

FORMER SEARS AUTO CENTER
4720 THIRD AVENUE
BRONX, NEW YORK 10458
NYSDEC BCP ID: C203147

FINAL ENGINEERING REPORT

SUBMITTED TO:



New York State Department of Environmental Conservation
Region 2
47-40 21st Street
Long Island City, New York 11101

PREPARED FOR:

4720 VCD LLC, 4720 Third Ave LLC, 4720 JR LLC & 4720 Development LLC
213 West 35th Street, Floor 7
New York, New York 10001

PREPARED BY:



P.W. Grosser Consulting Engineer & Hydrogeologist PC
630 Johnson Avenue, Suite 7
Bohemia, New York 11716
Phone: 631-589-6353
Fax: 631-589-8705

Jennifer Lewis, PG, Vice President
Michael Gaul, Project Manager

JenniferL@pwgrosser.com
mgaul@pwgrosser.com

PWGC Project Number: OMN2102

OCTOBER 2022



**FORMER SEARS AUTO CENTER
BRONX, NEW YORK**

FINAL ENGINEERING REPORT

NYSDEC SITE NUMBER: C203147

PREPARED FOR:

4720 VCD LLC, 4720 Third Ave LLC, 4720 JR LLC & 4720 Development LLC
213 WEST 35th STREET, FLOOR 7
NEW YORK, NEW YORK 10014

PREPARED BY:

P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST PC
630 JOHNSON AVENUE, SUITE 7
BOHEMIA, NEW YORK 11716

OCTOBER 2022



CERTIFICATION

I, Paul K. Boyce, PE, 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 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 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 the 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 the 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 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, Paul K. Boyce, PE, of P.W. Grosser Consulting, P.C. of Bohemia, New York, am certifying as Owner's Designated Site Representative and I have been authorized and designated by the site owners to sign this certification for the site.



NYS Professional Engineer # 074604

10.25.2022

Date

Signature



**FINAL ENGINEERING REPORT
FORMER SEARS AUTO CENTER (C203147)**

TABLE OF CONTENTS		PAGE
1.0	BACKGROUND AND SITE DESCRIPTION	1
2.0	SUMMARY OF SITE REMEDY.....	2
2.1	Remedial Action Objectives.....	2
2.2	Description of Selected Remedy	2
3.0	INTERIM REMEDIAL MEASURES, OPERABLE UNITS AND REMEDIAL CONTRACTS	4
3.1	Interim Remedial Measure.....	4
4.0	DESCRIPTION OF REMEDIAL ACTIONS PERFORMED	8
4.1	Governing Documents.....	8
4.1.1	Site Specific Health and Safety Plan	8
4.1.2	Quality Assurance Project Plan (QAPP)	9
4.1.3	Soil/Materials Management Plan (SMMP).....	9
4.1.4	Storm-Water Pollution Prevention Plan (SWPPP).....	10
4.1.5	Community Air Monitoring Plan (CAMP)	10
4.1.6	Contractors Site Operations Plans (SOPs)	11
4.1.7	Community Participation Plan.....	12
4.2	REMEDIAL PROGRAM ELEMENTS.....	12
4.2.1	Contractors and Consultants	12
4.2.2	Site Preparation.....	13
4.2.3	General Site Controls.....	13
4.2.4	Nuisance Controls	14
4.2.5	CAMP Results	14
4.2.6	Reporting	15
4.3	Contaminated Material Removal	16
4.3.1	Soil Removal	16
4.3.2	Underground Storage Tanks	18
4.4	Remedial Performance/Documentation Sampling	19
4.5	Imported Backfill	25
4.6	Contamination Remaining at the Site	26
4.7	Soil Cover/Cap System.....	26
4.8	Other Engineering Controls.....	26
4.9	Institutional Controls.....	27
4.10	Deviations from The Remedial Action Work Plan	27



**FINAL ENGINEERING REPORT
FORMER SEARS AUTO CENTER (C203147)**

TABLES

Table 1	Interim Endpoint Sample Analytical Results - SVOCs
Table 2	Interim Endpoint Sample Analytical Results – Metals
Table 3	Waste Disposal Tonnages and Facilities
Table 4	Tank Confirmation Sample Analytical Results – VOCs and SVOCs
Table 5	Soil Cleanup Objectives (SCOs) for the Project
Table 6	Remedial Endpoint Sample Analytical Results – VOCs
Table 7	Remedial Endpoint Sample Analytical Results – SVOCs
Table 8	Remedial Endpoint Sample Analytical Results – Pesticides, PCBs, and Herbicides
Table 9	Remedial Endpoint Sample Analytical Results – Metals
Table 10	Remedial Endpoint Sample Analytical Results – PFASs
Table 11	Material Import Quantities and Sources

FIGURES

Figure 1	Subject Site Location
Figure 2	Site Plan
Figure 3	Interim Endpoint Boring Locations
Figure 4	Hotspot Locations
Figure 5	Truck Route Map
Figure 6	Location of Former Potential Areas of Concern
Figure 7	Remedial Excavation Depths
Figure 8	Remedial Endpoint Soil Sampling Locations
Figure 9	Former UST Locations
Figure 10	Backfill Placement
Figure 11	Remaining Contamination
Figure 12	Sitewide Cover System
Figure 13	Soil Reuse

APPENDICES

Appendix A	Metes and Bounds
Appendix B	IRMWP Approval
Appendix C	Laboratory Reports
Appendix D	Waste Characterization Documentation
Appendix E	Waste Approvals
Appendix F	Waste Manifests
Appendix G	Tank Closure Documentation
Appendix H	RAWP Approval
Appendix I	CAMP Reports
Appendix J	Daily Field Reports
Appendix K	Monthly Reports
Appendix L	Data Usability Summary Report



Appendix M
Appendix N

Imported Fill Documentation
Vapor Barrier Documentation



**FINAL ENGINEERING REPORT
FORMER SEARS AUTO CENTER (C203147)**

LIST OF ACRONYMS	
AST	Aboveground Storage Tank
BGS	Below Ground Surface
CAMP	Community Air Monitoring Plan
CPP	Community Participation Plan
DER	Division of Environmental Remediation
DUSR	Data Usability Summary Report
ELAP	Environmental Laboratory Approval Program
FER	Final Engineering Report
HASP	Health and Safety Plan
IRM	Interim Remedial Measure
NYC	New York City
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PID	Photoionization Detector
ppm	Parts Per Million
PWGC	P.W. Grosser Consulting Engineer & Hydrogeologist PC
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RI	Remedial Investigation
RRSCO	Restricted Residential Soil Cleanup Objective
SCO	Soil Cleanup Objective
SMMP	Soil & Materials Management Plan
SOE	Support of Excavation
SOP	Site Operation Plan
SVOC	Semi-Volatile Organic Compound
SWPPP	Storm Water Pollution Prevention Plan
TAL	Target Analyte List
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
UUSCO	Unrestricted Use Soil Cleanup Objective
VOC	Volatile Organic Compound



1.0 BACKGROUND AND SITE DESCRIPTION

4720 VCD LLC entered into a Brownfield Cleanup Agreement (“BCA”) with the New York State Department of Environmental Conservation (NYSDEC) on September 3, 2021, to investigate and remediate a 35,612-square foot property (0.818 acres) located at 4720 Third Avenue in the Bronx, New York (Tax Map ID Nos. Block 3042 Lots 13, 22, and 28; hereinafter the “Site”). A BCA Amendment was executed on March 10, 2022 to add volunteers 4720 Third Ave LLC, 4720 JR LLC, & 4720 Development LLC. The majority of the Site (0.7807 acres) was remediated to Track 1 unrestricted use soil cleanup objectives (SCOs). See **Appendix A** Survey map. Only a small 0.0386-acre portion of the Site in the northwest corner met the Track 2 residential use SCOs. The Site is being redeveloped for mixed-use commercial, residential and community space purposes. When completed, the Site will contain one nine-story mixed-use building that will be used as commercial space, community space and residential space. The Site is currently an active construction site and unoccupied; the anticipated occupancy date of the new building under construction is July 2024.

