0.4
1/27/2022	1	1.3	7	0.9	8,905	7.108	580	3	4	0.4	0.5
1/28/2022	1	1.3	7	0.9	8,918	7.121	551	4	3	0.5	0.4
1/29/2022	1	1.3	7	0.9	8,909	7.217	606	3	4	0.4	0.5
1/30/2022	1	1.3	7	0.9	8,897	7.137	607	4	3	0.5	0.4
1/31/2022	1	1.3	7	0.9	8,907	7.177	561	3	4	0.3	0.5
2/1/2022	1	1.3	0.7	9.0	8,888	7.116	540	4	3	5.0	4.0
2/2/2022	1	1.3	0.7	9.0	8,896	7.096	385	3	4	4.0	5.0
2/3/2022	1	1.3	0.7	9.0	8,899	7.094	257	4	3	5.0	4.0
2/4/2022	2	1.3	0.7	9.0	8,905	7.100	478	3	4	4.0	5.0
2/5/2022	1	1.3	0.7	9.0	8,899	7.140	575	4	3	5.0	4.0
2/6/2022	1	1.3	0.7	9.0	8,918	7.146	559	3	4	4.0	5.0
2/7/2022	1	1.5	0.8	11.0	10,208	7.032	446	4	4	5.0	5.0
2/8/2022	1	1.3	0.7	9.0	8,931	7.123	461	4	3	5.0	4.0
2/9/2022	1	1.4	0.8	10.0	9,647	7.106	364	3	4	4.0	5.0
2/10/2022	1	1.4	0.8	10.0	9,169	7.132	341	4	4	5.0	5.0
2/11/2022	1	1.3	0.7	9.0	8,925	7.102	334	4	3	5.0	4.0
2/12/2022	1	1.5	0.8	11.0	10,214	7.142	231	4	4	5.0	5.0
2/13/2022	1	1.3	0.7	9.0	8,924	7.088	519	3	4	4.0	5.0
2/14/2022	1	1.3	0.7	9.0	8,911	7.138	582	4	3	5.0	4.0
2/15/2022	5	1.3	0.7	9.0	8,920	7.160	555	3	4	4.0	5.0
2/16/2022	1	1.3	0.7	10.0	8,973	7.089	396	4	3	5.0	4.0
2/17/2022	3	1.3	0.7	9.0	8,931	7.143	221	3	4	4.0	5.0
2/18/2022	1	1.5	0.8	11.0	10,205	7.078	365	4	4	5.0	5.0
2/19/2022	1	1.3	0.7	9.0	8,907	7.225	567	4	3	5.0	4.0
2/20/2022	1	1.3	0.7	9.0	8,863	6.744	556	3	4	4.0	5.0
2/21/2022	1	1.3	0.7	9.0	8,863	6.717	325	4	3	5.0	4.0
2/22/2022	1	1.5	0.8	11.0	10,163	6.264	215	4	4	5.0	5.0
2/23/2022	1	1.3	0.7	9.0	8,904	6.354	217	3	4	4.0	5.0
2/24/2022	1	1.3	0.7	9.0	8,912	6.412	529	4	3	5.0	4.0
2/25/2022	1	1.4	0.8	10.0	9,741	6.619	456	4	4	4.0	5.0
2/26/2022	1	1.4	0.8	10.0	9,069	6.196	495	4	4	4.0	5.0
2/27/2022	1	1.3	0.7	9.0	8,931	6.770	376	4	3	5.0	4.0
2/28/2022	1	1.5	0.8	11.0	10,208	5.801	428	4	4	4.0	5.0
3/1/2022	1	1.3	7	0.9	8,934	6.437	361	4	4	0.4	0.5
3/2/2022	1	1.3	7	0.9	8,929	6.390	272	4	3	0.5	0.4
3/3/2022	1	1.5	8	1.1	10,202	5.996	294	4	4	0.5	0.5
3/4/2022	1	1.3	7	0.9	8,929	6.375	471	3	4	0.4	0.5
3/5/2022	1	1.3	7	0.9	8,930	6.612	353	4	3	0.5	0.4
3/6/2022	1	1.3	7	0.9	8,936	6.375	194	3	4	0.4	0.5
3/7/2022	1	1.5	8	1.1	10,203	6.625	172	4	4	0.5	0.5

Table B-1
2022 Groundwater Treatment Plant Operations Summary
Former York Naval Ordnance Plant
1425 Eden Road, York, PA 17402

