Periodic Review Report
Roxy Cleaners (442024)
North Greenbush, New York

Prepared for

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233

Prepared by

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November 2023
Version: FINAL
EA Project No. 16025.06

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7 November 2023

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LIST OF ACRONYMS AND ABBREVIATIONS

µg/L	Microgram(s) per liter
AWQS	Ambient Water Quality Standard
COC	Contaminant of concern
DCE	Dichloroethene
EA	EA Engineering, P.C. and its affiliate EA Science and Technology
gpm	Gallon(s) per minute
IC	Institutional control
LaBella	LaBella Associates
LTMP	Long-Term Monitoring Plan
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operation and maintenance
OM&M	Operations, monitoring, and maintenance
PCE	Tetrachloroethene
PRR	Periodic Review Report
ROD	Record of Decision
SSDS	Sub-slab depressurization system
TCE	Trichloroethene
VOC	Volatile organic compound

ES. EXECUTIVE SUMMARY

EA Engineering, P.C. and its affiliate EA Science and Technology (EA) have prepared this Periodic Review Report for the Roxy Cleaners site in the town of North Greenbush, Rensselaer County, New York. This work was performed for the New York State Department of Environmental Conservation (NYSDEC) under Work Assignment D009806 of EA's Superfund Standby Contract with NYSDEC. The NYSDEC has assigned the Site Identification Number 4-42-024. There is currently a groundwater pump and treatment system in operational condition at the site. The groundwater pump and treatment system was shut down in December of 2021 to initiate a groundwater and vapor rebound study to evaluate any contaminant rebound or migration following the groundwater injections and system shutdown. At the end of the rebound study, it will be determined whether the groundwater pump and treatment system should remain off. This report describes activities and results at the site from 16 June 2020 to 16 June 2023.

In March 1994, a Record of Decision (ROD) was completed for the site. According to the ROD, the remedy includes a groundwater extraction system consisting of three recovery wells. The primary goals of the groundwater extraction and treatment system are to:

- Reduce the mass and concentration of contaminants in the groundwater
- Control migration of the groundwater contamination.

In situ bioremediation pilot study injections were also performed in August 2019 to support development of a remedial system optimization by directly treating impacted groundwater at the site. Performance monitoring was completed and documented in quarterly operation and maintenance reports. Results from September 2019 through June 2020 indicated that dechlorination of tetrachloroethene (PCE) and trichloroethene (TCE) was occurring in the overburden and may be beginning in the bedrock aquifer.

Following the bioremediation pilot study injections, EA installed seven groundwater monitoring wells, five soil vapor points, and two sub-slab vapor points, as part of a groundwater and vapor rebound study. The objective of the rebound study was to evaluate contaminant of concern (COC) rebound after the completion of the injections and the shutdown of the groundwater pump and treatment system. Ten groundwater monitoring wells were sampled quarterly from 16 November 2021 through 8 March 2023. All quarterly air samples associated with this rebound study were collected within the heating seasons. The results of the rebound study are currently being provided in a separate report for the NYSDEC and New York State Department of Health (NYSDOH). The preliminary conclusions for the rebound study suggest that the groundwater concentrations are stable and that the groundwater pump and treat system could remain off but in operational condition.

Comparative analysis of historical and recent groundwater data suggests that the overall mass concentrations of chlorinated volatile organic compounds in the groundwater plume in the vicinity of the site are being reduced and the migration of the groundwater contamination is currently stable.

The remedy selected by the 1994 ROD included the groundwater pump and treat system which was shut down in December 2021 at the beginning of the groundwater and vapor sampling rebound study. The groundwater and vapor sampling rebound study completed between Nov 2021 and March 2023 is being utilized as a guide to determine if the groundwater pump and treat system needs to remain in operation according to the SMP and ROD to reach the remedial action objectives per the 1994 ROD. All other components of the site's remedy remain effective.

It is recommended that a desktop review of the Periodic Review Report continue to be conducted every 3 years to evaluate the performance, effectiveness, and protectiveness of the remedial actions that are being implemented at the site.

1. SITE OVERVIEW

This Periodic Review Report (PRR) has been prepared to document the ongoing performance, effectiveness, and protectiveness of the selected remedy at the Roxy Cleaners site as required by 6 New York Code of Rules and Regulations Part 375. The Roxy Cleaners site (New York State Department of Environmental Conservation [NYSDEC] Site Number [No.] 4-42-024) is located in a suburban portion of Rensselaer County, in North Greenbush, New York (**Figure 1**). Roxy Cleaners, Inc. operated a dry cleaning establishment at this site and allegedly spilled dry cleaning solvents, resulting in contamination of the site's soil and groundwater. Contaminants were found to be tetrachloroethene (PCE), trichloroethene (TCE), and 1,2-dichloroethene (DCE).

1.1 OBJECTIVES OF THE PERIODIC REVIEW

The periodic review process is used for determining if the remedy continues to be properly managed as set forth in the April 2022 Site Management Plan[1]. The reporting period this report is from June 2020 to June 2023. The objectives of the periodic review for sites in the State Superfund Program are as follows:

- Determine if the remedy remains in place, is performing properly and effectively, and is protective of public health and the environment.
- Evaluate compliance with the decision document(s) and, if available, the Site Management Plan.
- Evaluate all treatment units, and recommend repairs or changes, if necessary.
- Evaluate the condition of the remedy.
- Certify, if appropriate, that the intent of institutional controls (ICs) continues to be met and that engineering controls (ECs) remain in place, and are effective and protective of public health and the environment.

1.2 REMEDIAL HISTORY

From 1959 to 1998, Roxy Cleaners, Inc. operated a dry cleaning establishment at this site and allegedly spilled dry cleaning solvents, which resulted in contamination of the site's soil and groundwater. In 1990, NYSDEC initiated a remedial investigation/feasibility study to determine the extent of the contamination. Contaminants were found to be PCE, TCE, and DCE. In January 1992, a vacuum extraction system was installed at the site as an interim remedial measure. The vacuum extraction system operated between March 1992 through November 1992 and removed approximately 350 pounds of PCE from the vadose zone using this system.

1 EA. 2022. *Site Management Plan.* April.

In March 1994, a Record of Decision (ROD)[2] was issued for the site. The ROD called for:

- Installation of on-site overburden and bedrock recovery wells.
- Installation of off-site overburden recovery wells.
- Operation and maintenance (O&M) of a groundwater treatment system on-site and off-site.
- Discharge of treated wastewater to Wynantskill Creek.
- Extension of the existing public water supply system to service the effected private water supply wells.
- Institution of a long-term monitoring program for the site.

A vapor intrusion evaluation investigation was completed in April 2006 to assess whether or not soil vapor contamination existed in the vicinity of the site. The assessment evaluated the extent to which the vapors, if detected, posed a threat to human health or the environment. As a result of the investigation, one on-site and two off-site sub-slab depressurization systems (SSDSs) were installed. Only two of the systems remain, as one off-site building was removed and the property was redeveloped by Stewart's Shops. Both systems are still operational.

From October 2007 to present, Aztech Environmental, now LaBella Associates (LaBella), has performed weekly O&M visits. Influent and effluent samples are collected on a monthly basis to determine system efficiency and mass removal of contaminants. During that same period, EA Engineering, P.C. and its affiliate EA Science and Technology (EA) has performed oversight and quarterly reporting of O&M activities.

In August 2019, EA performed an injection of CarBstrate™ into both the overburden and bedrock aquifers at the site as part of a pilot study. A total of three bedrock wells (INJ-1, INJ-2, and INJ-3) and two overburden trenches (T-1 and T-2) were used to implement the CarBstrate™ injections. A total of 10,000 lb of CarBstrate™ was injected into the subsurface, 4,000 lb into the overburden via injection trenches and 6,000 lb into the bedrock via injection wells. Preliminary results indicated effective reductive dechlorination of volatile organic compounds (VOCs) in the overburden aquifer. Bedrock aquifer concentrations have been reported within historical ranges.

2. NYSDEC. 1994. *Roxy Cleaners Site, Site No. 4-42-024, Town of North Greenbush, Rensselaer County, New York. Record of Decision*. March.

2. REMEDY PERFORMANCE, EFFECTIVENESS, AND PROTECTIVENESS

Based on previous site visits and a review of the April 2022 Site Management Plan[1], this groundwater treatment system consists of the following primary elements:

- Three recovery wells: RW-1, RW-2, and RW-3
- Groundwater extraction pumps
- Filters
- Granular activated charcoal units
- Air stripper (including two blowers)
- Groundwater gravity discharge system

2.1 OPERATION, MONITORING, AND MAINTENANCE PLAN COMPLIANCE REPORT

O&M operations were performed from the beginning of the June 2020 reporting period through December 2021 when the groundwater pump and treat system was shut down for the groundwater and soil vapor rebound study. The following summarizes the 2020 - 2021 OM&M program.:

- The treatment system was operated and maintained by the on-site remedial contractor (LaBella) from the Ballston Spa, New York, office until the shut down in December 2021.

- Weekly visits were typically required to maintain the system. The system is not equipped with remote monitoring capabilities.

- Groundwater treatment system sampling (influent and effluent) was performed monthly for VOCs while the system was running.

- Twenty-three monitoring wells are currently sampled on a 15-month basis and analyzed for VOCs.

2.1.1 Operation, Monitoring, and Maintenance Plan Compliance

From June 2020 to December 2021, the State Pollutant Discharge Elimination System values for VOCs in the effluent samples were below the stated discharge limitations. The groundwater pump and treatment system was shut down in December 2021 to initiate the groundwater and vapor rebound study. Effluent sampling will resume in the event that the system is restarted.

During the 36-month period from June 2020 to June 2023, the following OM&M compliance activities were accomplished as described in the following table.

Confirm Compliance with OM&M Activities

Activity	Required Frequency (X)					Compliance Dates
	Weekly	Monthly	Quarterly	Five-Quarter	As Needed	
Preventative Maintenance	X					June 2020 – December 2021
Groundwater (influent and effluent) Sampling		X				June 2020– December 2021
Monitoring Well Sampling				X		June 2020 – June 2023
Selected Monitoring Well Sampling			X			November 2021 – March 2023
Air Stripper and Pump Cleaning					X	June 2020 – December 2021
Sediment Filters					X	June 2020 – December 2021

Note: System has been inactive since December 2021 at the request of NYSDEC in order to perform the Groundwater and Vapor Sampling Rebound Study

Following the August 2019 pilot study implementation, two recovery wells were shut off to allow injectate to propagate in the overburden aquifer. RW-1 was shut off 17 January 2020 and RW-2 was shut off 15 May 2020 after CarBstrate™ was observed to be present in the recovery wells. Both RW-1 and RW-2 remained off until the overall system was shut down in December 2021 as part of the groundwater and vapor rebound study.

2.1.2 Evaluation of Operation, Monitoring, and Maintenance Activities

2.1.2.1 Flow Rates

From June 2020 to December 2021, the groundwater extraction and treatment system treated 973,865 gallons of groundwater. The individual pumping rates varied from well to well. Based on the Final OM&M[3], dated January 1998, the designed flow rates are as follows: 0.5 gallons per minute (gpm) for RW-1, 5 gpm for RW-2, and 16 gpm for RW-3. During the period, RW-3 averaged a flow rate of approximately 1.45 gpm. During the June 2020 to June 2023 reporting period neither RW-1 or RW-2 were operational due to the injection pilot study activities and then to the overall system shutdown for the groundwater and vapor sampling study. RW-1 was shut down on 17 January 2020 and RW-2 was shut down on 15 May 2020 due to the injections. RW-1 and RW-2 remained off, with the exception of being turned on in order to be sampled monthly. The average flow rates are calculated using the total available operational time for the period, divided by the total gallons pumped during that time period. Therefore, actual operational flow rates are likely to be higher after treatment system down time is taken into account.

2.1.2.2 Groundwater Levels

During the groundwater sampling event completed in November 2021, groundwater elevations were obtained from the well network to ensure that the cones of influence created by the recovery

3. Malcolm Pirnie, Inc. 1998. *Operations & Maintenance Manual. N.Y.S. Superfund Standby Contract Work Assignment #D002852-13, Roxy Cleaners Remedial Construction Oversight, Site #4-42-024. January.*

wells were maintained (**Figures 3A and 3B**). Recovery wells RW-2 and RW-3 are overburden wells. As shown on **Figure 3A** (interpolated overburden groundwater contour map), a cone of influence is created by RW-3 when it is operational. A cone of influence was not maintained by RW-1 or RW-2 and is likely due to the low average flow rates for RW-2 and the downtime experienced by RW-1. **Figure 3B** (interpolated bedrock groundwater contour map) shows no cone of influence created by RW-1 in the bedrock groundwater table. The Site's vertical hydraulic gradient has not been evaluated since the groundwater recovery wells have been turned off. During the groundwater rebound study, site-wide groundwater gauging was performed during each quarterly event. The results of the most recent gauging event, March 2023, are illustrated on **Figures 4A and 4B**; the overburden and bedrock groundwater elevations have stabilized to static conditions following the system shutdown. The cone of influence from the recovery wells is no longer present based on the overburden or bedrock groundwater elevations.

2.1.2.3 Influent Analytical

Monthly samples were collected from the influent lines from each of the three recovery wells in conjunction with the treatment system effluent samples while the system was running. These samples provide a basis for determining the mass of contaminants recovered from the groundwater at the three wells and are also used in determining the removal efficiency of the air stripper system. Typically, the influent samples have been over the NYSDEC Ambient Water Quality Standards (AWQS) for the Site's contaminants of concern (COCs) during the June 2020 – June 2023 reporting period. The results of these analyses are summarized in **Table 1**.

2.1.2.4 Effluent Analytical

The treatment system effluent met the discharge criteria during the period, prior to it being shut down in December 2021 for the completion of the rebound study. After the groundwater pump and treatment system was shut down to initiate the site groundwater and vapor rebound study effluent sampling was not collected. Effluent sampling will resume if the groundwater pump and treatment system is turned back on.

2.1.2.5 System Maintenance

From June 2020 to December 2021, LaBella performed weekly O&M visits. Representatives from EA were on-site periodically to discuss system operation and performance, as well as any recurring issues. From June 2020 to December 2021, the system ran continuously; however, as stated in Section 2.1, RW-1 and RW-2 were shut down during extended periods of time. RW-1 was shut off 17 January 2020 to allow injectate from the August 2019 pilot study to propagate in the overburden aquifer. RW-2 was also shut down 15 May 2020 to allow injectate from the pilot study to propagate. Both RW-1 and RW-2 remained off until the overall system was shut down in December 2021 as part of the groundwater and vapor rebound study.

Between June 2020 and December 2021, the groundwater treatment system removed 973,865 gallons of contaminated water. Mass removal was calculated on a quarterly basis for the three COCs (PCE, TCE, and DCE). During this 36-month period, the treatment system removed 1.813 pounds of PCE, TCE, and DCE in the process.

2.2 MONITORING PLAN COMPLIANCE REPORT

The Site Management Plan was finalized in April 2022[1]. Currently, as directed by the NYSDEC, the monitoring wells are sampled on a five-quarter basis (every 15 months) per Division of Environmental Remediation-10. The first of the 15-month sampling events within the June 2020 – June 2023 reporting period was performed on 16 November 2021, and also served as the baseline sampling event for the groundwater and vapor rebound study. Starting in March 2021, EA began sampling the designated monitoring wells on a quarterly basis, continuing through March 2023, as part of the groundwater rebound study, to evaluate how the groundwater COC plume and soil vapor associated with the site would respond once the on-site groundwater pump and treatment system had been shut down in the fourth quarter of 2021. One of the five-quarter sampling events was postponed until the third quarter of 2023 after the completion of the rebound study sampling. Therefore, the monitoring plan compliance section of this PRR assesses whether the site has been managed accordingly.

2.2.1 Groundwater Sampling

The site includes a network of 23 groundwater monitoring wells that are currently used to monitor plume migration and provide a line-of-evidence necessary to demonstrate the effectiveness of groundwater remediation, which are listed in the April 2022 SMP. Currently 5 of the 23 wells either cannot be located or the integrity of the well has been compromised (MW-101, MW-101A, MW-102, MW-105A, and MW-1B). In order to provide the data for compliance monitoring, groundwater sampling is performed on a five-quarter basis (every 15 months) to capture seasonal changes in groundwater elevation.

Three new injection wells were installed in April 2019 as part of the bioremediation pilot study program and sampled in August 2020. These wells are not included in the monitoring network designated in the April 2022 SMP but were sampled during this reporting period to monitor the progress of the pilot study injections.

Seven new monitoring wells were installed in October 2021 as part of the groundwater monitoring associated with the groundwater and vapor rebound study. Two down-gradient wells were installed (MW-114A and MW-115A), three at the center of the COC plume (TW-08, TW-09, TW-10), and two were installed at the source area (TW-06 and TW-07). These wells were sampled quarterly during the groundwater and vapor rebound study but were not designated for sampling in the April 2022 SMP. Existing well MW-113A was also sampled as part of the groundwater and vapor rebound study but is not included in the April 2022 SMP designated wells. All other wells sampled as part of the groundwater and vapor rebound study are listed as designated wells in the SMP. All well locations are illustrated in **Figure 2**.

The monitoring well network consists of overburden and bedrock monitoring wells. Interpreted overburden and bedrock groundwater monitoring well elevation maps illustrating the direction of groundwater flow for the most recent gauging events, November 2021 and March 2023, are detailed in **Table 2** and shown on **Figure 3A through Figure 4B**. Hydraulic groundwater gradient across the site was determined to be 0.011 in the overburden wells and 0.0010 in the bedrock wells.

The observed groundwater flow direction in the overburden and bedrock wells is in a westerly direction, which follows the same general direction as topography.

During each sampling event that took place during this reporting period, all monitoring wells were inspected prior to gauging and sampling, and their condition was noted on the groundwater purge forms. During the well inspections, a total of 31 monitoring wells were listed for inspection. This included the 23 monitoring wells listed in the SMP and the additional 8 monitoring wells that are called for sampling in the groundwater rebound study. Four monitoring wells (MW-101, MW-101A, MW-102A, and MW-105A) were not located, and MW-1B was filled with dirt and could not be gauged. During the March 2023 sampling event, the following well conditions were noted:

- The well head for monitoring well MW-1B was filled with sediment and could not be gauged or sampled.
- Monitoring well MW-103A had a missing well cover but had a intact and operational J-plug
- Monitoring well MW-111 had an intact well cover but had no J-plug as the well is 8 inches in diameter.
- The polyvinyl chloride (PVC) casing for monitoring well MW-106 was cracked at the surface. The cast iron well cover was intact.

Currently, groundwater samples are analyzed for VOCs by U.S. Environmental Protection Agency Method 8260B. The following sections detail analytical results for the overburden and bedrock monitoring wells.