The Site is located in the County of The Bronx, New York and is identified as Block 3042, Lots 13, 22 and 28 in the New York City Tax Map. The tax lots have not yet been merged. A Vicinity Map (**Figure 1**) shows the Site location.

The Site is situated on an approximately 0.818 acres or 35,612-square foot area bounded by E. 189th Street, a parking garage, and a restaurant to the north, a United States Post Office to the south, a parking lot for the post office to the east, and a vacant lot to the west (see **Figure 2**). The boundaries of the Site are fully described in **Appendix A: Survey Map, Metes and Bounds**.



2.0 SUMMARY OF SITE REMEDY

2.1 Remedial Action Objectives (RAOs)

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater containing contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of, volatiles emanating from contaminated groundwater.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into future buildings at the subject property.

2.2 Description of Selected Remedy

The Site was remediated in accordance with the remedy selected by the NYSDEC in the Decision Document dated March 2022.

The factors considered during the selection of the remedy are those listed in 6 NYCRR 375-1.8. The following are the components of the selected remedy:

1. An Interim Remedial Measure (IRM) pursuant to an approved November 2021 IRM Work Plan including demolition and removal of surface improvements (former building concrete slab and paved asphalt parking lot); unearthing, cleaning, and removal of a total of four underground storage tanks (USTs) (two 275-gallon USTs and two 550-gallon USTs) and one hydraulic cylinder; excavation of the top five feet of soils to allow for support of excavation (SOE) system installation; and starting the installation of the SOE



system to a lagged depth ranging from approximately 15 to 25 feet bgs with soldier piles extending a minimum of an additional 10 feet of embedment to allow for the completion of remedial excavation.

2. Completion under the remedial action of the installation of the SOE system to a lagged depth of 15 to 25 feet bgs with soldier piles extending a minimum of an additional 10 feet of embedment to allow for the completion of remedial excavation.
3. Excavation and offsite disposal of onsite soils which exceeded the Track 1 unrestricted use SCOs, as defined by 6 NYCRR Part 375-6.8 with the exception of the 0.0368 acre northwestern portion of the Site (referred to as the Track 2 area) which included the excavation of soils which exceeded the Track 2 residential use SCOs as defined by 6 NYCRR Part 375-6.8.
4. Performance of dewatering activities to allow for the advancement of the remedial excavation and the progression of contaminated soil removal to achieve the Track 1/Track 2 remedy.
5. Construction and maintenance of a composite cover system consisting of 18 inches of concrete slab underlain by six inches of $\frac{3}{4}$ " concrete stone to prevent human exposure to remaining contaminated soil/fill remaining in the northwest Track 2 portion of the Site.
6. Backfill with clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) to complete the backfilling outside of the perimeter foundation walls and establish the designed grades at the Site.
7. Incorporation of green remediation principles accomplished in the future on-site building including a 50-mil vapor barrier/waterproofing membrane under the foundation and a 60-mil vapor barrier/waterproofing membrane extending vertically up the outside of the foundation walls to grade to improve energy efficiency as an element of construction.



3.0 INTERIM REMEDIAL MEASURES

The remedy for this Site included one interim remedial measure (IRM) which was approved in November 2021 and completed in March 2022.

3.1 Interim Remedial Measure

Interim Remedial Measure activities completed at the Site were conducted in accordance with the NYSDEC-approved Interim Remedial Measure Work Plan (IRMWP) for the Former Sears Auto Center Site (November 2021). Deviations from the IRMWP are noted below. The IRMWP was approved by NYSDEC in a letter dated November 24, 2021. A copy of the approval letter is included in **Appendix B**.

Interim Remedial Measure activities commenced on November 30, 2021 and included the following:

1. The collection of interim endpoint samples to further delineate the extent of on-Site contamination.
2. The delineation and characterization of a hazardous lead hotspot.
3. Mobilization and site preparation including installation of construction fencing and a security booth, construction of stabilized construction entrances, and installation of erosion and sediment controls where needed.
4. Demolition and removal of surface improvements.
5. Excavation of the top five feet of soils.
6. Removal of the hazardous lead hotspot.
7. Removal of two non-hazardous lead hotspots.
8. Closure and removal of four USTs.
9. Starting the installation of the SOE system to a lagged depth ranging from approximately 15 to 25 feet bgs with soldier piles extending a minimum of an additional 10 feet of embedment to allow for the completion of remedial excavation to achieve the Track 1/2 remedy.

Based on the existing Site analytical data and soil characterization from the remedial investigation (RI) and supplemental remedial investigation (SRI), further vertical delineation was requested by the NYSDEC to confirm the depth that soils cease to exceed the unrestricted use SCOs. PWGC oversaw the advancement of eleven soil borings on November 30, 2021 to a depth of 10 feet bgs in the area in question to resolve this deficiency. The



boring locations are identified in **Figure 3**. Soil samples were collected from 2 to 4 feet, 4 to 6 feet, 6 to 8 feet, and 8 to 10 feet bgs. Based on field observations, each of the 4 to 6 foot samples were initially submitted to an New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP) certified environmental laboratory (Alpha Analytical Laboratory [Alpha]) for analysis with the others put on hold. As the main contaminants of concern were semi-volatile organic compounds (SVOCs) and metals, sampling was limited to the following criteria:

- Target Compound List (TCL) SVOCs by United States Environmental Protection Agency (USEPA) method 8270
- Trivalent & Hexavalent Chromium by USEPA Method 7196;
- Target Analyte List (TAL) Metals by USEPA method 6010/7471

Seven of the eleven initially analyzed 4 to 6 foot samples were identified as having exceedances of unrestricted use SCOs for metals (IEP001, IEP002, IEP003, IEP005, IEP008, IEP009, and IEP010). Upon receipt of these results, these samples also had their 6 to 8 foot and 8 to 10 foot samples analyzed and each of those samples also had metals exceedances of unrestricted use SCOs. The other four samples (IEP004, IEP006, IEP007, and IEP011) did not have identified exceedances of unrestricted use SCOs in their 4 to 6 foot samples and each had their 2 to 4 foot samples analyzed, which each had exceedances of unrestricted use SCOs for metals. The interim endpoint sampling tables are included as **Tables 1** and **2**. The laboratory analytical reports are included as **Appendix C**. The results were utilized to set the proposed remedial excavation depths of the IEP001, IEP002, IEP003, IEP005, IEP008, IEP009, and IEP010 area as ten feet bgs and IEP004, IEP006, IEP007, and IEP011 area as four feet bgs.

A ten foot wide by ten foot long by five foot deep hazardous lead hotspot was delineated and characterized on December 1, 2021 and December 16, 2021 during the IRM phase of this project. An USEPA Resource Conservation and Recovery Act (RCRA) Generator ID was assigned (NYR000253526) and the hotspot was removed during the IRM. The excavated hazardous hotspot material was sent to the Clean Earth of North Jersey facility (CENJ) and totaled 54.6 tons of material. Two additional non-hazardous lead hotspots were also delineated during this time period. The excavated non-hazardous hotspot material was also sent to CENJ and totaled 53.48 tons of material. The delineated hotspot locations are identified in **Figure 4**.

Excavation and soil disposal activities commenced on January 20, 2022. A total of 8,907.04 tons of impacted soils were removed from the Site and properly disposed of during the IRM. During IRM excavation activities,



excavation proceeded vertically to a depth of five feet bgs Site-wide as needed to allow for starting SOE system installation to a lagged depth to be completed during the remedial action ranging from approximately 15 to 25 feet bgs with soldier piles extending a minimum of an additional 10 feet of embedment and to complete the proposed remedial excavation to reach the depths of the shallow (4 foot bgs) initial remedial confirmation endpoint samples.

Table 3 shows the total quantities of each category of material removed from the Site and the disposal locations. A summary of the samples collected to characterize the waste, and associated analytical results are summarized in **Appendix D**.

