Final Engineering Report
Ardsley LLC
Westchester County, New York
Town of Greenburgh, New York
NYSDEC Site No. C360146

Prepared for
EnviroAnalytics Group, LLC
1515 Des Peres Road, Suite 300
St. Louis, Missouri 63131

May 2024

Project Number: 153292

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Certification Statement

I, MAREK OSTROWSKI, am currently a registered professional engineer licensed by the State of New York, I had primary direct responsibility for implementation of the remedial program activities, and I certify that the Remedial Action Work Plan was implemented and that all construction activities were completed in substantial conformance with the Department-approved Remedial Action Work Plan.

I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the Remedial Action Work Plan and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established for the remedy.

I certify that all use restrictions, Institutional Controls, Engineering Controls, and/or any operation and maintenance requirements applicable to the Site are contained in an environmental easement created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded.

I certify that a Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of all Engineering Controls employed at the Site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by the Department.

I certify that all documents generated in support of this report have been submitted in accordance with the DER's electronic submission protocols and have been accepted by the Department.

I certify that all data generated in support of this report have been submitted in accordance with the Department's electronic data deliverable and have been accepted by the Department.

I certify that all information and statements in this certification form 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, Marek Ostrowski, of Brown and Caldwell Associates, am certifying as Owner’s Designated Site Representative for the site.

Marek Ostrowski

Signer Name: Marek Ostrowski
Signing Reason: I reviewed this document.
Signing Time: 2024-05-06 10:49:12(PDT)

May 6, 2024

Marek Ostrowski, P.E.
New York State P.E. License #073661

Date

Brown AND Caldwell

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List of Abbreviations

Akzo	Akzo Nobel
BC	Brown and Caldwell Associates
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
bgs	below ground surface
CAMP	Community Air Monitoring Plan
cis-DCE	cis-1,2-Dichloroethene
COC	contaminant of concern
CWP	Construction Work Plan
DD	Decision Document
DER	Division of Environmental Remediation
DUSR	Data Usability Summary Report
EAG	EnviroAnalytics Group, LLC
ELAP	Environmental Laboratory Approval Program
ENRC	Enterprise Network Resolutions Contracting, LLC
EPA	U.S. Environmental Protection Agency
FER	Final Engineering Report
GPS	Global Positioning System
HASP	Health and Safety Plan
ISCO	In-situ Chemical Oxidation
ISCO WP	ISCO Summary Work Plan and Proposal
ISOTEC	In-Situ Oxidation Technologies, Inc.
mg/kg	milligrams per kilogram
MNA	Monitored Natural Attenuation
NYCRR	New York State Codes of Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSSESC	New York State Standards and Specifications for Erosion and Sediment Control
O.D.	outside diameter
PCE	Tetrachloroethene
PID	Photoionization Detector
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
RA	Remedial Action
RAO	Remedial Action Objectives
RAWP	Remedial Action Work Plan
RI	Remedial Investigation
RIR	Remedial Investigation Report
SCO	Soil Cleanup Objectives

SESC	Soil Erosion and Sediment Control
Site	Ardsley LLC, Town of Greenburgh, New York
Sovereign	Sovereign Consulting Inc.
SWPPP	Stormwater Pollution Prevention Plan
TCE	Trichloroethene
TOGS	Technical and Operation Guidance Series
µg/L	micrograms per liter
VC	Vinyl Chloride
VOC	Volatile Organic Compound

Section 1

Introduction and Background

This Final Engineering Report (FER) has been prepared by Brown and Caldwell Associates (BC), on behalf of EnviroAnalytics Group, LLC (EAG) to document the completion of the remedial action (RA) at the Ardsley LLC Site located in Town of Greenburgh, Westchester County, New York (hereafter referred to as the "Site"). The Site is part of the New York State Department of Environmental Conservation's (NYSDEC) Brownfield Cleanup Program (BCP) registry as Site No. C360146.

1.1 Report Organization

This FER is organized as follows, which is consistent with the requirements of the NYSDEC's DER 10/Technical Guidance for Site Investigation and Remediation (hereafter referred to as DER 10):

- **Section 1:** Introduction and Background
- **Section 2:** Description of Completed Work
- **Section 3:** Schedule for Completed Work
- **Section 4:** Post-Construction Remediation Activities
- **Section 5:** References

1.2 Site Background and Setting

Ardsley LLC entered into a Brownfield Cleanup Agreement (BCA), with the NYSDEC effective in July 2018, to investigate and remediate an approximately 6.00-acre property located in Town of Greenburgh, Westchester County, New York (Figure 1 – Site Location). The property was remediated to commercial use.

The Site, part of the former Akzo Nobel (Akzo) property is located at 1 Lawrence Street, Town of Greenburgh in the County of Westchester, New York and is identified as parcel 8.370-265-1 on the Westchester County Tax Map. The Site is situated on an approximately 6.00-acre area bounded by additional parcels of the Akzo property (8.370-265-3 and 8.370-265-4) to the north, Lawrence Street to the south, an additional parcel of the Akzo property (8.370-265-2) and Saw Mill River Road to the east, and the South County Trailway, maintained by Westchester County Parks, to the west (see Figure 2). The boundaries of the Site are fully described in the BCA provided as Appendix A.

1.3 Investigation and Remedial History

Ardsley LLC entered into a BCA effective July 10, 2018 with the NYSDEC to remediate the Site. An initial Amendment Application to the BCA to include Lots 2, 3, and 4 was denied by the NYSDEC on Sept 27, 2019. The BCA was amended on May 26, 2020 to update tax credit status (Gen 2 to Gen 3); and again, on May 4, 2022 clarifying the BCP Site is in the Town of Greenburgh (not Ardsley). BCA Amendment No. 3 was executed on July 7, 2022 to refine the Site boundary to exclude the Saw Mill River and land below the high water line. An additional amendment (No. 4) was submitted on July 24, 2023 to add the Purchaser of the property, Lawrence Ardsley LLC to the BCA. The BCA and amendments are provided as Appendix A.

A summary of the chronology of the regulatory and remedial history of the Site is as follows:

- Sovereign Consulting Inc. (Sovereign) submitted a Site Investigation Report (November 2009)
- First Environment submitted a Remedial Investigation (RI) Work Plan to NYSDEC (July 2017)
- Ardsley LLC enters into BCA (July 2018)
- First Environment implemented RI Work Plan (July 2018 – September 2018)
- First Environment submitted a RI Data Summary Report to NYSDEC (March 2019)
- BC submitted a Supplemental RI Work Plan to NYSDEC (March 2019)
- NYSDEC issued letter providing comments on Supplemental RI Work Plan (April 2019)
- BC submitted response to comment letter and provided a revised Supplemental RI Work Plan to NYSDEC (May 2019)
- NYSDEC issued letter providing comments on revised Supplemental RI Work Plan (June 2019)
- BC and NYSDEC agreed to clarifications to the comment letter via phone and memorialized clarifications in e-mail (June 2019)
- BC implemented Supplemental RI Work Plan (May 2019 – July 2019)
- BC submitted Supplemental RI Letter Report to NYSDEC (August 2019) – referred to as Remedial Investigation Report by NYSDEC
- NYSDEC issued letter providing comments on RI Report (October 2019)
- BC submitted response to comment letter, including recommendation of additional field investigation activities to NYSDEC (December 2019)
- NYSDEC issued letter approving additional field investigation activities (January 2020)
- BC implemented additional field investigation activities (February 2020 – June 2020)
- BC submitted Remedial Investigation Report (RIR) (September 2020)
- NYSDEC issued letter providing comments on RIR and RA Work Plan (January 2021)
- BC submitted response to comment letter, including recommendation of additional field investigation activities to NYSDEC (February 2021)
- BC, EAG, and NYSDEC participated in conference call where NYSDEC requested additional surface and subsurface soil delineation (February 2021)
- BC submitted response to comment letter, including recommendation of additional field investigation activities to NYSDEC (March 2021)
- BC implemented additional field investigation activities (March 2021)
- BC, EAG, and NYSDEC participated in conference call where NYSDEC agreed that surface and subsurface soil delineation is complete (May 2021)
- BC submits final RIR (August 2021)
- BC submits final Alternatives Analysis and Remedial Action Work Plan (RAWP) (June 2022)
- NYSDEC issues Decision Document (June 2022)
- RA Construction (July 2022 to February 2024)

1.4 Remedial Action Objectives

Based on the results of the RI, the following Remedial Action Objectives (RAOs) were identified for this Site, as provided in the RAWP:

Groundwater

- RAOs for Public Health Protection

  - Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
  - Prevent contact with, or inhalation of volatiles, from contaminated groundwater.
- RAOs for Environmental Protection
  - Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
  - Remove the source of ground or surface water contamination.

Soil

- RAOs for Public Health Protection
  - Prevent ingestion and direct contact with contaminated soil.
  - Prevent inhalation of or exposure to contaminants volatilizing from contaminants in soil.
- RAOs for Environmental Protection
  - Prevent migration of contaminants that would result in groundwater or surface water contamination.
  - Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Soil Vapor

- RAOs for Public Health Protection
  - Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into building at a Site.

1.5 Description of the Selected Remedy

The remedy for the Site was selected based on the factors listed in New York State Code of Rules and Regulations (6 NYCRR) Part 375-1.8 and was documented by the NYSDEC in the Decision Document (DD) dated June 2022(NYSDEC, June 2022). The following are the components of the selected remedy:

- Construction and maintenance of a soil cover system consisting of imported clean fill placed over an orange demarcation layer and remaining existing asphalt to prevent human exposure to remaining contaminated soil/fill remaining at the Site.
- Installation and maintenance of fencing along the bank of the Saw Mill River to prevent human exposure to remaining contaminated soil/fill remaining at the Site.
- In-situ chemical oxidation (ISCO) mechanically mixed into soils to a depth of 14 feet below ground surface (bgs) to treat volatile organic compounds (VOCs) including tetrachloroethene (PCE) and trichloroethene (TCE) in the central portion of the Site in the area of the “Former Solvent Shed”.
- Addressing the remaining groundwater contamination through Monitored Natural Attenuation (MNA).
- Execution and recording of an Environmental Easement to restrict land use to commercial use or industrial use, restrict the use of groundwater, and prevent future exposure to any contamination remaining at the Site.
- Development and implementation of a Site Management Plan for long-term management of remaining contamination as required by the Environmental Easement, which includes plans for:

(1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance, and (4) reporting.

- Periodic certification of the institutional and engineering controls listed above.

Section 2

Description of Completed Work

The RA construction began July 2022 and was completed February 2024 (refer to Section 4 for a summary of the project schedule). The construction included the following activities, which are further described in subsequent sections of this FER:

1. Mobilization and Site Preparation
    - Mobilization of Temporary Facilities
    - Construction of Staging Areas
    - Installation of Soil Erosion and Sediment Control (SESC) Measures
    - Construction of Decontamination Pad
    - Subsurface Obstruction Survey
    - Demolition of Asphalt Pavement and Concrete Pads
    - Protection/Abandonment of Existing Monitoring Wells
    - Installation of Replacement Monitoring Well
    - Abandonment of the Vault within Area of ISCO
2. Remedial Activities
    - ISCO
    - Installation of a Cover System (Engineering Control)
    - Fencing (Engineering Control)
3. Demobilization
    - Complete Punch List Items
    - Demobilization

Refer to Appendix B for the Record Drawings of work completed and refer to Appendix C for a photograph log documenting RA construction.

2.1 Project Roles and Responsibilities

The following parties comprised the project team for the RA activities:

- **NYSDEC:** Regulatory agency responsible for review and approval of the RAWP, oversight of RA implementation, and review and approval of this FER.
- **Ardsley LLC:** Project Owner responsible for overall implementation of the project.
- **BC:** Design and Construction Quality Assurance Engineer retained by Ardsley LLC. BC prepared the design, including development of design drawings and technical specifications (collectively referred to herein as Design Documents). Responsibilities during construction included construction quality assurance observation and documentation of remedial construction activities.
- **EAG:** Construction Manager retained by Ardsley LLC to serve as Ardsley LLC's Representative during remedial construction activities. Responsibilities included project public relations, daily construction operations oversight, contract compliance, facilitation of effective project

performance, and coordination with subcontractors. Primary subcontractors used by EAG included the following:

  - Pennington Environmental for monitoring well decommissioning and installation
  - Eurofins Environmental Testing America for analytical testing of pre-remedial (baseline) groundwater.
  - Alpha Analytical, Inc for analytical testing of post-remedial groundwater.
- **Enterprise Network Resolutions Contracting, LLC (ENRC):** Remediation Contractor retained by EAG and responsible for all construction activities required to implement the remedial activities, including demolition of designated foundation slabs and pavement, soil excavation, Site grading, ISCO, and construction of the final cover, and coordination with subcontractors. Primary subcontractors used by ENRC included the following:
  - RMS Environmental, Geological and Environmental Consultants for 3rd party Community Air Monitoring Plan (CAMP) implementation.
  - Ryan and Ryan Landscaping, Inc. for tree clearing activities.
  - Colliers Engineering & Design for land surveying activities.
  - American Geophysics Inc. for private utility mark-out.
  - In-Situ Oxidation Technologies, Inc. (ISOTEC) for ISCO implementation.
  - Hampton-Clarke, Inc, for ISCO confirmation soil analytical testing.
  - King Fence for permanent fence restoration and installation.
  - Westchester Metal Works for transportation of import cover materials.

2.2 Pre-Mobilization

The following summarizes the pre-mobilization activities:

- **Permitting and Access:** A copy of the following permit documentation is included in Appendix D.
  - A Slope Clearance Form, issued by Town of Greenburgh, was obtained by Ardsley LLC on November 24, 2021
  - A Stormwater Management Control Permit, issued by Town of Greenburgh, was obtained by Ardsley LLC on December 14, 2021
  - A Floodplain Development Permit, issued by Town of Greenburgh, was obtained by Ardsley LLC on April 19, 2022
  - A Tree Removal Permit, issued by Town of Greenburgh, for the removal of regulated trees from the Site was attained by Ardsley LLC on March 28, 2023
  - A Fill Permit, issued by Town of Greenburgh, was obtained by Ardsley LLC on August 23, 2023
- **Pre-Construction Submittals:** ENRC, along with their subcontractor ISOTEC, prepared and submitted pre-construction submittals including work plans detailing the means, methods, equipment, and materials to be used to complete the implementation of the remedy. The major submittals included the following:
  - ISCO Summary Work Plan and Proposal (ISCO WP)
  - Specifications for the demarcation layer
  - Backfill source information and results from geotechnical testing which were submitted to NYSDEC for review prior to approval of the source

2.2.1 Decommissioning and Replacement of Monitoring Well MW-5

EAG's subcontractor Penning Environmental mobilized to the Site to decommission MW-5 and install MW-5R (replacement to MW-5) (Figure 2). The decommissioning and replacement as described below was completed under oversight by BC.

MW-5 was decommissioned in accordance with NYSDEC guidance document CP-43: Groundwater Monitoring Well Decommissioning Policy; November 3, 2009 and its attachment Groundwater Monitoring Well Decommissioning Procedures; NYSDEC DER; August 2009. Because MW-5 was a contaminated overburden monitoring well that did not penetrate a confining layer, the method of grouting in-place was used. After removing the monitoring well vault, the polyvinyl chloride (PVC) casing was filled with cement-bentonite grout to surface using a tremie pipe. The decommissioning log for MW-5 is included as Appendix E.

Consistent with the existing monitoring wells previous installed at the Site, MW-5R (Figure 2) was drilled using hollow-stem augers and sampled with a 2-foot long, 2-inch outside diameter (O.D.) split-spoon sampler from ground surface to approximately 10 feet below the top of the water table to a depth of 25 feet bgs. The screened interval for MW-5R is 15 feet in length and straddles the water table. The well was constructed of 2-inch diameter, Schedule 40 PVC well casing with 0.010-inch slot PVC screens and an appropriately sized filter pack. Following installation, the monitoring well was developed. The monitoring well construction log for MW-5R is included as Appendix F.

2.2.2 Baseline Groundwater Sampling

One round of pre-ISCO (baseline) groundwater sampling was conducted, by BC, for comparison with post-ISCO sampling data to evaluate treatment performance.

Baseline groundwater samples were collected from monitoring wells MW-4, MW-5R, and MW-8 on April 13, 2022. The samples will be and analyzed for:

- VOCs via U.S Environmental Protection Agency (EPA) SW-846 Method 8260C
- Total and dissolved metals (arsenic, barium, cadmium, chromium, hexavalent chromium, copper, lead, iron, manganese, and selenium) via EPA SW-846 Method(s) 6010C/6020A/7196A and SM 3500 CR D
- Geochemical parameters (alkalinity, sulfate, and chloride) via Method(s) SM 2320 B, SM 4500 Cl- E, and D516-90; and
- Field parameters (dissolved oxygen, oxidation-reduction potential, pH, temperature, conductivity, and groundwater levels)

Laboratory analysis was completed by Eurofins of Amherst, New York [New York State Department of Health Environmental Laboratory Approval Program (NYSDOH ELAP) Number 10026].