2.2.2 Overburden Monitoring Wells

Groundwater analytical data for the August 2020 and November 2021 sampling events are summarized in **Tables 3A and 3B**. Analytical results for both events, August 2020 and November 2021, are shown on **Figures 5 and 6**, respectively, and isopleths for PCE in the overburden wells from November 2021 event are depicted on **Figure 7**. The available historical data for the COCs (TCE, PCE, and DCE) are presented in **Table 4**. These data include 22 groundwater sampling events completed from October 1989 to November 2021. Trend graphs for available historical analytical data are provided on **Figures 8A through 8F**. Analytical data from the quarterly groundwater monitoring events from the groundwater and vapor sampling rebound study can be found in **Table 5** and **Table 6**. The Groundwater and Soil Vapor Rebound Study Report that will be submitted to the NYSDEC separately.

PCE was the most prevalent analyte and was detected at concentrations greater than the AWQS of 5 micrograms per liter (µg/L) in 9 overburden wells ranging from 8.3 µg/L (MW-107A) to 200 µg/L (TW-10). *Cis*-1,2-DCE was detected at 4 monitoring wells above NYSDEC AWQS with concentrations ranging from 7.2 µg/L (MW-2) to 25 µg/L (TW-08), which is greater than the

AWQS of 5 µg/L. TCE was not detected at monitoring wells at a concentration greater than the corresponding AWQS of 5 µg/L.

Historically, 5 overburden monitoring wells (MW-2, MW-101A, MW-103A, MW-107A, and MW-111) have had concentrations of COCs (PCE, TCE, and DCE) above the AWQS of 5 µg/L. Since initial sampling in October 1989, the general concentrations of these analytes have decreased in these monitoring wells. Since 2008, PCE has also been detected at concentrations above the 5 µg/L standard at monitoring wells TW-5 and MW-105A. PCE has also been detected at concentrations above the 5 µg/L standard at the newly installed monitoring wells in 2021 (TW-06, TW-08, TW-09, TW-10, and MW-115A).

It should be noted that there is an increase of PCE, TCE, and DCE at MW-2. This well is directly adjacent to RW-3 which has recently been turned off for the groundwater and vapor sampling rebound study. It is anticipated that the increase in COCs at this well is temporary and will stabilize or attenuate. The bedrock monitoring well MW-2B has not seen a similar increase in site COCs.

2.2.3 Bedrock Monitoring Wells

Three bedrock monitoring wells (MW-101, MW-103, and MW-107) have historically had concentrations of one or more analytes (PCE, TCE, and DCE) above the AWQS. No bedrock monitoring wells had detections of PCE, TCE, or DCE above the AWQS during this reporting period.

2.2.4 Groundwater and Vapor Sampling Rebound Study

Following the bioremediation injection pilot study, it was determined that the groundwater pump and treatment system on-site would be shut down for a period of time to evaluate groundwater and vapor rebound and migration at the site. The rebound study's objective was to determine how the groundwater COC plume and soil vapor associated with the site (including potential exposure at downgradient locations) would respond once the on-site groundwater pump and treatment system had been shut down in the fourth quarter of 2021. EA completed groundwater, indoor air, soil vapor, and sub-slab air sampling as part of the ongoing rebound study. The rebound study began in the fourth quarter of 2021 (16 November 2021 sampling event) and continued through the first quarter of 2023. A summary of the analytical data from the quarterly groundwater sampling and the heating season air sampling can be found in **Table 5** and **Table 6**, respectively. COC trends from the rebound study period appear to be stable or decreasing. The groundwater and soil vapor sampling occurred quarterly within the reporting period for this PRR but will be presented in a separate report. Further analysis of the on-site groundwater trends is provided in the Groundwater and Vapor Sampling Rebound Study, which includes a Mann-Kendall Statistical analysis of site COCs for all selected monitoring wells.

2.2.5 Confirm Compliance with Monitoring Plan

During the 36-month period from June 2020 to June 2023, the following monitoring plan compliance activities were accomplished.

Activity	Required Frequency (X)					Compliance Dates
	Semi-Annual	Monthly	Quarterly	Five-Quarter	As Needed	
Groundwater Sampling				X		June 2020–June 2023

2.2.6 Confirm Performance Standards Are Being Met

Both current and available historical data (**Table 4**) were reviewed to determine if there are any notable trends in the data concentrations. Previous investigations at this site indicate that the primary COCs are PCE, TCE, and DCE. Historical data reveal that 8 monitoring wells (MW-2, MW-101, MW-101A, MW-103, MW-103A, MW-107, MW-107A, and MW-111) have had concentrations of one or more analyte (PCE, TCE, and DCE) above the AWQS standard of 5 µg/L. Based on historical trend graphs (**Figures 8A through 8F**), the general concentrations of these analytes have decreased in these monitoring wells since initial sampling in October 1989.

2.3 SUB-SLAB DEPRESSURIZATION SYSTEM

As a result of a previous vapor intrusion investigation, three SSDSs were installed in January 2008. In November 2009, an initial inspection was completed on the three SSDSs and determined to be in working order. Only two of the systems remain, as one off-site building was removed, and the property was redeveloped by Stewart's Shops. Both systems are still operational. If the property owners report a problem, the NYSDEC will have a contractor inspect and complete repairs as needed. To date, there have not been any issues reported with the SSDS systems. EA performs visual and auditory checks of the exterior of the system during each site visit and has not noted any issues.

2.4 INSTITUTIONAL CONTROL/ENGINEERING CONTROL CERTIFICATION PLAN REPORT

IC/ECs at the site currently consist of:

- The Environmental Notice prepared for the site by NYSDEC, dated 22 November 2013
- Maintenance of restricted access and posted warning notifications.
- O&M of groundwater extraction and treatment system
- Environmental monitoring to determine effectiveness of the remedy.

2.4.1 Institutional Control/Engineering Control Requirements and Compliance

Determination of compliance with the ICs/ECs at the site is made based on the following criteria:

- The ICs/ECs applied at the site are in place and unchanged from the previous certification (presented in the OM&M manual).

- Nothing has occurred that would impair the ability of such controls to protect the public health and the environment or constitute a violation or failure to comply with any element of the OM&M plan for such controls.

- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of such controls.

2.4.2 Institutional Control/Engineering Control Certification Form

The completed IC/EC Certification Form is provided as **Appendix A**.

3. CONCLUSIONS/RECOMMENDATIONS

3.1 CONCLUSIONS

As described in the March 1994 ROD,[2] the primary goals of the groundwater pump and treat system are:

- Reduce the mass and concentration of contaminants in the groundwater
- Control migration of the groundwater contamination.

Following the bioremediation pilot study injections, as well as the shutdown of the groundwater pump and treatment system, the concentrations and migration of the site COCs has been determined to be stable if not decreasing. Per discussions with NYSDEC and NYSDOH it was determined that the groundwater pump and treat system would be turned off to complete a rebound study. Following the quarterly sampling between 16 November 2021 and 8 March 2023 for groundwater and vapor it was determined that semiannual groundwater sampling and vapor sampling (during heating seasons) will be completed during 2023 and 2024 and that the groundwater pump and treat system would remain off.

3.2 RECOMMENDATIONS

It is recommended that the groundwater sampling continue to be performed on a 15-month basis as specified in the April 2022 SMP. The onsite and offsite SSDS should continue to be inspected on an auditory and visual basis.

Per conversations with NYSDEC and NYSDOH the site sub-slab vapor, indoor air, and soil vapor should continue to be sampled during the heating season.

Following the completion and finalization of the Groundwater and Vapor Sampling Rebound Study, it is anticipated that additional groundwater monitoring may be performed at the newly installed groundwater monitoring wells and the select existing monitoring wells mentioned in Section 2.2.1 on a more frequent basis than specified in the SMP. The monitoring well network may be reevaluated to determine whether wells that are damaged or redundant should be decommissioned, based on the results of the Groundwater and Vapor Sampling Rebound Study.

It is also anticipated that the on-site groundwater pump and treatment system will remain off (but in operational condition) unless the COCs in groundwater are noted to be increasing or resulting in indoor air quality issues. In that case, EA would recommend to the NYSDEC and the NYSDOH that the groundwater pump and treatment system be re-activated; EA would then continue to monitor the COC concentrations for another year to evaluate if the groundwater pump and treatment system could be decommissioned.

It is also recommended that the PRRs continue to be completed for 3-year performance periods.

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Tables

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Table 1 Historical Summary of Detected Volatile Organic Compounds for Treatment System Samples (July 2014 - December 2021)

Parameter	RW-01										
	18-Jul-14	**22-Aug-14**	**12-Sep-14**	**17-Oct-14**	**21-Nov-14**	**12-Dec-14**	**15-Jan-15**	**27-Feb-15**	**20-Mar-15**	**17-Apr-15**	**22-May-15**
Tetrachloroethene	**340**	**320**	**300**	**300**	**300**	**280**	**320**	**370**	**360**	**250**	**360**
Trichloroethene	**29**	**29**	**26**	**26**	**29**	**26**	**35**	**29**	**29**	**30**	**37**
cis 1,2-dichloroethene	**44**	**58**	**49**	**64**	**59**	**47**	**71**	**62**	**94**	**52**	**75**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	548,236	550,110	551,079	553,480	556,030	556,510	557,440	559,380	560,800	561,940	563,960
Total Flow (gal)	2,046,066	2,047,940	2,048,909	2,051,310	2,053,860	2,054,340	2,055,270	2,057,210	2,058,630	2,059,770	2,061,790
Gallons between samples	1,416	1,874	969	2,401	2,550	480	930	1,940	1,420	1,140	2,020
Parameter	**RW-02**										
	18-Jul-14	**22-Aug-14**	**12-Sep-14**	**17-Oct-14**	**21-Nov-14**	**12-Dec-14**	**15-Jan-15**	**27-Feb-15**	**20-Mar-15**	**17-Apr-15**	**22-May-15**
Tetrachloroethene	**230**	**250**	**260**	**210**	**340**	**320**	**220**	**260**	**260**	**160**	**270**
Trichloroethene	**9.2**	**8.5**	**9**	**8.6**	**10**	**11**	**8.2**	**7.4**	**8**	**7.5**	**11**
cis 1,2-dichloroethene	**10**	**18**	**16**	**18**	**15**	**23**	**16**	**13**	**20**	**11**	**19**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	240,160	293,431	319,953	361,459	380,054	397,795	483,776	538,489	584,973	621,578	645,583
Total Flow (gal)	30,027,209	30,080,480	30,107,002	30,148,508	30,167,103	30,184,844	30,270,825	30,325,538	30,372,022	30,408,627	30,432,632
Gallons between samples	50,784	53,271	26,522	41,506	18,595	17,741	85,981	54,713	46,484	36,605	24,005
Parameter	**RW-03**										
	18-Jul-14	**22-Aug-14**	**12-Sep-14**	**17-Oct-14**	**21-Nov-14**	**12-Dec-14**	**15-Jan-15**	**27-Feb-15**	**20-Mar-15**	**17-Apr-15**	**22-May-15**
Tetrachloroethene	**180**	**200**	**150**	**160**	**170**	**170**	**170**	**210**	NS	NS	**190**
Trichloroethene	4.2	**8.5**	3.8	3.4	**10**	**4.5**	**4.1**	**7.4**	NS	NS	**11**
cis 1,2-dichloroethene	**6.7**	**18**	**5.2**	**7.1**	**15**	**5.9**	**7.1**	**13**	NS	NS	**19**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND
Totalizer Reading (gal)	1,591,551	1,962,810	2,172,839	2,503,950	2,855,230	2,993,320	3,343,210	3,615,830	3,702,220	3,702,220	3,915,170
Total Flow (gal)	14,469,800	14,841,059	15,051,088	15,382,199	15,733,479	15,871,569	16,221,459	16,494,079	16,580,469	16,580,469	16,793,419
Gallons between samples	386,501	371,259	210,029	331,111	351,280	138,090	349,890	272,620	86,390	0	212,950
Parameter	**SYSTEM EFFLUENT**										
	18-Jul-14	**22-Aug-14**	**12-Sep-14**	**17-Oct-14**	**21-Nov-14**	**12-Dec-14**	**15-Jan-15**	**27-Feb-15**	**20-Mar-15**	**17-Apr-15**	**22-May-15**
Tetrachloroethene	ND	ND	2	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis 1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	22,248,862	22,675,266	22,912,786	26,331,675	26,704,100	26,860,411	35,192,462	35,521,735	35,656,029	31,991,554	35,932,749
Total Flow (gal)	46,543,075	46,969,479	47,206,999	47,582,017	47,954,442	48,110,753	48,547,554	48,876,827	49,011,121	49,048,866	49,287,841
Gallons between samples	438,701	426,404	237,520	375,018	372,425	156,311	436,801	329,273	134,294	37,745	238,975

NOTES:
NYSDEC Ambient Water Quality Standard Values (µg/L) 5 for all except VC, which is 2.
Bold values indicate that the analyte was detected greater than the NYSDEC AWQS.
Effluent Limitations Daily Max Load is 10 µg/L for all analyses listed. Treatment effluent limitations and monitoring requirements set forth in the Treatment System Operations and Maintenance Manual Dated July 1997.
gal = Gallon(s)
NR = Not recorded.
ND = The analyte was analyzed for, but was not detected above the sample reporting limit.
NS = Monitoring well not sampled.

Table 1 Historical Summary of Detected Volatile Organic Compounds for Treatment System Samples (July 2014 - December 2021)

Parameter	RW-01										
	19-Jun-15	**24-Jul-15**	**14-Aug-15**	**18-Sep-15**	**28-Oct-15**	**20-Nov-15**	**18-Dec-15**	**22-Jan-16**	**25-Mar-16**	**27-May-16**	**24-Jun-16**
Tetrachloroethene	**380**	**300**	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene	**36**	**32**	NS	NS	NS	NS	NS	NS	NS	NS	NS
cis 1,2-dichloroethene	**66**	**72**	NS	NS	NS	NS	NS	NS	NS	NS	NS
Vinyl Chloride	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS
Totalizer Reading (gal)	564,850	567,010	567,190	567,190	567,190	567,190	567,190	567,190	567,190	567,190	567,190
Total Flow (gal)	2,062,680	2,064,840	2,065,020	2,065,020	2,065,020	2,065,020	2,065,020	2,065,020	2,065,020	2,065,020	2,065,020
Gallons between samples	890	2,160	180	0	0	0	0	0	0	0	0
Parameter	**RW-02**										
	19-Jun-15	**24-Jul-15**	**14-Aug-15**	**18-Sep-15**	**28-Oct-15**	**20-Nov-15**	**18-Dec-15**	**22-Jan-16**	**25-Mar-16**	**27-May-16**	**24-Jun-16**
Tetrachloroethene	**350**	**310**	**160**	**500**	**560**	**450**	**460**	**420**	**420**	**410**	**400**
Trichloroethene	**12**	**11**	4	**18**	**20**	**17**	**17**	**15**	**14**	**14**	**14**
cis 1,2-dichloroethene	**18**	**23**	**5.2**	**32**	**34**	**36**	**42**	**30**	**25**	**21**	**20**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	677,656	710,937	712,110	719,539	736,488	755,944	774,949	800,645	841,182	880,530	939,241
Total Flow (gal)	30,464,705	30,497,986	30,499,159	30,506,588	30,523,537	30,542,993	30,561,998	30,587,694	30,628,231	30,667,579	30,726,290
Gallons between samples	32,073	33,281	1,173	7,429	16,949	19,456	19,005	25,696	40,537	39,348	58,711
Parameter	**RW-03**										
	19-Jun-15	**24-Jul-15**	**14-Aug-15**	**18-Sep-15**	**28-Oct-15**	**20-Nov-15**	**18-Dec-15**	**22-Jan-16**	**25-Mar-16**	**27-May-16**	**24-Jun-16**
Tetrachloroethene	**200**	**150**	**150**	**190**	**190**	**170**	**160**	**190**	**210**	**230**	**230**
Trichloroethene	**4.0**	**3.4**	4	4.1	3.2	17	3.4	3.5	**3.5**	3.7	2.9
cis 1,2-dichloroethene	**5.4**	**6.6**	**5.2**	**5.7**	**5.6**	**36**	**4.2**	**6.4**	**6.1**	**5.1**	**5.2**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	4,118,100	4,401,110	4,553,430	4,788,570	4,937,220	5,115,590	5,294,650	5,510,770	5,783,570	6,001,320	6,147,840
Total Flow (gal)	16,996,349	17,279,359	17,431,679	17,666,819	17,815,469	17,993,839	18,172,899	18,389,019	18,661,819	18,879,569	19,026,089
Gallons between samples	202,930	283,010	152,320	235,140	148,650	178,370	179,060	216,120	272,800	217,750	146,520
Parameter	**SYSTEM EFFLUENT**										
	19-Jun-15	**24-Jul-15**	**14-Aug-15**	**18-Sep-15**	**28-Oct-15**	**20-Nov-15**	**18-Dec-15**	**22-Jan-16**	**25-Mar-16**	**27-May-16**	**24-Jun-16**
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis 1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	36,168,642	36,487,093	36,640,766	36,883,335	43,124,233	43,322,059	43,520,124	50,398,729	50,712,066	58,161,106	58,366,337
Total Flow (gal)	49,523,734	49,842,185	49,995,858	50,238,427	50,404,026	50,601,852	50,799,917	51,041,733	51,355,070	51,612,168	51,817,399
Gallons between samples	235,893	318,451	153,673	242,569	165,599	197,826	198,065	241,816	313,337	257,098	205,231

NOTES:
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(a) Treatment effluent limitations and monitoring requirements set forth in the Treatment System Operations and Maintenance Manual Dated July 1997.
gal = Gallon(s)

ND = The analyte was analyzed for, but was not detected above the sample reporting limit.
NS = Monitoring well not sampled.