Acceptance letters from disposal facility owners are attached in **Appendix E**. Manifests and bills of lading are included in electronic format in **Appendix F**.

On January 20, 2022, during routine IRM excavation activities, one previously identified 275-gallon UST was unearthed beneath the central portion of the Site. The tank was a single wall, steel tank; the tank appeared to have formerly stored an unknown type of oil. During the preparation of the IRMWP this UST was believed to the 550 gallons, but this assumption from a past geophysical survey was incorrect. On February 12, 2022, during routine IRM excavation activities three additional USTs (one 275-gallon and two 550-gallon USTs) were discovered beneath the west portion of the Site. The tanks were single wall, steel tanks; the tanks appeared to have formerly stored an unknown type of oil. Each of the tanks were removed within a week of being uncovered and cleaned, and wastes were properly disposed of. Soils beneath the tanks were evaluated for evidence of gross contamination, which was not identified. Soil endpoint samples were then collected in accordance with DER-10 guidance depending on the size of the UST. At least one bottom endpoint sample was collected from each excavation. Samples were submitted to a NYSDOH ELAP certified laboratory (Alpha) and were analyzed for the following:

- Volatile Organic Compounds (VOCs) by USEPA 8260, CP-51 list
- SVOCs by USEPA 8270, CP-51 list

Sample results were compared to CP-51 soil cleanup levels and NYSDEC restricted-residential use SCOs. Exceedances of these standards were not identified with the exception of multiple PAHs at two of the sampling



locations (Tank-001 and Tank-007). These Polycyclic Aromatic Hydrocarbons (PAHs) were not indicative of a release as they were consistent with the concentrations previously identified in the historic fill layer in the Site. The material containing these PAHs in exceedance of SCOs was over-excavated to a depth of 12 to 19 feet bgs (depending on which UST it was) for the completion of the remedial excavation and removed during the remedial action at the Site. A Petroleum Bulk Storage (PBS) Application registering the tanks as “closed-removed” was submitted to the NYSDEC PBS program. A formal response from the PBS program confirming the closure has not yet been received. Tank closure documentation is included as **Appendix G**. A table of tank bottom endpoint sample results is included as **Table 4**. The oil-water separator that was discussed in the IRMWP was never identified and was likely a result of a false positive identification during the geophysical survey.

A total of seven remedial confirmation endpoint samples were collected at a depth of four feet bgs during the IRM (EP001-EP007). Remedial confirmation endpoint samples were submitted to a NYSDOH ELAP certified laboratory (Alpha) and were analyzed for:

- TCL VOCs by USEPA Method 8260;
- TCL SVOCs by USEPA Method 8270;
- TCL Pesticides/Polychlorinated Biphenyls (PCBs) by USEPA Method 8081/8082;
- Trivalent & Hexavalent Chromium by USEPA Method 7196;
- Total Cyanide by USEPA Method 9012;
- TAL Metals by USEPA Method 6010/7471;
- Silvex by USEPA Method 8151;
- 1,4-dioxane by USEPA 8270; and
- Per- and polyfluoroalkyl substance (PFAS) by USEPA modified method 537.1.

One of the seven remedial confirmation endpoint samples met unrestricted use SCOs at a depth of four feet bgs (EP005). Each of the samples that failed were re-sampled one foot deeper at a depth of five feet bgs. Four additional samples met unrestricted use SCOs at a depth of five feet bgs (EP001, EP004, EP006 and EP007). Samples that failed to meet unrestricted use SCOs at a depth of five feet bgs were continued under the future remedial action. The selected SCOs for the Site are documented in **Table 5**. The analytical results for the samples that met unrestricted use SCOs are documented in **Tables 6 through 10**.

Work under the IRM was completed on March 11, 2022.



4.0 DESCRIPTION OF REMEDIAL ACTIONS PERFORMED

Remedial activities completed at the Site were conducted in accordance with the NYSDEC-approved Remedial Action Work Plan (RAWP) for the Former Sears Auto Center Site (February 2022). Deviations from the RAWP are noted below. The RAWP was approved by NYSDEC in a letter dated March 11, 2022. A copy of the approval letter is included in **Appendix H**.

Remedial activities commenced on March 14, 2022, continuing directly from the IRM. Excavation and soil disposal activities under the remedial action commenced on March 16, 2022. Approximately 39,211.21 tons of impacted soils and approximately 3,728.55 tons of weathered bedrock were removed from the Site and properly disposed of during entire remedial excavation (including the IRM) for a total off-site disposal of 42,939.76 tons. During excavation activities, planned excavation areas were expanded vertically as needed based on confirmatory sample results and/or visual evidence of the presence of historical fill material (e.g., brick/concrete fragments other debris) to a maximum depth of 23.5 feet bgs. Due to this, to meet Track 1 unrestricted use SCOs (except for the northwest Track 2 area), much of the Site was excavated to weathered bedrock and excavation areas and depths extended beyond what was necessary for construction purposes in some areas. This extension of the proposed excavation depths was predominantly tied to the presence of widespread selenium levels in excess of Track 1 unrestricted SCOs in deeper material. The limits of excavation and the remedial confirmation endpoint sample locations were surveyed in accordance with DER-10. Excavation and soil removal was completed on August 11, 2022. A total of approximately 3,097.05 tons of backfill material was imported to the Site to establish design grades and to backfill outside of the building's foundation walls (and property boundaries). Backfill sources were approved by NYSDEC prior to import. Import of backfill material was completed on October 6, 2022.

4.1 Governing Documents

4.1.1 Site Specific Health and Safety Plan

The project Construction Health and Safety Plan (CHASP) was included as Appendix E of the RAWP approved by NYSDEC. The CHASP outlines the requirements for training, medical surveillance, daily tailgate meetings, emergency response, and accident and injury reporting. The CHASP was approved by NYSDEC as part of the RAWP in a letter dated March 11, 2022. A copy of the approval letter is included in **Appendix H**.



Remedial work performed under this plan was in compliance with governmental requirements, including site and worker safety requirements mandated by Federal Occupational Safety and Health Administration (OSHA) and the PWGC Corporate Environmental Health and Safety policy. Modifications to the CHASP were made with the approval of the PWGC Health and Safety Manager and/or Project Manager.

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

The Construction Health and Safety Plan (CHASP) was complied with for all remedial and invasive work performed at the Site.

4.1.2 *Quality Assurance Project Plan (QAPP)*

The QAPP was included as Appendix G of the Remedial Action Work Plan (RAWP) approved by NYSDEC. The QAPP describes the specific policies, objectives, organization, functional activities, and quality assurance/ quality control activities designed to achieve the project data quality objectives. The QAPP was approved by NYSDEC as part of the RAWP in a letter dated March 11, 2022. A copy of the approval letter is included in **Appendix H**.

The QAPP follows requirements detailed in DER-10, Section 2. The components of the QAPP include:

- Project organization.
- Sampling requirements.
- File and laboratory data control requirements.
- Equipment decontamination.
- Field documentation.

4.1.3 *Soil/Materials Management Plan (SMMP)*

Remediation was performed pursuant to a Soil/Materials Management Plan (SMMP) detailed in Section 5.4 of the NYSDEC approved RAWP, which includes detailed plans for managing soils/materials that were disturbed at the Site, including excavation, handling, storage, transport, and disposal. The SMMP also included the controls that were applied to these efforts to assure effective, nuisance-free performance in compliance with applicable federal, state, and local laws and regulations including but not limited to the following:



- Visual, olfactory and PID (photoionization detector) soil screening and assessment during excavation activities.
- Proper temporary stockpile procedures including use of tarps and erosion controls as needed.
- Vehicle loadout procedures including securely covered loads, proper manifests and permits, and use of a truck wash.
- Offsite disposal of soils removed from the Site at properly permitted facilities in accordance with local state and federal regulations.
- Import of backfill meeting the requirements for DER-10 5.4e, including submittal of Request to Import/Reuse Fill or Soil to NYSDEC prior to importing backfill material.