Results of the baseline groundwater sampling event are provided Table 3 and in Appendix L-1.

2.2.3 NYSDEC Notification

On July 19, 2022, via e-mail, EAG informed NYSDEC that Site clearing was underway and intrusion activities were scheduled to being on August 1, 2022.

2.3 Governing Documents:

2.3.1 Site Specific Health and Safety Plan

All remedial work performed under this RA was in full compliance with governmental requirements, including Site and worker safety requirements mandated by Federal OSHA.

A Site-specific Health and Safety Plan (HASP) (BC August 2021, Revised September 2022) was complied with for all remedial and invasive work performed at the Site.

2.3.2 Construction Work Plan

The Construction Work Plan (CWP), provided as Appendix D to the RAWP (BC, June 2022), set forth the Site remedy and provided the framework for means and methods for implementation of the RA by the selected remedial contractor(s).

The CWP included the following;

- Design Drawings/Supporting Documents
- Town of Greenburgh Permits (received as of June 2022)
- Decommissioning and Replacement of Monitoring Well MW-5
- Demolition of Designated Foundation Slabs
- ISCO Mixing of Soil
- Soil Excavation and Site Grading
- Installation of Engineering Controls
- Site Preparation, Temporary Controls, and Monitoring
- Earthwork Materials
- Waste Management
- Site Restoration
- Erosion and Sediment Controls
- Odor, Vapor, and Dust Controls and Monitoring
- Stormwater Management
- CAMP

2.3.3 ISCO Summary Work Plan and Proposal

The ISCO WP prepared by ISCOTEC specified the means and methods for the ISCO soil blending. ENRC anticipated to perform the majority of work tasks associated with excavator bucket mixing with ISOTEC providing chemical management and application support for ISCO.

The ISCO WP contained the required field sequencing, soil mixing design summary, field testing of mixed cells, and quality assurance/quality control (QA/QC). The ISCO WP contained the requirements for final reporting including daily field reports, sodium persulfate and hydrogen peroxide reagents tracking, and a treatment program summary report to be prepared by ISCOTEC.

2.3.4 Stormwater Pollution Prevention Plan

The erosion and sediment controls for all remedial construction were performed in conformance with requirements presented in the New York State Guidelines for Urban Erosion and Sediment Control and the Site-specific Stormwater Pollution Prevention Plan (SWPPP) provide as Drawings C-800 through C-802 of the CWP (Appendix D to the RAWP [BC, June 2022]). Additional requirements were presented in the Town of Greenburgh Stormwater Management Control Permit Special Conditions.

2.3.5 Community Air Monitoring Plan

CAMP, as presented in the CWP (Appendix D to the RAWP [BC, June 2022]), was implemented throughout the RA. As per the CAMP requirements continuous monitoring of particulates and VOCs were conducted at each of the air monitoring stations (one upwind, two downwind). Real-time data was to be recorded in 15-minute intervals. Continuous monitoring was conducted throughout the

duration of the excavation activities. Monitoring occurred continuously during working hours at each of the stations. Alarms, if triggered when recorded levels exceed action levels as defined in the CAMP, if any were identified by visually reviewing each air monitoring station and the data generated. Result of the CAMP implementation are provided in Appendix G.

2.3.6 Community Participation Plan

As documented in the DD, a public comment period was held following NYSDEC receipt of the RAWP. During the public comment period, the public was encouraged to submit comment on the proposed remedy. All comments received by NYSDEC were considered in selecting the remedy for the Site.

2.4 Mobilization and Site Preparation

Mobilization of the equipment, materials, and personnel required for construction activities associated with RA began on July 5, 2022.

Following mobilization, ENRC began Site preparation activities including the following:

- Site Clearing
- Baseline Community Air Monitoring
- Work Area Delineation
- Temporary Facilities
- Stormwater Management and Erosion and Sediment Control Measures
- Pre-Construction Surveying
- Utility Locating
- Monitoring Well Protection
- Abandonment of the Vault within Area of ISCO

2.4.1 Site Clearing

ENRC cleared underbrush from the Site utilizing hand equipment and small equipment. Following clearing of underbrush, tree removal was performed by Ryan and Ryan Landscaping, Inc. of Ardsley, New York. Tree clearing began on July 5, 2022. Debris generated from tree clearing activities were stockpiled, managed, and disposed of by AAA Carting and Rubbish Removal of Cortlandt Manor, New York.

Refer to the first 15 photographs of Appendix C which shows the Site as Site clearing was underway.

2.4.2 Baseline Community Air Monitoring

Prior to commencement of intrusive remedial activities, monitoring was conducted to establish baseline conditions and evaluate the potential range of background concentrations that may be present during implementation of the remedy. To establish baseline conditions, continuous monitoring was performed at the monitoring stations from August 15, 2022 through August 17 2022 for a minimum of eight hours per day. Community air monitoring documentation is provided as Appendix G.

2.4.3 Work Zone Delineation

Signage was placed at all entrances of the Site and temporary fencing was used to establish (where existing Site fencing was not present) a barrier between the public and the work zone.

2.4.4 Temporary Facilities

ENRC mobilized one office trailer to be used as office space for on-Site personnel. The trailer was equipped with first aid facilities and office equipment (e.g., tables, chairs, etc.). Temporary sanitary facilities, including portable toilets and handwashing stations, were also maintained on the Site during the project.

2.4.5 Stormwater Management and Erosion and Sediment Control Measures

In accordance with the RAWP, the Site SWPPP included as an appendix to the Remedial Design Report, New York State Standards and Specifications for Erosion and Sediment Control (NYSSESC) (NYSDEC, November 2016), and the Stormwater Management Control Permit, SESCs were established and maintained on Site during construction. The SESCs included compost filter socks along the perimeter of the work area and stabilized construction entrance/tracking pad (refer to photographs 4 through 6, and 10 in Appendix C). Throughout work activities, SESC measures were inspected and repaired, as needed.

2.4.6 Pre-Construction Surveying

Colliers Engineering & Design, a Professional Land Surveyor licensed in the State of New York located the boundaries of the remediation areas, 100-year floodplain, and utilities prior to commencement of the remedial activities including the location and invert elevation of the trunk sewer line. Other surveying performed prior to remedial activities included establishing the work areas, identifying the location of encountered utilities, and survey of ISCO mixing areas.

Refer to Photograph 29 as an example of staked out limits of excavation within the floodplain.

2.4.7 Utility Locating

A non-intrusive subsurface obstruction survey was performed by American Geophysics, Inc. to identify potential utilities, and the location of the 66-inch diameter sanitary sewer owned by Westchester County traverses the Site approximately from north to south. 20-foot-wide easement and one utility hole are associated with the sewer. ENRC was also responsible for protecting the sewer and utility hole.

Refer to Photograph 16 of Appendix C for mark-out of sanitary sewer and easement.

2.4.8 Monitoring Well Protection

Monitoring wells MW-1 through MW-4, MW-5R, and MW-6 through MW-10 were to be protected during the entirety of the RA. ENRC and BC located all monitoring wells, and ENRC placed spray-painted stakes at each monitoring well for visual protection.

2.4.9 Abandonment of Vault within ISCO Area

Prior to implementation of ISCO, a vault was identified as encroaching on the area of ISCO soil-mixing. The vault, located north of the decommissioned monitoring well MW-5 (Figure 2) was abandoned in-place. This vault was filled with flowable fill and crushed stone from the Site. This stone was encountered beneath the surrounding concrete pad.

2.5 General Site Controls

General controls were installed and maintained at the Site during construction.

2.5.1 Dust, Vapor, and Odor Controls

Dust and vapor control measures were implemented, as necessary, during construction as a precautionary measure in response to visual and olfactory observations and in response to work zone and community air monitoring readings. Dust and vapor control measures implemented during construction included:

- Wetting work areas and equipment using a water truck and/or hose to prevent dust generation.

2.5.2 Work Zone and Community Air Monitoring

Work zone air monitoring was performed during intrusive and dust generating activities (e.g., excavation, concrete crushing, ISCO mixing, placement of Site cover) to protect the health and safety of Site workers. The work zone air monitoring program included use of a photoionization detector (PID) to monitor concentrations of VOCs and a dust/particulate meter to monitor concentrations of particulates in and immediately around active work areas.

Community air monitoring was also performed in accordance with the CWP to monitor air quality leaving the Site. The community air monitoring program included three monitoring stations (one positioned upwind and two positioned downwind of the active work area). Each monitoring station was equipped with a PID and a dust/particulate monitor.

The community air monitoring results from each monitoring station are included in Appendix G.

There were no exceedances of community air monitoring action levels during construction activities.

2.5.3 Site Security

During work hours, ENRC maintained a sign-in sheet for all Site personnel and visitors. The gate on perimeter construction fence was kept closed when not in use. Small equipment and materials were locked within the construction trailer overnight and large equipment with cabs and trailers were locked and left in place.

2.6 Demolition of Selected Foundation Slabs and Pavement

Subsurface structures and piping were demolished and removed, where applicable to facilitate remediation construction activities. The following provides a description of these activities.

To facilitate Site grading and future development, all concrete foundation slabs to a depth of approximately 2 feet bgs, and paving were demolished. In the ISCO treatment area, any existing paving or building foundations that prevented access to the subsurface were removed using an excavator, backhoe, or equivalent equipment.

The removed concrete pads and asphalt pavement were crushed on Site to 4-inch minus material to facilitate the spreading, grading, and compaction of the material on Site, beneath the Site cover. Refer to Photographs 55 through 58 of Appendix C for crushing of concrete slabs and pavement.

Asphalt pavement in southwest loading dock area along Lawrence Street was preserved and incorporated as final Site cover.

Metal, including rebar and historical, retired, subsurface piping was removed during the crushing activities. This metal was managed and recycled of by AAA Carting and Rubbish Removal of Cortlandt Manor, New York.

2.7 In-Situ Chemical Oxidation of Soil

ISCO soil mixing using hydrogen peroxide-activated sodium persulfate (treatment reagents) was utilized to treat PCE-impacted soil near the former solvent shed source area where PCE soil concentrations exceed 25 milligrams per kilogram (mg/kg), in accordance with the RAWP.

ISCOTEC mobilized to the Site on October 17, 2022 and began the ISCO soil mixing on October 19, 2022. As described in the ISCO WP, the target area was divided in separate treatment cells, approximately 10 feet x 10 feet in size. The ISCO soil mixing and application of treatment was completed, in the area shown on Figure 3, as described in the ISCO Soil Mixing Treatment Program Summary Report (Appendix H-1, Section 6.2), prepared by ISOTEC. and summarized below:

- As described in Section 2.4.7, the 20-foot sewer easement marked in the field, was not encroached upon during implementation of ISCO mixing.
- The corners of each treatment cell were marked with a handheld global positioning system (GPS) unit and confirmed with measuring tape.
- Soils from the 0-10 feet bgs interval within the treatment cell were excavated and stockpiled adjacent to the active treatment cell. The 10 feet bgs depth was confirmed in the field.
- Dry treatment reagents were added to the 10-14 feet bgs interval via the excavator bucket.
- Wet treatment reagents were pumped into the treatment cell.
- An excavator bucket was used to thoroughly mix the 10-14 feet bgs interval to ensure that the reagents are making contact with soil throughout the interval.
- Following thorough mixing, soils from the 0-10 feet bgs stockpile were added to bring the total depth of the cell to 5 feet bgs. Dry and wet reagents are added as above and thoroughly mixed.
- The process was then repeated with the remaining stockpiled soil (0-5 feet bgs).

Hydrogen peroxide-activated sodium persulfate was selected for its comparatively faster reaction rate with PCE relative to other oxidants or activation methods. As documented in Appendix H-1 the following total oxidant amounts was used:

- 72,842 pounds of sodium persulfate
- 2,220 pounds of 25 percent sodium hydroxide
- 35,000 pounds of 43 percent hydrogen peroxide

Amount of treatment reagents/oxidant dosing applied to each cell is provided in Appendix H-1.

ISOTEC personnel collected quality assurance samples once a day from completed cells to evaluate for sodium persulfate and alkaline conditions. These tests were completed by field methods. The majority of these samples collected shown detectable concentrations of sodium persulfate remaining following treatment, as well as acidic condition indicative of a breakdown of sodium persulfate.

In addition to the field tests, following mixing, analytical samples of mixed soils from treated cells were collected by ENRC for analysis of chlorinated VOCs analysis of soils was completed by Hampton-Clarke, Inc. of Fairfield, New Jersey. Not required by the RAWP or DD, post mixing soil samples were collected to analyze for remaining PCE mass after mixing. Results of the post-mixing soil samples are provided in Appendix H-2. Post-mixing groundwater monitoring, as prescribed in the RAWP will be used to evaluate the ISCO soil mixing performance. Results of the post-mixing groundwater monitoring is documented in Section 4.1.

Refer to Photographs 33 through 38 and 42 through 47 of Appendix C for ISCO mixing activities.

2.8 Soil Excavation and Base Site Grading

In order to install the Site cover in the portions of the Site within the 100-Year Flood Zone, the existing soils in these areas were excavated to a depth of one foot. These excavated soils, as well as crushed concrete and asphalt debris (described above) were graded on Site (except within the 100-Year Flood Zone) to create the base grades suitable for the one-foot Site cover placement, facilitate stormwater management, and future development. The regraded soils and crushed concrete and asphalt were graded and compacted with vibratory drum rollers.

The overall pattern of Site grading was generally similar to pre-remedial conditions. The final base grading directs stormwater to the east, toward the main channel of Saw Mill River

Along the perimeter in the areas within the 100-Year Flood Zone, along the existing perimeter fencing to remain, and along the retaining walls, a narrow (10-foot wide) excavation was performed to allow for placement of the Site cover and maintaining the existing grade along these permanent features. In the remainder of the Site, the final grades were raised to accommodate the demolished concrete and pavement material and excavated soils from within flood zone areas.

Refer to Photographs 59 through 62 for base grade conditions.

The final base grades are presented on Table 1 and Figure 4. Final base grade elevations were confirmed by a New York State licensed surveyor.

2.9 Site Cover System

Where existing asphalt was not demolished and inspected to be in good condition (southwest corner of property), it was deemed acceptable to remain as a cover system to serve as an EC to prevent contact with contaminant of concern (COC) concentration potentially exceeding Commercial Soil Cleanup Objectives (SCOs) that remain at the Site.

In all other locations, a cover system was installed to serve as an engineering control to prevent contact with COC concentrations potentially exceeding Commercial SCOs that remain at the Site. The cover system consists of orange demarcation fabric (Appendix I) overlain with 1-foot of imported materials (discussed below). The limits of the cover system are depicted on the Record Drawings included in Appendix B.

2.9.1 Imported Materials

On January 4, 2023, BC submitted a letter to NYSDEC to serve as an addendum to the RAWP. The purpose of the addendum was to include a sampling and analysis plan to evaluate recycled crush concrete fill material available at 1100 Sawmill River Road, Yonkers, New York for use as final Site cover. The letter is provided in Appendix J-1. Following approval of the sampling and analysis plan, sampling was completed at a frequency exceeding the minimum requirements of DER-10.

Below is a summary of the imported fill materials. The table provided in Appendix J-2 provides a summary of the backfill and fill quantities used during construction. Request to Import/Reuse Fill or Soil forms for each material including source information, quality documentation, and import tickets for fill materials are included in Appendix J-2.

- Recycled Crushed Concrete/Fines Surface Cover
  - Source: Westchester Metal Works, 1100 Sawmill River Rd, Yonkers, New York
  - The source information and quality documentation that were provided to the NYSDEC via e-mail and approved as follows:

- Request to Import/Reuse Fill or Soil form for Recycled Crushed Concrete from Westchester Metal Works dated April 7, 2023, approved by NYSDEC via e-mail on April 7, 2023.

This section provides a summary of the material and placement of backfill and fill materials.

Backfill and fill materials used during remediation included the following:

- Imported recycled crushed concrete
- Recycled Crushed Concrete Surface Cover:
  - Approximately 11,556 cubic yards of recycled crushed concrete was imported for use as Site cover.
  - Within areas that received Crushed Stone Surface Cover, orange non-woven geotextile demarcation fabric (Refer to Appendix I for product information) was installed on the prepared subgrade surface with a minimum 6-inch overlap between adjacent rolls.
  - A minimum 12-inch-thick layer of Recycled Crush Concrete Cover was then placed on top of the demarcation fabric. Recycled Crushed Concrete was compacted with a with a vibratory drum roller. As per the RAWP no compaction testing was completed. Following compaction of the surface cover, fine grading was performed to achieve the final grades. Final grades are provided on Table 1 and Figure 5 and the Record Drawing provided in Appendix B.