Table 1 Historical Summary of Detected Volatile Organic Compounds for Treatment System Samples (July 2014 - December 2021)

Parameter	RW-01										
	22-Jul-16	**26-Aug-16**	**23-Sep-16**	**28-Oct-16**	**18-Nov-16**	**29-Dec-16**	**27-Jan-17**	**17-Feb-17**	**24-Mar-17**	**21-Apr-17**	**19-May-17**
Tetrachloroethene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
cis 1,2-dichloroethene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Vinyl Chloride	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Totalizer Reading (gal)	567,190	567,190	567,190	567,190	567,190	567,190	567,190	567,190	567,190	567,190	567,190
Total Flow (gal)	2,065,020	2,065,020	2,065,020	2,065,020	2,065,020	2,065,020	2,065,020	2,065,020	2,065,020	2,065,020	2,065,020
Gallons between samples	0	0	0	0	0	0	0	0	0	0	0
Parameter	**RW-02**										
	22-Jul-16	**26-Aug-16**	**23-Sep-16**	**28-Oct-16**	**18-Nov-16**	**29-Dec-16**	**27-Jan-17**	**17-Feb-17**	**24-Mar-17**	**21-Apr-17**	**19-May-17**
Tetrachloroethene	**380**	**340**	**310**	**340**	**340**	**320**	**290**	**250**	**280**	**170**	**160**
Trichloroethene	**12**	**12**	**13**	**12**	**12**	**11**	**10**	**9.6**	**9.3**	0	**5.2**
cis 1,2-dichloroethene	**19**	**18**	**22**	**21**	**19**	**14**	**16**	**15**	**9.8**	**5.2**	**6**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	992,139	1,007,260	1,110,254	1,158,602	1,173,723	1,270,476	1,319,870	1,360,313	1,429,159	1,488,974	1,538,910
Total Flow (gal)	30,779,188	30,794,309	30,897,303	30,945,651	30,960,772	31,057,525	31,106,919	31,147,362	31,216,208	31,276,023	31,325,959
Gallons between samples	52,898	15,121	102,994	48,348	15,121	96,753	49,394	40,443	68,846	59,815	49,936
Parameter	**RW-03**										
	22-Jul-16	**26-Aug-16**	**23-Sep-16**	**28-Oct-16**	**18-Nov-16**	**29-Dec-16**	**27-Jan-17**	**17-Feb-17**	**24-Mar-17**	**21-Apr-17**	**19-May-17**
Tetrachloroethene	**220**	**180**	**170**	**190**	**190**	**220**	**180**	**210**	**230**	**210**	**180**
Trichloroethene	3.5	**12**	2.8	3	**12**	**3.2**	**2.9**	**9.6**	3.7	3.3	**5.2**
cis 1,2-dichloroethene	**5.6**	**18**	**6.3**	**5.9**	**19**	**4.7**	**5.5**	**15**	**4.5**	**4.9**	**6**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	6,302,940	6,364,505	6,648,821	6,795,350	6,853,790	7,107,170	7,237,150	7,348,820	7,533,480	7,682,153	7,823,410
Total Flow (gal)	19,181,189	19,242,754	19,527,070	19,673,599	19,732,039	19,985,419	20,115,399	20,227,069	20,411,729	20,560,402	20,701,659
Gallons between samples	155,100	61,565	284,316	146,529	58,440	253,380	129,980	111,670	184,660	148,673	141,257
Parameter	**SYSTEM EFFLUENT**										
	22-Jul-16	**26-Aug-16**	**23-Sep-16**	**28-Oct-16**	**18-Nov-16**	**29-Dec-16**	**27-Jan-17**	**17-Feb-17**	**24-Mar-17**	**21-Apr-17**	**19-May-17**
Tetrachloroethene	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis 1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	66,228,606	66,305,292	66,692,602	66,887,479	66,961,040	67,311,173	67,490,547	67,642,660	67,896,166	77,634,483	77,825,676
Total Flow (gal)	52,025,397	52,102,083	52,489,393	52,684,270	52,757,831	53,107,964	53,287,338	53,439,451	53,692,957	53,901,445	54,092,638
Gallons between samples	207,998	76,686	387,310	194,877	73,561	350,133	179,374	152,113	253,506	208,488	191,193

NOTES:
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(a) Treatment effluent limitations and monitoring requirements set forth in the Treatment System Operations and Maintenance Manual Dated July 1997.
gal = Gallon(s)

ND = The analyte was analyzed for, but was not detected above the sample reporting limit.
NS = Monitoring well not sampled.

Table 1 Historical Summary of Detected Volatile Organic Compounds for Treatment System Samples (July 2014 - December 2021)

Parameter	RW-01										
	23-Jun-17	**21-Jul-17**	**18-Aug-17**	**22-Sep-17**	**20-Oct-17**	**17-Nov-17**	**1-Dec-17**	**19-Jan-18**	**23-Feb-18**	**23-Mar-18**	**20-Apr-18**
Tetrachloroethene	NS	NS	NS	**270**	**240**	**260**	NS	**110**	**170**	**240**	**230**
Trichloroethene	NS	NS	NS	**24**	**23**	**29**	NS	**8.2**	**18**	**24**	**19**
cis 1,2-dichloroethene	NS	NS	NS	**62**	**75**	**58**	NS	**14**	**37**	**58**	**29**
Vinyl Chloride	NS	NS	NS	ND	ND	ND	NS	ND	ND	ND	ND
Totalizer Reading (gal)	567,190	567,190	567,190	567,640	568,250	569,070	569,500	570,930	571,830	572,430	573,370
Total Flow (gal)	2,065,020	2,065,020	2,065,020	2,065,470	2,066,080	2,066,900	2,067,330	2,068,760	2,069,660	2,070,260	2,071,200
Gallons between samples	0	0	0	450	610	820	430	1,430	900	600	940
Parameter	**RW-02**										
	23-Jun-17	**21-Jul-17**	**18-Aug-17**	**22-Sep-17**	**20-Oct-17**	**17-Nov-17**	**1-Dec-17**	**19-Jan-18**	**23-Feb-18**	**23-Mar-18**	**20-Apr-18**
Tetrachloroethene	**160**	**210**	**270**	**310**	**270**	**290**	NS	**52**	**260**	**240**	**200**
Trichloroethene	**6.1**	**9.4**	**13**	**13**	**11**	**11**	NS	2.3	**8**	**10**	**7.9**
cis 1,2-dichloroethene	**7.4**	**16.0**	**18**	**18**	**24**	**19**	NS	3.3	**15**	**11**	**12**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
Totalizer Reading (gal)	1,595,310	1,635,613	1,672,213	1,717,043	1,744,796	1,781,560	1,799,886	1,870,321	1,912,369	1,965,525	2,008,026
Total Flow (gal)	31,382,359	31,422,662	31,459,262	31,504,092	31,531,845	31,568,609	31,586,935	31,657,370	31,699,418	31,752,574	31,795,075
Gallons between samples	56,400	40,303	36,600	44,830	27,753	36,764	18,326	70,435	42,048	53,156	42,501
Parameter	**RW-03**										
	23-Jun-17	**21-Jul-17**	**18-Aug-17**	**22-Sep-17**	**20-Oct-17**	**17-Nov-17**	**1-Dec-17**	**19-Jan-18**	**23-Feb-18**	**23-Mar-18**	**20-Apr-18**
Tetrachloroethene	**170**	**200**	**200**	**230**	**170**	**190**	NS	**95**	**180**	**190**	**200**
Trichloroethene	3.1	3.7	**13**	3.3	3	**11**	NS	1.9	**8**	2.5	3.2
cis 1,2-dichloroethene	**4.6**	**5.7**	**18**	**5.3**	**7.4**	**19**	NS	**3.4**	**15**	**6.4**	**3.9**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
Totalizer Reading (gal)	8,000,500	8,137,440	8,271,420	8,399,550	8,474,380	8,573,440	8,623,420	8,757,500	8,873,940	8,963,840	9,043,290
Total Flow (gal)	20,878,749	21,015,689	21,149,669	21,277,799	21,352,629	21,451,689	21,501,669	21,635,749	21,752,189	21,842,089	21,921,539
Gallons between samples	177,090	136,940	133,980	128,130	74,830	99,060	49,980	134,080	116,440	89,900	79,450
Parameter	**SYSTEM EFFLUENT**										
	23-Jun-17	**21-Jul-17**	**18-Aug-17**	**22-Sep-17**	**20-Oct-17**	**17-Nov-17**	**1-Dec-17**	**19-Jan-18**	**23-Feb-18**	**23-Mar-18**	**20-Apr-18**
Tetrachloroethene	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
cis 1,2-dichloroethene	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
Totalizer Reading (gal)	78,059,166	88,399,409	88,569,989	88,743,399	99,530,825	99,667,469	99,736,205	110,934,956	111,094,344	111,238,000	122,862,686
Total Flow (gal)	54,326,128	54,503,371	54,673,951	54,847,361	54,950,554	55,087,198	55,155,934	55,361,879	55,521,267	55,664,923	55,787,814
Gallons between samples	233,490	177,243	170,580	173,410	103,193	136,644	68,736	205,945	159,388	143,656	122,891

NOTES:
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Bold values indicate that the analyte was detected greater than the NYSDEC AWQS.
(a) Treatment effluent limitations and monitoring requirements set forth in the Treatment System Operations and Maintenance Manual Dated July 1997.
gal = Gallon(s)

ND = The analyte was analyzed for, but was not detected above the sample reporting limit.
NS = Monitoring well not sampled.

Table 1 Historical Summary of Detected Volatile Organic Compounds for Treatment System Samples (July 2014 - December 2021)

Parameter	RW-01										
	18-May-18	**22-Jun-18**	**20-Jul-18**	**31-Aug-18**	**28-Sep-18**	**19-Oct-18**	**20-Nov-18**	**21-Dec-18**	**24-Jan-19**	**22-Feb-19**	**22-Mar-19**
Tetrachloroethene	**NS**	**220**	**210**	**140**	**170**	**230**	**250**	**290**	**210**	**130**	**160**
Trichloroethene	**NS**	**17**	**14**	**15**	**17**	**13**	**23**	**23**	**20**	**11**	**6.5**
cis 1,2-dichloroethene	**NS**	**32**	**24**	**36**	**32**	**27**	**53**	**68**	**33**	**26**	**12**
Vinyl Chloride	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	574,280	575,280	576,090	577,240	577,620	578,290	579,320	580,330	581,460	582,430	583,140
Total Flow (gal)	2,072,110	2,073,110	2,073,920	2,075,070	2,075,450	2,076,120	2,077,150	2,078,160	2,079,290	2,080,260	2,080,970
Gallons between samples	910	1,000	810	1,150	380	670	1,030	1,010	1,130	970	710

Parameter	RW-02										
	18-May-18	**22-Jun-18**	**20-Jul-18**	**31-Aug-18**	**28-Sep-18**	**19-Oct-18**	**20-Nov-18**	**21-Dec-18**	**24-Jan-19**	**22-Feb-19**	**22-Mar-19**
Tetrachloroethene	**NS**	**240**	**270**	**210**	**250**	**250**	**230**	**220**	**180**	**130**	**150**
Trichloroethene	NS	**11**	**11**	12	**11**	**9.9**	**8.1**	**7.1**	**7.3**	**5.5**	**5.5**
cis 1,2-dichloroethene	**NS**	**16**	**11**	**15**	**16**	**15**	**11**	**14**	**8.9**	**7.3**	**10**
Vinyl Chloride	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	2,060,966	2,115,874	2,156,037	2,217,979	2,239,018	2,286,244	2,356,504	2,423,723	2,495,703	2,551,718	2,606,527
Total Flow (gal)	31,848,015	31,902,923	31,943,086	32,005,028	32,026,067	32,073,293	32,143,553	32,210,772	32,282,752	32,338,767	32,393,576
Gallons between samples	52,940	54,908	40,163	61,942	21,039	47,226	70,260	67,219	71,980	56,015	54,809

Parameter	RW-03										
	18-May-18	**22-Jun-18**	**20-Jul-18**	**31-Aug-18**	**28-Sep-18**	**19-Oct-18**	**20-Nov-18**	**21-Dec-18**	**24-Jan-19**	**22-Feb-19**	**22-Mar-19**
Tetrachloroethene	NS	**210**	**200**	**130**	**150**	**200**	**210**	**240**	**210**	**110**	**200**
Trichloroethene	NS	3.7	2.8	**12**	2.1	2.3	**8.1**	2.8	4	**5.5**	2.9
cis 1,2-dichloroethene	NS	**5.5**	**4.3**	**15**	**5.1**	**5.8**	**11**	**8.5**	**4.6**	**7.3**	**6.1**
Vinyl Chloride	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	9,146,450	9,270,640	9,367,150	9,490,260	9,534,740	9,613,930	9,733,970	9,848,250	9,970,110	16,600	122,670
Total Flow (gal)	22,024,699	22,148,889	22,245,399	22,368,509	22,412,989	22,492,179	22,612,219	22,726,499	22,848,359	22,894,849	23,000,919
Gallons between samples	103,160	124,190	96,510	123,110	44,480	79,190	120,040	114,280	121,860	46,490	106,070

Parameter	SYSTEM EFFLUENT										
	18-May-18	**22-Jun-18**	**20-Jul-18**	**31-Aug-18**	**28-Sep-18**	**19-Oct-18**	**20-Nov-18**	**21-Dec-18**	**24-Jan-19**	**22-Feb-19**	**22-Mar-19**
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis 1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	123,019,696	123,199,794	135,299,071	135,485,273	135,551,172	148,029,636	148,220,966	148,403,475	161,450,748	151,554,223	151,715,812
Total Flow (gal)	55,944,824	56,124,922	56,262,405	56,448,607	56,514,506	56,641,592	56,832,922	57,015,431	57,210,401	57,313,876	57,475,465
Gallons between samples	157,010	180,098	137,483	186,202	65,899	127,086	191,330	182,509	194,970	103,475	161,589

NOTES:
NYSDEC Ambient Water Quality Standard Values (µg/L) 5 for all except VC, which is 2.
Bold values indicate that the analyte was detected greater than the NYSDEC AWQS.
(a) Treatment effluent limitations and monitoring requirements set forth in the Treatment System Operations and Maintenance Manual Dated July 1997.
gal = Gallon(s)

ND = The analyte was analyzed for, but was not detected above the sample reporting limit.
NS = Monitoring well not sampled.

Table 1 Historical Summary of Detected Volatile Organic Compounds for Treatment System Samples (July 2014 - December 2021)

Parameter	RW-01														
	26-Apr-19	**24-May-19**	**21-Jun-19**	**19-Jul-19**	**23-Aug-19**	**20-Sep-19**	**11-Oct-19**	**1-Nov-19**	**6-Dec-19**	**3-Jan-20**	**7-Feb-20**	**5-Mar-20**	**3-Apr-20**	**8-May-20**	**12-Jun-20**
Tetrachloroethene	**170**	**170**	**140**	**230**	**310**	**8**	**14**	ND	ND	ND	**7.2**	0.95	ND	ND	ND
Trichloroethene	**7**	**11**	**8.9**	**20**	**51**	**7.6**	**24**	ND	ND	ND	**12**	**7.1**	ND	3.8	ND
cis 1,2-dichloroethene	**8.6**	**11**	**14**	**22**	**130**	**1,100**	**1,600**	**1,800**	**300**	ND	**94**	**27**	ND	**9.6**	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	**43**	ND	**39**	**19**	ND	**4.3**	ND
Totalizer Reading (gal)	583,140	583,140	583,210	583,430	583,840	584,270	584,540	584,950	585,150	585,180	585,180	585,180	585,180	585,180	585,240
Total Flow (gal)	2,080,970	2,080,970	2,081,040	2,081,260	2,081,670	2,082,100	2,082,370	2,082,780	2,082,980	2,083,010	2,083,010	2,083,010	2,083,010	2,083,010	2,083,070
Gallons between samples	0	0	70	220	410	430	270	410	200	30	0	0	0	0	60
Parameter	**RW-02**														
	26-Apr-19	**24-May-19**	**21-Jun-19**	**19-Jul-19**	**23-Aug-19**	**20-Sep-19**	**11-Oct-19**	**1-Nov-19**	**6-Dec-19**	**3-Jan-20**	**7-Feb-20**	**5-Mar-20**	**3-Apr-20**	**8-May-20**	**12-Jun-20**
Tetrachloroethene	**140**	**140**	**120**	**190**	**210**	**240**	**310**	**300**	**180**	**200**	**110**	**76**	**8.3**	**60**	**7.3**
Trichloroethene	**5.3**	**6.4**	**5.1**	**7.1**	ND	**19**	**20**	**20**	**6.8**	**4.8**	**5.3**	3.7	4	3.6	**13**
cis 1,2-dichloroethene	**9.3**	**8.6**	**6.8**	**13**	**7.7**	**19**	**43**	**39**	**19**	**7.9**	**17**	**14**	ND	**10**	**75.0**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.7**
Totalizer Reading (gal)	2,663,675	2,716,940	2,761,788	2,785,888	2,843,908	2,858,588	2,865,266	2,871,063	2,877,192	2,878,995	2,894,946	2,916,946	2,951,237	2,977,810	2,978,652
Total Flow (gal)	32,450,724	32,503,989	32,548,837	32,572,937	32,630,957	32,645,637	32,652,315	32,658,112	32,664,241	32,666,044	32,681,995	32,703,995	32,738,286	32,764,859	32,765,701
Gallons between samples	57,148	53,265	44,848	24,100	58,020	14,680	6,678	5,797	6,129	1,803	15,951	22,000	34,291	26,573	842
Parameter	**RW-03**														
	26-Apr-19	**24-May-19**	**21-Jun-19**	**19-Jul-19**	**23-Aug-19**	**20-Sep-19**	**11-Oct-19**	**1-Nov-19**	**6-Dec-19**	**3-Jan-20**	**7-Feb-20**	**5-Mar-20**	**3-Apr-20**	**8-May-20**	**12-Jun-20**
Tetrachloroethene	**190**	**180**	**180**	**190**	**230**	**240**	**190**	**220**	**210**	**230**	**190**	**200**	**190**	**180**	**200**
Trichloroethene	2.7	**6.4**	2.9	**6.5**	2.8	4.5	3.6	2.9	3	2.5	2.7	2.9	2.1	2.8	3.2 J
cis 1,2-dichloroethene	**4.9**	**8.6**	**5.2**	**10**	**6.8**	**6.7**	**14**	**6.8**	**6.3**	**7.1**	**6.2**	**5.5**	ND	**6.5**	**6.1**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	236,280	342,190	440,680	482,740	598,020	724,490	739,260	818,900	941,330	1,048,600	1,180,080	1,279,740	1,385,180	NR	1,611,790
Total Flow (gal)	23,114,529	23,220,439	23,318,929	23,360,989	23,476,269	23,602,739	23,617,509	23,697,149	23,819,579	23,926,849	24,058,329	24,157,989	24,263,429	NR	24,490,039
Gallons between samples	113,610	105,910	98,490	42,060	115,280	126,470	14,770	79,640	122,430	107,270	131,480	99,660	105,440	NR	NR
Parameter	**SYSTEM EFFLUENT**														
	26-Apr-19	**24-May-19**	**21-Jun-19**	**19-Jul-19**	**23-Aug-19**	**20-Sep-19**	**11-Oct-19**	**1-Nov-19**	**6-Dec-19**	**3-Jan-20**	**7-Feb-20**	**5-Mar-20**	**3-Apr-20**	**8-May-20**	**12-Jun-20**
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis 1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	155,198,907	155,358,082	155,501,490	155,567,870	155,741,580	155,883,160	160,072,226	160,158,073	160,286,832	164,799,607	164,947,038	165,068,698	165,208,429	165,235,002	165,235,904
Total Flow (gal)	57,646,223	57,805,398	57,948,806	58,015,186	58,188,896	58,330,476	58,352,194	58,438,041	58,566,800	58,675,903	58,823,334	58,944,994	59,084,725	59,111,298	59,112,200
Gallons between samples	170,758	159,175	143,408	66,380	173,710	141,580	21,718	85,847	128,759	109,103	147,431	121,660	139,731	26,573	902

NOTES:
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Bold values indicate that the analyte was detected greater than the NYSDEC AWQS.
(a) Treatment effluent limitations and monitoring requirements set forth in the Treatment System Operations and Maintenance Manual Dated July 1997.
gal = Gallon(s)

ND = The analyte was analyzed for, but was not detected above the sample reporting limit.
NS = Monitoring well not sampled.