Soil and historic fill material were disposed of at properly permitted facilities and in accordance with the SMMP and applicable federal, state, and local laws.

4.1.4 Storm-Water Pollution Prevention Plan (SWPPP)

The Site is less than one acre in size. As such, a site-specific Storm-Water Pollution Prevention Plan (SWPPP) was not required. The erosion and sediment controls for remedial construction were performed in conformance with requirements presented in the New York State Guidelines for Urban Erosion and Sediment Control.

4.1.5 Community Air Monitoring Plan (CAMP)

Pursuant to the Site-specific Community Air Monitoring Plan (CAMP) included as Appendix F of the NYSDEC approved RAWP, real-time monitoring was performed during intrusive activities such as excavation, or manipulation of soil piles. Air monitoring consisted of the following:

- VOC monitoring at the upwind and downwind Site perimeter.
- Particulate monitoring at the upwind and downwind Site perimeter.

VOC and particulate monitoring were performed using a pair of MiniRAE 3000 photoionization detectors (PIDs) and a pair of DustTrak™ II Aerosol Monitor 8530 dust monitors, respectively. Before work began, background concentrations were measured. During intrusive activities, when concentrations were greater than the background concentrations, and pursuant to the action levels detailed in the table below, appropriate actions were taken as necessary.

AIR MONITORING INSTRUMENT	MONITORING LOCATION	ACTION LEVEL TIME WEIGHTED AVERAGE (TWA) – 15 MINUTES	SITE ACTION	REASON
PID	Work Area Perimeter	< 5 ppm	None	Exposure below established exposure limits.
PID	Work Area Perimeter	> 5 ppm	Stop work and implement vapor release response plan until readings return to acceptable levels, Notify PWGC Project Manager.	Increased exposure to site contaminants, potential for vapor release to public areas.
Particulate (Dust, Mist or Aerosol) Meter	Work Area Perimeter	>100 but < 150 $\mu\text{g}/\text{m}^3$ for 15 minutes	Institute dust suppression measures, Notify PWGC Project Manager. Work may continue if particulate concentrations remain below 150 $\mu\text{g}/\text{m}^3$.	Increased exposure to site contaminants, potential for vapor release to public areas.
Particulate (Dust, Mist or Aerosol) Meter	Work Area Perimeter	>150 $\mu\text{g}/\text{m}^3$	Don ASR or SCBA, Institute dust suppression measures. Stop work and implement dust suppression techniques until readings return to acceptable levels, Notify PWGC Project Manager.	Increased exposure to site contaminants, potential for vapor release to public areas.

The CAMP was approved by NYSDEC as part of the RAWP in a letter dated March 11, 2022. A copy of the approval letter is included in **Appendix H**.

4.1.6 Contractors Site Operations Plans (SOPs)

The Remediation Engineer reviewed all plans and submittals for this remedial project (i.e., those listed above plus contractor and subcontractor submittals) and confirmed that they were in compliance with the RAWP. Remedial documents were submitted to NYSDEC and NYSDOH in a timely manner and prior to the start of work.



4.1.7 Community Participation Plan (CPP)

A certification of mailing was sent by the Volunteer to the NYSDEC project manager following the distribution of Fact Sheets (English and Spanish) and notices that included: (1) certification that the Fact Sheets were mailed, (2) the date they were mailed; (3) a copy of the Fact Sheet, and (4) a list of recipients (contact list).

No changes were made to approved Fact Sheets authorized for release by NYSDEC. No other information, such as brochures and flyers, was included with the Fact Sheet mailing.

The approved Community Participation Plan for this project was attached in Appendix H of the NYSDEC approved RAWP. The CPP was approved by NYSDEC as part of the RAWP in a letter dated March 11, 2022. A copy of the approval letter is included in **Appendix H**.

Document repositories were established at the following locations which contain applicable project documents:

- New York Public Library - Bronx Library Center, 310 East Kingsbridge Road, Bronx, NY 10458

4.2 REMEDIAL PROGRAM ELEMENTS

4.2.1 Contractors and Consultants

The certifying Engineer of Record is Paul K. Boyce of PWGC. PWGC's primary health and safety officers were Melissa Perri and Danielle Dulligan.

The following Consultants and Contractors performed remediation related activities at the Site during the implementation of the RAWP at the Site:

- Alpha Analytical Laboratories (Alpha), Westborough, MA – environmental analytical services.
- York Analytical Laboratories (York), Stratford, CT - environmental analytical services.
- Environmental Data Usability (EDU), Dansville, NY – data validation and DUSR preparation.
- Associated Environmental Services LTD (AES), Hauppauge, NY – environmental drilling services.
- Eastern Environmental Solutions Inc (EES), Manorville, NY – performed tank cleaning and removal services.
- Omnibuild Construction Inc (OC), New York, NY – general contractor and project management.



- Precise Construction Contracting, Inc. (PCC), Bronx, NY - construction services for the project, including, but not limited to Site excavation, impacted soil handling, backfilling, and concrete work.
- Angkor Contracting (AC)., Queens, NY – vapor barrier/waterproofing contractor.
- Clean Earth LLC (CE), Piscataway, NJ – coordinated disposal of soils.
- Bousquet Holstein LLP (BHL), Syracuse, NY – environmental counsel and accounting services.
- Knauf Shaw, P.C. (KS), Rochester, NY – environmental counsel.
- P.W. Grosser Consulting Engineer & Hydrogeologist PC (PWGC), Bohemia, NY – project management, environmental, and engineering services during the course of the remedial action and served as the Engineering firm of Record.

4.2.2 *Site Preparation*

Mobilization occurred on January 17, 2022. A small amount of remedial work, including soil boring advancement for further delineation of soil contamination and for waste characterization sampling, took place prior to this under the IRM, but this work only included PWGC, AES and OC and did not require formal mobilization. Site workers received site orientation and training in accordance with the site-specific CHASP, CAMP, and established policies and procedures to be followed during the implementation of remedial activities. The remediation contractor and associated subcontractors each received a copy of the RAWP, CHASP, and CAMP and were briefed on their contents. Mobilization also included the installation of construction fencing and security booth, construction of stabilized construction entrances, and installation of erosion and sediment controls where needed.

4.2.3 *General Site Controls*

The Site was secured with construction fencing erected prior to mobilization. Construction gates were closed and secured with a lock while contractors were offsite. Full time security was on site when work was not taking place, and a Site Safety Manager was on site during work hours. Stabilized construction entrances were maintained along the northern entrance to the Site for the duration of excavation, and along the southern entrance to the Site until precluded by the construction of foundation elements. OC and its subcontractors were solely responsible for the utility marker and easements layout.



During excavation, soils were inspected for visual and olfactory evidence of impact and field screened with a PID by PWGC.

4.2.4 Nuisance Controls

A truck wash was constructed at the primary point of site egress. Soils were removed from truck tires mechanically using water and brushes prior to exiting the Site. Soils tracked offsite were immediately swept back onsite.

Dust control was achieved by wetting surface soils as necessary during activities and/or site conditions that had the potential to generate dust. Elevated PID readings affiliated with soil excavation were not encountered during intrusive activities. Soils excavated with suspect odors were promptly stockpiled as per the RAWP and covered with plastic until disposal was arranged.

Truck routing was organized and utilized a queueing system. Truck routes were limited to the routes specified in the NYSDEC approved RAWP unless traffic, road work, or other conditions necessitated alternate routing. A Truck Route Map is included as **Figure 5**.

Formal complaints were not received during implementation of remedial activities.

4.2.5 CAMP Results

Air monitoring was performed on a daily basis during intrusive activities in accordance with the Community Air Monitoring Plan (CAMP) included as Appendix F of the NYSDEC approved RAWP.

Some minor dust exceedances were noted during normal construction activities. Such exceedances typically occurred while breaking up decomposed bedrock and during machine movement on particularly dry and windy days. They were not prolonged and were addressed promptly using water spray as a dust control method.