Date	AST Blower Cycles	AST Blower Hours	AST Pump Cycles	AST Pump Hours	Discharge Flow (gallons)	Influent pH (S.U.)	GWTS KWH	Effluent Pump P1 Cycles	Effluent Pump P2 Cycles	Effluent Pump P1 Hours	Effluent Pump P2 Hours
3/8/2022	1	1.3	7	0.9	8,929	6.695	242	4	3	0.5	0.4
3/9/2022	1	1.3	7	0.9	8,935	6.505	466	3	4	0.4	0.5
3/10/2022	1	1.4	8	1.0	9,577	6.061	349	4	3	0.5	0.4
3/11/2022	1	1.4	8	1.0	9,232	6.254	314	4	4	0.5	0.5
3/12/2022	1	1.3	7	0.9	8,923	6.533	492	3	4	0.3	0.5
3/13/2022	1	1.3	7	0.9	8,944	6.710	567	4	3	0.5	0.4
3/14/2022	1	1.3	7	0.9	8,932	6.760	349	3	4	0.4	0.5
3/15/2022	1	1.5	8	1.1	10,190	6.741	236	4	4	0.5	0.5
3/16/2022	1	1.3	7	0.9	8,883	6.825	168	4	3	0.5	0.4
3/17/2022	1	1.5	8	1.1	10,152	6.784	175	4	4	0.5	0.5
3/18/2022	1	1.3	7	0.9	8,882	6.777	155	3	4	0.4	0.5
3/19/2022	1	1.5	8	1.1	10,150	6.584	143	4	4	0.5	0.5
3/20/2022	1	1.3	7	0.9	8,884	6.952	197	4	3	0.5	0.4
3/21/2022	1	1.3	7	0.9	8,898	6.926	183	3	4	0.3	0.5
3/22/2022	1	1.5	8	1.1	10,164	6.906	186	4	4	0.5	0.5
3/23/2022	1	1.3	7	0.9	8,899	7.044	219	4	3	0.5	0.4
3/24/2022	1	1.3	7	0.9	8,905	7.042	220	3	4	0.3	0.5
3/25/2022	1	1.5	8	1.1	10,180	6.993	211	4	4	0.5	0.5
3/26/2022	1	1.3	7	0.9	8,910	7.064	226	4	3	0.5	0.4
3/27/2022	1	1.5	8	1.1	10,178	7.163	460	4	4	0.5	0.5
3/28/2022	1	1.3	7	1.0	8,912	7.197	567	3	4	0.3	0.5
3/29/2022	1	1.3	7	1.0	8,910	7.154	442	4	3	0.5	0.4
3/30/2022	1	1.3	7	1.0	8,908	7.119	382	3	4	0.3	0.5
3/31/2022	1	1.5	8	1.1	10,161	6.766	183	4	4	0.5	0.5
4/1/2022	1	1.3	7	0.9	8,893	6.986	210	4	3	0.5	0.4
4/2/2022	1	1.3	7	0.9	8,913	6.963	226	3	4	0.4	0.5
4/3/2022	1	1.5	8	1.1	10,187	6.990	220	4	4	0.5	0.5
4/4/2022	1	1.3	7	0.9	8,908	6.984	262	4	3	0.5	0.4
4/5/2022	1	1.5	8	1.1	9,811	6.867	198	4	4	0.4	0.5
4/6/2022	1	1.3	7	0.9	8,905	6.855	189	3	4	0.3	0.5
4/7/2022	1	1.5	8	1.1	10,181	6.888	211	4	4	0.5	0.5
4/8/2022	1	1.5	8	1.1	10,216	6.761	200	4	4	0.5	0.5
4/9/2022	1	1.5	8	1.1	10,141	6.861	207	4	4	0.5	0.4
4/10/2022	1	1.4	7	1.0	8,943	6.938	251	4	4	0.5	0.4
4/11/2022	1	1.5	8	1.1	9,881	6.727	277	4	4	0.5	0.5
4/12/2022	1	1.5	8	1.1	10,214	6.404	141	4	4	0.5	0.5
4/13/2022	1	1.5	8	1.1	10,204	6.025	128	4	4	0.5	0.5
4/14/2022	1	1.5	8	1.1	10,214	6.061	119	4	4	0.5	0.5
4/15/2022	1	1.5	8	1.1	10,233	6.021	167	4	4	0.5	0.5
4/16/2022	1	1.5	8	1.1	10,198	5.975	149	4	4	0.5	0.5
4/17/2022	1	1.5	8	1.1	10,209	6.246	206	4	4	0.5	0.5
4/18/2022	1	1.6	8	1.1	10,228	6.501	462	4	4	0.5	0.5
4/19/2022	1	1.6	8	1.1	10,227	6.452	352	4	4	0.5	0.5
4/20/2022	1	1.5	8	1.1	10,218	6.087	288	4	4	0.5	0.5
4/21/2022	1	1.5	8	1.1	10,204	5.786	206	4	4	0.5	0.5
4/22/2022	1	1.5	8	1.1	9,999	5.452	178	4	4	0.4	0.5
4/23/2022	1	1.4	7	0.9	8,932	5.674	171	4	4	0.4	0.5
4/24/2022	1	1.5	8	1.1	10,219	5.223	161	4	4	0.5	0.5
4/25/2022	1	1.5	8	1.1	10,203	5.628	171	4	4	0.5	0.5
4/26/2022	1	1.5	8	1.1	10,203	5.660	165	4	4	0.5	0.5
4/27/2022	1	1.5	8	1.1	10,214	5.990	300	4	4	0.5	0.5
4/28/2022	1	1.5	8	1.1	10,214	5.879	457	4	4	0.5	0.5
4/29/2022	1	1.3	7	1.0	8,926	5.869	270	4	3	0.5	0.4
4/30/2022	1	1.5	8	1.1	10,212	5.667	241	4	4	0.5	0.5
5/1/2022	1	1.5	8	1.1	10,200	5.649	214	4	4	0.5	0.5
5/2/2022	1	1.3	7	0.9	8,926	5.429	168	3	4	0.3	0.5
5/3/2022	1	1.5	8	1.1	10,230	5.589	158	5	4	0.5	0.5
5/4/2022	1	1.5	8	1.1	10,185	5.434	163	4	4	0.5	0.6
5/5/2022	1	1.3	7	0.9	8,932	5.450	152	4	3	0.5	0.4
5/6/2022	2	1.5	8	1.1	10,282	5.930	206	4	4	0.5	0.6
5/7/2022	1	1.6	8	1.1	10,232	6.195	258	4	4	0.5	0.6
5/8/2022	1	1.8	9	1.2	11,559	5.934	237	4	5	0.5	0.7
5/9/2022	1	1.8	9	1.2	11,571	5.674	205	5	4	0.7	0.6
5/10/2022	1	1.8	9	1.2	11,576	5.542	177	4	5	0.5	0.7
5/11/2022	1	1.8	9	1.2	11,592	5.393	179	5	4	0.7	0.6
5/12/2022	1	1.8	9	1.2	11,674	5.167	169	4	5	0.5	0.7

Table B-1
2022 Groundwater Treatment Plant Operations Summary
Former York Naval Ordnance Plant
1425 Eden Road, York, PA 17402