Table 1 Historical Summary of Detected Volatile Organic Compounds for Treatment System Samples (July 2014 - December 2021)

	RW-01																
Parameter	**10-Jul-20**	**14-Aug-20**	**4-Sep-20**	**2-Oct-20**	**6-Nov-20**	**4-Dec-20**	**15-Jan-21**	**23-Feb-21**	**12-Mar-21**	**2-Apr-21**	**7-May-21**	**4-Jun-21**	**9-Jul-21**	**5-Aug-21**	**17-Sep-21**	**8-Oct-21**	**12-Nov-21**
Tetrachloroethene	ND	ND	ND	ND	0.47 J	ND	**0.45 J**	**1.2**	0.46 J	0.69 J	**8.5**	**6.1**	**22**	**21**	**4.0**	**14**	**2.0**
Trichloroethene	ND	ND	ND	4.9 J	0.52 J	ND	ND	**2.2**	ND	0.61 J	**2.1**	**1.9**	**7.4**	**14**	**2.7**	**4.9**	**0.89 J**
cis 1,2-dichloroethene	ND	ND	ND	**9.7**	ND	ND	ND	ND	ND	0.96 J	**1.2**	**1.1**	**5.8**	**56**	**2.7**	**6.3**	**1.4**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.7**	**22**	ND	ND	ND
Totalizer Reading (gal)	585,240	585,240	585,270	585,270	585,290	585,310	585,340	585,340	585,350	585,370	585,390	585,410	585,420	585,420	585,420	585,430	585,440
Total Flow (gal)	2,083,070	2,083,070	2,083,100	2,083,100	2,083,120	2,083,140	2,083,170	2,083,170	2,083,180	2,083,200	2,083,220	2,083,240	2,083,250	2,083,250	2,083,250	2,083,260	2,083,270
Gallons between samples	0	0	30	0	20	20	30	0	10	20	20	20	10	0	0	10	10
	RW-02																
Parameter	**10-Jul-20**	**14-Aug-20**	**4-Sep-20**	**2-Oct-20**	**6-Nov-20**	**4-Dec-20**	**15-Jan-21**	**23-Feb-21**	**12-Mar-21**	**2-Apr-21**	**7-May-21**	**4-Jun-21**	**9-Jul-21**	**5-Aug-21**	**17-Sep-21**	**8-Oct-21**	**12-Nov-21**
Tetrachloroethene	**15**	**25**	**40**	**14**	**37**	**32**	**29**	**220 E**	**29**	**33**	**23**	**44**	**46**	**18**	**8.1**	**17**	**12**
Trichloroethene	**23**	**7.1**	3.4	**6.8**	**3.4**	**2.4**	**13**	**2.5**	**1.9**	**1.7**	**3.2**	**2.4**	**2.7**	**4.9**	**3.1**	**2.5**	**2.5**
cis 1,2-dichloroethene	**88.0**	**7.5**	**4.4**	**29**	**3.6**	**1.2**	**25**	**6.4**	ND	**1.4**	**8**	**1.9**	**1.8**	**6.3**	**9.8**	**1.1**	**2.1**
Vinyl Chloride	**13.0**	**6.7**	1.3	**7.2**	**2.8**	ND	ND	ND	ND	ND	**1.8**	ND	**2.7**	**11.0**	**8.8**	**2.7**	**3.2**
Totalizer Reading (gal)	2,978,652	2,978,652	2,978,698	2,978,698	2,978,719	2,978,732	2,978,737	2,978,737	2,978,750	2,978,764	2,978,778	2,978,793	2,978,805	2,978,805	2,978,811	2,978,816	2,978,821
Total Flow (gal)	32,765,701	32,765,701	32,765,747	32,765,747	32,765,768	32,765,781	32,765,786	32,765,786	32,765,799	32,765,813	32,765,827	32,765,842	32,765,854	32,765,854	32,765,860	32,765,865	32,765,870
Gallons between samples	0	0	46	0	21	13	5	0	13	14	14	15	12	0	6	5	5
	RW-03																
Parameter	**10-Jul-20**	**14-Aug-20**	**4-Sep-20**	**2-Oct-20**	**6-Nov-20**	**4-Dec-20**	**15-Jan-21**	**23-Feb-21**	**12-Mar-21**	**2-Apr-21**	**7-May-21**	**4-Jun-21**	**9-Jul-21**	**5-Aug-21**	**17-Sep-21**	**8-Oct-21**	**12-Nov-21**
Tetrachloroethene	**200**	**170**	**190**	**200**	**170 F1**	**210 F1**	**220**	**210**	**210**	**230 E**	**160**	**200**	**200**	**200**	**200**	**180 F1**	**180**
Trichloroethene	2.5 J	2.7 J	2.8 J	2.1 J	2.6 J	2.8 J	2.6 J	2.6 J	2.8 J	2.9	2.3 J	2.4 J	**2.8 J**	2.6 J	2.4 J	ND	2.3 J
cis 1,2-dichloroethene	**4.9**	**5.7**	**6.2**	**5.7**	**5.7**	**6.0**	**6.9**	**6.3**	**6.3**	**6.2**	**5.2**	**5.2**	**6.1**	**6.1**	**6.0**	**7.1 F2**	**6.0**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	1,710,084	1,825,200	1,852,930	1,951,520	2,073,970	2,157,110	2,224,660	2,324,100	2,361,220	2,409,700	2,478,130	2,541,200	2,581,110	2,612,050	2,641,880	2,659,830	2,683,580
Total Flow (gal)	24,588,333	24,703,449	24,731,179	24,829,769	24,952,219	25,035,359	25,102,909	25,202,349	25,239,469	25,287,949	25,356,379	25,419,449	25,459,359	25,490,299	25,520,129	25,538,079	25,561,829
Gallons between samples	98,294	115,116	27,730	98,590	122,450	83,140	67,550	99,440	37,120	48,480	68,430	63,070	39,910	30,940	29,830	17,950	23,750
	SYSTEM EFFLUENT																
Parameter	**10-Jul-20**	**14-Aug-20**	**4-Sep-20**	**2-Oct-20**	**6-Nov-20**	**4-Dec-20**	**15-Jan-21**	**23-Feb-21**	**12-Mar-21**	**2-Apr-21**	**7-May-21**	**4-Jun-21**	**9-Jul-21**	**5-Aug-21**	**17-Sep-21**	**8-Oct-21**	**12-Nov-21**
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis 1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Totalizer Reading (gal)	155,198,907	155,358,082	155,501,490	155,567,870	155,741,580	155,883,160	160,072,226	160,158,073	160,286,832	164,799,607	164,947,038	165,068,698	165,108,630	165,139,570	165,169,406	165,187,371	165,211,136
Total Flow (gal)	59,210,494	59,325,610	59,353,416	59,452,006	59,574,497	59,657,670	59,725,255	59,824,695	59,861,838	59,910,352	59,978,816	60,041,921	60,081,853	60,112,793	60,142,629	60,160,594	60,184,359
Gallons between samples	98,294	115,116	27,806	98,590	122,491	83,173	67,585	99,440	37,143	48,514	68,464	63,105	39,932	30,940	29,836	17,965	23,765

NOTES:
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Bold values indicate that the analyte was detected greater than the NYSDEC AWQS.
(a) Treatment effluent limitations and monitoring requirements set forth in the Treatment System Operations and Maintenance Manual Dated July 1997.
gal = Gallon(s)

ND = The analyte was analyzed for, but was not detected above the sample reporting limit.
NS = Monitoring well not sampled.

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Table 2 Summary of Groundwater Table Elevations (August 2020)

Well Number	TOIC Elevation (ft/amsl)	Depth to Water Level (ft)	Groundwater Table Elevation (ft amsl)	Issues Notes
Overburden Monitoring Wells				
MW-1	363.51	13.10	350.41	---
MW-2	352.41	11.12	341.29	---
MW-3	350.93	8.33	342.60	---
MW-4	348.77	7.55	341.22	---
MW-101A	357.41	7.94	349.47	---
MW-102A	355.94	Well Not Found		---
MW-103A	356.61	9.81	346.8	---
MW-104A	368.47	Well Dry		---
MW-105A	346.12	6.10	340.02	Well had no well cap and was full of dirt on arrival
MW-106A	351.68	11.00	340.68	PVC Casing is Damaged. Well is still gaugable and sampleable
MW-107A	352.74	9.75	342.99	---
MW-108A	351.19	7.20	343.99	---
MW-111	356.15	9.39	346.76	---
MW-112A	357.59	Well Not Found		---
MW-113A	343.80	Well Not Found		---
INJ-1	Not Surveyed	7.80	--	---
INJ-2	Not Surveyed	9.97	--	---
INJ-3	Not Surveyed	9.93	--	---
Bedrock Monitoring Wells				
MW-1B	363.77	13.23	350.54	---
MW-2B	352.21	12.55	339.66	---
MW-3B	349.92	7.27	342.65	---
MW-4B	348.75	7.54	341.21	---
MW-5B	349.91	Well Damaged		Bolts are fused to well cover
MW-101	356.75	Well Not Gauged		---
MW-102	356.44	Well Not Gauged		---
MW-104	368.12	23.72	344.40	---
MW-105	346.94	5.14	341.80	---
MW-106	351.91	11.25	340.66	---
MW-107	353.43	Well Not Gauged		Well is filled in with soil
MW-108	351.02	7.01	344.01	---
MW-109	345.80	7.24	338.56	---
MW-110B	354.09	Well Not Found		---
Recovery Wells				
RW-1	351.58	Recovery well - not gauged		---
RW-2	348.75	Recovery well - not gauged		---
RW-3	348.03	Recovery well - not gauged		---
Piezometer, and Unknown Wells				
TW-1	---	Well Not Gauged		---
TW-2	---	Well Not Gauged		---
TW-3	---	Well Not Gauged		---
TW-4	356.39	Well Not Gauged		---
TW-5	352.48	10.23	342.25	---
PZ-1	352.17	Well Not Gauged		---
PZ-2	361.96	Well Not Gauged		---
PZ-3	---	Well Not Gauged		---
PZ-4	---	Well Not Gauged		---
PW-1	Not surveyed	NA	NA	---
SSI	---	Well Not Gauged		---
MW-N	---	Well Not Gauged		---
UNKN1	---	Well Not Gauged		---

NOTES:
amsl = Above mean sea level
ft = Foot (feet)
NA = Not applicable
TOIC = Top of inner casing
Bolded well IDs are included in the April 2022 SMP monitoring well list.

Table 2 Summary of Groundwater Table Elevations (November 2021)

Well Number	TOIC Elevation (ft/amsl)	Depth to Water Level (ft)	Groundwater Table Elevation (ft amsl)	Issues Notes
Overburden Monitoring Wells				
MW-1	363.51	11.84	351.67	---
MW-2	352.41	11.84	340.57	---
MW-3	350.93	7.51	343.42	---
MW-4	348.77	7.64	341.13	---
MW-101A	357.41	Well Damaged		Well filled in with soil
MW-102A	355.94	Well Not Located		---
MW-103A	356.61	8.70	347.91	---
MW-104A	368.47	Well Dry		---
MW-105A	346.12	Well Not Located		---
MW-106A	351.68	10.10	341.58	PVC casing is damaged
MW-107A	352.74	8.60	344.14	Well Cap was broken
MW-108A	351.19	6.26	344.93	---
MW-111	356.15	8.24	347.91	---
MW-112A	357.59	Well Not Located		---
MW-113A	343.80	Well Not Located		---
MW-114A	346.40	7.00		---
MW-115A	345.10	5.29		---
INJ-1	Well Not Gauged			---
INJ-2	Well Not Gauged			---
INJ-3	Well Not Gauged			---
Bedrock Monitoring Wells				
MW-1B	363.77	Well Not Gauged		---
MW-2B	352.21	11.54	340.67	---
MW-3B	349.92	6.21	343.71	---
MW-4B	348.75	6.52	342.23	---
MW-5B	349.91	Well Damaged		Bolts are fused to well cover
MW-101	356.75	6.19	350.56	Soil inside well. Well was still gauge able and samplable
MW-102	356.44	Well Not Located		---
MW-104	368.12	22.58	345.54	---
MW-105	346.94	4.25	342.69	---
MW-106	351.91	11.44	340.47	---
MW-107	353.43	Well Damaged		Well is filled in with soil
MW-108	351.02	6.13	344.89	---
MW-109	345.80	6.16	339.64	---
MW-110B	354.09	Well Not Located		---
Recovery Wells				
RW-1	351.58	Recovery well - not gauged		---
RW-2	348.75	Recovery well - not gauged		---
RW-3	348.03	Recovery well - not gauged		---
Piezometer, and Unknown Wells				
TW-1	---	Well Not Located		---
TW-2	---	Well Not Located		---
TW-3	---	Well Not Located		---
TW-4	356.39	Well Not Located		---
TW-5	352.48	9.20	343.28	---
TW-06	352.47	7.69	344.78	---
TW-07	352.71	11.77	340.94	---
TW-08	352.50	8.10	344.40	---
TW-09	352.78	8.54	344.24	---
TW-10	351.64	7.70	343.94	---
PZ-1	352.17	Not gauged		---
PZ-2	361.96	Not gauged		---
PZ-3	---	Not gauged		---
PZ-4	---	Not gauged		---
PW-1	--	Not gauged		---
SSI	---	Not gauged		---
MW-N	---	Not gauged		---
UNKN1	---	Not gauged		---

NOTES:
amsl = Above mean sea level
ft = Foot (feet)
NA = Not applicable
TOIC = Top of inner casing
Bolded well IDs are included in the April 2022 SMP monitoring well list.

Table 2 Summary of Groundwater Table Elevations (March 2023)

Well Number	TOIC Elevation (ft/amsl)	Depth to Water Level (ft)	Groundwater Table Elevation (ft amsl)	Issues Notes
Overburden Monitoring Wells				
MW-1	363.51	12.35	351.16	---
MW-2	352.41	12.2	340.21	---
MW-3	350.93	7.70	343.23	---
MW-4	348.77	6.82	341.95	---
MW-101A	357.41	Well Not Located		---
MW-102A	355.94	Well Not Located		---
MW-103A	356.61	9.13	347.48	---
MW-104A	368.47	23.16	345.31	---
MW-105A	346.12	Well Not Located		---
MW-106A	351.68	10.19	341.49	---
MW-107A	352.74	8.76	343.98	---
MW-108A	351.19	6.47	344.72	---
MW-111	356.15	8.78	347.37	---
MW-112A	357.59	Well Not Located		---
MW-113A	343.80	6.53	NA	---
MW-114A	346.40	7.28	339.12	---
MW-115A	345.10	5.6	339.50	---
INJ-1	Well Not Gauged			---
INJ-2	Well Not Gauged			---
INJ-3	Well Not Gauged			---
Bedrock Monitoring Wells				
MW-1B	363.77	Well Damaged		Well filled in with soil
MW-2B	352.21	11.67	340.54	---
MW-3B	349.92	6.42	343.50	---
MW-4B	348.75	6.74	342.01	---
MW-5B	349.91	Well Not Located		---
MW-101	356.75	Well Not Located		---
MW-102	356.44	Well Not Located		---
MW-104	368.12	22.95	345.17	---
MW-105	346.94	6.81	340.13	---
MW-106	351.91	10.59	341.32	---
MW-107	353.43	Well Damaged		Well filled in with soil
MW-108	351.02	6.36	344.66	---
MW-109	345.80	6.41	339.39	---
MW-110B	354.09	Well Not Located		---
Recovery Wells				
RW-1	351.58	Recovery well - not gauged		---
RW-2	348.75	Recovery well - not gauged		---
RW-3	348.03	Recovery well - not gauged		---
Piezometer, and Unknown Wells				
TW-1	---	Not gauged		---
TW-2	---	Not gauged		---
TW-3	---	Not gauged		---
TW-4	356.39	Not gauged		---
TW-5	352.48	Well Damaged		Blockage in well.
TW-06	352.47	8.03	344.44	---
TW-07	352.71	8.09	344.62	---
TW-08	352.50	8.43	344.07	---
TW-09	352.78	8.85	343.93	---
TW-10	351.64	7.90	343.74	---
PZ-1	352.17	Not gauged		---
PZ-2	361.96	Not gauged		---
PZ-3	---	Not gauged		---
PZ-4	---	Not gauged		---
PW-1	---	Not gauged		---
SSI	---	Not gauged		---
MW-N	---	Not gauged		---
UNKN1	---	Not gauged		---

NOTES:
amsl = Above mean sea level
ft = Foot (feet)
NA = Not applicable
TOIC = Top of inner casing
Bolded well IDs are included in the April 2022 SMP monitoring well list.