Periods of identified VOC exceedance took place on six separate days of work. These days were:

- 4/13 while intrusive work was not taking place,
- 5/27, 5/31, 7/22 and 7/25 when the exceedances were at the upwind stations only, and
- 8/11 when there was an equipment malfunction.



The full CAMP data logs are provided in electronic format in [Appendix I](#).

4.2.6 Reporting

Daily Reports

PWGC prepared and maintained daily reports, which included a description of daily activities keyed to an alpha-numeric map for the Site to identify work areas. Daily reports included a summary of air sampling results, odor and / or dust matters and related corrective actions, and complaints received from the public as well as the following:

- An update of progress made during the reporting day.
- Locations of work and quantities of material imported and exported from the Site.
- References to alpha-numeric map for site activities.
- A summary of complaints with relevant details (names, phone numbers).
- A summary of CAMP findings, including exceedances.
- Upcoming (planned) activities for the next workday.
- An explanation of notable site conditions.

The NYSDEC project manager was informed of unexpected occurrences (e.g., discovery of USTs), requests for changes to the RAWP, or other sensitive or time-critical information, as needed.

Monthly Reports

Monthly reports were submitted to NYSDEC and NYSDOH Project Managers following the end of the month of the reporting period and included:

- Activities relative to the Site during the previous reporting period and those anticipated for the next reporting period, particularly as it relates to schedule as per NYSDEC.
- Description of approved activity modifications, including changes of work scope and/or schedule.
- Sampling results received following internal data review and validation, as applicable.



- An update of the remedial schedule including the percentage of project completion, unresolved delays, encountered or anticipated, that may affect the future schedule, and efforts made to mitigate such delays.

Daily and monthly reports are included in electronic format in **Appendix J** and **Appendix K**, respectively.

Representative photos of remedial activities are included in daily reports.

4.3 Contaminated Material Removal

Contaminated materials at the Site consisted of soils impacted with VOCs, SVOCs, pesticides, and metals exceeding their respective NYSDEC unrestricted use SCOs likely related to the historic usage of the Site and/or the presence of historic urban fill material.

A list of the soil cleanup objectives (SCOs) for the contaminants of concern for this project is provided in **Table 5**.

A figure of the location of the former areas of concern and the areas where excavations were performed is shown in **Figures 6** and **7**.

4.3.1 Soil Removal

Soil was excavated to achieve unrestricted use SCOs (or residential use SCOs in the Track 2 area) during the RAWP implementation. SOE, including soldier piles, lagging, etc., was installed as needed along the northern, southern, eastern, and western property boundaries.

Approximately 39,211.21 tons of impacted soils and approximately 3,728.55 tons of weathered bedrock were removed from the Site during the entire remedial action, including the IRM work, for a total off-site disposal of 42,939.76 tons. Impacted soils were removed to at least 20 feet bgs or until weathered bedrock was encountered across the entire site. Remedial excavation depths varied from 12 feet bgs to 23.5 feet bgs depending on the location (see **Figure 7**). These final excavation depths extended significantly beyond the proposed excavation depths, predominantly due to the presence of widespread selenium levels in excess of Track 1 unrestricted SCOs in deeper material. This scope of the remedial excavation required the installation of the full SOE system as installed.

Excavation depths/areas were expanded vertically as needed based on confirmatory sample results and/or visual evidence of the presence of historical fill material (e.g., brick/concrete fragments other debris). Once excavation areas were extended, new endpoint samples were collected. Endpoint samples were collected until they either met Track 1 SCOs, weathered bedrock was encountered, or the property boundary was reached. The only exception to this was the approximately 0.0368-acre Track 2 area in the northwest corner of the Site that met the Track 2 residential use SCOs. See **Appendix A**. The limits of excavation and the remedial confirmation endpoint sample locations were surveyed in accordance with DER-10. Contamination in excess of unrestricted use SCOs was identified at depths beyond what was anticipated based on the RIR and SRIR. During excavation activities, contamination in excess of unrestricted use SCOs was identified to extend to the weathered bedrock surface at depths up to approximately 23.5 feet bgs. Due to the presence of elevated compounds in endpoint samples and/or visual indications of fill material, remedial excavation depths in most of the Site were deeper than anticipated in the RAWP. Confirmatory sample results are illustrated in **Figure 8**.

Soil exportation activities began on January 20, 2022. Excavated soils were transported to the following facilities:

- Clean Earth of Bethlehem (Bethlehem, Pennsylvania) – 11,805.60 tons – (all for remedial excavation purposes)
- Clean Earth of Carteret (Carteret, New Jersey) – 4,993.16 tons – (all for remedial excavation purposes)
- Clean Earth of New Jersey (Kearny, New Jersey) – 53.48 tons non-hazardous and 54.60 tons hazardous – (all for remedial excavation purposes)
- Impact Reuse and Recovery Center (Lyndhurst, New Jersey) – 598.87 tons – (all for remedial excavation purposes)
- PPark NJ (Prospect Park, New Jersey) – 25,434.05 tons - (21,705.5 tons for remedial excavation purposes and 3,728.55 tons for construction purposes)

Soils were primarily transported by D&A Contracting, LLC of West Parsippany, New Jersey (Part 364 Permit: NJ-957).



In-situ waste characterization sampling was performed in September through December 2021. Waste characterization included dividing the Site into six grids (1 through 6) and collecting composite samples from multiple depths within each grid. A copy of each of the Waste Characterization Laboratory Analytical Reports was provided to each disposal facility for review.

Additional waste characterization sampling was performed in April 2022 to characterize previously uncharacterized material from 15 feet bgs to 25 feet bgs and to obtain approval for excess soils to be exported to Clean Earth of Carteret. Additional waste characterization sampling was also performed in August 2022 to increase the PPark NJ approval quantity.

Table 3 shows the total quantities of each category of material removed from the Site and the disposal locations. A summary of the samples collected to characterize the waste, and associated analytical results are summarized in **Appendix D**.

Acceptance letters from disposal facility owners are attached in **Appendix E**.

Manifests and bills of lading are included in electronic format in **Appendix F**.

4.3.2 *Underground Storage Tanks*

As referenced in the prior IRM section, on January 20, 2022 during routine excavation activities, one previously known UST was unearthed beneath the central portion of the Site. The tank was a 275-gallon, single wall, steel tank; the tank appeared to have formerly stored an unknown type of oil.

On February 12, 2022 during routine excavation activities, three USTs were discovered beneath the west-central portion of the Site. The tanks were one 275-gallon and two 550-gallon single wall, steel tanks; they appeared to have formerly stored an unknown type of oil.

Former UST Locations are illustrated in **Figure 9**.



Prior to removal, remaining liquids were pumped out utilizing a vacuum powered pump truck. Following liquid removal, the tanks were removed from the excavation, cut open, and cleaned. A total of approximately 731 gallons of residual liquids (oily water) and 1,700 pounds of non-hazardous, non-RCRA sludges were generated and properly disposed of at the following facilities:

- Liquid wastes – Clean Water of New York, Staten Island, New York
- Sludge wastes - Clean Water of New York, Staten Island, New York
- Tank bodies and the hydraulic cylinder – Gershow Recycling, Medford, New York

Wastes were transported by Eastern Environmental Solutions of Manorville, New York.

Tank closure documentation and waste manifests are included in **Appendix G**.