Date	AST Blower Cycles	AST Blower Hours	AST Pump Cycles	AST Pump Hours	Discharge Flow (gallons)	Influent pH (S.U.)	GWTS KWH	Effluent Pump P1 Cycles	Effluent Pump P2 Cycles	Effluent Pump P1 Hours	Effluent Pump P2 Hours
5/13/2022	1	1.8	9	1.2	11,672	5.067	165	5	4	0.7	0.6
5/14/2022	1	1.8	9	1.2	11,667	4.862	164	4	5	0.5	0.7
5/15/2022	1	1.6	8	1.1	10,363	5.474	163	4	4	0.5	0.6
5/16/2022	1	1.8	9	1.2	11,657	5.444	163	5	4	0.7	0.6
5/17/2022	1	1.8	9	1.2	11,661	6.632	159	4	5	0.5	0.7
5/18/2022	1	1.6	8	1.1	10,371	7.529	149	4	4	0.5	0.5
5/19/2022	1	1.8	9	1.2	11,664	6.871	155	5	4	0.6	0.5
5/20/2022	1	1.6	8	1.1	10,357	7.433	141	4	4	0.5	0.6
5/21/2022	1	1.6	8	1.1	10,338	7.177	142	4	4	0.5	0.5
5/22/2022	1	1.8	9	1.2	11,623	6.710	148	4	5	0.5	0.7
5/23/2022	1	1.6	8	1.1	10,344	7.617	141	4	4	0.5	0.5
5/24/2022	1	1.6	8	1.1	10,352	8.033	141	4	4	0.5	0.5
5/25/2022	1	1.8	9	1.2	11,650	7.680	155	5	4	0.6	0.5
5/26/2022	1	1.6	8	1.1	10,351	7.902	145	4	4	0.5	0.5
5/27/2022	1	1.6	8	1.1	10,342	8.027	141	4	4	0.5	0.5
5/28/2022	1	1.6	9	1.1	10,841	7.332	144	4	4	0.5	0.5
5/29/2022	1	1.7	9	1.1	10,771	7.070	144	4	5	0.5	0.7
5/30/2022	1	1.5	8	1.1	10,308	6.785	142	4	4	0.5	0.5
5/31/2022	1	1.5	8	1.1	10,294	6.597	139	4	4	0.5	0.5
6/1/2022	1	1.5	8	1.1	10,290	6.528	144	4	4	0.5	0.5
6/2/2022	1	1.4	8	1.0	9,705	7.000	137	4	3	0.5	0.4
6/3/2022	1	1.4	8	1.0	9,275	8.165	138	4	4	0.5	0.5
6/4/2022	1	1.5	8	1.1	10,309	8.170	141	4	4	0.5	0.5
6/5/2022	1	1.5	8	1.1	10,311	8.229	140	4	4	0.5	0.5
6/6/2022	1	1.5	8	1.1	10,298	7.848	139	4	4	0.5	0.5
6/7/2022	1	1.3	7	0.9	9,018	8.472	132	3	4	0.4	0.5
6/8/2022	1	1.5	8	1.1	10,301	8.169	137	4	4	0.5	0.5
6/9/2022	1	1.5	8	1.1	10,298	8.012	137	4	4	0.5	0.5
6/10/2022	2	1.3	7	0.9	9,004	8.514	134	4	3	0.5	0.4
6/11/2022	1	1.5	8	1.1	10,301	8.472	139	4	4	0.5	0.5
6/12/2022	1	1.3	7	0.9	9,008	8.680	135	3	4	0.3	0.5
6/13/2022	1	1.5	8	1.1	10,274	7.838	137	4	4	0.5	0.5
6/14/2022	1	1.3	7	0.9	8,998	8.530	130	4	3	0.5	0.4
6/15/2022	1	1.4	8	1.0	9,547	7.771	137	3	4	0.3	0.5
6/16/2022	1	1.4	8	1.0	9,368	8.527	134	4	4	0.5	0.5
6/17/2022	1	1.3	7	0.9	8,979	8.593	133	4	3	0.5	0.4
6/18/2022	1	1.5	8	1.1	10,285	8.599	138	4	4	0.5	0.5
6/19/2022	1	1.3	7	0.9	9,017	8.906	134	3	4	0.3	0.5
6/20/2022	1	1.5	8	1.1	10,304	8.665	139	4	4	0.5	0.5
6/21/2022	1	1.3	7	0.9	9,001	8.819	133	4	3	0.5	0.4
6/22/2022	1	1.4	8	1.0	9,369	8.392	133	3	4	0.3	0.5
6/23/2022	1	1.5	8	1.0	9,574	8.987	138	4	4	0.5	0.5
6/24/2022	1	1.3	7	0.9	9,014	8.938	133	4	3	0.5	0.4
6/25/2022	1	1.5	8	1.1	10,266	8.229	140	4	4	0.5	0.5
6/26/2022	1	1.3	7	0.9	8,972	8.656	135	3	4	0.3	0.5
6/27/2022	1	1.3	7	0.9	8,977	8.930	130	4	3	0.5	0.4
6/28/2022	1	1.5	8	1.1	10,161	8.540	137	4	4	0.4	0.5
6/29/2022	1	1.4	7	0.9	8,991	8.782	134	4	4	0.4	0.5
6/30/2022	1	1.3	7	0.9	8,975	8.715	146	4	3	0.5	0.4
7/1/2022	1	1.3	7	0.9	8,966	8.775	154	3	4	0.3	0.5
7/2/2022	1	1.3	7	0.9	8,968	8.901	154	4	3	0.5	0.4
7/3/2022	1	1.5	8	1.1	10,284	8.478	158	4	4	0.5	0.5
7/4/2022	1	1.3	7	0.9	8,979	8.787	154	3	4	0.3	0.5
7/5/2022	1	1.3	7	0.9	8,973	8.933	151	4	3	0.5	0.4
7/6/2022	1	1.4	8	1.0	9,396	8.235	154	3	4	0.3	0.5
7/7/2022	1	1.5	8	1.0	9,489	6.916	143	4	4	0.5	0.5
7/8/2022	1	1.3	7	0.9	8,973	6.986	131	4	3	0.5	0.4
7/9/2022	1	1.3	7	0.9	8,977	7.142	129	3	4	0.3	0.5
7/10/2022	1	1.3	7	0.9	8,999	7.033	135	4	3	0.5	0.4
7/11/2022	1	1.3	7	0.9	8,985	7.117	133	3	4	0.3	0.5
7/12/2022	1	1.5	8	1.1	10,260	6.898	141	4	4	0.5	0.5
7/13/2022	1	1.3	7	0.9	8,971	6.892	132	4	3	0.5	0.4
7/14/2022	1	1.3	7	0.9	8,956	6.820	135	3	4	0.3	0.5
7/15/2022	1	1.3	7	0.9	8,968	6.821	134	4	3	0.5	0.4
7/16/2022	1	1.3	7	0.9	8,648	6.955	128	3	4	0.3	0.4
7/17/2022	1	1.2	7	0.8	7,744	7.241	124	3	4	0.3	0.4