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Table 3A Summary of Detected Volatile Organic Compounds in Groundwater Samples Collected (10-11 August 2020)

Volatile Organic Compounds by U.S. Environmental Protection Agency Method 8260B (µg/L)									
Parameters List	**MW-1**	**MW-1B**	**MW-2**	**MW-2B**	**MW-3**	**MW-3B**	**MW-4**	**MW-4B**	**NYSDEC AWQS (µg/L)**
Tetrachloroethene (PCE)	ND	ND	**43**	ND	ND	ND	ND	ND	5
Trichloroethene (TCE)	ND	ND	ND	ND	ND	ND	ND	ND	5
cis-1,2 Dichloroethene (DCE)	ND	ND	**5.2**	ND	ND	ND	ND	ND	5
Parameters List	**TW-5**	**MW-101**	**MW-102A**	**MW-103A**	**MW-104**	**MW-105**	**MW-105A**	**MW-106**	**NYSDEC AWQS (µg/L)**
Tetrachloroethene (PCE)	**28**	**11**	0.9 J	**81 F1**	ND	ND	ND	ND	5
Trichloroethene (TCE)	1.4	ND	ND	4.2	ND	ND	ND	ND	5
cis-1,2 Dichloroethene (DCE)	1.2	ND	ND	**9.4**	ND	ND	ND	ND	5
Parameters List	**MW-106A**	**MW-107A**	**MW-108**	**MW-108A**	**MW-109**	**MW-111**	**MW-112A**	**MW-113A**	**NYSDEC AWQS (µg/L)**
Tetrachloroethene (PCE)	ND	**13**	ND	ND	ND	4.2	ND	ND	5
Trichloroethene (TCE)	ND	1.4	ND	ND	ND	ND	ND	ND	5
cis-1,2 Dichloroethene (DCE)	ND	1.3	ND	ND	ND	ND	ND	ND	5
Parameters List	**MW-104A**	**INJ-3**	**INJ-2**	**INJ-1**	**MW-101A**	**FD-08102020[a]**	**FD-08112020[b]**	**FB-08112020**	**NYSDEC AWQS (µg/L)**
Tetrachloroethene (PCE)	ND	**120**	ND	**14**	ND	4.0	ND	ND	5
Trichloroethene (TCE)	ND	**20**	ND	**32**	ND	ND	ND	ND	5
cis-1,2 Dichloroethene (DCE)	ND	ND	**190**	**44**	**8.0**	ND	ND	ND	5

Parameters List	**FB-08102020**	**TB-08112020**	**NYSDEC AWQS (µg/L)**
Tetrachloroethene (PCE)	ND	ND	5
Trichloroethene (TCE)	ND	ND	5
cis-1,2 Dichloroethene (DCE)	ND	ND	5

(a) Duplicate sample was collected from MW-111
(b) Duplicate sample was collected from MW-106
µg/L = Microgram(s) per liter
F1 = MS and/or MSD recovery exceeds control limits
NYSDEC = New York State Department of Environmental Conservation
AWQS = Ambient Water Quality Standard
MW = Monitoring well

ND = Non-detect
NS = Not sampled
PQL = Practical quantitation limit
J = Analyte detected below the PQL
Analytical data results provided by ALS Environmental Group.
Bold values indicate that the analyte was detected greater than the NYSDEC AWQS.

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Table 3B Summary of Detected Volatile Organic Compounds in Groundwater Samples Collected (16-18 November 2021)

Volatile Organic Compounds by U.S. Environmental Protection Agency Method 8260B (µg/L)									
Parameters List	**MW-1**	**MW-1B**	**MW-2**	**MW-2B**	**MW-3**	**MW-3B**	**MW-4**	**MW-4B**	**NYSDEC AWQS (µg/L)**
Tetrachloroethene (PCE)	ND	ND	**120 E**	ND	ND	ND	ND	ND	5
Trichloroethene (TCE)	ND	ND	0.95 J	ND	ND	ND	ND	ND	5
cis-1,2 Dichloroethene (DCE)	ND	ND	**7.2**	ND	ND	0.68 J	ND	ND	5
Parameters List	**TW-5**	**MW-101**	**MW-102A**	**MW-103A**	**MW-104**	**MW-105**	**MW-105A**	**MW-106**	**NYSDEC AWQS (µg/L)**
Tetrachloroethene (PCE)	**31**	ND	1.0 J	**52**	ND	ND	ND	ND	5
Trichloroethene (TCE)	2.1	ND	ND	3	ND	ND	ND	ND	5
cis-1,2 Dichloroethene (DCE)	1.1	ND	ND	4.5	ND	ND	ND	ND	5
Parameters List	**MW-106A**	**MW-107A**	**MW-108**	**MW-108A**	**MW-109**	**MW-111**	**MW-112A**	**MW-113A**	**NYSDEC AWQS (µg/L)**
Tetrachloroethene (PCE)	ND	**8.3**	1.2	ND	ND	3.6	ND	ND	5
Trichloroethene (TCE)	ND	0.88 J	ND	ND	ND	ND	ND	ND	5
cis-1,2 Dichloroethene (DCE)	ND	ND	ND	ND	ND	ND	ND	ND	5
Parameters List	**TW-06**	**MW-114A**	**MW-115A**	**TW-08**	**TW-09**	**TW-07**	**TW-10**	**TB-01**	**NYSDEC AWQS (µg/L)**
Tetrachloroethene (PCE)	**19**	ND	**63**	**16**	**110**	ND	**200**	ND	5
Trichloroethene (TCE)	ND	ND	1.8	2.1	ND	ND	ND	ND	5
cis-1,2 Dichloroethene (DCE)	**11**	ND	**9.2**	**25**	ND	ND	ND	ND	5
Parameters List	**FD-01**[a]	**FD-02**[b]	**FD-03**[c]						**NYSDEC AWQS (µg/L)**
Tetrachloroethene (PCE)	ND	ND	ND						5
Trichloroethene (TCE)	ND	ND	ND						5
cis-1,2 Dichloroethene (DCE)	ND	ND	ND						5

(a) Duplicate sample was collected from MW-4
(b) Duplicate sample was collected from MW-108
(c) Duplicate sample was collected from MW-114A
µg/L = Microgram(s) per liter
AWQS = Ambient Water Quality Standard
E = Result exceeded calibration range
MW = Monitoring well
ND = Non-detect
NS = Not sampled
NYSDEC = New York State Department of Environmental Conservation
PQL = Practical quantitation limit
J = Analyte detected below the PQL
(g) = NYSDEC AWQS guidance value
Analytical data results provided by Chemtech Consulting Group.
Bold values indicate that the analyte was detected greater than the NYSDEC AWQS.

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Table 4 Historical Groundwater Analytical Results

	MW-1			MW-1B			MW-2			MW-2B			MW-3			MW-3B			MW-4			MW-4B		
DATE	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**
October 1989	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
November 1991	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
February 1992	<1	---	---	<1	---	---	**610**	---	---	<1	---	---	<1	---	---	**6**	---	---	<1	---	---	<1	---	---
June 1992	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**5**	---	---	---	---	---	---	---	---
17 July 1997	---	---	---	---	---	---	**160**	**5**	**5.6**	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	---
4 November 1997	---	---	---	---	---	---	**140**	ND	**9**	1	ND	ND	NS	NS	NS	NS	NS	NS	---	---	---	---	---	---
14 July 1998	---	---	---	---	---	---	**170**	ND	**9**	ND	ND	0.3	ND	ND	ND	0.6	ND	ND	---	---	---	---	---	---
4 November 1998	---	---	---	---	---	---	**57**	ND	2.1	ND	ND	ND	NS	NS	NS	NS	NS	NS	---	---	---	---	---	---
14 July 1999	---	---	---	---	---	---	**32**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	---
8 December 1999	---	---	---	---	---	---	**66**	ND	4	ND	ND	1	NS	NS	NS	NS	NS	NS	---	---	---	---	---	---
May 2005	---	---	---	---	---	---	**8.3**	---	1.0J	---	---	1.7	---	---	---	---	---	---	---	---	---	---	---	---
October 2005	---	---	---	---	---	---	**74**	---	**12**	---	---	1.2	---	---	---	0.3 J	---	---	---	---	---	---	---	---
1 September 2008	ND	ND	ND	ND	ND	ND	**119**	0.42	**10.2**	ND	ND	3.85	ND	ND	ND	0.38	ND	ND	ND	ND	ND	ND	ND	ND
24 August 2009	ND	ND	ND	ND	ND	ND	**36.7**	ND	2.56	ND	ND	4.62	ND	ND	ND	0.22 J	ND	ND	ND	ND	ND	ND	ND	ND
22-23 November 2010	ND	ND	ND	ND	ND	ND	**22.9**	ND	1.4	ND	ND	4.44	ND	ND	ND	ND	ND	0.68	ND	ND	ND	ND	ND	ND
21-22 March 2012	ND	ND	ND	ND	ND	ND	3.12	ND	ND	ND	ND	0.43 J	0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
23-24 July 2013	NS	NS	NS	ND	ND	ND	**6.7**	ND	0.5 J	1.3 J	ND	ND	ND	ND	ND	ND	ND	0.87 J	ND	ND	ND	ND	ND	ND
21 November 2014	ND	ND	ND	ND	ND	ND	**7**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
17 February 2016	ND	ND	ND	ND	ND	ND	**30**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-4 December 2018	ND	ND	ND	ND	ND	ND	**12**	ND	3	ND	ND	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10-11 August 2020	ND	ND	ND	ND	ND	ND	**43**	ND	**5.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16-18 November 2021	ND	ND	ND	NS	NS	NS	**120**	0.95	**7.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 4 Historical Groundwater Analytical Results

	MW-101			MW-101A			MW-102			MW-102A			MW-103			MW-103A			MW-104			MW-104A		
DATE	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**
October 1989	**1,400**	---	---	**24**	---	---	<5	---	---	<5	---	---	**450**	---	---	**1,500**	---	---	<5	---	---	<5	---	---
November 1991	**2,300**	---	---	**24**	---	---	<5	---	---	<5	---	---	**370**	---	---	**1,300**	---	---	<5	---	---	<5	---	---
February 1992	**530**	---	---	**28**	---	---	<1	---	---	2	---	---	**610**	---	---	**13,000**	---	---	<1	---	---	<1	---	---
June 1992	**1,200**	---	---	**20**	---	---	---	---	---	---	---	---	**800**	---	---	**5,000**	---	---	---	---	---	---	---	---
17 July 1997	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**3,200**	**24**	**18**	ND	ND	ND	---	---	---
4 November 1997	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**560**	**7**	ND	ND	ND	ND	---	---	---
14 July 1998	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1,200**	**8**	**12**	ND	ND	ND	---	---	---
4 November 1998	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**160**	2.6	ND	ND	ND	ND	---	---	---
14 July 1999	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**690**	**6**	**6.1**	ND	ND	ND	---	---	---
8 December 1999	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**250**	**10**	2	NS	NS	NS	---	---	---
May 2005	**33**	1.1 J		4.7 J	---	---	---	---	---	0.83 J	---	---	---	---	---	**260 D**	**10**	**14**	---	---	---	---	---	---
October 2005	**91**	4.4 J	4.4 J	**16**	---	---	---	---	---	---	---	---	---	---	---	**240 D**	**7.2**	**6.4**	---	---	---	---	---	---
12 and 13 May 2008	**34.5**	0.81	0.54	**7.57**	ND	ND	1.65	ND	ND	---	---	---	---	---	---	**412**	**9.33**	**13.7**	ND	0.13	ND	---	---	---
24 August 2009	**29.3**	0.37 J	0.40 J	---	---	---	NS	NS	NS	1.29	ND	ND	---	---	---	**397**	**8.00 J**	**14.8**	ND	ND	ND	---	---	---
22-23 November 2010	**15.7**	0.13	ND	NS	NS	NS	N S	NS	NS	1.14	ND	ND	NS	NS	NS	**437**	**9.8**	**16**	ND	ND	ND	NS	NS	NS
21-22 March 2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.22	ND	ND	NS	NS	NS	**379**	**11.8**	**23.4**	ND	ND	ND	NS	NS	NS
23-24 July 2013	ND	ND	ND	NS	NS	NS	NS	NS	NS	0.72 J	ND	ND	NS	NS	NS	**360 E**	**11**	**19**	ND	ND	ND	NS	NS	NS
10-11 November 2014	**11**	ND	ND	NS	NS	NS	NS	NS	NS	0.9 J	ND	ND	NS	NS	NS	**320**	**13**	ND	ND	ND	ND	NS	NS	NS
17 February 2016	NS	NS	NS	NS	NS	NS	NS	NS	NS	1 J	ND	ND	NS	NS	NS	NS	NS	NS	ND	ND	ND	NS	NS	NS
3-4 December 2018	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**300**	**18**	**51**	ND	ND	ND	ND	ND	ND
10-11 August 2020	NS	NS	NS	ND	ND	8	NS	NS	NS	NS	NS	NS	NS	NS	NS	**81**	4.2	**9.4**	ND	ND	ND	NS	NS	NS
16-18 November 2021	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**52**	3.2	4.5	ND	ND	ND	NS	NS	NS

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Table 4 Historical Groundwater Analytical Results

	MW-105			MW-105A			MW-106			MW-106A			MW-107			MW-107A			MW-108			MW-108A		
DATE	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**
October 1989	<5	---	---	<5	---	---	<5	---	---	<5	---	---	**43**	---	---	**750**	---	---	**9**	---	---	<5	---	---
November 1991	<5	---	---	<5	---	---	<5	---	---	<5	---	---	**130**	---	---	**940**	---	---	<5	---	---	<5	---	---
February 1992	<1	---	---	<1	---	---	<1	---	---	<1	---	---	**190**	---	---	**850**	---	---	4	---	---	<1	---	---
June 1992	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 July 1997	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	**360**	**11**	**19.5**	ND	ND	ND	ND	ND	ND
4 November 1997	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	---	---	---	**440**	**12**	**30**	3	ND	ND	ND	ND	ND
14 July 1998	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	**500**	**11**	**24**	**5**	ND	ND	ND	ND	ND
4 November 1998	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	---	---	---	**340**	**11**	**18**	2	ND	ND	ND	ND	ND
14 July 1999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	**230**	**6.7**	**14**	2.2	ND	ND	ND	ND	ND
8 December 1999	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	---	---	---	**230**	**6.7**	**14**	3	ND	ND	ND	ND	ND
May 2005	---	---	0.3 J	1.1 J	---	---	---	---	---	---	---	---	**11**	**6.4**	**26**	**10**	1.4 J	1.6 J	2.9	---	---	---	---	---
October 2005	---	---	---	1.4 J	---	**12**	---	---	---	---	---	---	**36**	**9.3**	**21**	**16**	---	4.1 J	1.2	---	---	---	---	---
12 and 13 May 2008	0.11	ND	0.29	**21**	0.15	4.08	ND	0.13	ND	ND	ND	ND	---	---	---	**42.8**	2.42	2.07	3.01	ND	ND	ND	ND	ND
24 August 2009	ND	ND	ND	**15.3**	0.14 J	3.02	ND	ND	ND	ND	ND	ND	---	---	---	**24.9**	2.23	3.94	1.58	ND	ND	ND	ND	0.19 J
22-23 November 2010	ND	ND	ND	**7.98**	ND	1.22	ND	ND	ND	ND	ND	ND	---	---	---	**26.9**	3.3	**6.66**	1.25	ND	ND	ND	ND	0.17 J
21-22 March 2012	ND	ND	ND	ND	ND	1.78	ND	ND	ND	ND	ND	ND	NS	NS	NS	**9.95**	0.71	0.56	1.64	ND	ND	ND	ND	0.14 J
23-24 July 2013	ND	ND	ND	**8.1**	ND	0.76 J	ND	ND	ND	ND	ND	ND	NS	NS	NS	**18**	1.2 J	0.77 J	1.4 J	ND	ND	ND	ND	ND
10-11 November 2014	ND	ND	ND	**5.3**	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	**16**	1.9 J	ND	1.1 J	ND	ND	ND	ND	ND
17 February 2016	1.5 J	0.73 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	**15**	1.9 J	ND	0.97 J	ND	ND	ND	ND	ND
3-4 December 2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	**23**	2	ND	1	ND	ND	ND	ND	ND
10-11 August 2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	**13**	1.4	1.3	1.1	ND	ND	ND	ND	ND
16-18 November 2021	ND	ND	ND	NS	NS	NS	ND	ND	ND	ND	ND	ND	NS	NS	NS	**8.3**	0.88	ND	1.2	ND	ND	ND	ND	ND

EA Engineering, P.C. and Its Affiliate
EA Science and Technology

Table 4 Historical Groundwater Analytical Results

	MW-109			MW-111			TW-5			MW-112A			MW-113A		
DATE	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**
October 1989	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
November 1991	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
February 1992	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
June 1992	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17 July 1997	ND	ND	ND	**8.9**	0.7	0.5	---	---	---	---	---	---	---	---	---
4 November 1997	NS	NS	NS	**58**	4	8	---	---	---	---	---	---	---	---	---
14 July 1998	ND	ND	ND	**19**	2	1	---	---	---	---	---	---	---	---	---
4 November 1998	NS	NS	NS	**57**	**5.2**	**5.3**	---	---	---	---	---	---	---	---	---
14 July 1999	ND	ND	ND	**22**	ND	ND	---	---	---	---	---	---	---	---	---
8 December 1999	NS	NS	NS	**40**	4	4	---	---	---	---	---	---	---	---	---
May 2005	---	---	---	1.4 J	---	---	---	---	---	---	---	---	---	---	---
October 2005	---	---	---	**7.7**	---	---	---	---	---	---	---	---	---	---	---
12 and 13 May 2008	ND	ND	ND	4.1	0.15	ND	**40.4**	2.73	1.5	---	---	---	---	---	---
24 August 2009	ND	ND	ND	4.45	0.16 J	ND	**34.7**	2.88	1.68	---	---	---	---	---	---
22-23 November 2010	ND	ND	ND	**5.02**	0.23 J	ND	**39.4**	3.02	2.13	---	---	---	---	---	---
21-22 March 2012	ND	ND	ND	3.82	0.11 J	ND	**41.6**	2.44	1.23	---	---	---	---	---	---
23-24 July 2013	NS	NS	NS	4.3 J	ND	ND	**33**	2.5 J	1.2 J	ND	ND	ND	ND	ND	ND
10-11 November 2014	ND	ND	ND	3.6 J	ND	ND	**37**	2.5 J	ND	ND	ND	ND	ND	ND	ND
17 February 2016	ND	ND	ND	3.9 J	ND	ND	**26**	1.9 J	ND	ND	ND	ND	ND	ND	ND
3-4 December 2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10-11 August 2020	ND	ND	ND	4.2	ND	ND	**28**	2.3	1.2	NS	NS	NS	NS	NS	NS
16-18 November 2021	ND	ND	ND	3.6	ND	ND	**31**	2.1	1.1	NS	NS	NS	NS	NS	NS

NOTES:

MW-1B was found in bad condition and unable to be sampled during the 2021 sampling event

J = Estimated value due to either being a Tentatively Identified Compound or that the concentration is between the Method Reporting Limit and the Method Detection Limit. Concentrations are not verified within the linear range of the calibration.

MW = Monitoring well

ND = The analyte was analyzed for, but was not detected above the sample reporting limit.

NS = Monitoring well not sampled.

PCE = Tetrachloroethene

DCE = cis 1,2-dichloroethene

TCE = Trichloroethene

Samples are reported in micrograms per liter (µg/L)

Bold values indicate that the analyte was detected greater than the NYSDEC AWQS of 5 µg/L per each analyte.