4.4 Remedial Performance/Documentation Sampling

Post-excavation (endpoint) documentation sampling was performed to document the concentrations of regulated constituents that will remain in place following excavation activities. In accordance with the approved RAWP, post-excavation documentation samples were analyzed for:

- TCL VOCs by USEPA Method 8260
- TCL SVOCs by USEPA Method 8270
- TAL Metals by USEPA Method 6010/7471
- Trivalent & Hexavalent Chromium by USEPA Method 7196A
- Total Cyanide by USEPA Method 9012B
- TCL Pesticides by USEPA Method 8081
- PCBs by USEPA Method 8082
- Silvex by USEPA Method 8151A
- PFAS by USEPA Method 537.1 Modified
- 1,4-Dioxane by USEPA Method 8270-SIM

Post-excavation samples collected from the former UST locations were analyzed for:



- TCL VOCs by USEPA Method 8260 (CP-51 list)
- TCL SVOCs by USEPA Method 8270 (CP-51 list)

Post-excavation (endpoint) documentation samples were collected at frequency of approximately one bottom sample from the excavation for every 900 square feet of bottom. In accordance with PWGC's coordination with the NYSDEC, in excavation areas where weathered bedrock was encountered, samples were not collected, and in areas where the excavation extends to the property line, sidewall endpoint samples were not collected. Each proposed sidewall sampling location was ultimately approved for exemption by the NYSDEC, as the excavation areas that were to be bounded by the sidewall samples were expanded based upon repeated failures to meet unrestricted use SCOs on the bottom endpoint samples.

Post-excavation (endpoint) documentation samples achieved Track 1 cleanup levels for Site-related constituents in areas not excavated to weathered bedrock with the exception of three endpoints (EP031, EP032, and EP034) in the northwest corner of the Site that achieved Track 2 Residential cleanup levels. During the geotechnical investigation, weathered bedrock was encountered in soil borings at depths of 8 to 26 feet bgs across the Site. During remedial excavation, weathered bedrock was encountered at similar depths. The presence of weathered bedrock was initially identified based upon increased physical resistance to excavation equipment and confirmed by visual examination by PWGC's onsite representative and the geotechnical engineer's onsite representative after an area was excavated and exposed. In areas where post-excavation samples did not meet Track 1 cleanup standards, additional soils were removed and additional post-excavation samples were collected at the new excavation depth. Additional iterations of this were performed until Track 1 standards were met or weathered bedrock was encountered with the exception of the Track 2 area. Areas where initial post excavation samples did not meet Track 1 cleanup standards are as follows:

- EP001 – Sample EP001 was collected at 4 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until Track 1 cleanup levels were achieved in sample EP001 – 5'.



- EP002 – Sample EP002 was collected at 4 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 19 feet bgs.
- EP003 – Sample EP003 was collected at 4 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 19 feet bgs.
- EP004 – Sample EP004 was collected at 4 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until Track 1 cleanup levels were achieved in sample EP004 – 5 feet bgs.
- EP006 – Sample EP006 was collected at 4 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until Track 1 cleanup levels were achieved in sample EP006 – 5 feet bgs.
- EP007 – Sample EP007 was collected at 4 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until Track 1 cleanup levels were achieved in sample EP007 – 5 feet bgs.
- EP008 – Sample EP008 was collected at 6 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 18 feet bgs.
- EP010 – Sample EP010 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area until weathered bedrock was encountered at 12 feet bgs.
- EP011 – Sample EP011 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area until weathered bedrock was encountered at 12 feet bgs.
- EP012 – Sample EP012 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area until weathered bedrock was encountered at 12 feet bgs.



- EP014 – Sample EP014 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area until weathered bedrock was encountered at 12 feet bgs.
- EP015 – Sample EP015 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area until weathered bedrock was encountered at 12 feet bgs.
- EP016 – Sample EP016 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area until weathered bedrock was encountered at 12 feet bgs.
- EP017 – Sample EP017 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area until weathered bedrock was encountered at 12 feet bgs.
- EP018 – Sample EP018 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area until weathered bedrock was encountered at 12 feet bgs.
- EP019 – Sample EP019 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area until weathered bedrock was encountered at 12 feet bgs.
- EP020 – Sample EP020 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area until weathered bedrock was encountered at 12 feet bgs.
- EP021 – Sample EP021 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 19 feet bgs.
- EP022 – Sample EP022 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 19 feet bgs.



- EP023 – Sample EP023 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 19 feet bgs.
- EP024 – Sample EP024 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 18 feet bgs.
- EP025 – Sample EP025 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 19 feet bgs.
- EP026 – Sample EP026 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 19 feet bgs.
- EP027 – Sample EP027 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 19 feet bgs.
- EP028 – Sample EP028 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 18 feet bgs.
- EP029 – Sample EP029 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 18 feet bgs.
- EP030 – Sample EP030 was collected at 10 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 19 feet bgs.
- EP031 – Sample EP031 was collected at 20 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was initially removed from this area and additional post-excavation samples were initially collected until SOE concerns required backfilling to 20 feet bgs. This sample location met Track 2 residential use SCOs.

- EP032 – Sample EP032 was collected at 20 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was initially removed from this area and additional post-excavation samples were initially collected until SOE concerns required backfilling to 20 feet bgs. This sample location met Track 2 residential use SCOs.
- EP034 – Sample EP034 was collected at 20 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was initially removed from this area and additional post-excavation samples were initially collected until SOE concerns required backfilling to 20 feet bgs. This sample location met Track 2 residential use SCOs.
- EP035 – Sample EP035 was collected at 20 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until Track 1 cleanup levels were achieved in sample EP035 – 22 feet bgs.
- EP036 – Sample EP036 was collected at 20 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 23.5 feet bgs.
- EP037 – Sample EP037 was collected at 20 feet bgs and contained impact greater than Track 1 Cleanup standards. Additional material was removed from this area and additional post-excavation samples were collected until weathered bedrock was encountered at 23.5 feet bgs.

These final depths of endpoint sampling extended significantly beyond the proposed remedial confirmation endpoint sampling depths, predominantly due to repeated failures of the samples to meet unrestricted use SCOs due to the presence of widespread selenium levels in excess of Track 1 unrestricted SCOs in deeper material. Despite the presence of multiple shallow remedial confirmation endpoint samples (four feet bgs or five feet bgs) that met unrestricted use SCOs (EP001, EP004, EP005, EP006 and EP007), the defined remedial excavation depths for these areas match the identified depth of weathered bedrock. These samples were collected as part of the IRM prior to the identification of site-wide elevated selenium concentrations greater than unrestricted use SCOs in deeper material. Deeper material was not sampled at these passing locations and these shallow sample locations were interspersed among samples that failed to meet unrestricted use SCOs above weathered bedrock. As such, the remedial excavation depth for the areas represented by these samples is the depth of weathered bedrock. In addition, post-IRM samples EP009 and EP013 met unrestricted use SCOs at 10 feet bgs,



but the greater excavation area that they are a part of did not reach unrestricted use SCOs until weathered bedrock at 12 feet bgs.

Post-excavation (endpoint) sampling was performed following quality assurance / quality control (QA/QC) guidelines set for in the QAPP presented in Appendix G of the RAWP.

A summary of endpoint sample results is included in **Tables 6 through 10**. **Figure 8** shows the final endpoint samples (or indicates that the location was excavated to bedrock) demonstrating that Track 1 standards (or Track 2 Residential standards) were achieved.

Data Usability Summary Reports (DUSRs) were prepared for the final endpoint samples in areas where remedial excavation did not advance to bedrock and for the tank confirmation samples. These DUSRs are included in **Appendix L** and associated raw data is provided electronically in **Appendix C**.

4.5 Imported Backfill

Materials were imported to the Site from offsite sources for use as fill material. Backfill materials consisted of $\frac{3}{4}$ " concrete stone and NYSDOT Item 703, size #2 crushed granite stone. A total of approximately **3,097.05 tons** of backfill material were imported to the Site. The material originated from two sites:

- A total of **2,975.97** tons of concrete stone ($\frac{3}{4}$ -inch) was supplied by Thaille Industries – Elmsford Processing Facility of Elmsford, New York. A Request to Import/Reuse Fill or Soil was submitted to NYSDEC on January 13, 2022 and was approved via email on January 14, 2022.
- A total of **121.08** tons of New York State Department of Transportation (NYSDOT) Item 703, size #2 crushed granite stone was supplied by Thaille Industries – Fishkill Quarry of Fishkill, New York. A Request to Import/Reuse Fill or Soil was submitted to NYSDEC on June 17, 2022 and was approved via email on June 22, 2022.