Table B-1
2022 Groundwater Treatment Plant Operations Summary
Former York Naval Ordnance Plant
1425 Eden Road, York, PA 17402

Date	AST Blower Cycles	AST Blower Hours	AST Pump Cycles	AST Pump Hours	Discharge Flow (gallons)	Influent pH (S.U.)	GWTS KWH	Effluent Pump P1 Cycles	Effluent Pump P2 Cycles	Effluent Pump P1 Hours	Effluent Pump P2 Hours
7/18/2022	1	1.3	7	0.9	8,992	7.217	130	4	3	0.5	0.4
7/19/2022	1	1.3	7	0.9	8,975	7.147	131	3	4	0.3	0.5
7/20/2022	1	1.3	7	0.9	8,958	7.067	138	4	3	0.5	0.4
7/21/2022	1	1.3	7	0.9	8,954	7.015	133	3	4	0.3	0.5
7/22/2022	1	1.4	10	0.9	8,951	6.932	141	4	3	0.5	0.4
7/23/2022	1	1.3	7	0.9	8,965	6.983	136	3	4	0.3	0.5
7/24/2022	1	1.3	7	0.9	8,963	6.981	136	4	3	0.5	0.4
7/25/2022	1	1.3	7	0.9	8,958	7.086	136	3	4	0.3	0.5
7/26/2022	1	1.3	7	0.9	8,969	7.211	135	4	3	0.5	0.4
7/27/2022	1	1.3	7	0.9	8,984	7.148	133	3	4	0.3	0.5
7/28/2022	1	1.3	7	0.9	8,969	7.041	134	4	3	0.5	0.4
7/29/2022	1	1.1	6	0.8	7,713	7.382	124	3	3	0.3	0.4
7/30/2022	1	1.3	7	0.9	9,021	7.343	135	3	4	0.3	0.5
7/31/2022	1	1.3	7	0.9	9,010	7.354	134	4	3	0.5	0.4
8/1/2022	1	1.3	7	0.9	9,040	7.355	130	3	4	0.3	0.5
8/2/2022	1	1.3	7	0.9	9,052	7.214	136	4	3	0.5	0.4
8/3/2022	1	2.8	12	2.1	19,372	7.162	177	6	6	0.9	1.0
8/4/2022	1	1.3	7	0.9	8,976	7.121	138	3	4	0.3	0.5
8/5/2022	1	1.3	7	0.9	9,014	7.066	136	4	3	0.4	0.4
8/6/2022	1	1.1	6	0.8	7,762	7.386	128	3	3	0.3	0.4
8/7/2022	1	1.3	7	0.9	9,037	7.375	133	3	4	0.3	0.5
8/8/2022	1	1.3	7	0.9	9,009	7.249	128	4	3	0.5	0.4
8/9/2022	1	1.3	7	0.9	8,987	7.253	124	3	4	0.3	0.5
8/10/2022	1	1.3	7	0.9	9,019	7.227	124	4	3	0.5	0.4
8/11/2022	1	1.3	7	0.9	9,037	7.211	124	3	4	0.3	0.5
8/12/2022	1	1.1	6	0.8	7,768	7.456	114	3	3	0.3	0.4
8/13/2022	1	1.3	7	0.9	9,080	7.478	115	4	3	0.5	0.4
8/14/2022	1	1.3	7	0.9	9,075	7.433	117	3	4	0.3	0.5
8/15/2022	1	1.3	7	0.9	9,069	7.387	110	4	3	0.5	0.4
8/16/2022	1	1.1	6	0.8	7,776	7.509	106	3	3	0.3	0.4
8/17/2022	1	1.3	7	0.9	9,074	7.507	110	3	4	0.3	0.5
8/18/2022	9	1.3	7	0.9	9,088	7.398	112	4	3	0.5	0.4
8/19/2022	1	1.2	6	0.8	7,847	7.439	112	3	3	0.3	0.4
8/20/2022	1	1.3	7	0.9	9,062	7.332	121	3	4	0.3	0.5
8/21/2022	1	1.1	6	0.8	7,768	7.462	113	3	3	0.3	0.4
8/22/2022	1	1.3	7	0.9	9,063	7.461	116	4	3	0.5	0.4
8/23/2022	3	1.3	7	0.9	9,057	7.405	114	3	4	0.3	0.5
8/24/2022	1	1.1	6	0.8	7,769	7.500	110	3	3	0.3	0.4
8/25/2022	1	1.3	7	0.9	9,062	7.412	117	4	3	0.5	0.4
8/26/2022	1	1.1	6	0.8	7,725	7.472	118	3	3	0.3	0.4
8/27/2022	1	1.3	7	0.9	9,052	7.436	120	3	4	0.3	0.5
8/28/2022	1	1.1	6	0.8	7,759	7.503	113	3	3	0.3	0.4
8/29/2022	1	1.3	7	0.9	9,038	7.401	120	4	3	0.5	0.4
8/30/2022	1	1.1	6	0.8	7,758	7.507	113	3	3	0.3	0.4
8/31/2022	1	1.3	7	0.9	9,059	7.416	115	3	4	0.3	0.5
9/1/2022	9	1.1	6	0.8	7,775	7.546	114	3	3	0.3	0.4
9/2/2022	9	2.4	11	1.7	16,500	7.609	149	6	5	0.8	0.7
9/3/2022	15	1.3	7	0.9	9,077	7.430	116	3	4	0.3	0.5
9/4/2022	20	1.1	6	0.8	7,775	7.482	113	3	3	0.3	0.4
9/5/2022	11	1.1	6	0.8	7,767	7.548	111	3	3	0.3	0.4
9/6/2022	10	1.3	7	0.9	9,107	7.596	109	4	3	0.5	0.4
9/7/2022	10	1.1	6	0.8	7,851	7.651	99	3	3	0.3	0.4
9/8/2022	10	1.3	7	0.9	9,189	7.580	106	3	4	0.3	0.5
9/9/2022	9	1.1	6	0.8	7,860	7.601	104	3	3	0.3	0.4
9/10/2022	22	1.1	6	0.8	7,885	7.626	106	3	3	0.3	0.4
9/11/2022	10	1.3	7	0.9	9,210	7.645	107	4	3	0.5	0.4
9/12/2022	9	2.9	14	2.2	20,481	7.944	159	7	7	0.9	1.0
9/13/2022	10	2.3	11	1.7	15,897	7.634	138	5	6	0.6	0.8
9/14/2022	9	1.1	6	0.8	7,908	7.653	102	3	3	0.3	0.4
9/15/2022	9	1.3	7	0.9	9,255	7.598	111	4	3	0.4	0.4
9/16/2022	10	1.3	7	0.9	9,274	7.616	113	3	4	0.3	0.4
9/17/2022	9	1.1	6	0.8	7,935	7.599	107	3	4	0.3	0.4
9/18/2022	9	1.3	7	0.9	9,246	7.527	113	4	3	0.5	0.4
9/19/2022	9	1.1	6	0.8	7,918	7.590	104	3	3	0.3	0.4
9/20/2022	9	1.3	7	0.9	8,935	7.409	112	3	4	0.3	0.4
9/21/2022	9	1.7	8	1.2	11,244	7.536	123	4	5	0.5	0.6