Table 5. Summary of Rebound Study Groundwater COC Concentrations and Exceedances

	MW-106A			MW-111			MW-113A			MW-114A			MW-115A			TW-06			TW-07			TW-08			TW-09			TW-10		
DATE	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**	**PCE**	**TCE**	**DCE**
16-18 November 2021 (Baseline)	ND	ND	ND	3.6	ND	ND	--	--	--	ND	ND	ND	**63**	1.8	**9.2**	**19**	ND	**11**	ND	ND	ND	**16**	2.1	**25**	**110**	ND	ND	**200**	ND	ND
15-16 March 2022 (Q1 Sampling Event)	ND	ND	ND	2.0	ND	ND	--	--	--	ND	ND	ND	**49**	1.3	**7.7**	**17**	3.3	**8.2**	0.37 J	ND	ND	**11**	1.0	**14**	**89**	4.1	3.4	**190**	1.3 J	0.54 J
13-15 June 2022 (Q2 Sampling Event)	ND	ND	ND	1.6	ND	ND	ND	ND	0.37 J	ND	ND	ND	**35**	1.1	**6.0**	**12**	**6.0**	**8.8**	ND	ND	ND	**8.1**	0.8 J	**13**	**85**	4.4	2.2	**210**	1.4 J	ND
9 August 2022 (Q3 Sampling Event)	ND	ND	ND	3.0	ND	ND	ND	ND	ND	ND	ND	ND	**39**	1.0	**7.9**	**6.1**	**8.6**	**11**	ND	ND	ND	**12**	1.3	**20**	**74**	**5.7**	4.7	**200**	1.5 J	1.3 J
15 – 16 November 2022 (Q4 Sampling Event)	ND	ND	ND	2.5	ND	ND	ND	ND	ND	ND	ND	ND	**18**	0.55 J	3.9	2.3	0.89 J	**23**	ND	ND	ND	**6.2**	0.54 J	**14**	**81**	4.7	**6.0**	**130**	0.92 J	2.1
7 – 8 March 2023 (Q1 Sampling Event) *	ND	ND	ND	2.6	ND	ND	ND	ND	ND	ND	ND	ND	**14**	0.45 J	4.4	2.2	1.3	**8.3**	ND	ND	ND	**7.8**	0.83 J	**16**	**90**	3.6	**5.6**	**130**	1.0	1.1

Notes:
*Data not yet validated
-- = Not available
AWQS = Ambient Water Quality Standard
COC = Contaminant(s) of concern
DCE = *cis*-1,2-dichloroethylene
E = Result exceeded calibration range
J = Analyte detected between the Reported Detection Limit and the Method Detection Limit; concentration estimated
MW = Monitoring well
ND = The analyte was analyzed for but was not detected above the sample reporting limit.
NS = Monitoring well not sampled.
NYSDEC = New York State Department of Environmental Conservation
PCE = Tetrachloroethylene
TCE = Trichloroethylene
TW = Temporary well
Q1 = Quarter one
Q2 = Quarter two
Samples are reported in microgram(s) per liter (µg/L).
Bold values indicate that the analyte was detected greater than the NYSDEC AWQS of 5 µg/L per each analyte.

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Table 6. Summary of Rebound Study Air COC Concentrations (March 2023)

DATE	IA-195			OA-195			SV-01			SV-02*			SV-03*			SV-04			SV-05**			SV-195			SV-184			IA-184		
	PCE	TCE	DCE	PCE	TCE	DCE	PCE	TCE	DCE	PCE	TCE	DCE	PCE	TCE	DCE	PCE	TCE	DCE	PCE	TCE	DCE	PCE	TCE	DCE	PCE	TCE	DCE	PCE	TCE	DCE
17 November 2021 (Baseline)	6.4	ND	ND	--	--	--	ND	ND	ND	--	--	--	ND	ND	ND	ND	ND	ND	16	2.1	25	6.3	0.22	ND	NC	NC	NC	NC	NC	NC
16 March and 4 April 2022 (Q1 Sampling Event)	5.5	1.1	0.14	ND	ND	ND	ND	ND	ND	0.917 J	ND	ND	1.97	0.428 J	ND	ND	ND	ND	ND	ND	ND	2.3	ND	ND	NC	NC	NC	NC	NC	NC
13 June 2022 (Q2 Sampling Event)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
9 August 2022 (Q3 Sampling Event)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
15–16 November 2022 (Q4 Sampling Event)	5.6	ND	ND	ND	ND	ND	1.2	0.38 J	0.63	0.80	ND	ND	0.69	ND	ND	1.5	ND	ND	4.0 J	ND	ND	6.2	ND	ND	1.4	ND	ND	2.9	0.88	3.3
7–8 March 2023 (Q1 Sampling Event) ***	3.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	NC	NC	NC	2.1	ND	ND	0.91	ND	ND	0.83	ND	ND

Notes:
1. New York State Department of Health (NYSDOH) Ambient Air Guidelines and Immediate Action Levels apply to indoor air and outdoor air samples; New York currently does not have any standards, criteria, or guidance values for concentrations of compounds in sub-slab vapor. Guidelines and Action Levels are based on the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006, and NYSDOH Soil Vapor Intrusion Updates dated September 2013 and August 2015.

*A second sampling effort was required to collect these samples during Quarter 1 of 2022. Samples could not be collected at SV-02 and SV-03 in March 2022 due to faulty gauges for the Summa® canisters.
**Data for Quarter 4 2022 sampling event may be inaccurate. It is believed that there was a blockage in the soil vapor point that prevented soil gas from entering the Summa® canister. The vacuum pressure recorded at the beginning of the sample event and the vacuum pressure recorded at the lab did not change therefore no soil gas entered the Summa® canister.
***Data not yet validated
-- = Not available
COC = Contaminant of concern
DCE = *cis*-1,2-dichloroethylene
IA = Indoor air
J = Analyte detected between the Reported Detection Limit and the Method Detection Limit; concentration estimated
NC = Sample not collected during the quarterly sampling event.
ND = The analyte was analyzed for but was not detected above the sample reporting limit.
NYSDEC = New York State Department of Environmental Conservation
OA = Outdoor air
PCE = Tetrachloroethylene
TCE = Trichloroethylene
Samples are reported in microgram(s) per cubic meter ($\mu g/m^3$).

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Figures

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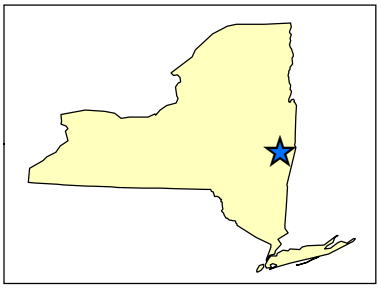
\\syracusefp\Syracuse\Projects\State&Local\NYSDEC - D009806\Work Assignments\1602506 Roxy SM\06 GIS\01 MXD\Quarterly Reports\Roxy Figure1 SiteLocation.mxd



Legend

★ Site Location

0 0.125 0.25 0.5
Miles

1 inch = 0.25 miles

N

Figure 1
SITE LOCATION MAP
Roxy Cleaners Site (Site No. 442024)
North Greenbush, New York

Map Date: 2/9/2023
Projection: NAD_1983_StatePlane_New_York_East_FIPS_3101_Feet

NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

EA

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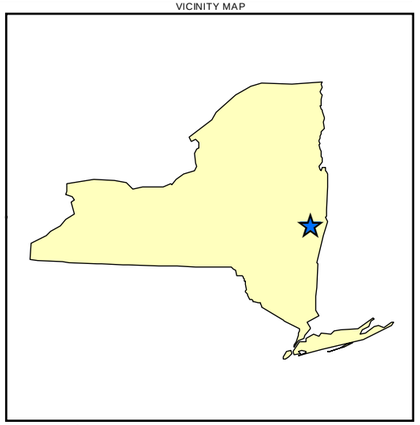
VICINITY MAP



Legend

- Overburden Monitoring Well
- Bedrock Monitoring Well
- Recovery Well
- Bedrock Injection Wells
- InjectionTrench
- Roxy Cleaners Parcel
- Proposed Soil Vapor Point Location

Map Date: 10/11/2023
Source: ESRI, 2011
Projection: NAD 1983 State Plane New York East

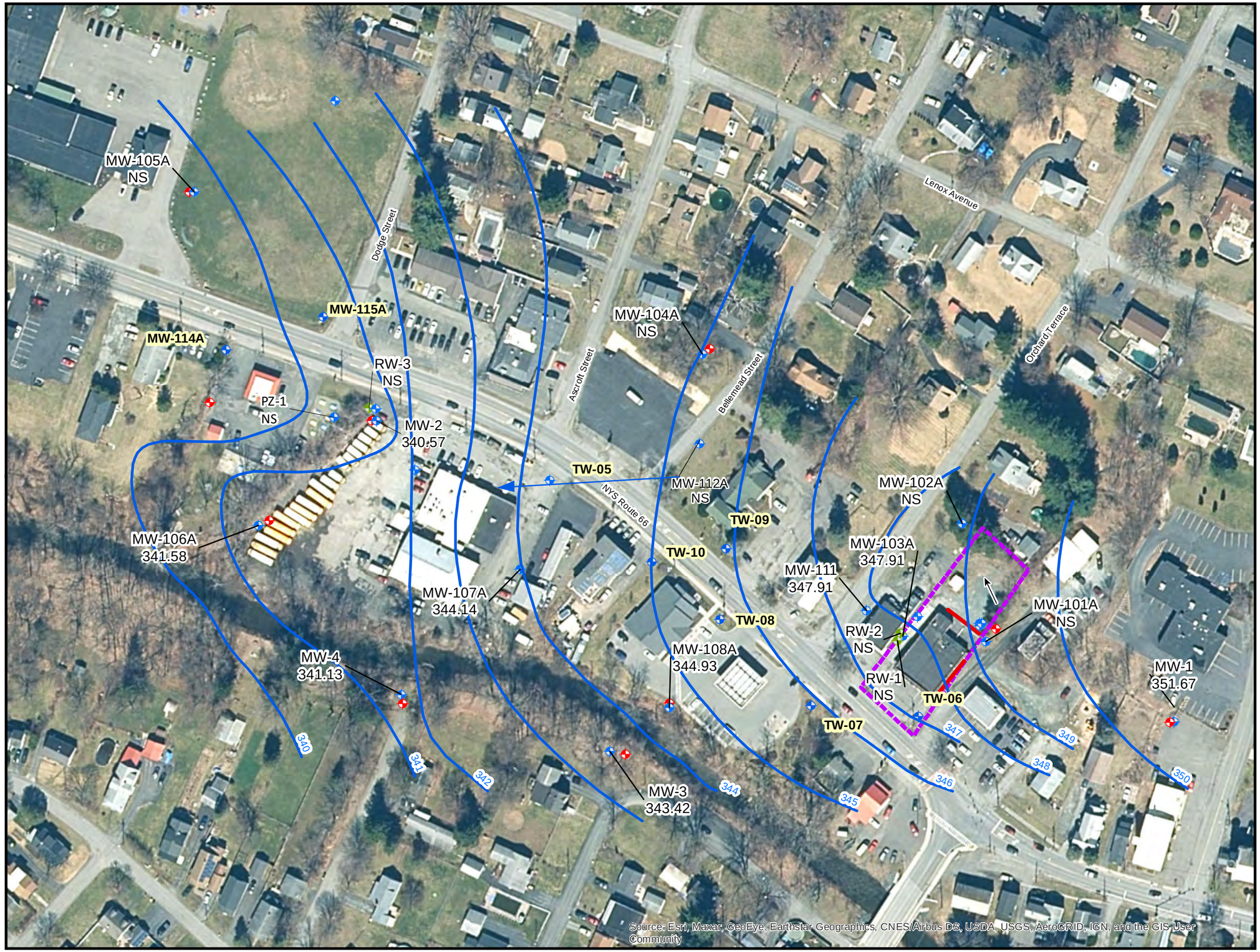
N

0 125 250

Feet

Figure 2
MONITORING WELL AND
SOIL VAPOR POINT LOCATIONS
Roxy Cleaners Site (Site No. 442024)
North Greenbush, New York

G:\GIS\data\State\and\Local\Roxy Cleaners\PROJECTS\ArcMap (mxd)\PRR\PRR 2020 - 2023\Figure 2_Roxy_ProposedWellLocations-rev.mxd



Legend

- Overburden Monitoring Well
- Bedrock Monitoring Well
- Recovery Well
- Injection Trench Locations
- Roxy Cleaners Parcel
- Overburden Groundwater Contour
- Estimated Groundwater Flow Direction

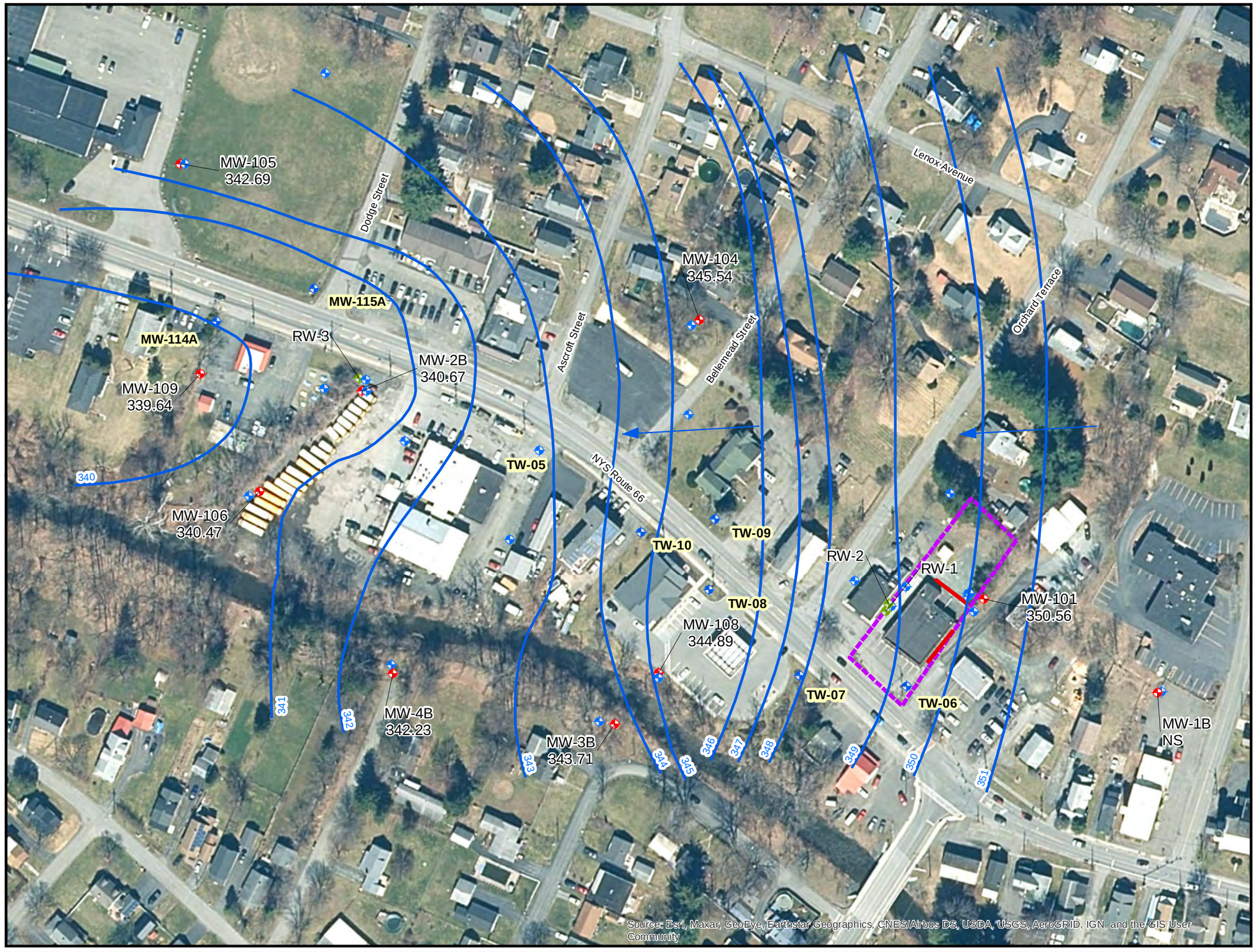
N

0 125 250 Feet

Map Date: 10/12/2023
Data Collected: December 2018
Projection: NAD 1983 State Plane New York East
NS = Not Sampled

Department of Environmental Conservation

Figure 3A
Baseline November 2021
Overburden Groundwater Elevations
Roxy Cleaners Site (Site No. 442024)
North Greenbush, New York



Legend

- Overburden Monitoring Well
- Bedrock Monitoring Well
- Recovery Well
- Injection Trench Locations
- Roxy Cleaners Parcel
- Bedrock Groundwater Contour
- Estimated Groundwater Flow Direction

N

0 125 250 Feet

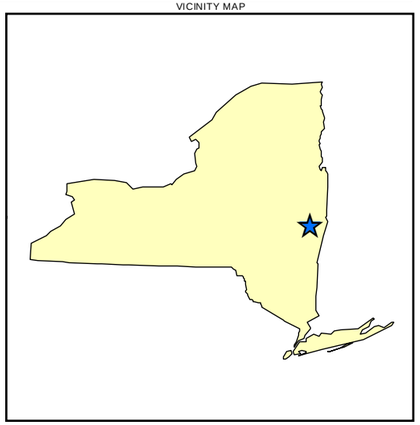
Department of Environmental Conservation

Map Date: 10/12/2023
Data Collected: November 2021
Projection: NAD 1983 State Plane New York East

NS = Not Sampled

Figure 3B
Baseline November 2021
Bedrock Groundwater Elevations
Roxy Cleaners Site (Site No. 442024)
North Greenbush, New York

VICINITY MAP



Legend

- Overburden Monitoring Well
- Abandoned Overburden Monitoring Well
- Estimated Groundwater Elevation (ft AMSL)
- Estimated Groundwater Flow Direction

Notes:
1. MW-105A could not be located.
2. TW-05 was observed to have a blockage and could not be gauged.