As the material imported to the Site for backfill consisted of recycled concrete and crushed stone from NYSDEC permitted facilities with less than 10% by weight material which would pass through a size 80 sieve, in accordance with DER-10 5.4(e)5, chemical analysis of the fill material was not required.



Table 11 shows the total quantities of each category of material imported to the Site and the source locations. Copies of the Requests to Import/Reuse Fill or Soil and NYSDEC approvals are included in **Appendix M**. Copies of fill import documentation are included as **Appendix M**. **Figure 10** shows the backfill placement locations at the Site.

4.6 Contamination Remaining at the Site

Track 1 unrestricted use SCOs were met in confirmatory post-excavation (endpoint) soil samples or impacted soils were removed until weathered bedrock was encountered across the majority of the Site. The only contamination remaining at the Site greater than unrestricted use SCOs is in the northwest area that met Track 2 residential use SCOs. In areas where weathered bedrock was encountered and not removed for construction purposes, residual soils were scraped and removed from the top of the bedrock surface during excavation activities.

Figure 8 summarizes the results of all soil samples remaining at the Site after completion of the remedial action that meet the SCOs for unrestricted use of the site. **Figure 11** shows the Track 2 area that contains the Site's residual soil contamination in excess of unrestricted use SCOs.

4.7 Soil Cover/Cap System

In the majority of the Site, a Track 1 cleanup was achieved and a soil cover/cap system was not necessary. In the northwest Track 2 Residential cleanup area, the area is capped with approximately six inches of $\frac{3}{4}$ " concrete stone subbase and 18 inches of concrete slab. **Figure 12** shows the Site-wide cover system.

4.8 Other Engineering Controls

The remedy for the Site did not require the construction of engineering control systems. As specified in the RAWP, a 50-mil vapor barrier/water proofing membrane was installed beneath the foundations of the proposed building and a 60-mil vapor barrier/water proofing membrane was installed vertically up the exterior of the foundation walls to grade. As the vapor barrier/waterproofing membrane is not considered an engineering control, a PE certification of its installation was not required. The vapor barrier is rather a green remedial measure to improve energy efficiency in the building and inspection reports from the project and a copy of the manufacturer's specification sheets are included in **Appendix N**.



4.9 Institutional Controls

As the Site has achieved a split Track 1 and Track 2 Residential cleanup down to weathered bedrock (except for the Track 2 area), no institutional controls are necessary.

4.10 Deviations from The Remedial Action Work Plan

Deviations from the RAWP that occurred during remedial activities included the following:

1. Increasing the depth interval between failed remedial confirmation bottom samples from every one foot to every two feet within the construction excavation area.
2. Backfilling with previously excavated material within the Track 2 residential area due to support of excavation concerns. Previously excavated materials that were utilized as backfill met Track 2 residential use SCOs. The soil reuse origin and destination locations are shown on **Figure 13**.
3. Removal of the proposed sub-slab depressurization system (SSDS) from the project due to the presence of a shallow water table that would have inhibited the function of the system.
4. Due to the presence of a shallow water table at the foundation slab, the proposed SSDS was not installed; therefore, the post-construction soil vapor evaluation that was proposed in the approved RAWP to determine if the SSDS needs to be activated was not performed. A potential source of soil vapor contamination on the Site was not identified during the remedial excavation. Remedial confirmation endpoint sampling did not identify exceedances of unrestricted use SCOs for the NYSDOH matrix compounds. A site-wide vapor barrier/waterproofing system and composite cover system were each installed at the site under the oversight of PWGC that will prevent future soil vapor intrusion concerns.
5. A total of three proposed 20 foot bgs remedial endpoint samples were exempted from collection due to weathered bedrock being encountered prior to excavation reaching 20 feet bgs.
6. Each of the proposed sidewall samples other than SW001 through SW003 were exempted from collection due to the adjacent areas needing to be excavated to similar elevations for remediation. The samples SW001 through SW003 were collected once before being exempted, but did not meet unrestricted use SCOs.



7. Data validation and the preparation of electronic data deliverables was only required for tank confirmation samples and the remedial endpoints that either met unrestricted use SCOs or represented the terminal depth of excavation based upon instruction from the NYSDEC project manager.
8. These final depths of remedial excavation extended significantly beyond the proposed remedial excavation depths in the RAWP, predominantly due to repeated failures of remedial confirmation endpoint samples to meet unrestricted use SCOs due to the presence of widespread selenium levels in excess of Track 1 unrestricted SCOs in deeper material. Despite the presence of multiple shallow remedial confirmation endpoint samples (four feet bgs or five feet bgs) that met unrestricted use SCOs (EP001, EP004, EP005, EP006 and EP007), the defined remedial excavation depths for the areas represented by these samples and the majority of the site match the identified depth of weathered bedrock. These shallow samples were collected as part of the IRM prior to the identification of the site-wide elevated selenium concentrations greater than unrestricted use SCOs in deeper material. Deeper material was not sampled at these passing locations and these shallow sample locations were interspersed among samples that failed to meet unrestricted use SCOs above weathered bedrock. As such, the remedial excavation depth for the areas represented by these samples is the depth of weathered bedrock.



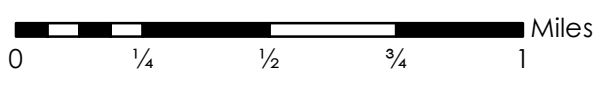
FIGURES



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

SUBJECT SITE LOCATION

4720 THIRD AVE
BRONX, NY



Project:	OMN2102
Date:	3/19/2021
Designed by:	JL
Drawn by:	UC
Approved by:	JL
Figure No:	1

Document Path: W:\Projects\E-L\HM\G1901\Mapfiles\FIG01_Site_Location.mxd

PWGC
CLIENT DRIVEN SOLUTIONS
P.W. Grosser Consulting Engineer & Hydrogeologist, PC

630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgros.com



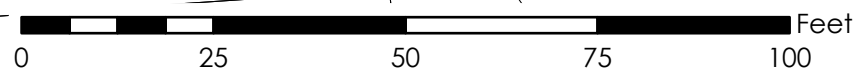
E 189th Street

LOT #22



LOT #28

3rd Avenue

LOT #13



Document Path: W:\Projects\M-R\OMN\2102\ProjectFiles\FER_Figures\FER_Figures.aprx

	Site Boundary
	Tax Lot Boundary



P.W. Grosser Consulting Engineer & Hydrogeologist, PC

630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgros.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS
DRAWING AND RELATED DOCUMENTS IS A VIOLATION
OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS
----------	------	---------	----------

DRAWING INFORMATION:

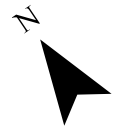
Project:	OMN2102	Designed by:	MG
Date:	10/18/2022	Drawn by:	FT
Scale:	AS SHOWN	Approved by:	MG