2.10 Chain-Link Fencing (Engineering Control)

Where placement of the Site cover was not practical (along the banks of the Saw Mill River), new and existing fencing acts an engineering control in preventing direct contact with COCs. As shown on Record Drawing in Appendix B, on-Site access to most of the Saw Mill River riverbank was restricted by existing fencing remaining from the former Akzo facility. This existing fencing was retained and as necessary, replaced or repaired, following an inspection if damage was noted. As shown in Appendix B, new fencing was installed along the previously unfenced edge in the southeast portion of the Site (east of the Saw Mill River), along the boundary of the 100-year floodplain on the west side of the Saw Mill River, and on the western boundary of the Site. The installation and maintenance of new chain-link fencing will limit the disturbance of the Saw Mill River riverbank and its established vegetation, preventing the erosion of the bank and sedimentation within the river.

2.11 Site Restoration

Following completion of Site cover installation, all existing monitoring had surface coverings replaced to match the new grade across the Site.

Temporary fencing constructed to separate the work zone from the rest of the Site was removed and fencing that existed prior to remediation was restored to its original orientation or to connect with the new fencing along Saw Mill River. Temporary structures such as the stabilized construction entrances, and office/storage structures were removed from the Site. Additionally, any remaining materials not used during the RA were removed from the Site.

2.12 Description of Design Modifications

There were no modifications that present a change in the RAWP-approved remedial design included as part of the implemented design.

2.13 Institutional Controls

The Site remedy requires that an environmental easement be placed on the property to (1) implement, maintain, and monitor the Engineering Controls; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination (soil and groundwater); and (3) limit the use and development of the site to commercial or industrial uses only. The environmental easement for the Site was originally executed by the Department on September 15, 2020, and filed with the Westchester County Clerk on October 20, 2020. The County Recording control number for this filing is 622913183. An amended environmental easement for the Site was executed by the Department on November 21, 2022, and filed with the Westchester County Clerk on December 5, 2022. The County Recording control number for this filing is 622913183. A copy of both the original easement and amended easement and proofs of filing are provided in Appendix K.

Section 3

Schedule for Completed Work

The following is a summary of the schedule for completion of the RA construction:

- July 5, 2022: Began mobilization to the Site, installation of SESC measures, and Site and tree clearing (i.e., removal of vegetation, trees, and miscellaneous debris).
- August 16, 17, and 18, 2022: Baseline CAMP monitoring conducted.
- August 31, 2022: Geophysical survey of trunk sewer line by American Geophysics. Began removal of existing asphalt, concrete pads, and foundations.
- September 5, 2022: Survey mark-out of 100-year Flood Zone/excavation areas within Site boundaries.
- September 7, 2022: Site meeting held with BC, EAG, ENRC, and ISCOTEC.
- October 19, 2022: ISOTEC begins ISCO Soil Mixing.
- October 31, 2022: ISCO Soil Mixing completed.
- August 2022: Began excavation of soils from within the 100-year Flood Zone.
- February 27, 2023: Concrete crushing and regrading of soil, crushed concrete, and asphalt.
- September 26, 2023: Began placement of orange demarcation layer and installation of Site cover.
- November 6, 2023: Site cover installation completed.
- February 2024: New chain-link fencing installed/existing chain-link fencing repair completed.
- February 2024: Demobilization.

Section 4

Post-Construction Remediation Activities

Following the completion of the RA construction and demobilization from the Site, ongoing maintenance and monitoring activities are required to satisfy the DD. These post-construction remediation activities are further discussed within the Site Management Plan and summarized below.

4.1 Post-Mixing Groundwater Monitoring

As prescribed in the RAWP, groundwater monitoring was to be performed quarterly for one year after the ISCO soil mixing operations were completed. Results of the groundwater monitoring are to be used to evaluate ISCO soil mixing performance. To date three of the four post-mixing monitoring events have been conducted, completed in March 2023, June 2023, and September 2023, each corresponding to approximately three, six, nine months post-mixing. Groundwater was sampled from replacement monitoring well MW-5R and existing monitoring wells MW-4 and MW-8 and analyzed for VOCs analysis during each of the three sampling events. Results of groundwater monitoring events are provided in Appendix L and discussed below.

Prior to each groundwater monitoring event a synoptic rounds of water level measurements was collected from all wells to evaluate the water table. Water level depths and elevations are presented in Table 2. The water table contours for each event are provided as Figures 1 through 3 of Appendix L-1. As depicted on the above figures, the groundwater flow is generally southeast across the Site toward the Saw Mill River. In the northern portion of the Site, groundwater flow is more easterly, with a more southerly flow in the southern portion of the Site. This is consistent with the findings documented in the RIR.

Groundwater samples were collected according to the EPA low-flow sampling protocol.

Laboratory analysis was completed by Alpha Analytical of Westborough, Massachusetts [NYSDOH ELAP Number 11148].

The results of the March 2023, June 2023, and September 2023 post-mixing groundwater monitoring are events are described below.

An electronic data deliverable (EDD) for data generated as part of the FER (baseline and post-ISCO groundwater monitoring data) was submitted to NYENVDATA on April 24, 2024. Documentation of acceptance of the EDD will be submitted to the NYSDEC Project Manager upon receipt.

4.1.1 March 2023 Post-Mixing Groundwater Monitoring

Approximately four months post-mixing a groundwater monitoring event was completed on March 2, 2023. During the monitoring event samples were collected from MW-4, MW-5R, and MW-8 and analyzed for VOCs by Alpha Analytical.

Analytical Data Validation

A Data Usability Summary Report (DUSR) was prepared for the groundwater data packages (Appendix L-3). The analytical data were determined to be acceptable for the intended purposes and none of the data was rejected. Analytical data was qualified as described in the DUSR.

Results

Results of the analyses are presented in Table 3 and compared to the Title 6, Chapter 100, Part 703 of the New York State Code of Rules and Regulations (6 NYCRR Part 703) groundwater standards for Class GA groundwater or, where no such standard exists, the corresponding guidance value from Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. Collectively, these are referred to herein as Class GA criteria.

During the three months post-mixing groundwater monitoring the only VOC to exceed the 6 NYCRR Part 703 groundwater standard was PCE at MW-4 (result of 12 micrograms per liter [µg/L] vs. standard of 5 µg/L). No other VOCs were detected above the standard.

4.1.2 June 2023 Post-Mixing Groundwater Monitoring

Approximately six months post-mixing a groundwater monitoring event was completed on June 16, 2023. During the monitoring event samples were collected from MW-4, MW-5R, and MW-8 and analyzed for VOCs by Alpha Analytical.

Analytical Data Validation

A DUSR was prepared for the groundwater data packages (Appendix L-4). The analytical data were determined to be acceptable for the intended purposes and none of the data was rejected. Analytical data was qualified as described in the DUSR.

Results

Results of the analyses are presented in Table 3 and compared to the Class GA criteria for groundwater.

During the six months post-mixing groundwater monitoring the only VOC to exceed the 6 NYCRR Part 703 groundwater standard was PCE at MW-4 (result of 11 µg/L vs. standard of 5 µg/L). No other VOCs were detected above the standard.

4.1.3 September 2023 Post-Mixing Groundwater Monitoring

Approximately nine months post-mixing a groundwater monitoring event was completed on September 29, 2023. During the monitoring event samples were collected from MW-4, MW-5R, and MW-8 and analyzed for VOCs by Alpha Analytical.

Analytical Data Validation

A DUSR was prepared for the groundwater data packages (Appendix L-5). The analytical data were determined to be acceptable for the intended purposes and none of the data was rejected. Analytical data was qualified as described in the DUSR.

Results

Results of the analyses are presented in Table 3 and compared to the Class GA criteria for groundwater.

During the nine months post-mixing groundwater monitoring the only VOC to exceed the 6 NYCRR Part 703 groundwater standard was PCE at MW-4 (result of 6.4 µg/L vs. standard of 5 µg/L). No other VOCs were detected above the standard.

4.1.4 Post-Mixing Groundwater Monitoring Summary

The following is based on the monitoring period reported herein.

MW-4

Following the conclusion of ISCO mixing, the only VOC to exceed the Class GA criteria for groundwater at MW-4 has been PCE. From the baseline sampling event to the three-month post-mixing monitoring event the concentration of PCE rose from 3.4 µg/L to 12 µg/L. Since the three-month post-mixing monitoring event the PCE concentration has been decreasing to 11 µg/L (six month post-mixing) and to 6.4 µg/L (nine month post-mixing).

At MW-4 concentration of PCE degradation products including TCE, cis-1,2-dichloroethene (cis-DCE), and vinyl chloride (VC) have been non-detect during the baseline and post-mixing monitoring event, with the exception of TCE during the three-month post-mixing event. However, the detection of TCE is consistent with the method detection limits reported in other events.

MW-5R

Following the conclusion of the ISCO mixing, no VOCs has been detected above the Class GA criteria for groundwater at MW-5R. Concentration of PCE have decreased from a baseline concentration of 2.3 µg/L to a concentration of 0.63 µg/L in the nine-month post-mixing event.

At MW-5R concentration of PCE degradation products including TCE and cis-DCE have been detected a concentration below the Class GA criteria for groundwater. During the baseline event TCE was detected at 0.55 µg/L ("J-qualified"), increased to a concentration of 0.95 µg/L during the three-month post-mixing event and decreased to a concentration of 0.88 µg/L in the nine month post-mixing event. cis-DCE concentrations have followed a similar trend. During the baseline monitoring event cis-DCE was not detected, increased to 1.4 µg/L in the three-month post-mixing event and has decreased to 0.8 µg/L during the nine-month post-mixing event. VC has been non-detect.

MW-8

Following the conclusion of the ISCO mixing, no VOCs has been detected above the Class GA criteria for groundwater at MW-5R. No concentration of PCE has been detected above the method detection limit in the baseline or the post-mixing monitoring events.

At MW-8 concentration of PCE degradation products including TCE and cis-DCE have been detected a concentration below the Class GA criteria for groundwater. During the baseline event TCE was not detected and increased to a concentration of 0.79 µg/L during the three-month post-mixing event and decreased to a concentration of 0.47 µg/L ("J-qualified") in the nine-month post-mixing event. cis-DCE concentrations have followed a similar trend. During the baseline monitoring event cis-DCE was not detected, increased to 1.4 µg/L ("J-qualified") in the three-month post-mixing event and has decreased to 1.2 µg/L ("J-qualified") during the nine month post-mixing event. VC has been non-detect.

Conclusion

The increase in PCE concentrations at MW-4 immediately following mixing activities may be attributed to changes in groundwater flow as a result of the addition of the reagents and mixing activities. PCE concentrations decreased in MW-4 during the nine-month post-mixing event and overall at MW-5R. A full summary will be provided following receipt of validated analytical data from the January 2024 groundwater monitoring event, approximately 13-month post-mixing.

Additional groundwater monitoring events will be completed as documented in the Site Management Plan, pending NYSDEC approval.

Section 5

References

Brown and Caldwell Associates, June 2022. “Alternatives Analysis and Remedial Work Plan, Ardsley LLC, Site #C360146, Town of Greenburgh, Westchester County, New York”.

Brown and Caldwell Associates, August 2021.” Final Remedial Investigation Report, Ardsley, LLC (Former Akzo Nobel Pilot Plant Site), ID # C360146, Ardsley, New York”.

NYSDEC, June 2022. “Decision Document, Ardsley, LLC, Brownfield Cleanup Program, Town of Greenburgh, Westchester County, Site No. C360146”.

NYSDEC, May 3, 2010. “DER-10/Technical Guidance for Site Investigation and Remediation; NYSDEC Program Policy”.

NYSDEC, November 2009. “CP-43: Groundwater Monitoring Well Decommissioning Policy”.

Tables

TABLE 1
COMPARISON OF BASE GRADE TO FINAL GRADE SITE COVER ELEVATION
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

Base Grade Survey Points NY State Plan - NAD 83				Final Grade Survey Points NY State Plan - NAD 83				
Point Number	Northing	Easting	Elevation (ft., NAVD)	Point Number	Northing	Easting	Elevation (ft., NAVD)	Elevation Change (ft.)
5000	790581.38	670212.93	123.22	5001	790582.71	670212.02	124.31	1.09
5003	790610.51	670166.41	124.62	5002	790609.13	670166.86	125.84	1.22
5004	790640.56	670117.58	126.64	5005	790639.24	670117.80	127.73	1.08
5007	790667.04	670071.28	127.67	5006	790668.07	670071.91	129.05	1.38
5008	790686.35	670032.29	127.50	5009	790684.95	670032.14	129.02	1.53
5011	790759.28	670067.72	130.49	5010	790758.98	670066.06	131.77	1.28
5012	790734.41	670113.78	130.27	5013	790732.62	670113.79	131.78	1.51
5015	790704.56	670151.13	130.19	5014	790705.39	670152.09	131.31	1.12
5016	790681.92	670194.73	127.73	5017	790683.13	670195.16	128.82	1.09
5019	790664.70	670244.94	122.90	5018	790665.25	670243.53	124.52	1.62
5020	790645.43	670287.96	122.60	5021	790647.09	670288.10	124.10	1.50
5023	790696.00	670305.17	123.63	5022	790694.48	670305.02	124.89	1.26
5024	790710.62	670262.54	123.90	5025	790708.69	670262.71	125.40	1.50
5027	790731.79	670216.28	127.46	5026	790730.32	670215.15	128.77	1.32
5029	790751.48	670169.11	130.74	5028	790749.96	670168.47	131.89	1.14
5030	790773.80	670123.11	131.12	5031	790772.56	670123.05	132.08	0.96
5033	790797.74	670084.10	130.34	5032	790795.86	670084.36	131.93	1.59
5034	790871.79	670076.13	129.32	5035	790870.30	670075.74	130.82	1.50
5037	790857.49	670110.09	130.37	5036	790856.13	670109.61	131.69	1.32
5038	790843.84	670153.80	130.89	5039	790842.57	670153.34	132.04	1.15
5041	790824.04	670209.46	130.30	5040	790823.02	670208.59	131.88	1.58
5042	790813.79	670251.42	129.22	5043	790812.51	670250.61	130.71	1.48
5045	790775.61	670349.92	125.95	5044	790777.03	670350.37	127.56	1.61
5046	790824.46	670314.10	128.61	5047	790826.17	670313.68	129.77	1.16
5049	790843.38	670262.36	129.77	5048	790844.66	670262.88	131.07	1.30
5050	790857.37	670225.68	130.49	5051	790858.42	670226.46	131.93	1.43
5053	790878.02	670184.83	130.63	5052	790876.80	670184.44	132.02	1.38
5054	790903.17	670142.85	130.10	5055	790901.48	670142.29	131.54	1.44
5057	790924.83	670099.10	129.70	5056	790923.13	670099.35	131.08	1.38
5058	790954.98	670113.35	129.55	5059	790954.06	670113.09	130.90	1.35
5061	790940.35	670153.48	129.91	5060	790938.72	670153.30	131.24	1.33
5062	790915.90	670198.08	130.31	5063	790914.62	670197.80	131.70	1.39
5065	790897.80	670245.58	130.11	5064	790896.37	670244.69	131.40	1.29
5066	790883.72	670284.24	129.65	5067	790882.58	670283.06	130.97	1.33
5069	790868.38	670329.73	128.98	5068	790869.08	670327.67	130.46	1.48
5070	790889.65	670373.17	130.01	5071	790890.24	670371.72	131.43	1.42
5073	790926.12	670317.10	129.43	5072	790927.41	670317.94	130.88	1.46
5074	790951.24	670276.18	129.70	5075	790952.66	670276.24	131.31	1.62
5077	790976.47	670232.20	129.92	5076	790976.84	670232.31	131.36	1.44
5078	790984.74	670168.91	129.76	5079	790985.99	670169.15	130.86	1.10
5081	791000.33	670137.34	129.42	5080	790998.22	670137.79	130.77	1.35
5082	791032.81	670201.44	128.94	5083	791034.00	670202.32	130.27	1.32
5085	791009.02	670248.39	129.42	5084	791010.11	670249.57	130.68	1.26
5086	790995.52	670293.88	129.77	5087	790997.07	670294.75	131.04	1.27
5089	790973.01	670346.45	129.36	5088	790974.43	670346.53	130.75	1.38
5090	791029.04	670389.93	128.12	5091	791029.58	670388.50	129.72	1.60
5093	791094.39	670360.62	127.81	5092	791093.26	670359.75	129.30	1.49
5094	791120.22	670296.76	129.05	5095	791121.63	670297.29	130.33	1.29