AMSL = Above mean sea level

Map Date: 10/12/2023
Source: ESRI, 2011
Projection: NAD 1983 State Plane New York East

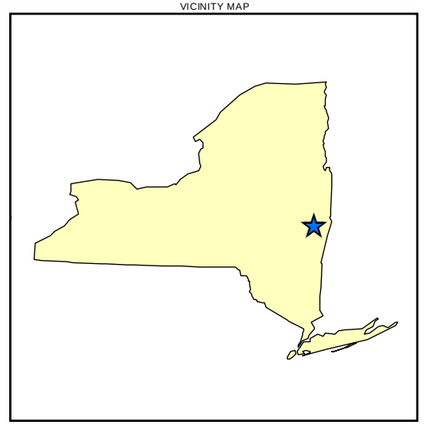
N

0 150 300
Feet

Figure 4A
March 2023 Overburden Groundwater Elevations
Roxy Cleaners Site (Site No. 442024)
North Greenbush, New York

G:\GIS\data\State and Local\Roxy Cleaners\PROJECTS\ArcMap (mxd)\PRR\PRR 2020 - 2023\Figure 4A_Roxy_GW_Elevation_Q1_2023_Overburden.mxd

VICINITY MAP



Legend

- Bedrock Monitoring Well
- Abandoned Bedrock Monitoring Well
- Estimated Groundwater Elevation (ft AMSL)
- Estimated Groundwater Flow Direction

Map Date: 10/12/2023
Source: ESRI, 2011
Projection: NAD 1983 State Plane New York East

Note:
AMSL = Above mean sea level

N

0 150 300
Feet

Department of Environmental Conservation

Figure 4B
March 2023 Bedrock
Groundwater Elevations
Roxy Cleaners Site (Site No. 442024)
North Greenbush, New York

G:\GIS\data\State and Local\Roxy Cleaners\PROJECTS\ArcMap (mxd)\PRR\PRR 2020 - 2023\Figure 4B_Roxy_GW_Elevation_Q1_2023_Bedrock.mxd

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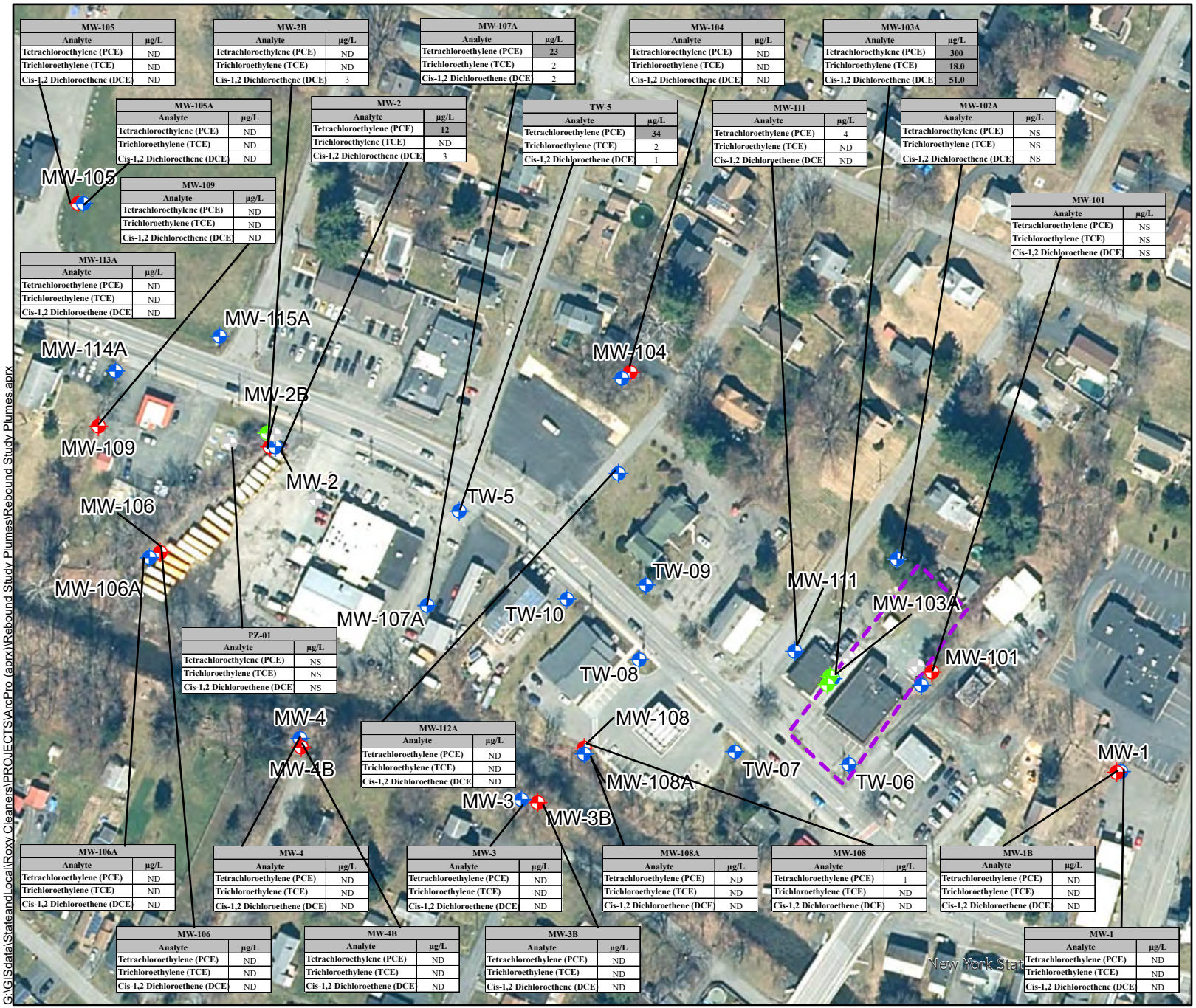

VICINITY MAP

Legend

- Bedrock Monitoring Wells
- Damaged or Missing Wells
- Overburden Monitoring Wells
- Recovery Wells
- Roxy Tax Parcel

N

0 100 200

Feet

Map Date: 10/13/2023
Projection: NAD 83 State Plane
New York East 3101 (US Feet)

NEW YORK STATE Department of Environmental Conservation

Figure 5
August 2020
CVOC Concentrations
Roxy Cleaners
North Greenbush, New York

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MW-105	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

MW-114A	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

MW-115A	µg/L
PCE	**63**
TCE	1.8
DCE	**9.2**
VC	ND

MW-109	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

MW-2	µg/L
PCE	**120 E**
TCE	0.95 J
DCE	**7.2**
VC	ND

TW-10	µg/L
PCE	**200**
TCE	ND
DCE	ND
VC	ND

TW-09	µg/L
PCE	**110**
TCE	ND
DCE	ND
VC	ND

MW-104	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

MW-111	µg/L
PCE	3.6
TCE	ND
DCE	ND
VC	ND

NYSDEC AWQS (µg/L)	
PCE	5
TCE	5
DCE	5
VC	2

MW-2B	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

TW-5	µg/L
PCE	**31**
TCE	2.1
DCE	1.1
VC	ND

MW-106	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

MW-106A	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

MW-107A	µg/L
PCE	**8.3**
TCE	0.88
DCE	ND
VC	ND

TW-08	µg/L
PCE	**16**
TCE	2.1
DCE	**25**
VC	ND

MW-101A	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

MW-4	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

MW-4B	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

MW-3	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

MW-3B	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

MW-108	µg/L
PCE	1.2
TCE	ND
DCE	ND
VC	ND

MW-108A	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

TW-07	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

MW-103A	µg/L
PCE	**52**
TCE	3.2
DCE	4.5
VC	ND

TW-06	µg/L
PCE	**19**
TCE	ND
DCE	**11**
VC	ND

MW-1	µg/L
PCE	ND
TCE	ND
DCE	ND
VC	ND

Dodge Street
Ascroft Street
Lenox Avenue
Bellemead Street
Orchard Terrace
NYS Route 66
Church Street

VICINITY MAP

Legend

- Overburden Monitoring Well
- Bedrock Monitoring Well
- Recovery Well
- Bedrock Injection Wells
- Roxy Cleaners Parcel
- Injection Trench Locations

Notes:
µg/L = Microgram(s) per liter
PCE = Tetrachloroethylene
TCE = Trichloroethylene
DCE = Cis-1,2-Dichlotoethylene
VC = Vinyl Chloride
E = Result exceeded calibration range.
ND = Non-detect
NYSDEC = New York State Department of Environmental Conservation
AWQS = Ambient Water Quality Standard

Map Date: 9/18/2023
Source: ESRI, 2011
Projection: NAD 1983 State Plane New York East

N

0 120 240
Feet

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Figure 6
CVOC CONCENTRATIONS (November 2021)
Roxy Cleaners Site (Site No. 442024)
North Greenbush, New York

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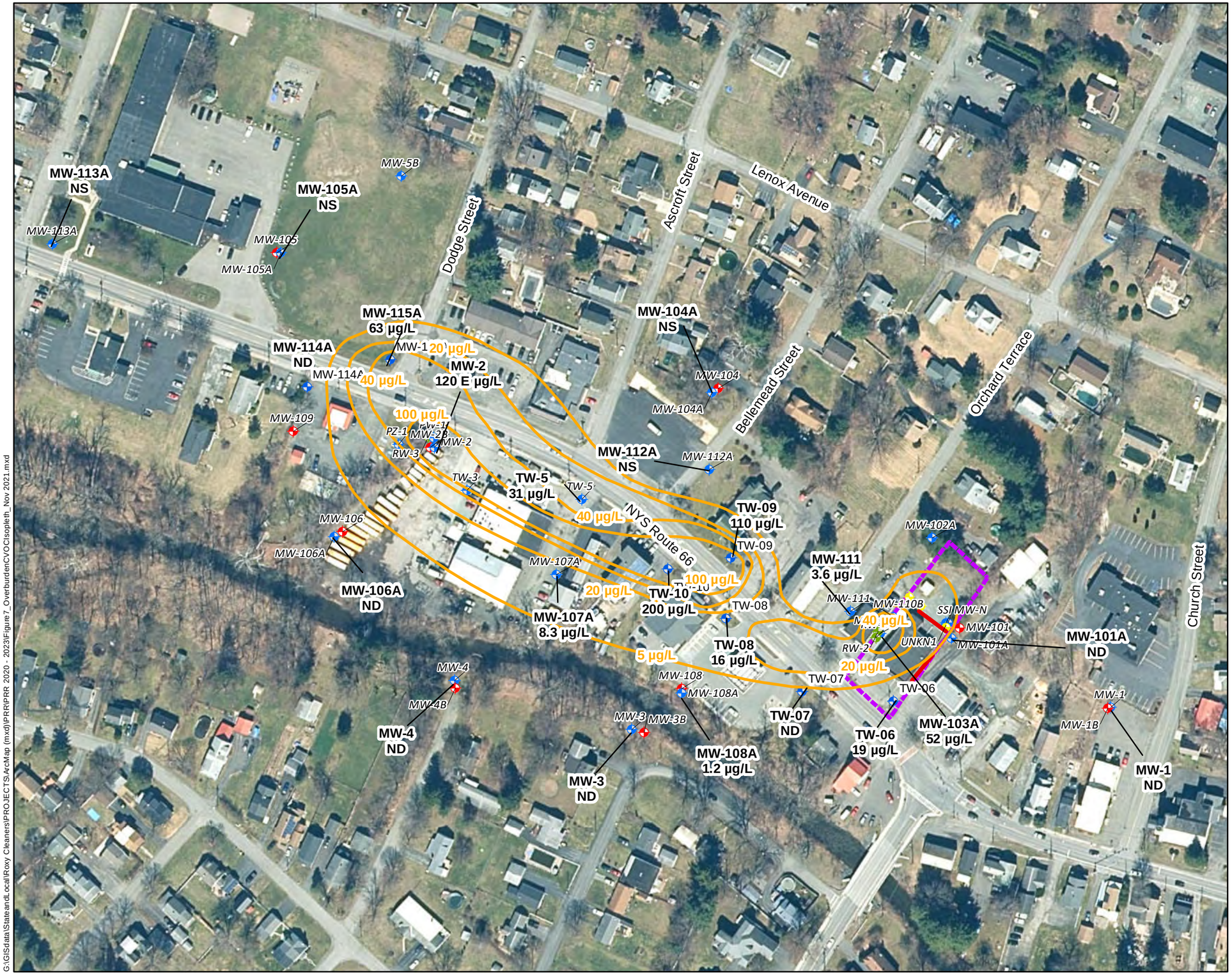
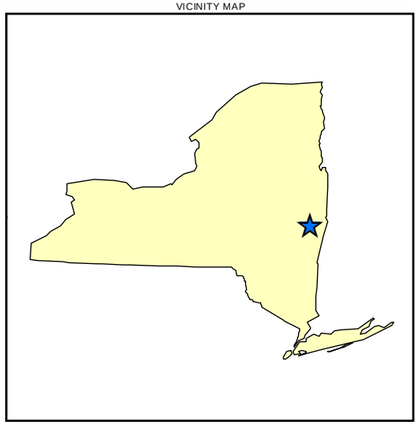


VICINITY MAP



Legend

- November 2021 PCE Isopleth
- Overburden Monitoring Well
- Bedrock Monitoring Well
- Recovery Well
- Bedrock Injection Wells
- Injection Trench Locations
- Roxy Cleaners Parcel

Notes:
µg/L = Microgram(s) per liter
E = Result exceeded calibration range.
ND = Non-detect
NS = Not sampled

Map Date: 10/12/2023
Source: ESRI, 2011
Projection: NAD 1983 State Plane New York East

N
0 120 240
Feet

NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

Figure 7
OVERBURDEN PCE ISOPLETH MAP (NOVEMBER 2021)
Roxy Cleaners Site (Site No. 442024)
North Greenbush, New York

G:\GIS\data\State and Local\Roxy Cleaners\PROJECTS\ArcMap (mxd)\PRR\PRR 2020 - 2023\Figure7_OverburdenCVOCIsopleth_Nov 2021.mxd