Table B-1
2022 Groundwater Treatment Plant Operations Summary
Former York Naval Ordnance Plant
1425 Eden Road, York, PA 17402

Date	AST Blower Cycles	AST Blower Hours	AST Pump Cycles	AST Pump Hours	Discharge Flow (gallons)	Influent pH (S.U.)	GWTS KWH	Effluent Pump P1 Cycles	Effluent Pump P2 Cycles	Effluent Pump P1 Hours	Effluent Pump P2 Hours
9/22/2022	9	1.6	8	1.1	10,945	7.684	116	4	4	0.5	0.5
9/23/2022	9	1.1	6	0.8	7,955	7.688	113	3	3	0.3	0.4
9/24/2022	9	1.3	7	0.9	9,311	7.620	128	4	3	0.4	0.4
9/25/2022	9	1.1	6	0.8	7,952	7.670	110	3	3	0.3	0.3
9/26/2022	10	1.1	6	0.8	7,967	7.669	119	3	3	0.3	0.4
9/27/2022	9	1.3	7	0.9	9,312	7.638	121	3	4	0.3	0.5
9/28/2022	9	1.1	6	0.8	8,007	7.655	126	3	3	0.3	0.4
9/29/2022	9	1.1	6	0.8	8,007	7.698	124	3	3	0.3	0.3
9/30/2022	9	1.1	6	0.8	8,021	7.707	138	3	3	0.3	0.3
10/1/2022	9	13.0	7	0.9	9,364	7.725	154	4	3	0.4	0.4
10/2/2022	9	11.0	6	0.8	8,023	7.725	150	3	3	0.3	0.4
10/3/2022	8	11.0	6	0.8	8,035	7.710	163	3	3	0.3	0.3
10/4/2022	9	13.0	7	0.9	9,394	7.609	202	3	4	0.3	0.5
10/5/2022	9	13.0	7	0.9	9,291	7.573	182	4	3	0.4	0.4
10/6/2022	8	13.0	7	0.9	9,283	7.480	151	3	4	0.3	0.5
10/7/2022	8	11.0	6	0.8	7,929	7.490	129	3	3	0.3	0.4
10/8/2022	9	13.0	7	0.9	9,284	7.545	169	4	3	0.4	0.3
10/9/2022	8	13.0	7	0.9	9,279	7.550	213	3	4	0.3	0.5
10/10/2022	8	11.0	6	0.8	7,953	7.586	163	3	3	0.3	0.4
10/11/2022	9	13.0	7	0.9	9,072	7.509	149	4	3	0.5	0.4
10/12/2022	9	13.0	7	0.9	8,775	7.364	140	3	4	0.3	0.5
10/13/2022	8	11.0	6	0.8	7,521	7.552	136	3	3	0.3	0.4
10/14/2022	8	13.0	7	0.9	8,774	7.487	141	4	3	0.5	0.4
10/15/2022	8	11.0	6	0.8	7,521	7.617	137	3	3	0.3	0.4
10/16/2022	8	13.0	7	0.9	8,771	7.604	135	3	4	0.3	0.5
10/17/2022	8	11.0	6	0.8	7,523	7.599	154	3	3	0.3	0.4
10/18/2022	8	13.0	7	0.9	8,777	7.585	185	4	3	0.5	0.4
10/19/2022	10	11.0	6	0.8	7,524	7.634	258	3	3	0.3	0.4
10/20/2022	8	12.0	7	0.8	7,867	7.442	261	1	23	0.1	0.8
10/21/2022	8	13.0	7	0.9	8,767	7.341	236	0	7	0.0	1.0
10/22/2022	8	11.0	6	0.8	7,514	7.543	184	1	6	0.0	0.7
10/23/2022	8	11.0	6	0.8	7,519	7.457	183	6	0	0.8	0.0
10/24/2022	7	13.0	7	0.9	8,776	7.269	181	7	0	0.9	0.0
10/25/2022	8	11.0	6	0.8	7,520	7.389	137	6	0	0.8	0.0
10/26/2022	8	11.0	6	0.8	7,511	7.521	145	5	1	0.6	0.1
10/27/2022	7	13.0	7	0.9	8,768	7.389	165	3	4	0.3	0.5
10/28/2022	8	11.0	6	0.8	7,526	7.472	194	3	3	0.4	0.4
10/29/2022	8	6.0	4	0.4	3,476	7.521	101	2	1	0.2	0.1
10/30/2022	7	15.0	8	1.1	10,099	7.617	331	4	4	0.5	0.6
10/31/2022	8	13.0	7	0.9	8,786	7.550	202	3	4	0.4	0.5
11/1/2022	8	1.1	6	0.8	7,523	7.630	146	3	3	0.4	0.4
11/2/2022	8	1.3	7	0.9	8,762	7.569	171	4	3	0.5	0.4
11/3/2022	8	0.9	5	0.7	6,257	7.618	177	2	3	0.2	0.4
11/4/2022	8	1.4	7	1.0	8,936	7.462	185	4	3	0.5	0.4
11/5/2022	8	1.1	6	0.8	7,515	7.538	137	3	3	0.4	0.4
11/6/2022	7	1.1	6	0.8	7,866	7.522	139	3	3	0.4	0.4
11/7/2022	3	1.3	7	0.9	8,217	7.505	141	6	7	0.7	0.1
11/8/2022	0	1.1	6	0.8	7,494	7.568	193	6	0	0.8	0.0
11/9/2022	0	1.1	6	0.8	7,512	7.550	277	6	0	0.8	0.0
11/10/2022	0	1.1	6	0.8	7,505	7.560	195	6	0	0.8	0.0
11/11/2022	12	1.3	7	0.9	8,753	7.488	170	7	1	0.8	0.1
11/12/2022	1	1.1	6	0.8	7,505	7.565	153	0	6	0.0	1.0
11/13/2022	12	1.1	6	0.8	7,505	7.595	248	0	6	0.0	0.9
11/14/2022	9	1.3	7	0.9	8,751	7.446	453	2	5	0.2	0.7
11/15/2022	8	1.1	6	0.8	7,500	7.566	524	3	4	0.4	0.5
11/16/2022	8	1.1	6	0.8	7,503	7.577	360	3	3	0.4	0.4
11/17/2022	8	1.1	6	0.8	7,505	7.574	460	3	3	0.4	0.4
11/18/2022	8	1.3	7	0.9	8,756	7.462	475	4	3	0.5	0.4
11/19/2022	8	1.1	6	0.8	7,504	7.554	478	3	3	0.4	0.4
11/20/2022	7	1.1	6	0.8	7,497	7.604	557	3	3	0.4	0.4
11/21/2022	8	1.1	6	0.8	7,499	7.625	469	3	3	0.4	0.4
11/22/2022	8	1.3	7	0.9	8,749	7.244	395	3	4	0.4	0.6
11/23/2022	7	1.1	6	0.8	7,496	7.602	381	3	3	0.4	0.4
11/24/2022	8	1.1	6	0.8	7,499	7.622	352	3	3	0.4	0.4
11/25/2022	8	1.1	6	0.8	7,502	7.632	265	3	3	0.4	0.4
11/26/2022	7	1.1	6	0.8	7,501	7.633	465	3	3	0.4	0.4

Table B-1
2022 Groundwater Treatment Plant Operations Summary
Former York Naval Ordnance Plant
1425 Eden Road, York, PA 17402