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Base Grade Survey Points NY State Plan - NAD 83				Final Grade Survey Points NY State Plan - NAD 83				
Point Number	Northing	Easting	Elevation (ft., NAVD)	Point Number	Northing	Easting	Elevation (ft., NAVD)	Elevation Change (ft.)
5097	791142.95	670250.52	128.91	5096	791144.06	670251.12	130.54	1.63
5099	791155.61	670222.64	129.23	5098	791154.32	670221.99	130.73	1.50
5100	791202.85	670247.11	129.48	5101	791201.60	670246.49	131.10	1.62
5103	791188.57	670295.49	129.15	5102	791187.19	670294.63	130.62	1.46
5104	791173.73	670334.48	128.26	5105	791172.65	670333.71	129.78	1.52
5107	791162.09	670390.73	126.71	5106	791160.77	670390.07	127.82	1.11
5108	791147.74	670431.98	125.54	5109	791149.37	670432.47	126.68	1.14
5111	791101.22	670434.42	126.12	5110	791101.62	670433.28	127.56	1.44
5112	791190.12	670454.19	124.70	5113	791191.61	670454.35	126.40	1.69
5115	791207.00	670403.60	125.30	5114	791205.65	670403.05	126.75	1.45
5116	791224.24	670343.20	127.49	5117	791223.09	670341.97	128.54	1.05
5119	791233.24	670305.65	128.94	5118	791231.71	670305.16	130.09	1.14
5120	791235.67	670240.74	128.78	5121	791233.96	670240.96	130.17	1.39
5123	791228.72	670217.20	126.49	5122	791228.44	670218.82	127.55	1.06
5124	791270.92	670275.06	127.99	5125	791269.93	670274.55	129.16	1.17
5127	791260.43	670325.74	127.33	5126	791259.08	670325.68	128.93	1.60
5128	791254.81	670372.69	126.03	5129	791253.52	670371.69	127.34	1.31
5131	791233.43	670418.83	124.93	5130	791232.32	670417.96	126.65	1.72
5133	791211.02	670467.81	124.78	5132	791210.05	670466.83	126.25	1.47
5134	791187.18	670205.21	127.33	5135	791185.48	670205.33	128.56	1.23
5137	791123.08	670174.52	126.03	5136	791123.88	670175.34	127.27	1.24
5138	791059.73	670144.08	125.98	5139	791058.47	670143.45	126.98	1.00
5141	791016.74	670120.69	125.61	5140	791015.44	670119.95	126.75	1.14
5142	790967.10	670099.96	125.50	5143	790966.22	670101.77	126.95	1.45
5145	790922.24	670077.05	125.22	5144	790921.27	670078.99	126.34	1.12
5146	790874.91	670056.49	125.65	5147	790874.42	670057.68	126.77	1.12
5149	790795.64	670015.42	125.94	5148	790794.72	670017.93	127.12	1.18
5150	790513.49	670388.21	125.63	5151	790512.69	670386.52	126.65	1.02
5153	790548.48	670380.06	124.62	5152	790548.67	670378.98	125.89	1.28
5154	790570.15	670392.53	124.54	5155	790570.09	670391.29	125.67	1.13
5157	790577.15	670374.61	123.75	5156	790578.11	670376.06	124.88	1.13
5158	790586.25	670382.93	123.78	5159	790585.96	670381.63	125.05	1.27
5161	790608.20	670396.53	124.10	5160	790607.89	670397.85	125.17	1.06
5162	790610.77	670406.61	124.18	5163	790611.38	670405.68	125.26	1.08
5165	790630.69	670408.62	123.59	5164	790631.79	670407.68	124.82	1.23
6238	791309.23	670269.62	127.45	6239	791309.04	670269.54	128.96	1.51
6240	791301.01	670286.33	127.06	6241	791301.21	670286.13	128.46	1.40
6242	791285.95	670300.97	127.28	6243	791286.22	670300.80	128.52	1.24
6244	791283.05	670331.99	126.17	6425	791282.80	670332.06	127.74	1.57

Notes:
Site cover Base and Final Grade Survey based on elevationed collected by Colliers Engineering & Design on Novmber 27, 2023.
Horizontal datum is on North America Datum if 1983 (NAD83)
Vertical datum is the North American Vertical Datum of 1988 (NAVD88)
Elevation change is to confirm at least 1 foot of Site cover installed as per the Remdial Action Work Plan
Base Grade elevations are plotted on Figure 4, Final Grade elevations are plotted on Figure 5

TABLE 2
GROUNDWATER ELEVATION MEASUREMENTS
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

				8/16/2018		5/13/2019		5/15/2019		5/23/2019		3/5/2020		3/2/2023	
Well ID	Top of Casing Elevation (Prior to January 1, 2024)[3] (ft., NGVD)	Top of Casing Elevation (After January 1, 2024)[3] (ft., NGVD)	Screened Interval (ft., BGS)	Depth to Water (ft., BTOC)	Water Elevation (ft., NGVD)	Depth to Water (ft., BTOC)	Water Elevation (ft., NGVD)	Depth to Water (ft., BTOC)	Water Elevation (ft., NGVD)	Depth to Water (ft., BTOC)	Water Elevation (ft., NGVD)	Depth to Water (ft., BTOC)	Water Elevation (ft., NGVD)	Depth to Water (ft., BTOC)	Water Elevation (ft., NGVD)
MW-1	123.93	123.93	8-23	5.10	118.83	3.90	120.03	3.91	120.02	4.83	119.10	5.54	118.39	7.80	116.13
MW-2	130.23	131.42	10-25	12.07	118.16	10.71	119.52	10.45	119.78	10.88	119.35	11.95	118.28	12.26	117.97
MW-3	122.60	123.19	10-25	--	--	3.88	118.72	3.93	118.67	4.27	118.33	4.76	117.84	4.89	117.71
MW-4	129.44	129.93	8-23	--	--	9.81	119.63	9.79	119.65	10.11	119.33	10.53	118.91	10.60	118.84
MW-5[1]	129.50	--	9-24	--	--	10.16	119.34	9.94	119.56	10.28	119.22	10.92	118.58	--	--
MW-5R	129.21	129.21	9-24	--	--	--	--	--	--	--	--	--	--	10.40	118.81
MW-6	126.66	126.83	7-22	--	--	7.81	118.85	7.78	118.88	8.07	118.59	8.47	118.19	8.63	118.03
MW-7	125.21	126.33	8-23	--	--	5.70	119.51	5.68	119.53	5.98	119.23	6.59	118.62	6.57	118.64
MW-8	129.03	130.24	9-24	--	--	--	--	--	--	--	--	10.39	118.64	10.63	118.40
MW-9	122.12	122.06	8-23	--	--	--	--	--	--	--	--	3.94	118.18	4.04	118.08
MW-10	123.10	123.01	8-23	--	--	--	--	--	--	--	--	5.18	117.92	5.23	117.87
SG-1[2]	122.51	122.51	--	--	--	3.57	118.94	3.82	118.69	3.88	118.63	3.99	118.52	3.89	118.62
Bridge[2]	125.82	125.82	--	--	--	8.49	117.33	8.51	117.31	8.67	117.15	9.08	116.74	9.00	116.82

Notes:
(1) - Monitoring Well MW-5 was decomissioned in March 2022 prior to implmenetation of Remedial Action
(2) - Surface water measurement points
(3) Monitoring wells were adjusted to meet the new ground surface following remedial action.
BGS - Below Ground Surface
BTOC - Below Top of Casing
NGVD - National Geodetic Vertical Datum
NM - Not Measured

TABLE 2
GROUNDWATER ELEVATION MEASUREMENTS
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

Well ID	Top of Casing Elevation (Prior to January 1, 2024)[3] (ft., NGVD)	Top of Casing Elevation (After January 1, 2024)[3] (ft., NGVD)	Screened Interval (ft., BGS)	6/15/2023 Depth to Water (ft., BTOC)	6/15/2023 Water Elevation (ft., NGVD)	9/29/2023 Depth to Water (ft., BTOC)	9/29/2023 Water Elevation (ft., NGVD)
MW-1	123.93	123.93	8-23	5.96	117.97	4.42	119.51
MW-2	130.23	131.42	10-25	12.61	117.62	11.70	118.53
MW-3	122.60	123.19	10-25	4.77	117.83	NM	--
MW-4	129.44	129.93	8-23	10.41	119.03	10.07	119.37
MW-5[1]	129.50	--	9-24	--	--	--	--
MW-5R	129.21	129.21	9-24	10.35	118.86	9.67	119.54
MW-6	126.66	126.83	7-22	8.19	118.47	7.94	118.72
MW-7	125.21	126.33	8-23	6.56	118.65	5.74	119.47
MW-8	129.03	130.24	9-24	10.56	118.47	9.65	119.38
MW-9	122.12	122.06	8-23	3.94	118.18	3.23	118.89
MW-10	123.10	123.01	8-23	5.13	117.97	4.07	119.03
SG-1[2]	122.51	122.51	--	3.59	118.92	2.89	119.62
Bridge[2]	125.82	125.82	--	8.51	117.31	7.76	118.06

Notes:
(1) - Monitoring Well MW-5 was decomissioned in March 2022 prior to implmenetation of Remedial Action
(2) - Surface water measurement points
(3) Monitoring wells were adjusted to meet the new ground surface following remedial action.
BGS - Below Ground Surface
BTOC - Below Top of Casing
NGVD - National Geodetic Vertical Datum
NM - Not Measured

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

Constituent	Class GA Groundwater Quality Criteria NYS703	NYSTOGS	FRACTION	Location ID / Sample Date / Units	MW-4 04/13/2022		MW-4-F 04/13/2022		MW-4 03/02/2023		MW-4 06/15/2023		MW-4 (DUP) 06/15/2023		MW-4 09/29/2023		MW-4 (DUP) 09/29/2023	
Volatile Organic Compounds (VOCs)																		
1,1,1,2-Tetrachloroethane	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
1,1,1-Trichloroethane	5	NE	Total	ug/L	0.82	U	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
1,1,2,2-Tetrachloroethane	5	NE	Total	ug/L	0.21	U	--		0.17	U	0.17	U	0.17	U	0.17	UJ	0.17	UJ
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5	NE	Total	ug/L	0.31	U	--		--		--		--		--		--	
1,1,2-Trichloroethane	1	NE	Total	ug/L	0.23	U	--		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	5	NE	Total	ug/L	0.38	U	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
1,1-Dichloroethene	5	NE	Total	ug/L	0.29	U	--		0.17	U	0.17	U	0.17	U	0.17	U	0.17	U
1,1-Dichloropropene	NE	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
1,2,3-Trichlorobenzene	5	10	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	UJ	0.7	UJ
1,2,3-Trichloropropane	0.04	NE	Total	ug/L	--		--		0.7	U	0.7	UJ	0.7	UJ	0.7	U	0.7	U
1,2,4,5-Tetramethylbenzene	NE	NE	Total	ug/L	--		--		0.54	U	0.54	U	0.54	U	0.54	UJ	0.54	UJ
1,2,4-Trichlorobenzene	5	10	Total	ug/L	0.41	U	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
1,2,4-Trimethylbenzene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
1,2-Dibromo-3-chloropropane (DBCP)	0.04	NE	Total	ug/L	0.39	U	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
1,2-Dibromoethane (EDB)	0.0006	NE	Total	ug/L	0.73	U	--		0.65	U	0.65	U	0.65	U	0.65	U	0.65	U
1,2-Dichlorobenzene	3	NE	Total	ug/L	0.79	UJ	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
1,2-Dichloroethane	0.6	NE	Total	ug/L	0.21	U	--		**0.29**	J	**0.16**	J	**0.16**	J	0.13	U	0.13	U
1,2-Dichloroethene, total	NE	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
1,2-Dichloropropane	1	NE	Total	ug/L	0.72	U	--		0.14	U	0.14	U	0.14	U	0.14	U	0.14	U
1,3,5-Trimethylbenzene (mesitylene)	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
1,3-Dichlorobenzene	3	NE	Total	ug/L	0.78	U	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
1,3-Dichloropropane	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
1,3-Dichloropropene, total	0.4	NE	Total	ug/L	--		--		0.14	U	0.14	U	0.14	U	0.14	U	0.14	U
1,4-Dichlorobenzene	3	NE	Total	ug/L	0.84	UJ	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
1,4-Dioxane	NE	0.35	Total	ug/L	--		--		61	U	61	UJ	61	UJ	61	UJ	61	UJ
2,2-Dichloropropane	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	UJ	0.7	UJ
2-Butanone (MEK)	NE	50	Total	ug/L	1.3	U	--		1.9	U	1.9	U	1.9	U	1.9	UJ	1.9	UJ
2-Chlorotoluene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
2-Hexanone	NE	50	Total	ug/L	1.2	U	--		1	U	1	UJ	1	UJ	1	UJ	1	UJ
4-Chlorotoluene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
4-Ethyltoluene	NE	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
4-Isopropyltoluene (p-Cymene)	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
4-Methyl-2-pentanone (MIBK)	NE	NE	Total	ug/L	2.1	U	--		1	U	1	UJ	1	UJ	1	UJ	1	UJ
Acetone	NE	50	Total	ug/L	3	UJ	--		1.5	U	1.5	U	1.5	U	1.5	UJ	1.5	UJ

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

Constituent	Class GA Groundwater Quality Criteria NYS703	NYSTOGS	FRACTION	Location ID / Sample Date Units	MW-4 04/13/2022		MW-4-F 04/13/2022		MW-4 03/02/2023		MW-4 06/15/2023		MW-4 (DUP) 06/15/2023		MW-4 09/29/2023		MW-4 (DUP) 09/29/2023	
Acrylonitrile	5	NE	Total	ug/L	--		--		1.5	U	1.5	U	1.5	U	1.5	U	1.5	U
Benzene	1	NE	Total	ug/L	0.41	U	--		**0.16**	J	0.16	U	0.16	U	0.16	U	0.16	U
Bromobenzene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Bromochloromethane	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Bromodichloromethane	NE	50	Total	ug/L	0.39	U	--		0.19	U	0.19	U	0.19	U	0.19	U	0.19	U
Bromoform	NE	50	Total	ug/L	0.26	U	--		0.65	U	0.65	U	0.65	U	0.65	U	0.65	U
Bromomethane	5	NE	Total	ug/L	0.69	U	--		0.7	U	0.7	UJ	0.7	UJ	0.7	UJ	0.7	UJ
Carbon disulfide	60	60	Total	ug/L	0.19	U	--		1	U	1	U	1	U	1	UJ	1	UJ
Carbon tetrachloride	5	NE	Total	ug/L	0.27	U	--		**0.16**	J	0.13	U	0.13	U	**0.15**	J	**0.15**	J
Chlorobenzene	5	NE	Total	ug/L	0.75	UJ	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Chloroethane	5	NE	Total	ug/L	0.32	U	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Chloroform	7	NE	Total	ug/L	**0.57**	J	--		**1.7**	J	**1.0**	J	**1.0**	J	0.7	U	0.7	U
Chloromethane	5	NE	Total	ug/L	0.35	U	--		0.7	U	0.7	UJ	0.7	UJ	0.7	U	0.7	U
cis-1,2-Dichloroethene	5	NE	Total	ug/L	0.81	U	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
cis-1,3-Dichloropropene	0.4	NE	Total	ug/L	0.36	U	--		0.14	U	0.14	U	0.14	U	0.14	U	0.14	U
Cyclohexane	NE	NE	Total	ug/L	0.18	U	--		--		--		--		--		--	
Dibromochloromethane	NE	50	Total	ug/L	0.32	U	--		0.15	U	0.15	U	0.15	U	0.15	U	0.15	U
Dibromomethane	5	NE	Total	ug/L	--		--		1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane (Freon 12)	5	NE	Total	ug/L	0.68	U	--		1	UJ	1	U	1	U	1	UJ	1	UJ
Diethyl Ether	NE	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Ethylbenzene	5	NE	Total	ug/L	0.74	U	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Hexachlorobutadiene	0.5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Isopropylbenzene (Cumene)	5	NE	Total	ug/L	0.79	U	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Methyl acetate	NE	NE	Total	ug/L	1.3	UJ	--		--		--		--		--		--	
Methylcyclohexane	NE	NE	Total	ug/L	0.16	U	--		--		--		--		--		--	
Methylene chloride	5	NE	Total	ug/L	0.44	UJ	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Naphthalene	NE	10	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	UJ	0.7	UJ
n-Butylbenzene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
n-Propylbenzene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
p-Diethylbenzene	NE	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
sec-Butylbenzene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Styrene	5	NE	Total	ug/L	0.73	UJ	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
tert-Butyl methyl ether (MTBE)	NE	10	Total	ug/L	0.16	U	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
tert-Butylbenzene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Tetrachloroethene (PCE)	5	NE	Total	ug/L	**3.4**		--		**12**		**11**		**11**		**6.3**		**6.4**	