Figure 8A
MW-2 Historical Groundwater Analytical Results

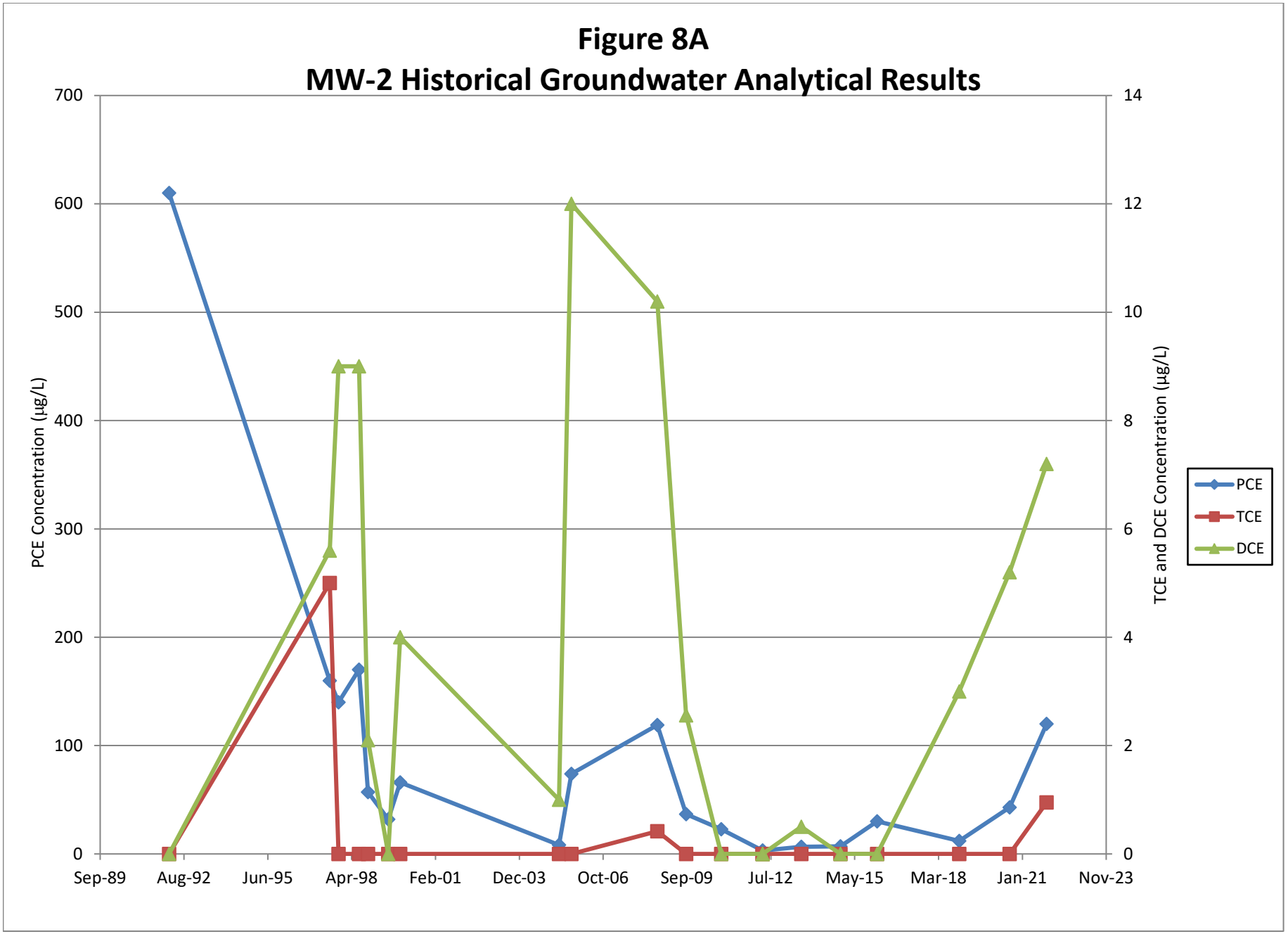


Figure 8B
MW-101 Historical Groundwater Analytical Results

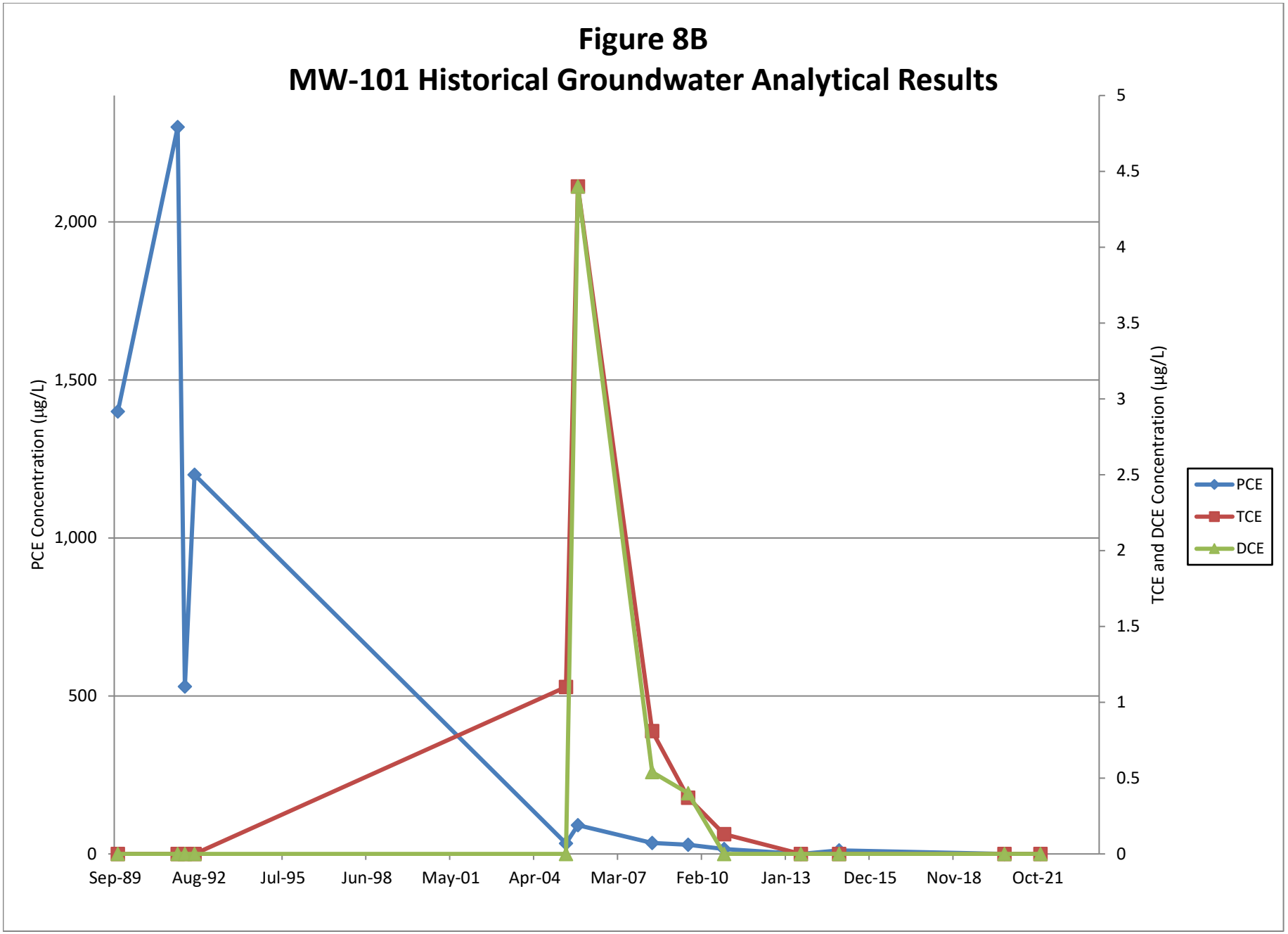


Figure 8C
MW-101A Historical Groundwater Analytical Results

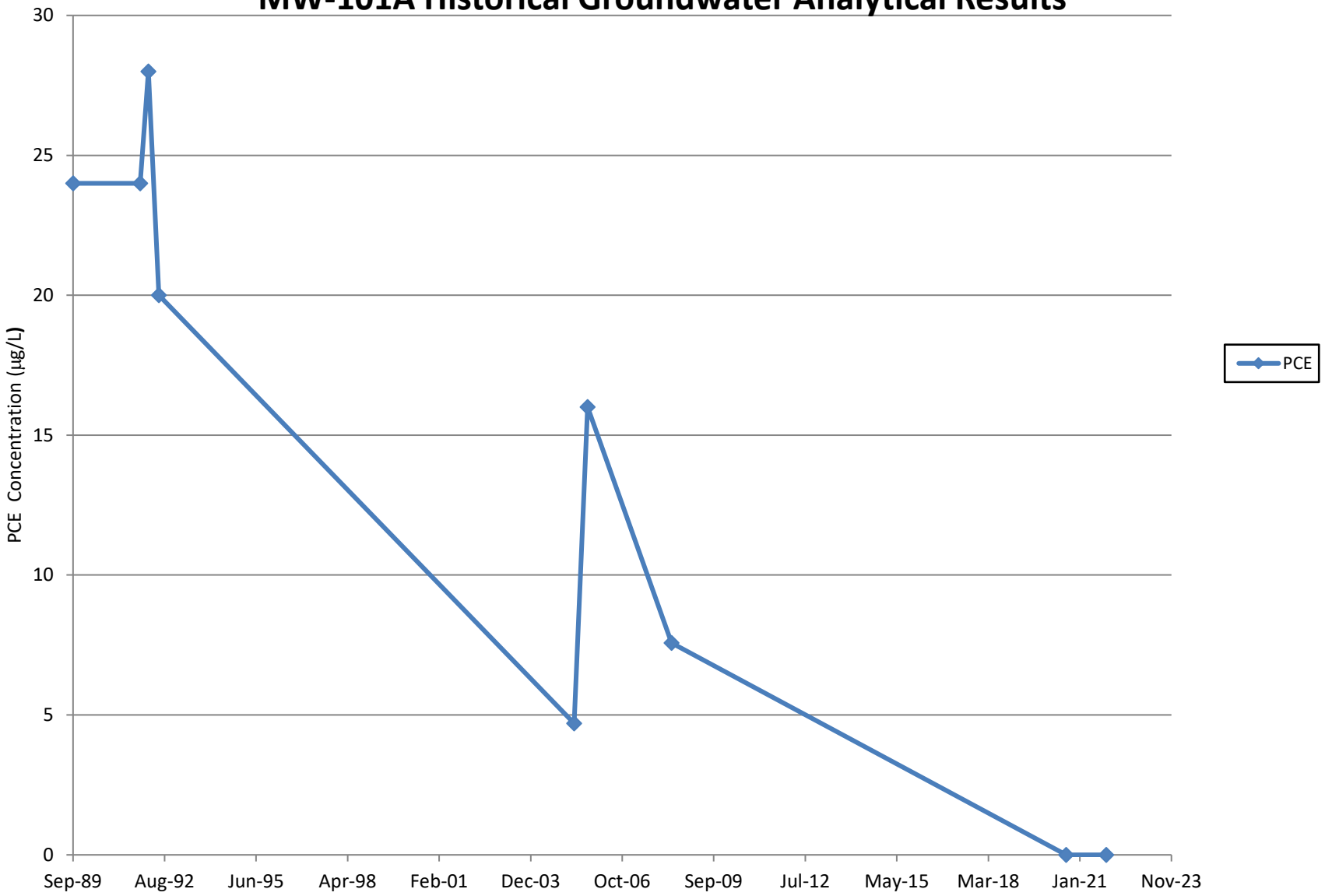


Figure 8D
MW-103A Historical Groundwater Analytical Results

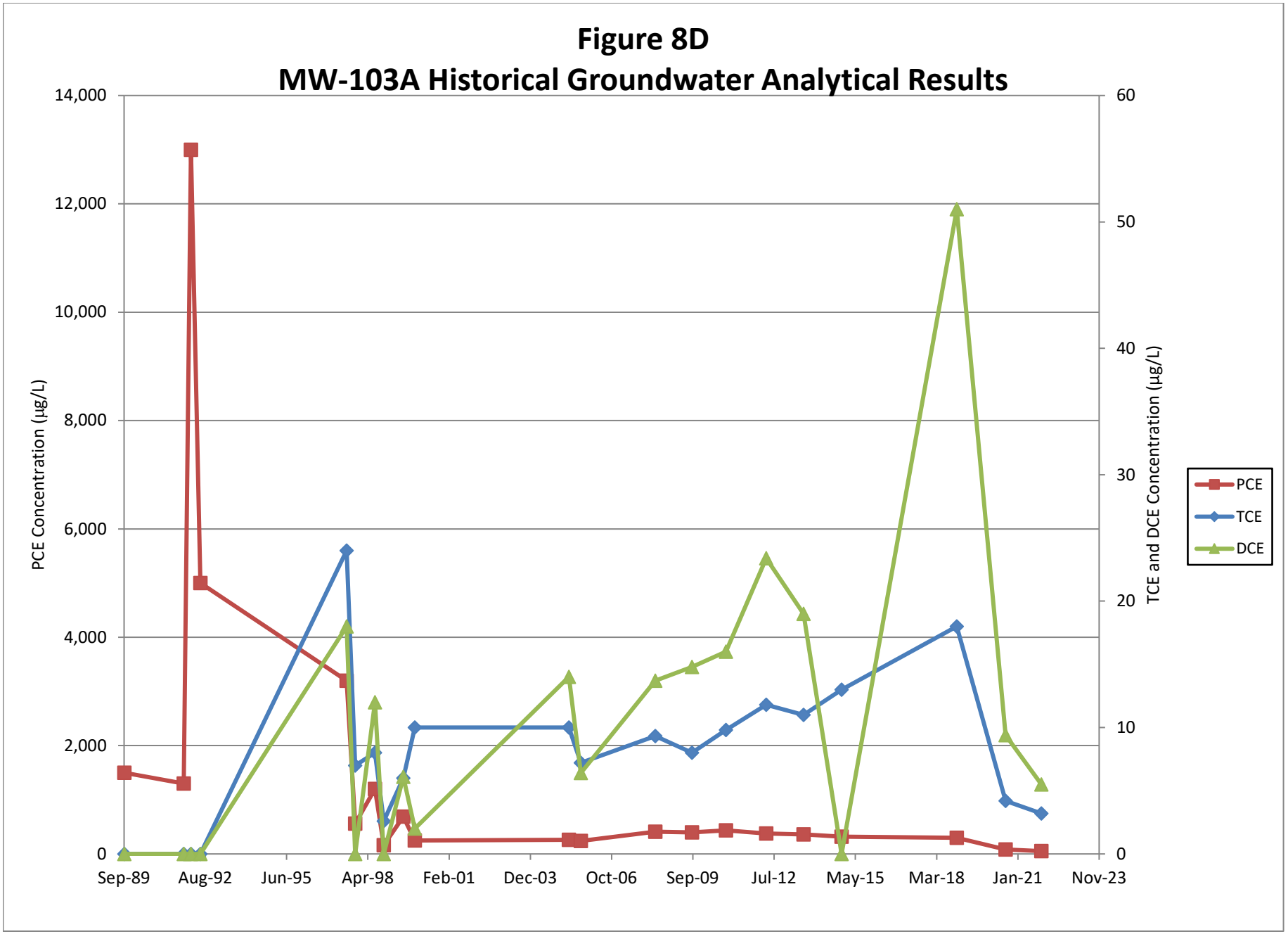


Figure 8E
MW-107 Historical Groundwater Analytical Results

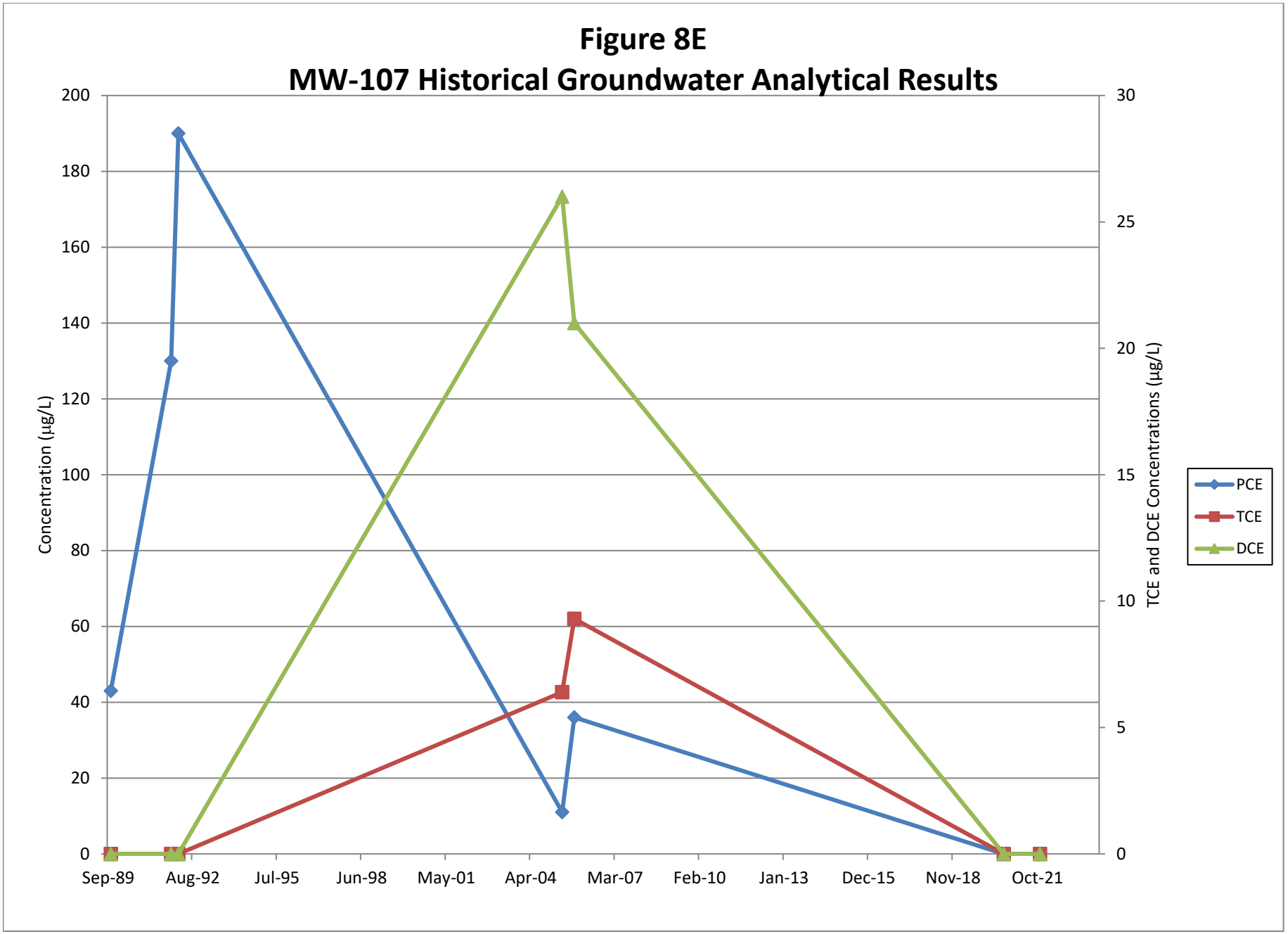
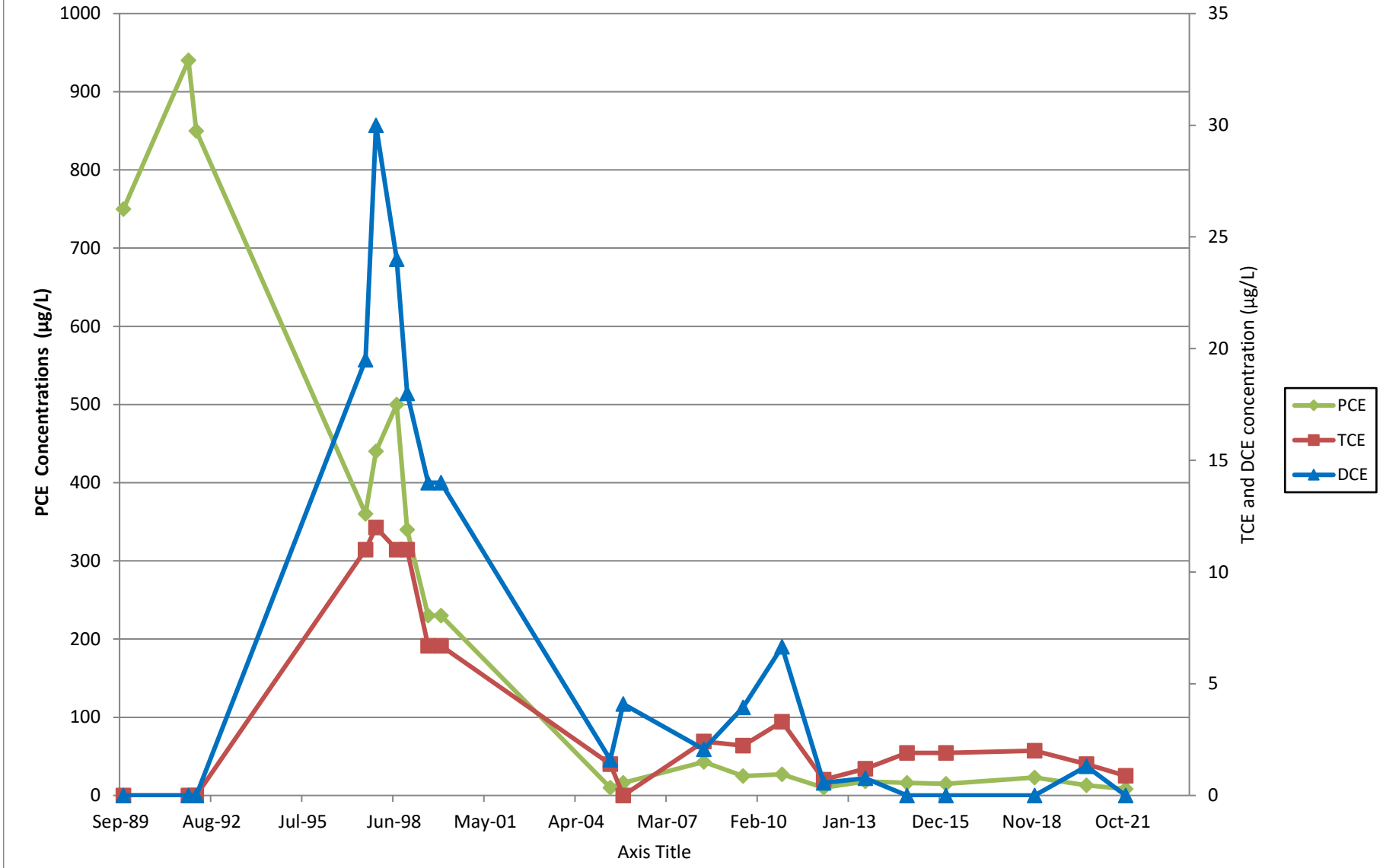


Figure 8F
MW-107A Historical Groundwater Analytical Results



Appendix A

Institutional Control/Engineering Control Certification Form

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Enclosure 1
Engineering Controls - Standby Consultant/Contractor Certification Form

Site Details **Box 1**

Site No. 442024

Site Name Roxy Cleaners

Site Address: Main Avenue (Route 66 at Route 150) Zip Code: 12198
City/Town: North Greenbush
County: Rensselaer
Site Acreage: 0.5

Reporting Period: June 16, 2020 to June 16, 2023

	YES	NO
1. Is the information above correct?	X	☐
If NO, include handwritten above or on a separate sheet.		
2. To your knowledge has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	X
3. To your knowledge has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	X
4. To your knowledge have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	X
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. To your knowledge is the site currently undergoing development?	☐	X

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	X	☐
7. Are all ICs/ECs in place and functioning as designed?	X	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor Date

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification, including data and material prepared by previous contractors for the current certifying period, if any;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) nothing has occurred that would constitute a failure to comply with the Site Management Plan, or equivalent if no Site Management Plan exists.

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor

Date

Box 6

IC/EC CERTIFICATIONS

Professional Engineer Signature

I certify that all information in Boxes 2 through 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I JAMES C. HAYWARD at 269 WEST JEFFERSON ST
print name

SYRACUSE, NY 13202

EA ENGINEERING, P.C.
(print business address)

am certifying as a Professional Engineer.

James C Hayward
Signature of Professional Engineer

Stamp
(Required for PE)

11/03/2023
Date

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