Date	AST Blower Cycles	AST Blower Hours	AST Pump Cycles	AST Pump Hours	Discharge Flow (gallons)	Influent pH (S.U.)	GWTS KWH	Effluent Pump P1 Cycles	Effluent Pump P2 Cycles	Effluent Pump P1 Hours	Effluent Pump P2 Hours
11/27/2022	8	1.3	7	0.9	8,746	7.586	503	4	3	0.5	0.4
11/28/2022	7	1.1	6	0.8	7,495	7.593	390	3	3	0.4	0.4
11/29/2022	7	1.1	6	0.8	7,489	7.625	402	3	3	0.4	0.4
11/30/2022	7	1.1	6	0.8	7,489	7.620	299	3	3	0.4	0.4
12/1/2022	8	1.1	6	0.8	7,489	7.571	489	3	3	0.4	0.4
12/2/2022	7	1.1	6	0.8	7,489	7.550	389	3	3	0.4	0.4
12/3/2022	7	1.3	7	0.9	8,747	7.354	263	3	4	0.4	0.6
12/4/2022	7	1.1	6	0.8	7,501	7.470	432	3	3	0.4	0.4
12/5/2022	7	1.1	6	0.8	7,495	7.501	425	3	3	0.4	0.4
12/6/2022	7	1.1	6	0.8	7,489	7.467	383	3	3	0.4	0.4
12/7/2022	7	1.1	6	0.8	7,502	7.517	239	3	3	0.4	0.4
12/8/2022	7	1.8	9	1.3	11,751	7.154	270	5	4	0.7	0.6
12/9/2022	7	1.0	5	0.7	7,045	6.903	431	2	3	0.3	0.5
12/10/2022	7	0.0	0	0.0	0	7.000	391	0	0	0.0	0.0
12/11/2022	7	0.0	0	0.0	0	7.062	469	0	0	0.0	0.0
12/12/2022	7	0.0	0	0.0	0	7.098	498	0	0	0.0	0.0
12/13/2022	7	0.0	0	0.0	0	7.134	500	0	0	0.0	0.0
12/14/2022	7	0.0	0	0.0	0	7.166	528	0	0	0.0	0.0
12/15/2022	6	0.0	0	0.0	0	7.180	525	0	0	0.0	0.0
12/16/2022	7	1.0	5	0.7	6,451	7.375	426	3	2	0.4	0.3
12/17/2022	7	1.8	9	1.2	11,450	7.396	475	4	5	0.5	0.7
12/18/2022	7	1.5	8	1.1	10,102	7.417	552	4	4	0.5	0.6
12/19/2022	7	4.2	19	3.2	28,316	6.423	669	10	9	1.5	1.6
12/20/2022	7	5.0	23	3.7	32,823	6.500	661	11	12	1.6	2.0
12/21/2022	6	4.2	20	3.1	27,734	6.504	597	10	10	1.4	1.6
12/22/2022	7	3.8	18	2.7	24,661	6.576	573	9	9	1.3	1.4
12/23/2022	7	3.5	16	2.5	18,211	6.576	648	8	8	1.2	1.3
12/24/2022	7	1.1	6	0.8	8,462	6.576	648	3	3	0.4	0.3
12/25/2022	6	1.1	6	0.8	8,462	6.576	648	3	3	0.3	0.4
12/26/2022	7	1.1	6	0.8	8,462	6.576	648	3	3	0.3	0.3
12/27/2022	7	1.3	7	0.9	8,816	7.350	558	4	3	0.5	0.4
12/28/2022	6	1.3	7	0.9	8,812	7.424	474	3	4	0.4	0.6
12/29/2022	7	1.5	8	1.1	10,067	7.290	444	4	4	0.5	0.6
12/30/2022	7	1.3	7	0.9	8,804	7.376	346	4	3	0.5	0.4
12/31/2022	6	1.5	8	1.1	10,068	7.046	256	4	4	0.5	0.6

APPENDIX C

2022 Operation and Maintenance Data Summary

Table C-1
2022 OPERATION AND MAINTENANCE DATA SUMMARY
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

TECHNICIAN		SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL
Date		1/6/2022	1/18/2022	2/8/2022	2/22/2022	3/1/2022	3/15/2022	4/5/2022	4/19/2022	5/3/2022	5/17/2022	6/7/2022	6/21/2022	7/7/2022	7/20/2022	8/2/2022	8/26/2022	9/1/2022	9/20/2022	10/4/2022	10/18/2022	11/1/2022	11/22/2022	12/1/2022	12/22/2022
PTA INFL. PUMP																								
Full Load = 17	AMPS	NM	7.2	NM	NM	NM	NM	NM	7.50	NM	NM	NM	NM	NM	7.40	NM	NM	NM	NM	NM	7.40	NM	NM	NM	NM
	FLOW RATE gpm	161	161	161	161	161	161	161	165	162	165	162	165	161	161	161	161	169	168	172	161	161	160	162	161
PTA BLOWER																								
Full Load = 24	AMP READINGS	NM	25.32	NM	NM	NM	NM	NM	22.85	NM	NM	NM	NM	NM	21.15	NM	NM	NM	NM	NM	23.62	NM	NM	NM	NM
	PRESSURE inches water	15.4	15.7	15.7	15.3	15.8	15.8	15.2	15.3	15.1	14.9	14.6	15.0	14.8	14.3	14.2	14	14.6	14.1	15.1	15.3	14.7	16.1	15.4	16
TOWER PANEL																								