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

Constituent	Class GA Groundwater Quality Criteria NYS703	NYSTOGS	FRACTION	Location ID / Sample Date / Units	MW-4 04/13/2022		MW-4-F 04/13/2022		MW-4 03/02/2023		MW-4 06/15/2023		MW-4 (DUP) 06/15/2023		MW-4 09/29/2023		MW-4 (DUP) 09/29/2023	
Toluene	5	NE	Total	ug/L	0.51	UJ	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
trans-1,2-Dichloroethene	5	NE	Total	ug/L	0.9	U	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
trans-1,3-Dichloropropene	0.4	NE	Total	ug/L	0.37	U	--		0.16	U	0.16	U	0.16	U	0.16	U	0.16	U
trans-1,4-Dichloro-2-butene	5	NE	Total	ug/L	--		--		0.7	U	0.7	UJ	0.7	UJ	0.7	U	0.7	U
Trichloroethene (TCE)	5	NE	Total	ug/L	0.46	U	--		**0.21**	J	0.18	U	0.18	U	0.18	U	0.18	U
Trichlorofluoromethane (Freon 11)	5	NE	Total	ug/L	0.88	U	--		**2.5**		**1.5**	J	**1.5**	J	**2.4**	J	**2.5**	
Vinyl acetate	NE	NE	Total	ug/L	--		--		1	U	1	UJ	1	UJ	1	UJ	1	UJ
Vinyl chloride	2	NE	Total	ug/L	0.9	U	--		0.07	U	0.07	U	0.07	U	0.07	U	0.07	U
Xylene, o (1,2-Dimethylbenzene)	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Xylenes, m & p	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Xylenes, total	5	NE	Total	ug/L	0.66	U	--		0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Inorganic Constituents																		
Chromium, Trivalent	NE	NE	Total	mg/L	0.006	U	0.006	U	--		--		--		--		--	
Chromium, Hexavalent	0.05	NE	Dissolved	mg/L	--		0.012	UJ	--		--		--		--		--	
Chromium, Hexavalent	0.05	NE	Total	mg/L	0.01	UJ	--		--		--		--		--		--	
Aluminum	NE	NE	Dissolved	ug/L	--		**710**		--		--		--		--		--	
Aluminum	NE	NE	Total	ug/L	--		--		--		--		--		--		--	
Antimony	3	NE	Dissolved	ug/L	--		6.8	U	--		--		--		--		--	
Antimony	3	NE	Total	ug/L	--		--		--		--		--		--		--	
Arsenic	25	NE	Dissolved	ug/L	--		**0.51**	J	--		--		--		--		--	
Arsenic	25	NE	Total	ug/L	**3.0**		--		--		--		--		--		--	
Barium	1000	NE	Dissolved	ug/L	--		**36**		--		--		--		--		--	
Barium	1000	NE	Total	ug/L	**38.9**		--		--		--		--		--		--	
Beryllium	NE	3	Dissolved	ug/L	--		0.3	U	--		--		--		--		--	
Beryllium	NE	3	Total	ug/L	--		--		--		--		--		--		--	
Boron	1000	NE	Dissolved	ug/L	--		**250**		--		--		--		--		--	
Cadmium	5	NE	Dissolved	ug/L	--		**0.55**	J	--		--		--		--		--	
Cadmium	5	NE	Total	ug/L	**0.22**	J	--		--		--		--		--		--	
Calcium	NE	NE	Dissolved	ug/L	--		**122000**		--		--		--		--		--	
Calcium	NE	NE	Total	ug/L	--		--		--		--		--		--		--	
Chromium	50	NE	Dissolved	ug/L	--		**0.99**	J	--		--		--		--		--	
Chromium	50	NE	Total	ug/L	**10.5**		--		--		--		--		--		--	
Cobalt	NE	NE	Dissolved	ug/L	--		**1.8**	J	--		--		--		--		--	
Cobalt	NE	NE	Total	ug/L	--		--		--		--		--		--		--	
Copper	200	NE	Dissolved	ug/L	--		**4.9**	J	--		--		--		--		--	

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

Constituent	Class GA Groundwater Quality Criteria NYS703	NYSTOGS	FRACTION	Location ID / Sample Date Units	MW-4 04/13/2022	MW-4-F 04/13/2022	MW-4 03/02/2023	MW-4 06/15/2023	MW-4 (DUP) 06/15/2023	MW-4 09/29/2023	MW-4 (DUP) 09/29/2023
Copper	200	NE	Total	ug/L	**6.0**	--	--	--	--	--	--
Iron	300	NE	Dissolved	ug/L	--	**960**	--	--	--	--	--
Iron	300	NE	Total	ug/L	**11400 J**	--	--	--	--	--	--
Lead	25	NE	Dissolved	ug/L	--	**4.3 J**	--	--	--	--	--
Lead	25	NE	Total	ug/L	**0.88 J**	--	--	--	--	--	--
Lithium	NE	NE	Dissolved	ug/L	--	**18 J**	--	--	--	--	--
Magnesium	NE	35000	Dissolved	ug/L	--	**26300**	--	--	--	--	--
Magnesium	NE	35000	Total	ug/L	--	--	--	--	--	--	--
Manganese	300	NE	Dissolved	ug/L	--	**350**	--	--	--	--	--
Manganese	300	NE	Total	ug/L	**421**	--	--	--	--	--	--
Mercury	0.7	NE	Dissolved	ug/L	--	--	--	--	--	--	--
Mercury	0.7	NE	Total	ug/L	--	--	--	--	--	--	--
Molybdenum	NE	NE	Dissolved	ug/L	--	3.6 U	--	--	--	--	--
Nickel	100	NE	Dissolved	ug/L	--	**12**	--	--	--	--	--
Nickel	100	NE	Total	ug/L	--	--	--	--	--	--	--
Potassium	NE	NE	Dissolved	ug/L	--	**6500**	--	--	--	--	--
Potassium	NE	NE	Total	ug/L	--	--	--	--	--	--	--
Selenium	10	NE	Dissolved	ug/L	--	**0.65 J**	--	--	--	--	--
Selenium	10	NE	Total	ug/L	**0.85 J**	--	--	--	--	--	--
Silver	50	NE	Dissolved	ug/L	--	1.7 U	--	--	--	--	--
Silver	50	NE	Total	ug/L	--	--	--	--	--	--	--
Sodium	20000	NE	Dissolved	ug/L	--	**75000**	--	--	--	--	--
Sodium	20000	NE	Total	ug/L	--	--	--	--	--	--	--
Strontium	NE	NE	Dissolved	ug/L	--	**450 J**	--	--	--	--	--
Thallium	NE	0.5	Dissolved	ug/L	--	10 U	--	--	--	--	--
Thallium	NE	0.5	Total	ug/L	--	--	--	--	--	--	--
Tin	NE	NE	Dissolved	ug/L	--	5.1 U	--	--	--	--	--
Titanium	NE	NE	Dissolved	ug/L	--	1.1 U	--	--	--	--	--
Vanadium	NE	NE	Dissolved	ug/L	--	1.5 U	--	--	--	--	--
Vanadium	NE	NE	Total	ug/L	--	--	--	--	--	--	--
Zinc	NE	2000	Dissolved	ug/L	--	**59**	--	--	--	--	--
Zinc	NE	2000	Total	ug/L	--	--	--	--	--	--	--

TABLE 3
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TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

Constituent	Class GA Groundwater Quality Criteria NYS703	NYSTOGS	FRACTION	Location ID / Sample Date / Units	MW-4 04/13/2022		MW-4-F 04/13/2022	MW-4 03/02/2023	MW-4 06/15/2023	MW-4 (DUP) 06/15/2023	MW-4 09/29/2023	MW-4 (DUP) 09/29/2023
Other Constituents												
Alkalinity, Bicarbonate (as CaCO3)	NE	NE	Total	mg/L	**38.8**		--	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NE	NE	Total	mg/L	0.79	U	--	--	--	--	--	--
Chloride	250	NE	Total	mg/L	**198**	J	--	--	--	--	--	--
Sulfate	250	NE	Total	mg/L	**290**	J	--	--	--	--	--	--

Notes:
Detections are boldfaced
Boldfaced and boxed results exceed at least one of the Class GA Groundwater Quality Criteria
NYS703 = Part 703 of the New York State Code of Rules and Regulations groundwater standards for Class GA groundwater
TOGS = Division of Water Technical and Operational Guidance Series 1.1.1
mg/L = milligrams per liter
ug/L = micrograms per liter
T = total
D = dissolved (filtered)
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
U = The analyte was analyzed for, but was not detected above the sample method detection limit (MDL). MDL reported
UJ = The analyte was not detected above the sample MDL; and the MDL is approximate
DUP = field duplicate
F = field filtered
NE = No Class GA Groundwater Quality Criteria

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GROUNDWATER ANALYTICAL RESULTS
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

Constituent	Class GA Groundwater Quality Criteria NYS703	NYSTOGS	FRACTION	Location ID / Sample Date / Units	MW-5R 04/13/2022		MW-5R-F 04/13/2022		MW-5R 03/02/2023		MW-5R (DUP) 03/02/2023		MW-5R 06/15/2023		MW-5R 09/29/2023	
Volatile Organic Compounds (VOCs)																
1,1,1,2-Tetrachloroethane	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
1,1,1-Trichloroethane	5	NE	Total	ug/L	0.82	U	--		0.7	U	0.7	U	0.7	U	0.7	U
1,1,2,2-Tetrachloroethane	5	NE	Total	ug/L	0.21	U	--		0.17	U	0.17	U	0.17	U	0.17	UJ
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5	NE	Total	ug/L	0.31	U	--		--		--		--		--	
1,1,2-Trichloroethane	1	NE	Total	ug/L	0.23	U	--		0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	5	NE	Total	ug/L	0.38	U	--		0.7	U	0.7	U	0.7	U	0.7	U
1,1-Dichloroethene	5	NE	Total	ug/L	0.29	U	--		0.17	U	0.17	U	0.17	U	0.17	U
1,1-Dichloropropene	NE	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
1,2,3-Trichlorobenzene	5	10	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	UJ
1,2,3-Trichloropropane	0.04	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	UJ	0.7	U
1,2,4,5-Tetramethylbenzene	NE	NE	Total	ug/L	--		--		0.54	U	0.54	U	0.54	U	0.54	UJ
1,2,4-Trichlorobenzene	5	10	Total	ug/L	0.41	U	--		0.7	U	0.7	U	0.7	U	0.7	U
1,2,4-Trimethylbenzene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
1,2-Dibromo-3-chloropropane (DBCP)	0.04	NE	Total	ug/L	0.39	U	--		0.7	U	0.7	U	0.7	U	0.7	U
1,2-Dibromoethane (EDB)	0.0006	NE	Total	ug/L	0.73	U	--		0.65	U	0.65	U	0.65	U	0.65	U
1,2-Dichlorobenzene	3	NE	Total	ug/L	0.79	U	--		0.7	U	0.7	U	0.7	U	0.7	U
1,2-Dichloroethane	0.6	NE	Total	ug/L	0.21	U	--		**0.35**	J	**0.34**	J	**0.25**	J	**0.25**	J
1,2-Dichloroethene, total	NE	NE	Total	ug/L	--		--		**1.3**	J	**1.4**	J	**0.86**	J	**0.80**	J
1,2-Dichloropropane	1	NE	Total	ug/L	0.72	U	--		0.14	U	0.14	U	0.14	U	0.14	U
1,3,5-Trimethylbenzene (mesitylene)	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
1,3-Dichlorobenzene	3	NE	Total	ug/L	0.78	U	--		0.7	U	0.7	U	0.7	U	0.7	U
1,3-Dichloropropane	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
1,3-Dichloropropene, total	0.4	NE	Total	ug/L	--		--		0.14	U	0.14	U	0.14	U	0.14	U
1,4-Dichlorobenzene	3	NE	Total	ug/L	0.84	U	--		0.7	U	0.7	U	0.7	U	0.7	U
1,4-Dioxane	NE	0.35	Total	ug/L	--		--		61	U	61	U	61	UJ	61	UJ
2,2-Dichloropropane	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	UJ
2-Butanone (MEK)	NE	50	Total	ug/L	1.3	U	--		1.9	U	1.9	U	1.9	U	1.9	UJ
2-Chlorotoluene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
2-Hexanone	NE	50	Total	ug/L	1.2	U	--		1	U	1	U	1	UJ	1	UJ
4-Chlorotoluene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
4-Ethyltoluene	NE	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
4-Isopropyltoluene (p-Cymene)	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
4-Methyl-2-pentanone (MIBK)	NE	NE	Total	ug/L	2.1	U	--		1	U	1	U	1	UJ	1	UJ
Acetone	NE	50	Total	ug/L	3	UJ	--		1.5	U	1.5	U	1.5	U	1.5	UJ

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Constituent	Class GA Groundwater Quality Criteria NYS703	NYSTOGS	FRACTION	Location ID / Sample Date / Units	MW-5R 04/13/2022		MW-5R-F 04/13/2022		MW-5R 03/02/2023		MW-5R (DUP) 03/02/2023		MW-5R 06/15/2023		MW-5R 09/29/2023	
Acrylonitrile	5	NE	Total	ug/L	--		--		1.5	U	1.5	U	1.5	U	1.5	U
Benzene	1	NE	Total	ug/L	0.41	U	--		**0.21**	J	**0.20**	J	0.16	U	0.16	U
Bromobenzene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
Bromochloromethane	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
Bromodichloromethane	NE	50	Total	ug/L	0.39	U	--		0.19	U	0.19	U	0.19	U	0.19	U
Bromoform	NE	50	Total	ug/L	0.26	U	--		0.65	U	0.65	U	0.65	U	0.65	U
Bromomethane	5	NE	Total	ug/L	0.69	U	--		0.7	U	0.7	U	0.7	UJ	0.7	UJ
Carbon disulfide	60	60	Total	ug/L	**0.24**	J	--		1	U	1	U	1	U	1	UJ
Carbon tetrachloride	5	NE	Total	ug/L	0.27	U	--		0.13	U	0.13	U	0.13	U	0.13	U
Chlorobenzene	5	NE	Total	ug/L	0.75	U	--		0.7	U	0.7	U	0.7	U	0.7	U
Chloroethane	5	NE	Total	ug/L	0.32	U	--		0.7	U	0.7	U	0.7	U	0.7	U
Chloroform	7	NE	Total	ug/L	**2.0**		--		**0.76**	J	**0.77**	J	0.7	U	0.7	U
Chloromethane	5	NE	Total	ug/L	0.35	U	--		0.7	U	0.7	U	0.7	UJ	0.7	U
cis-1,2-Dichloroethene	5	NE	Total	ug/L	0.81	U	--		**1.3**	J	**1.4**	J	**0.86**	J	**0.80**	J
cis-1,3-Dichloropropene	0.4	NE	Total	ug/L	0.36	U	--		0.14	U	0.14	U	0.14	U	0.14	U
Cyclohexane	NE	NE	Total	ug/L	0.18	U	--		--		--		--		--	
Dibromochloromethane	NE	50	Total	ug/L	0.32	U	--		0.15	U	0.15	U	0.15	U	0.15	U
Dibromomethane	5	NE	Total	ug/L	--		--		1	U	1	U	1	U	1	U
Dichlorodifluoromethane (Freon 12)	5	NE	Total	ug/L	0.68	U	--		1	UJ	1	UJ	1	U	1	UJ
Diethyl Ether	NE	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
Ethylbenzene	5	NE	Total	ug/L	0.74	U	--		0.7	U	0.7	U	0.7	U	0.7	U
Hexachlorobutadiene	0.5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
Isopropylbenzene (Cumene)	5	NE	Total	ug/L	0.79	U	--		0.7	U	0.7	U	0.7	U	0.7	U
Methyl acetate	NE	NE	Total	ug/L	1.3	U	--		--		--		--		--	
Methylcyclohexane	NE	NE	Total	ug/L	0.16	U	--		--		--		--		--	
Methylene chloride	5	NE	Total	ug/L	0.44	U	--		0.7	U	0.7	U	0.7	U	0.7	U
Naphthalene	NE	10	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	UJ
n-Butylbenzene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
n-Propylbenzene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
p-Diethylbenzene	NE	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
sec-Butylbenzene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
Styrene	5	NE	Total	ug/L	0.73	U	--		0.7	U	0.7	U	0.7	U	0.7	U
tert-Butyl methyl ether (MTBE)	NE	10	Total	ug/L	0.16	U	--		0.7	U	0.7	U	0.7	U	0.7	U
tert-Butylbenzene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
Tetrachloroethene (PCE)	5	NE	Total	ug/L	**2.3**		--		**1.3**		**1.4**		**0.60**		**0.63**	