	VISUAL INSPECT	NA	OK	NA	NA	NA	NA	NA	OK	NA	NA	NA	NA	NA	OK	NA	NA	NA	NA	NA	OK	NA	NA	NA	NA
	WARWICK SECURE	NA	OK	NA	NA	NA	NA	NA	OK	NA	NA	NA	NA	NA	OK	NA	NA	NA	NA	NA	OK	NA	NA	NA	NA
TOWER SAMPLING																								
	AST EFFLUENT pH	7.31	NM	7.28	NM	7.7	NM	7.79	NM	7.5	NM	7.8	NM	7.74	NM	7.4	NM	7.7	NM	7.6	NM	7.6	NM	7.3	NM
	AST INFLUENT pH	6.24	7.15	6.36	6.17	6.44	6.65	6.78	6.57	6.51	5.4	6.5	8.10	6.48	6.98	6.5	7.28	6.8	6.70	6.6	7.52	6.4	7.61	6.2	6.49
REDUX CHEMICAL INJECTION																								
	LMI PUMP SPEED (%)	29	29	29	29	29	29	25	29	29	29	25	29	30	30	30	30	29	31	31	29	29	29	29	29
	LMI INJECTION RATE (milis/min)	8.4	8.4	8.4	8.4	8.6	8.5	8.3	8.5	8.5	8.5	8.9	8.5	8.6	8.5	8.4	8.8	9	8.9	8.8	8.5	8.5	8.5	8.4	8.4
WPL WELLS																								
	TOTAL FLOW RATE gpm	0	0	0	0	0	0	0	0	0	0	0	0												
CW-9; Full Load = 5.5	AMPS	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-9	FLOW RATE gpm	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-9	PRESSURE psi	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-9	CLEAN "Y" STRAINER	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-9	HIGH LEVEL ALARM?	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-13; Full Load = 11.5	AMPS	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-13	FLOW RATE gpm	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-13	PRESSURE psi	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-13	CLEAN "Y" STRAINER	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-13	HIGH LEVEL ALARM?	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-17; Full Load = 11.5	AMPS	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-17	FLOW RATE gpm	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-17	PRESSURE psi	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-17	CLEAN "Y" STRAINER	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-17	HIGH LEVEL ALARM?	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-15A; Full Load = 1.6	AMPS	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-15A	FLOW RATE gpm	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-15A	PRESSURE psi	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-15A	CLEAN "Y" STRAINER	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-15A	HIGH LEVEL ALARM?	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-20 Full Load = 17.3	AMPS	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-20	FLOW RATE gpm	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-20	PRESSURE psi	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-20	CLEAN "Y" STRAINER	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
CW-20	HIGH LEVEL ALARM?	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
AST influent pressure	inches of water	10.3	10.0	10.1	9.9	10.2	10.3	9.6	10	9.9	9.8	9.5	9.7	9.7	9.2	7.7	9.2	9.7	9.4	10.1	10.2	9.7	10.7	10.2	10.4
GAC influent pressure	inches of water	8.5	8.4	8.4	8.4	8.3	8.5	8	8.8	8.1	8.1	8.0	7.9	7.9	7.6	9.3	7.6	7.9	7.8	8.3	8.5	8.1	8.8	8.4	8.7
AST pitot pressure	inches of water	0.24	0.24	0.25	0.24	0.24	0.24	0.26	0.23	0.24	0.22	0.23	0.22	0.22	0.24	0.22	0.22	0.22	0.22	0.22	0.24	0.25	0.25	0.23	0.23