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Toluene	5	NE	Total	ug/L	0.51	U	--		0.7	U	0.7	U	0.7	U	0.7	U
trans-1,2-Dichloroethene	5	NE	Total	ug/L	0.9	U	--		0.7	U	0.7	U	0.7	U	0.7	U
trans-1,3-Dichloropropene	0.4	NE	Total	ug/L	0.37	U	--		0.16	U	0.16	U	0.16	U	0.16	U
trans-1,4-Dichloro-2-butene	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	UJ	0.7	UJ
Trichloroethene (TCE)	5	NE	Total	ug/L	**0.55**	J	--		**0.94**		**0.92**		**0.80**		**0.88**	
Trichlorofluoromethane (Freon 11)	5	NE	Total	ug/L	0.88	U	--		0.7	U	0.7	U	0.7	U	0.7	U
Vinyl acetate	NE	NE	Total	ug/L	--		--		1	U	1	U	1	UJ	1	UJ
Vinyl chloride	2	NE	Total	ug/L	0.9	U	--		0.07	U	0.07	U	0.07	U	0.07	U
Xylene, o (1,2-Dimethylbenzene)	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
Xylenes, m & p	5	NE	Total	ug/L	--		--		0.7	U	0.7	U	0.7	U	0.7	U
Xylenes, total	5	NE	Total	ug/L	0.66	U	--		0.7	U	0.7	U	0.7	U	0.7	U
Inorganic Constituents																
Chromium, Trivalent	NE	NE	Total	mg/L	0.006	U	0.006	U	--		--		--		--	
Chromium, Hexavalent	0.05	NE	Dissolved	mg/L	--		0.005	U	--		--		--		--	
Chromium, Hexavalent	0.05	NE	Total	mg/L	0.005	U	--		--		--		--		--	
Aluminum	NE	NE	Dissolved	ug/L	--		**7800**		--		--		--		--	
Aluminum	NE	NE	Total	ug/L	--		--		--		--		--		--	
Antimony	3	NE	Dissolved	ug/L	--		6.8	U	--		--		--		--	
Antimony	3	NE	Total	ug/L	--		--		--		--		--		--	
Arsenic	25	NE	Dissolved	ug/L	--		**1.1**		--		--		--		--	
Arsenic	25	NE	Total	ug/L	**1.2**		--		--		--		--		--	
Barium	1000	NE	Dissolved	ug/L	--		**14**		--		--		--		--	
Barium	1000	NE	Total	ug/L	**15.6**		--		--		--		--		--	
Beryllium	NE	3	Dissolved	ug/L	--		**0.71**	J	--		--		--		--	
Beryllium	NE	3	Total	ug/L	--		--		--		--		--		--	
Boron	1000	NE	Dissolved	ug/L	--		**180**		--		--		--		--	
Cadmium	5	NE	Dissolved	ug/L	--		**1.1**	J	--		--		--		--	
Cadmium	5	NE	Total	ug/L	**0.73**		--		--		--		--		--	
Calcium	NE	NE	Dissolved	ug/L	--		**162000**		--		--		--		--	
Calcium	NE	NE	Total	ug/L	--		--		--		--		--		--	
Chromium	50	NE	Dissolved	ug/L	--		**3.3**	J	--		--		--		--	
Chromium	50	NE	Total	ug/L	**3.8**		--		--		--		--		--	
Cobalt	NE	NE	Dissolved	ug/L	--		**5.5**		--		--		--		--	
Cobalt	NE	NE	Total	ug/L	--		--		--		--		--		--	
Copper	200	NE	Dissolved	ug/L	--		**5.7**	J	--		--		--		--	

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Copper	200	NE	Total	ug/L	**4.3**		--		--	--	--	--
Iron	300	NE	Dissolved	ug/L	--		**9200**		--	--	--	--
Iron	300	NE	Total	ug/L	**9500**	J	--		--	--	--	--
Lead	25	NE	Dissolved	ug/L	--		**8.7**	J	--	--	--	--
Lead	25	NE	Total	ug/L	**0.58**	J	--		--	--	--	--
Lithium	NE	NE	Dissolved	ug/L	--		**53**		--	--	--	--
Magnesium	NE	35000	Dissolved	ug/L	--		**17300**		--	--	--	--
Magnesium	NE	35000	Total	ug/L	--		--		--	--	--	--
Manganese	300	NE	Dissolved	ug/L	--		**640**		--	--	--	--
Manganese	300	NE	Total	ug/L	**628**		--		--	--	--	--
Mercury	0.7	NE	Dissolved	ug/L	--		--		--	--	--	--
Mercury	0.7	NE	Total	ug/L	--		--		--	--	--	--
Molybdenum	NE	NE	Dissolved	ug/L	--		3.6	U	--	--	--	--
Nickel	100	NE	Dissolved	ug/L	--		**36**		--	--	--	--
Nickel	100	NE	Total	ug/L	--		--		--	--	--	--
Potassium	NE	NE	Dissolved	ug/L	--		**6600**		--	--	--	--
Potassium	NE	NE	Total	ug/L	--		--		--	--	--	--
Selenium	10	NE	Dissolved	ug/L	--		0.44	U	--	--	--	--
Selenium	10	NE	Total	ug/L	**0.46**	J	--		--	--	--	--
Silver	50	NE	Dissolved	ug/L	--		1.7	U	--	--	--	--
Silver	50	NE	Total	ug/L	--		--		--	--	--	--
Sodium	20000	NE	Dissolved	ug/L	--		**22000**		--	--	--	--
Sodium	20000	NE	Total	ug/L	--		--		--	--	--	--
Strontium	NE	NE	Dissolved	ug/L	--		**400**	J	--	--	--	--
Thallium	NE	0.5	Dissolved	ug/L	--		10	U	--	--	--	--
Thallium	NE	0.5	Total	ug/L	--		--		--	--	--	--
Tin	NE	NE	Dissolved	ug/L	--		5.1	U	--	--	--	--
Titanium	NE	NE	Dissolved	ug/L	--		**6.0**		--	--	--	--
Vanadium	NE	NE	Dissolved	ug/L	--		**3.4**	J	--	--	--	--
Vanadium	NE	NE	Total	ug/L	--		--		--	--	--	--
Zinc	NE	2000	Dissolved	ug/L	--		**410**		--	--	--	--
Zinc	NE	2000	Total	ug/L	--		--		--	--	--	--

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

Constituent	Class GA Groundwater Quality Criteria NYS703	NYSTOGS	FRACTION	Location ID / Sample Date / Units	MW-5R 04/13/2022		MW-5R-F 04/13/2022	MW-5R 03/02/2023	MW-5R (DUP) 03/02/2023	MW-5R 06/15/2023	MW-5R 09/29/2023
Other Constituents											
Alkalinity, Bicarbonate (as CaCO3)	NE	NE	Total	mg/L	0.79	U	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NE	NE	Total	mg/L	0.79	U	--	--	--	--	--
Chloride	250	NE	Total	mg/L	**24.7**		--	--	--	--	--
Sulfate	250	NE	Total	mg/L	**572**		--	--	--	--	--

Notes:
Detections are boldfaced
Boldfaced and boxed results exceed at least one of the Class GA Groundwater Quality Criteria
NYS703 = Part 703 of the New York State Code of Rules and Regulations groundwater standards for Class GA groundwater
TOGS = Division of Water Technical and Operational Guidance Series 1.1.1
mg/L = milligrams per liter
ug/L = micrograms per liter
T = total
D = dissolved (filtered)
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
U = The analyte was analyzed for, but was not detected above the sample method detection limit (MDL). MDL reported
UJ = The analyte was not detected above the sample MDL; and the MDL is approximate
DUP = field duplicate
F = field filtered
NE = No Class GA Groundwater Quality Criteria

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

Constituent	Class GA Groundwater Quality Criteria NYS703	NYSTOGS	FRACTION	Location ID / Sample Date / Units	MW-8 04/13/2022		MW-8 (DUP) 04/13/2022		MW-8-F 04/13/2022	MW-8-F (DUP-F) 04/13/2022	MW-8 03/02/2023		MW-8 06/15/2023		MW-8 09/29/2023	
Volatile Organic Compounds (VOCs)																
1,1,1,2-Tetrachloroethane	5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
1,1,1-Trichloroethane	5	NE	Total	ug/L	0.82	U	0.82	U	--	--	0.7	U	0.7	U	0.7	U
1,1,2,2-Tetrachloroethane	5	NE	Total	ug/L	0.21	U	0.21	U	--	--	0.17	U	0.17	U	0.17	UJ
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5	NE	Total	ug/L	0.31	U	0.31	U	--	--	--		--		--	
1,1,2-Trichloroethane	1	NE	Total	ug/L	0.23	U	0.23	U	--	--	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	5	NE	Total	ug/L	0.38	U	0.38	U	--	--	0.7	U	0.7	U	0.7	U
1,1-Dichloroethene	5	NE	Total	ug/L	0.29	U	0.29	U	--	--	0.17	U	0.17	U	0.17	U
1,1-Dichloropropene	NE	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
1,2,3-Trichlorobenzene	5	10	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	UJ
1,2,3-Trichloropropane	0.04	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	UJ	0.7	U
1,2,4,5-Tetramethylbenzene	NE	NE	Total	ug/L	--		--		--	--	0.54	U	0.54	U	0.54	UJ
1,2,4-Trichlorobenzene	5	10	Total	ug/L	0.41	U	0.41	U	--	--	0.7	U	0.7	U	0.7	U
1,2,4-Trimethylbenzene	5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
1,2-Dibromo-3-chloropropane (DBCP)	0.04	NE	Total	ug/L	0.39	U	0.39	U	--	--	0.7	U	0.7	U	0.7	U
1,2-Dibromoethane (EDB)	0.0006	NE	Total	ug/L	0.73	U	0.73	U	--	--	0.65	U	0.65	U	0.65	U
1,2-Dichlorobenzene	3	NE	Total	ug/L	0.79	U	0.79	U	--	--	0.7	U	0.7	U	0.7	U
1,2-Dichloroethane	0.6	NE	Total	ug/L	**0.22**	J	0.21	U	--	--	**0.33**	J	**0.22**	J	**0.28**	J
1,2-Dichloroethene, total	NE	NE	Total	ug/L	--		--		--	--	**1.4**	J	**1.2**	J	**1.2**	J
1,2-Dichloropropane	1	NE	Total	ug/L	0.72	U	0.72	U	--	--	0.14	U	0.14	U	0.14	U
1,3,5-Trimethylbenzene (mesitylene)	5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
1,3-Dichlorobenzene	3	NE	Total	ug/L	0.78	U	0.78	U	--	--	0.7	U	0.7	U	0.7	U
1,3-Dichloropropane	5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
1,3-Dichloropropene, total	0.4	NE	Total	ug/L	--		--		--	--	0.14	U	0.14	U	0.14	U
1,4-Dichlorobenzene	3	NE	Total	ug/L	0.84	U	0.84	U	--	--	0.7	U	0.7	U	0.7	U
1,4-Dioxane	NE	0.35	Total	ug/L	--		--		--	--	61	U	61	UJ	61	UJ
2,2-Dichloropropane	5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	UJ
2-Butanone (MEK)	NE	50	Total	ug/L	1.3	U	1.3	U	--	--	1.9	U	1.9	U	1.9	UJ
2-Chlorotoluene	5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
2-Hexanone	NE	50	Total	ug/L	1.2	U	1.2	U	--	--	1	U	1	UJ	1	UJ
4-Chlorotoluene	5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
4-Ethyltoluene	NE	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
4-Isopropyltoluene (p-Cymene)	5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
4-Methyl-2-pentanone (MIBK)	NE	NE	Total	ug/L	2.1	U	2.1	U	--	--	1	U	1	UJ	1	UJ
Acetone	NE	50	Total	ug/L	3	UJ	3	UJ	--	--	1.5	U	1.5	U	1.5	UJ

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

Constituent	Class GA Groundwater Quality Criteria NYS703	NYSTOGS	FRACTION	Location ID / Sample Date / Units	MW-8 04/13/2022		MW-8 (DUP) 04/13/2022		MW-8-F 04/13/2022	MW-8-F (DUP-F) 04/13/2022	MW-8 03/02/2023		MW-8 06/15/2023		MW-8 09/29/2023	
Acrylonitrile	5	NE	Total	ug/L	--		--		--	--	1.5	U	1.5	U	1.5	U
Benzene	1	NE	Total	ug/L	0.41	U	0.41	U	--	--	0.16	U	0.16	U	0.16	U
Bromobenzene	5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
Bromochloromethane	5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
Bromodichloromethane	NE	50	Total	ug/L	0.39	U	0.39	U	--	--	0.19	U	0.19	U	0.19	U
Bromoform	NE	50	Total	ug/L	0.26	U	0.26	U	--	--	0.65	U	0.65	U	0.65	U
Bromomethane	5	NE	Total	ug/L	0.69	U	0.69	U	--	--	0.7	U	0.7	UJ	0.7	UJ
Carbon disulfide	60	60	Total	ug/L	0.19	U	0.19	U	--	--	1	U	1	U	1	UJ
Carbon tetrachloride	5	NE	Total	ug/L	0.27	U	0.27	U	--	--	0.13	U	0.13	U	0.13	U
Chlorobenzene	5	NE	Total	ug/L	0.75	U	0.75	U	--	--	0.7	U	0.7	U	0.7	U
Chloroethane	5	NE	Total	ug/L	0.32	U	0.32	U	--	--	0.7	U	0.7	U	0.7	U
Chloroform	7	NE	Total	ug/L	0.34	U	0.34	U	--	--	0.7	U	0.7	U	0.7	U
Chloromethane	5	NE	Total	ug/L	0.35	U	0.35	U	--	--	0.7	U	0.7	UJ	0.7	U
cis-1,2-Dichloroethene	5	NE	Total	ug/L	0.81	U	0.81	U	--	--	**1.4**	J	**1.2**	J	**1.2**	J
cis-1,3-Dichloropropene	0.4	NE	Total	ug/L	0.36	U	0.36	U	--	--	0.14	U	0.14	U	0.14	U
Cyclohexane	NE	NE	Total	ug/L	0.18	U	0.18	U	--	--	--		--		--	
Dibromochloromethane	NE	50	Total	ug/L	0.32	U	0.32	U	--	--	0.15	U	0.15	U	0.15	U
Dibromomethane	5	NE	Total	ug/L	--		--		--	--	1	U	1	U	1	U
Dichlorodifluoromethane (Freon 12)	5	NE	Total	ug/L	0.68	U	0.68	U	--	--	1	UJ	1	U	1	UJ
Diethyl Ether	NE	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
Ethylbenzene	5	NE	Total	ug/L	0.74	U	0.74	U	--	--	0.7	U	0.7	U	0.7	U
Hexachlorobutadiene	0.5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
Isopropylbenzene (Cumene)	5	NE	Total	ug/L	0.79	U	0.79	U	--	--	0.7	U	0.7	U	0.7	U
Methyl acetate	NE	NE	Total	ug/L	1.3	U	1.3	U	--	--	--		--		--	
Methylcyclohexane	NE	NE	Total	ug/L	0.16	U	0.16	U	--	--	--		--		--	
Methylene chloride	5	NE	Total	ug/L	0.44	U	0.44	U	--	--	0.7	U	0.7	U	0.7	U
Naphthalene	NE	10	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	UJ
n-Butylbenzene	5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
n-Propylbenzene	5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
p-Diethylbenzene	NE	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
sec-Butylbenzene	5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
Styrene	5	NE	Total	ug/L	0.73	U	0.73	U	--	--	0.7	U	0.7	U	0.7	U
tert-Butyl methyl ether (MTBE)	NE	10	Total	ug/L	0.16	U	0.16	U	--	--	0.7	U	0.7	U	0.7	U
tert-Butylbenzene	5	NE	Total	ug/L	--		--		--	--	0.7	U	0.7	U	0.7	U
Tetrachloroethene (PCE)	5	NE	Total	ug/L	0.36	U	0.36	U	--	--	0.18	U	0.18	U	0.18	U

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

Constituent	Class GA Groundwater Quality Criteria NYS703	NYSTOGS	FRACTION	Location ID / Sample Date / Units	MW-8 04/13/2022		MW-8 (DUP) 04/13/2022		MW-8-F 04/13/2022		MW-8-F (DUP-F) 04/13/2022		MW-8 03/02/2023		MW-8 06/15/2023		MW-8 09/29/2023	
Toluene	5	NE	Total	ug/L	0.51	U	0.51	U	--		--		0.7	U	0.7	U	0.7	U
trans-1,2-Dichloroethene	5	NE	Total	ug/L	0.9	U	0.9	U	--		--		0.7	U	0.7	U	0.7	U
trans-1,3-Dichloropropene	0.4	NE	Total	ug/L	0.37	U	0.37	U	--		--		0.16	U	0.16	U	0.16	U
trans-1,4-Dichloro-2-butene	5	NE	Total	ug/L	--		--		--		--		0.7	U	0.7	UJ	0.7	U
Trichloroethene (TCE)	5	NE	Total	ug/L	0.46	U	0.46	U	--		--		**0.79**		**0.56**		**0.47**	J
Trichlorofluoromethane (Freon 11)	5	NE	Total	ug/L	0.88	U	0.88	U	--		--		0.7	U	0.7	U	0.7	U
Vinyl acetate	NE	NE	Total	ug/L	--		--		--		--		1	U	1	UJ	1	UJ
Vinyl chloride	2	NE	Total	ug/L	0.9	U	0.9	U	--		--		0.07	U	0.07	U	0.07	U
Xylene, o (1,2-Dimethylbenzene)	5	NE	Total	ug/L	--		--		--		--		0.7	U	0.7	U	0.7	U
Xylenes, m & p	5	NE	Total	ug/L	--		--		--		--		0.7	U	0.7	U	0.7	U
Xylenes, total	5	NE	Total	ug/L	0.66	U	0.66	U	--		--		0.7	U	0.7	U	0.7	U
Inorganic Constituents																		
Chromium, Trivalent	NE	NE	Total	mg/L	0.006	U	0.006	U	0.006	U	0.006	U	--		--		--	
Chromium, Hexavalent	0.05	NE	Dissolved	mg/L	--		--		0.005	U	0.01	UJ	--		--		--	
Chromium, Hexavalent	0.05	NE	Total	mg/L	0.005	U	0.005	U	--		--		--		--		--	
Aluminum	NE	NE	Dissolved	ug/L	--		--		**200**		**170**	J	--		--		--	
Aluminum	NE	NE	Total	ug/L	--		--		--		--		--		--		--	
Antimony	3	NE	Dissolved	ug/L	--		--		**14**	J	**13**	J	--		--		--	
Antimony	3	NE	Total	ug/L	--		--		--		--		--		--		--	
Arsenic	25	NE	Dissolved	ug/L	--		--		**0.78**	J	**0.70**	J	--		--		--	
Arsenic	25	NE	Total	ug/L	**3.3**		**3.3**		--		--		--		--		--	
Barium	1000	NE	Dissolved	ug/L	--		--		**36.5**		**37**		--		--		--	
Barium	1000	NE	Total	ug/L	**42.5**		**43.0**		--		--		--		--		--	
Beryllium	NE	3	Dissolved	ug/L	--		--		0.3	U	**0.34**	J	--		--		--	
Beryllium	NE	3	Total	ug/L	--		--		--		--		--		--		--	
Boron	1000	NE	Dissolved	ug/L	--		--		**7300**		**7500**		--		--		--	
Cadmium	5	NE	Dissolved	ug/L	--		--		0.071	U	0.071	U	--		--		--	
Cadmium	5	NE	Total	ug/L	**0.35**	J	**0.34**	J	--		--		--		--		--	
Calcium	NE	NE	Dissolved	ug/L	--		--		**202000**		**207000**		--		--		--	
Calcium	NE	NE	Total	ug/L	--		--		--		--		--		--		--	
Chromium	50	NE	Dissolved	ug/L	--		--		**0.94**	J	**0.82**	J	--		--		--	
Chromium	50	NE	Total	ug/L	**4.3**		**4.6**		--		--		--		--		--	
Cobalt	NE	NE	Dissolved	ug/L	--		--		**5.5**		**5.5**		--		--		--	
Cobalt	NE	NE	Total	ug/L	--		--		--		--		--		--		--	
Copper	200	NE	Dissolved	ug/L	--		--		**0.37**	J	0.22	U	--		--		--	

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

Constituent	Class GA Groundwater Quality Criteria NYS703	NYSTOGS	FRACTION	Location ID / Sample Date / Units	MW-8 04/13/2022	MW-8 (DUP) 04/13/2022	MW-8-F 04/13/2022	MW-8-F (DUP-F) 04/13/2022	MW-8 03/02/2023	MW-8 06/15/2023	MW-8 09/29/2023
Copper	200	NE	Total	ug/L	**4.3**	**4.4**	--	--	--	--	--
Iron	300	NE	Dissolved	ug/L	--	--	**78200**	**79400**	--	--	--
Iron	300	NE	Total	ug/L	**84200 J**	**84000 J**	--	--	--	--	--
Lead	25	NE	Dissolved	ug/L	--	--	**8.5 J**	**9.0 J**	--	--	--
Lead	25	NE	Total	ug/L	**0.81 J**	**0.83 J**	--	--	--	--	--
Lithium	NE	NE	Dissolved	ug/L	--	--	**34**	**35**	--	--	--
Magnesium	NE	35000	Dissolved	ug/L	--	--	**62000**	**63700**	--	--	--
Magnesium	NE	35000	Total	ug/L	--	--	--	--	--	--	--
Manganese	300	NE	Dissolved	ug/L	--	--	**1920**	**1870**	--	--	--
Manganese	300	NE	Total	ug/L	**1870**	**1880**	--	--	--	--	--
Mercury	0.7	NE	Dissolved	ug/L	--	--	--	--	--	--	--
Mercury	0.7	NE	Total	ug/L	--	--	--	--	--	--	--
Molybdenum	NE	NE	Dissolved	ug/L	--	--	3.6 U	3.6 U	--	--	--
Nickel	100	NE	Dissolved	ug/L	--	--	**13**	**12**	--	--	--
Nickel	100	NE	Total	ug/L	--	--	--	--	--	--	--
Potassium	NE	NE	Dissolved	ug/L	--	--	**13300**	**13800**	--	--	--
Potassium	NE	NE	Total	ug/L	--	--	--	--	--	--	--
Selenium	10	NE	Dissolved	ug/L	--	--	0.44 U	0.44 U	--	--	--
Selenium	10	NE	Total	ug/L	0.44 U	0.44 U	--	--	--	--	--
Silver	50	NE	Dissolved	ug/L	--	--	1.7 U	1.7 U	--	--	--
Silver	50	NE	Total	ug/L	--	--	--	--	--	--	--
Sodium	20000	NE	Dissolved	ug/L	--	--	**96100**	**99800**	--	--	--
Sodium	20000	NE	Total	ug/L	--	--	--	--	--	--	--
Strontium	NE	NE	Dissolved	ug/L	--	--	**460 J**	**470 J**	--	--	--
Thallium	NE	0.5	Dissolved	ug/L	--	--	10 U	10 U	--	--	--
Thallium	NE	0.5	Total	ug/L	--	--	--	--	--	--	--
Tin	NE	NE	Dissolved	ug/L	--	--	5.1 U	5.1 U	--	--	--
Titanium	NE	NE	Dissolved	ug/L	--	--	**2.7 J**	**1.8 J**	--	--	--
Vanadium	NE	NE	Dissolved	ug/L	--	--	1.5 U	1.5 U	--	--	--
Vanadium	NE	NE	Total	ug/L	--	--	--	--	--	--	--
Zinc	NE	2000	Dissolved	ug/L	--	--	**8.8 J**	**6.4 J**	--	--	--
Zinc	NE	2000	Total	ug/L	--	--	--	--	--	--	--

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

Constituent	Class GA Groundwater Quality Criteria NYS703	NYSTOGS	FRACTION	Location ID / Sample Date / Units	MW-8 04/13/2022		MW-8 (DUP) 04/13/2022		MW-8-F 04/13/2022	MW-8-F (DUP-F) 04/13/2022	MW-8 03/02/2023	MW-8 06/15/2023	MW-8 09/29/2023
Other Constituents													
Alkalinity, Bicarbonate (as CaCO3)	NE	NE	Total	mg/L	0.79	U	0.79	U	--	--	--	--	--
Alkalinity, Carbonate (as CaCO3)	NE	NE	Total	mg/L	0.79	U	0.79	U	--	--	--	--	--
Chloride	250	NE	Total	mg/L	**265**		**263**		--	--	--	--	--
Sulfate	250	NE	Total	mg/L	**681**		**695**		--	--	--	--	--

Notes:
Detections are boldfaced
Boldfaced and boxed results exceed at least one of the Class GA Groundwater Quality Criteria
NYS703 = Part 703 of the New York State Code of Rules and Regulations groundwater standards for Class GA groundwater
TOGS = Division of Water Technical and Operational Guidance Series 1.1.1
mg/L = milligrams per liter
ug/L = micrograms per liter
T = total
D = dissolved (filtered)
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
U = The analyte was analyzed for, but was not detected above the sample method detection limit (MDL). MDL reported
UJ = The analyte was not detected above the sample MDL; and the MDL is approximate
DUP = field duplicate
F = field filtered
NE = No Class GA Groundwater Quality Criteria

Figures

8/19/2021

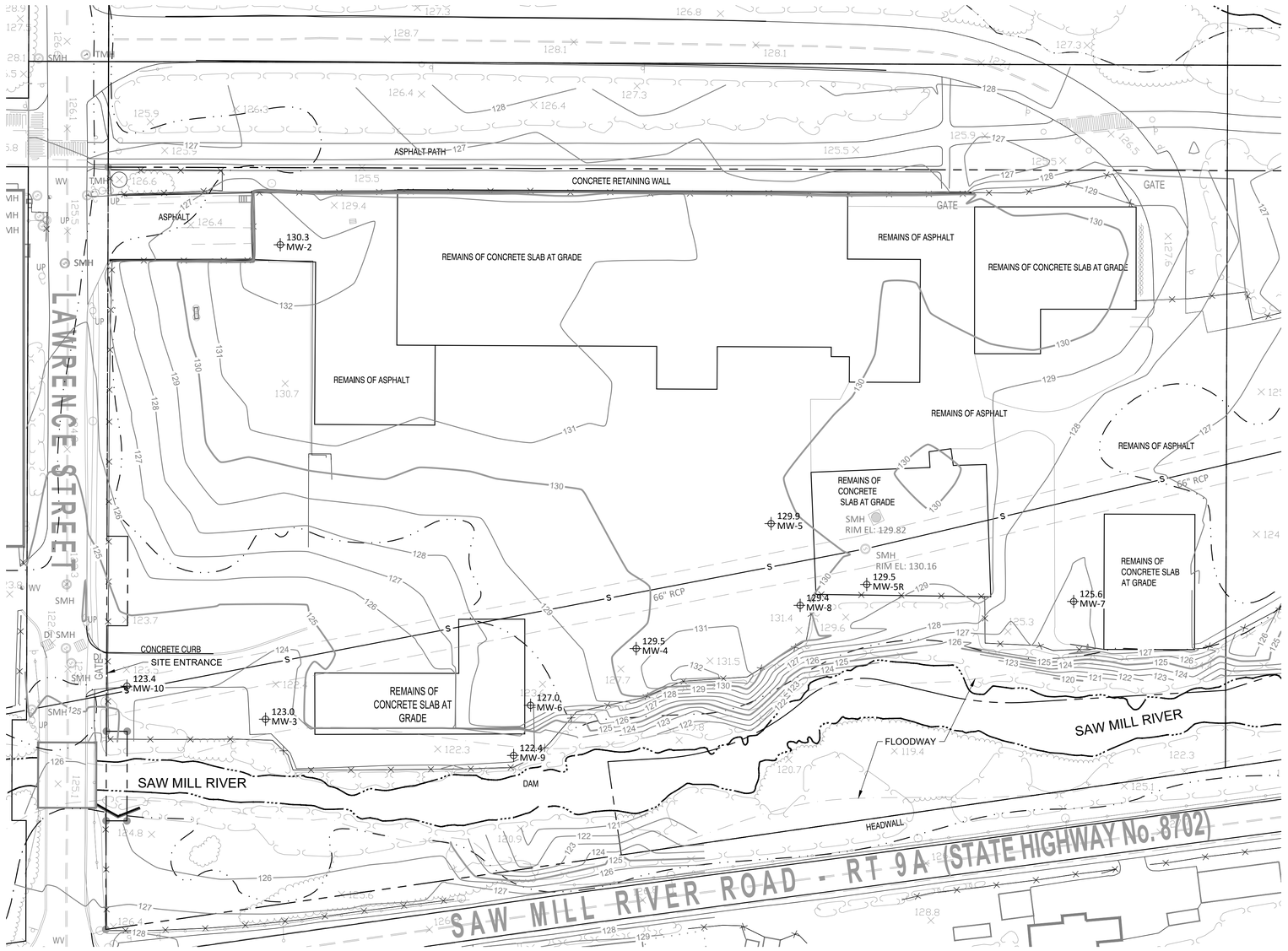
Author: BFTaylor Path: V:\Ramsey\ELT\Ardsley\Site_Location_RAWP.mxd

Brown AND Caldwell

FIGURE 1
SITE LOCATION
ARDSLEY LLC SITE (C360146)
TOWN OF GREENBURGH, WESTCHESTER COUNTY, NEW YORK

0 1,400 2,800
Feet

PLAN NORTH



PLAN VIEW

0 40 80

SCALE: 1"=40'

GENERAL NOTES:

1. BASE MAP INFORMATION BASED ON "TOPOGRAPHIC SURVEY, ARDSLEY NY, SITE" BY M.J. ENGINEERING AND LAND SURVEYING, P.C., JULY 9, 2021. THE HORIZONTAL DATUM IS ON NORTH AMERICAN DATUM OF 1983, NEW YORK STATE PLANE EAST ZONE 3101. THE VERTICAL DATUM IS THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).
2. MONITORING WELL MW-5 WAS DECOMMISSIONED AND REPLACED WITH MW-5R DOWNGRADIENT OF THE ISCO REMEDIATION AREA. THE REMAINING EXISTING MONITORING WELLS WILL REMAIN AS PART OF THE GROUNDWATER MONITORED NATURAL ATTENUATION PROGRAM.

LEGEND:

- SITE BOUNDARY / PROPERTY LINE
- 100 YEAR FLOOD ZONE
- FLOODWAY
- EDGE OF RIVER
- CHAIN LINK FENCE

Marek Ostrowski

Signer Name: Marek Ostrowski
Signing Reason: I reviewed this document.
Signing Time: 2024-05-06 10:49:12(PDT)

Brown AND Caldwell

BROWN AND CALDWELL ASSOCIATES
500 N. FRANKLIN TURNPIKE, SUITE 306

RAMSEY, NJ

STATE OF NEW YORK
MAREK OSTROWSKI
073661
LICENSED PROFESSIONAL ENGINEER

ARDSLEY LLC.
SITE No. C369146
TOWN OF GREENBURGH, NEW YORK

FINAL ENGINEERING REPORT

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED:	B. TAYLOR
DRAWN:	O. NAHHAS
CHECKED:	
CHECKED:	
APPROVED:	