Table C-1
2022 OPERATION AND MAINTENANCE DATA SUMMARY
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

TECHNICIAN		SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL	SRL
Date		1/6/2022	1/18/2022	2/8/2022	2/22/2022	3/1/2022	3/15/2022	4/5/2022	4/19/2022	5/3/2022	5/17/2022	6/7/2022	6/21/2022	7/7/2022	7/20/2022	8/2/2022	8/26/2022	9/1/2022	9/20/2022	10/4/2022	10/18/2022	11/1/2022	11/22/2022	12/1/2022	12/22/2022
SPBA WELLS																								
	TOTAL FLOW RATE gpm	6	6	6.6	6.7	7	6.8	6.8	7.2	6.9	7.6	7.1	6.3	6.5	6.3	6.1	6	5.9	6.1	5.6	5.8	6.1	5.6	5.9	6.2
CW-21; Full Load = 5	AMPS	NM	2.66	NM	NM	NM	NM	NM	2.72	NM	NM	NM	NM	NM	2.58	NM	NM	NM	NM	NM	2.54	NM	NM	NM	NM
CW-21	FLOW-RATE gpm	3.9	3.9	4.1	3.9	4.1	4	4	4.3	4.0	4.7	4.2	3.7	3.7	3.7	3.7	3.6	3.6	3.4	3.5	3.6	3.7	3.6	3.5	4.0
CW-21	PRESSURE psi	9.5	9	9.2	9.1	9.1	9	9.4	9.7	9.5	9.8	10.4	10.4	10.4	10.6	10.6	10.9	10.6	10.6	10.3	10.3	9.2	9.4	9.2	9.4
CW-21	TARGET LEVEL	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95
CW-21	TRANSDUCER READING	95	95	95	95	95	95	95	9	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95
CW-21	PUMP SPEED %	74	74	74	74	74	74	74	76	75	76	76	75	75	75	75	74	74	74	74	74	74	74	73	75
CW-21	CLEAN TRANSDUCER	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CW-21	WATER CLARITY	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
CW-21	HIGH LEVEL ALARM?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CW-22; Full Load = 3.9	AMPS	NM	1.92	NM	NM	NM	NM	NM	1.98	NM	NM	NM	NM	NM	20.6	NM	NM	NM	NM	NM	2.08	NM	NM	NM	NM
CW-22	FLOW-RATE gpm	1.9	1.9	1.8	1.9	2	1.9	1.9	1.8	1.8	2.6	2.1	1.9	2.1	1.8	1.9	1.9	1.8	1.7	1.8	1.7	1.8	1.5	1.9	1.8
CW-22	PRESSURE psi	9.7	9.2	9.2	9.2	9.2	9.2	9.5	9.8	9.7	10.1	10.6	10.4	10.5	10.7	10.7	11.1	10.7	10.7	10.6	10.4	9.5	9.5	9.5	9.5
CW-22	TARGET LEVEL	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97
CW-22	TRANSDUCER READING	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97
CW-22	PUMP SPEED %	72	72	72	72	72	72	72	73	73	74	73	73	73	73	73	73	73	73	73	72	71	71	71	71
CW-22	CLEAN TRANSDUCER	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CW-22	WATER CLARITY	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
CW-22	HIGH LEVEL ALARM?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CW-23; Full Load = 3.9	AMPS	NM	1.57	NM	NM	NM	NM	NM	1.65	NM	NM	NM	NM	NM	1.68	NM	NM	NM	NM	NM	1.68	NM	NM	NM	NM
CW-23	FLOW-RATE gpm	0.4	0.5	0.7	0.7	0.6	0.7	0.8	0.9	0.9	1	0.8	0.7	0.5	0.7	0.5	0.6	0.4	0.5	0.4	0.5	0.5	0.4	0.5	0.3
CW-23	PRESSURE psi	9.6	9	9.2	9.1	9.1	9.2	9.4	9.8	9.7	10	10.4	10.3	10.4	10.7	10.7	10.9	10.7	10.6	10.4	10.3	9.4	9.5	9.4	9.5
CW-23	TARGET LEVEL	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57
CW-23	TRANSDUCER READING	57	57	57.1	57	57	57	57	57	57	57.1	57	57	57	57	57.1	57	57	57	57	57	57	57	57	57
CW-22	PUMP SPEED %	68	68	69	68	69	69	69	70	69	70	70	70	69	69	69	69	69	69	69	69	68	68	68	68
CW-23	CLEAN TRANSDUCER	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
CW-23	WATER CLARITY	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
CW-23	HIGH LEVEL ALARM?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Notes: Y - Yes N - No NA - Not Applicable NM - Not Measurl - Not Measu OL - Off Line