FILENAME
153292-FIGURE 2.DWG

BC PROJECT NUMBER
153292

CLIENT PROJECT NUMBER

CIVIL

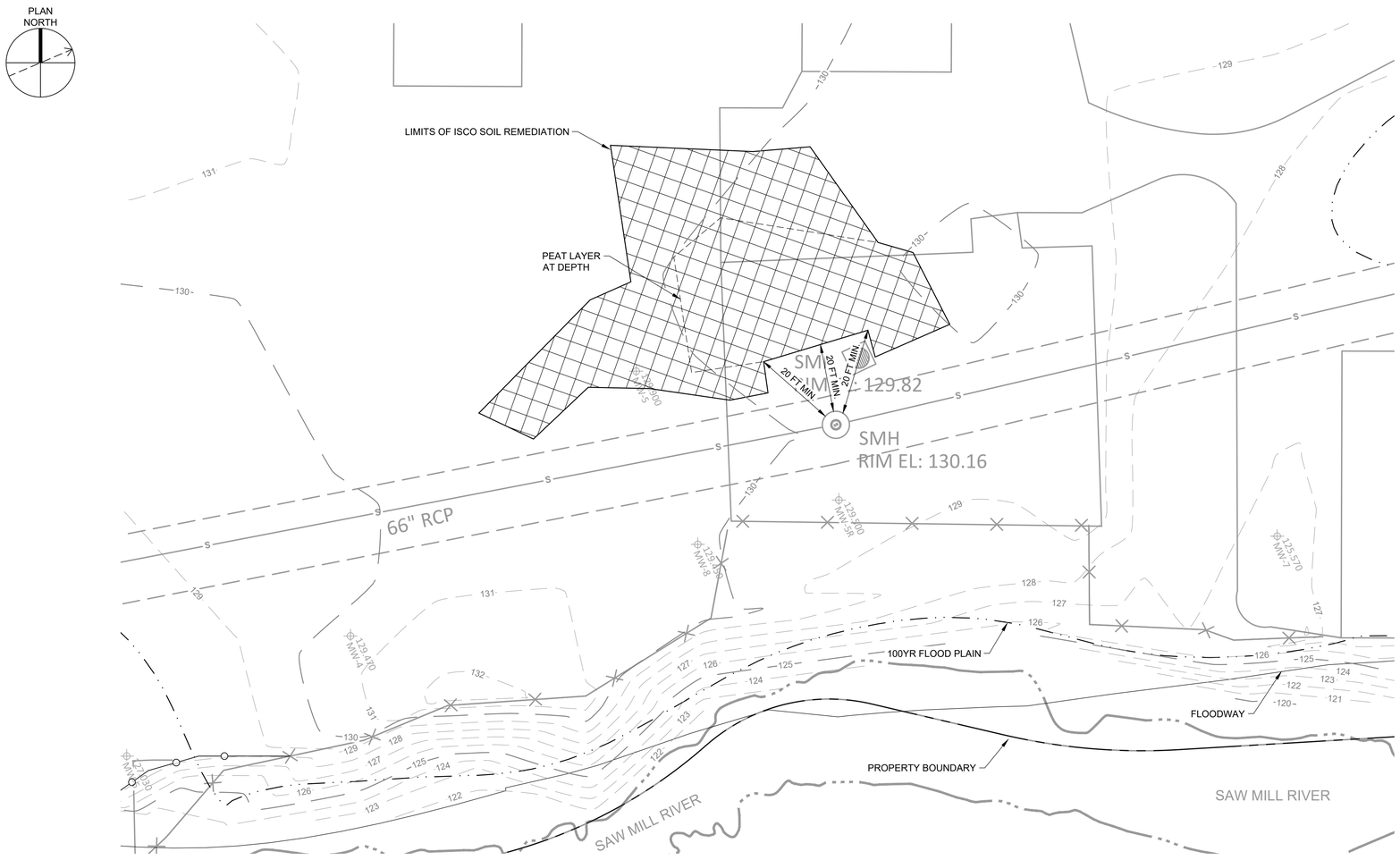
PRE- REMEDIATION SITE CONDITIONS PLAN

DRAWING NUMBER

FIGURE 2

SHEET NUMBER
OF

Path: C:\BCPWD3579047 FILENAME: 153292-FIGURE 2.DWG PLOT DATE: 4/25/2024 8:22 AM CAD USER: OMAR NAHHAS



PLAN VIEW

0 20 40

SCALE: 1"=20'

GENERAL NOTES:

1. ISCO SOIL REMEDIATION PERFORMED TO 14 FEET BGS, AS CONFIRMED DURING MIXING WITH FIELD MEASUREMENTS.
2. REFER TO APPENDIX H-1 OF FINAL ENGINEERING REPORT FOR DETAILS ON ISCO MIXING LIMITS AND DEPTHS.
3. GROUND SURFACE ELEVATIONS DEPICTED ARE PRE-REMEDIATION CONDITIONS.

Marek Ostrowski

Signer Name: Marek Ostrowski
Signing Reason: I reviewed this document.
Signing Time: 2024-05-06 10:49:12(PDT)

LEGEND:

- SITE BOUNDARY
- LIMITS OF ISCO REMEDIATION
- 100 YEAR FLOOD ZONE
- EXISTING SEWER MANHOLE
- EXISTING 8-FOOT SEWER MANHOLE
- SANITARY SEWER LINE
- SANITARY SEWER EASEMENT

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ARDSLEY LLC. SITE No. C369146 TOWN OF GREENBURGH, NEW YORK

FINAL ENGINEERING REPORT

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APPROVED:	

FILENAME
153292-FIGURE 3.DWG

BC PROJECT NUMBER
153292

CLIENT PROJECT NUMBER

CIVIL

LIMITS OF ISCO REMEDIATION

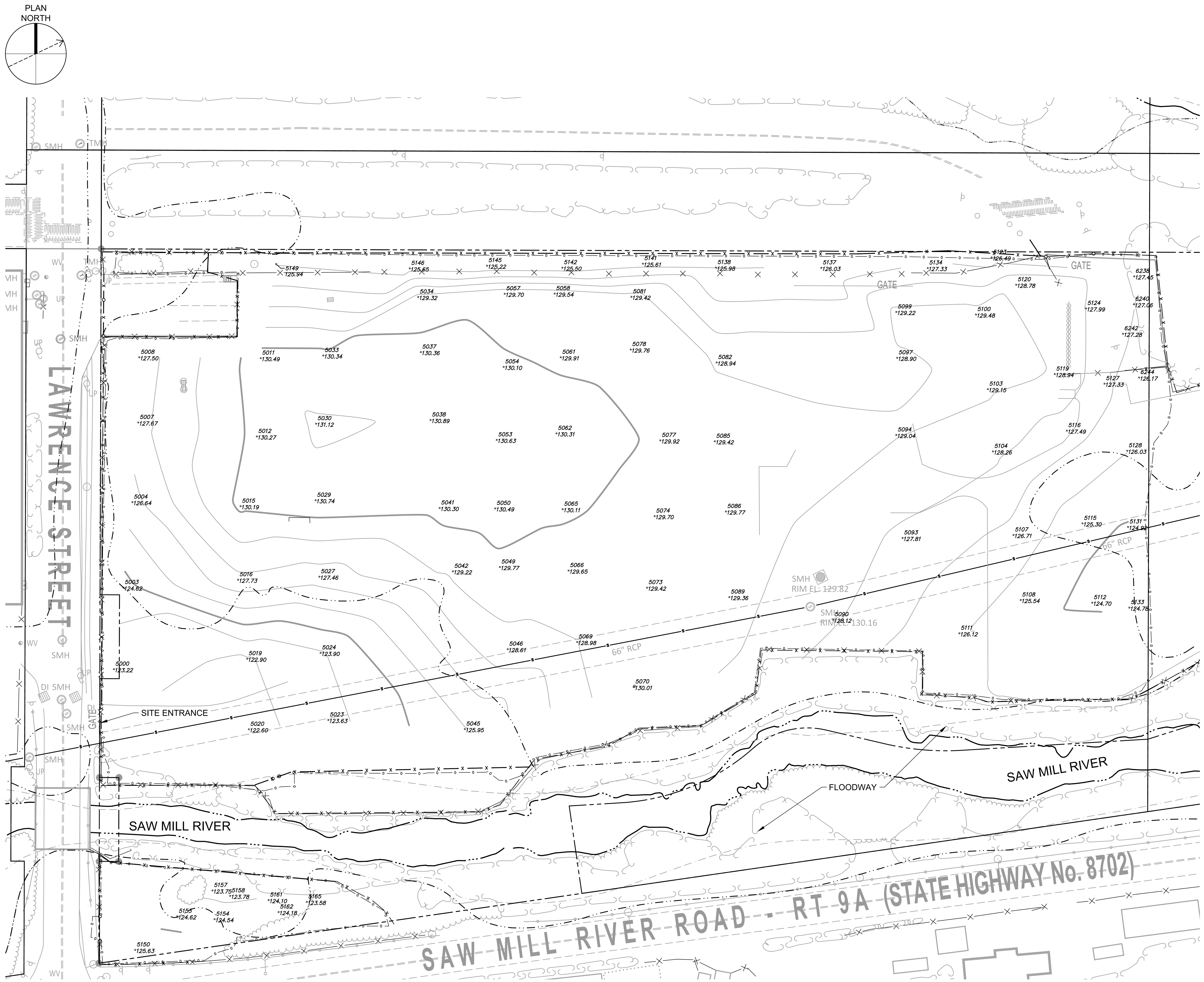
DRAWING NUMBER

FIGURE 3

SHEET NUMBER
OF

Path: C:\BCPW\D3579047 FILENAME: 153292-FIGURE 3.DWG PLOT DATE: 4/25/2024 10:52 AM CAD USER: OMAR NAHHAS

Path: C:\BCPWD3579047 FILENAME: 153292-FIGURE 4.DWG PLOT DATE: 4/25/2024 11:00 AM CAD USER: OMAR NAHHAS



PLAN VIEW

0 40 80

SCALE: 1"=40'

GENERAL NOTES:

1. BASE MAP INFORMATION BASED ON "TOPOGRAPHIC SURVEY, ARDSLEY NY, SITE" BY M.J. ENGINEERING AND LAND SURVEYING, P.C., JULY 9, 2021. THE HORIZONTAL DATUM IS ON NORTH AMERICAN DATUM OF 1983, NEW YORK STATE PLANE EAST ZONE 3101. THE VERTICAL DATUM IS THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).
2. SITE COVER BASE GRADE SURVEY BASED ON ELEVATIONS COLLECTED BY COLLIERS ENGINEERING & DESIGN ON NOVEMBER 27, 2023. HORIZONTAL DATUM IS ON NORTH AMERICAN DATUM OF 1983 (NAD83) (NEW YORK STATE PLANE COORDINATE SYSTEM-EAST ZONE). THE VERITICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). THE VERTICAL AND HORIZONTAL DATUM WERE ESTABLISHED AT THE PROJECT SITE BY USING GPS SURVEY METHODS.

LEGEND:

- SITE BOUNDARY / PROPERTY LINE
- 100 YEAR FLOOD ZONE
- FLOODWAY
- EDGE OF RIVER
- 5124 127.99 — SITE COVER BASE GRADE SPOT ELEVATIONS
- MAJOR / MINOR — SITE COVER BASE GRADE CONTOUR
- CHAIN FENCE (OLD)
- CHAIN FENCE (NEW)
- SITE COVER

Marek Ostrowski

Signer Name: Marek Ostrowski
Signing Reason: I reviewed this document.
Signing Time: 2024-05-06 10:49:12(PDT)

Brown AND Caldwell

BROWN AND CALDWELL ASSOCIATES
500 N. FRANKLIN TURNPIKE, SUITE 306
RAMSEY, NJ

STATE OF NEW YORK · MAREK OSTROWSKI · 073661 · LICENSED PROFESSIONAL ENGINEER

ARDSLEY LLC. SITE No. C369146 TOWN OF GREENBURGH, NEW YORK

FINAL ENGINEERING REPORT

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED:	B. TAYLOR
DRAWN:	O. NAHHAS
CHECKED:	
CHECKED:	
APPROVED:	

FILENAME
153292-FIGURE 4.DWG

BC PROJECT NUMBER
153292

CLIENT PROJECT NUMBER

CIVIL

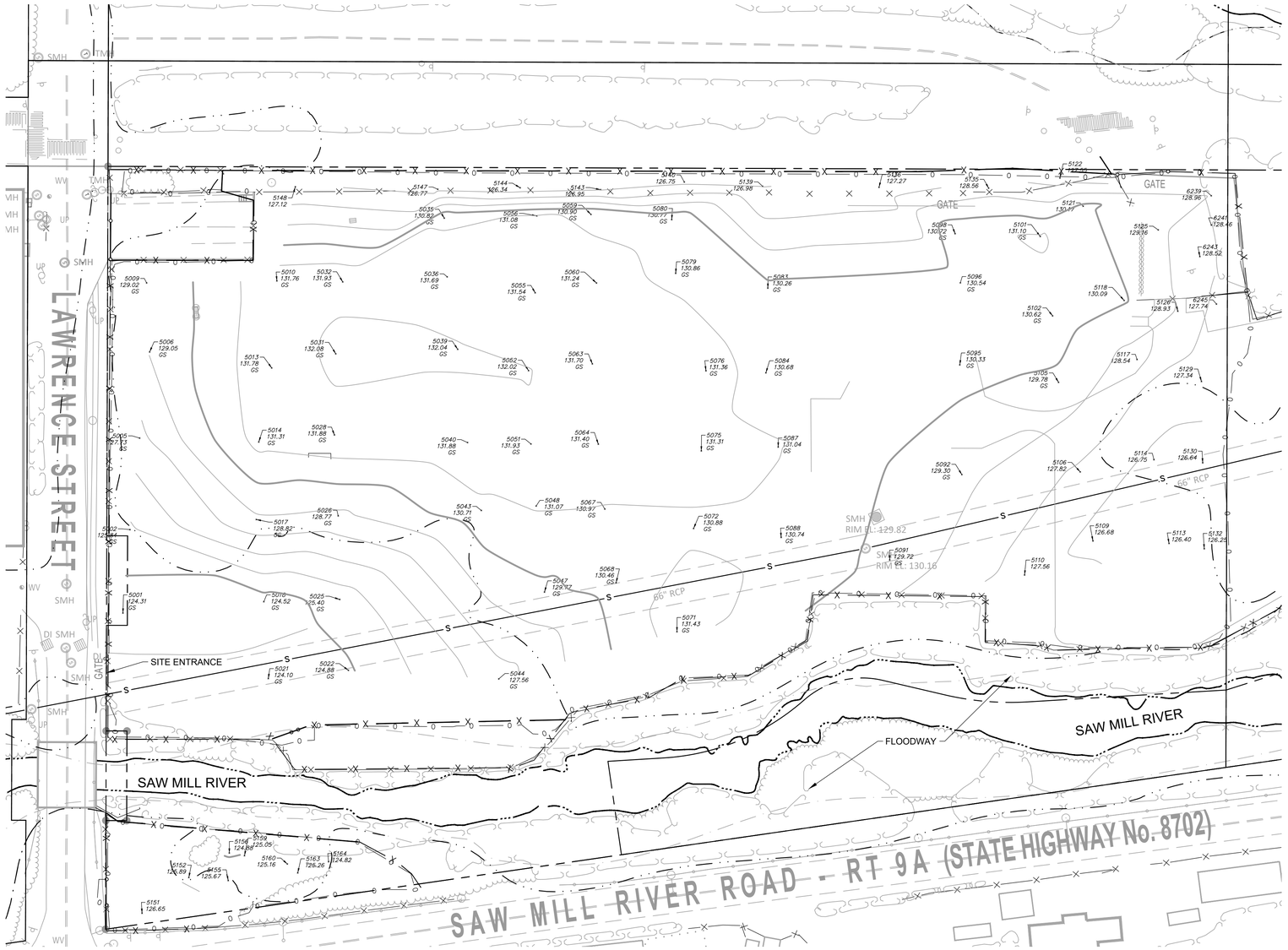
SITE COVER BASE GRADE SURVEY

DRAWING NUMBER

FIGURE 4

SHEET NUMBER
OF

PLAN NORTH



PLAN VIEW

0 40 80

SCALE: 1"=40'

GENERAL NOTES:

1. BASE MAP INFORMATION BASED ON "TOPOGRAPHIC SURVEY, ARDSLEY NY, SITE" BY M.J. ENGINEERING AND LAND SURVEYING, P.C., JULY 9, 2021. THE HORIZONTAL DATUM IS ON NORTH AMERICAN DATUM OF 1983, NEW YORK STATE PLANE EAST ZONE 3101. THE VERTICAL DATUM IS THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).
2. SITE COVER FINAL GRADE SURVEY BASED ON ELEVATIONS COLLECTED BY COLLIERS ENGINEERING & DESIGN ON NOVEMBER 27, 2023. HORIZONTAL DATUM IS ON NORTH AMERICAN DATUM OF 1983 (NAD83) (NEW YORK STATE PLANE COORDINATE SYSTEM-EAST ZONE). THE VERITICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). THE VERTICAL AND HORIZONTAL DATUM WERE ESTABLISHED AT THE PROJECT SITE BY USING GPS SURVEY METHODS.

Marek Ostrowski

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Signing Reason: I reviewed this document.
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LEGEND:

- SITE BOUNDARY / PROPERTY LINE
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- FLOODWAY
- EDGE OF RIVER
- + 5124 127.99 — SITE COVER BASE GRADE SPOT ELEVATIONS
- MAJOR / MINOR — SITE COVER BASE GRADE CONTOUR
- X — X — CHAIN FENCE (OLD)
- X — X — CHAIN FENCE (NEW)
- 0 — 0 — SITE COVER

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APPROVED:	

FILENAME
153292-FIGURE 5.DWG

BC PROJECT NUMBER
153292

CLIENT PROJECT NUMBER

CIVIL

SITE COVER FINAL GRADE SURVEY

DRAWING NUMBER

FIGURE 5

SHEET NUMBER
OF

Path: C:\BGPWD\3579047 FILENAME: 153292-FIGURE 5.DWG PLOT DATE: 4/25/2024 11:03 AM CAD USER: OMAR NAHHAS