SITE PLAN

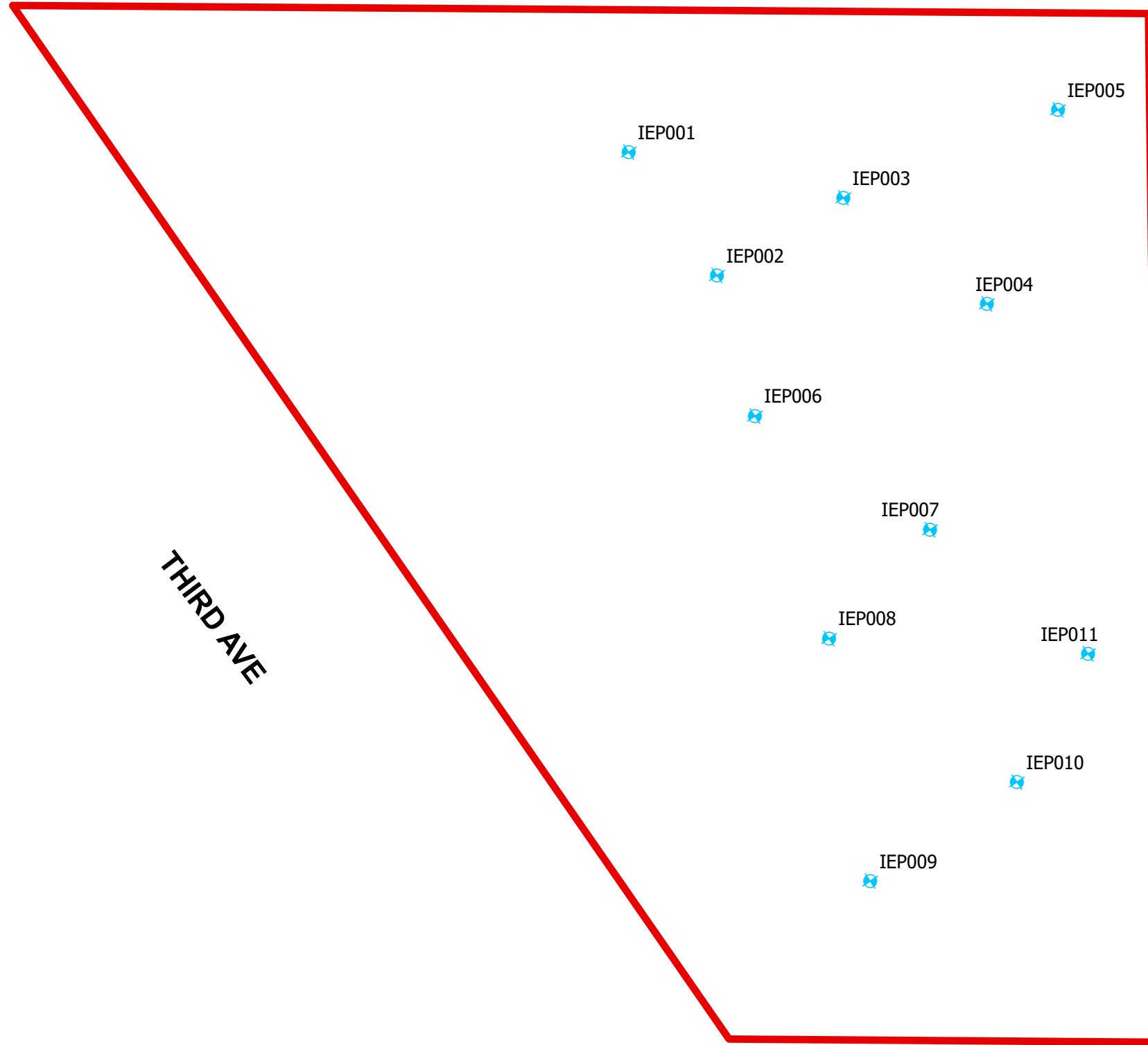
4720 3rd Avenue
Bronx, NY

FIGURE NO:

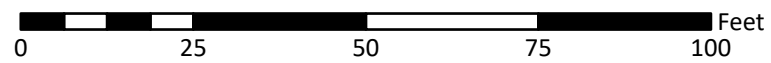
2





E 189th ST



THIRD AVE



 Site Boundary

 Interim Endpoint Sample Locations



P.W. Grosser Consulting Engineer & Hydrogeologist, PC

630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS
DRAWING AND RELATED DOCUMENTS IS A VIOLATION
OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

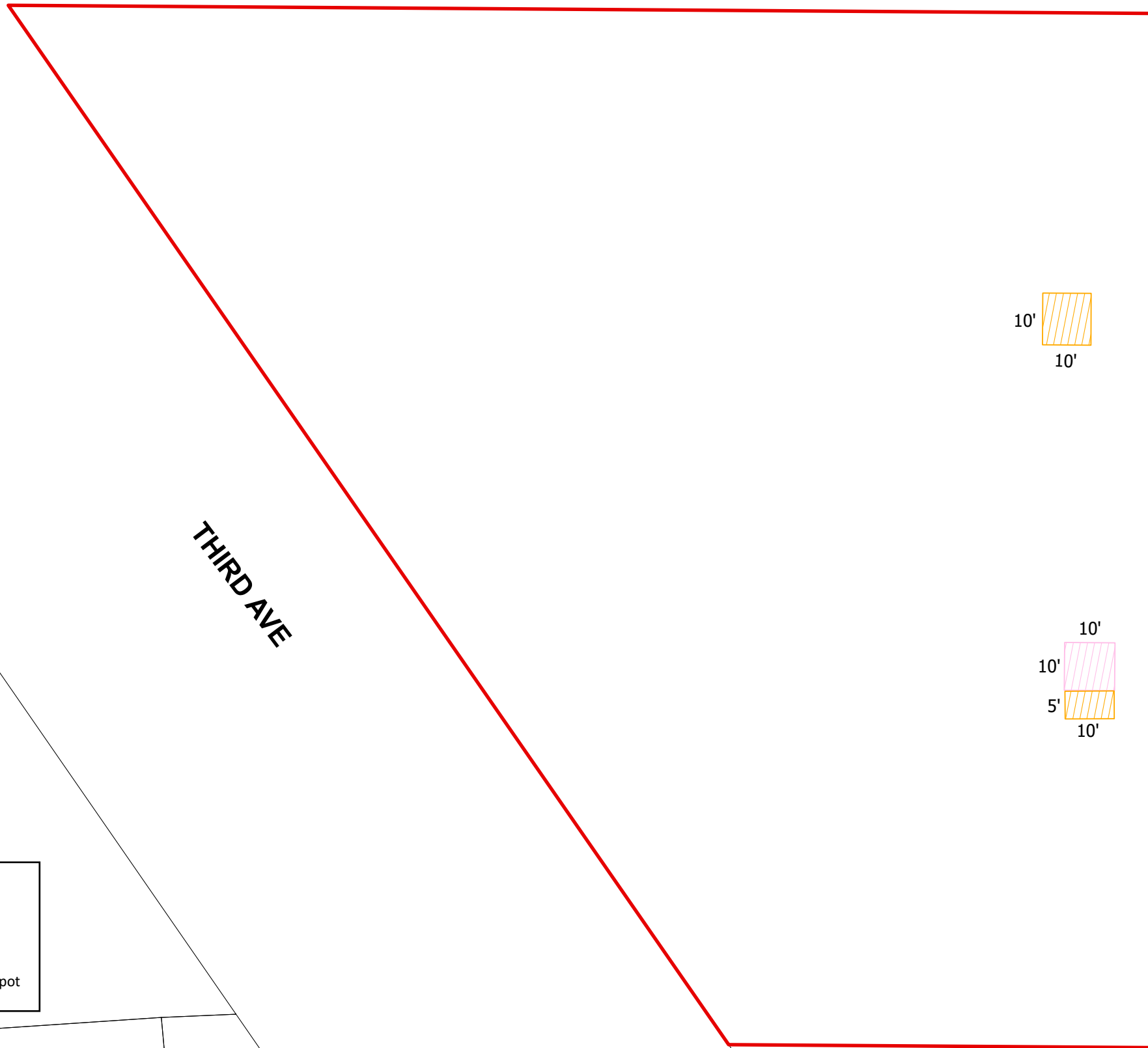
Project:	OMN2102	Designed by:	MG
Date:	10/18/2022	Drawn by:	FT
Scale:	AS SHOWN	Approved by:	MG

Interim
Endpoint Sample
Borings
4720 Third Street
Bronx, NY

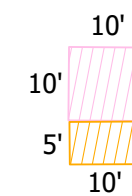
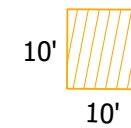
FIGURE NO:
3







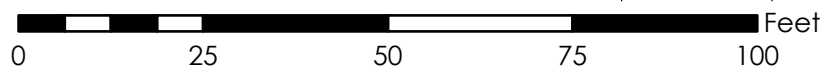
E 189th ST



THIRD AVE



 Site Boundary
 Lot Boundary
 Hazardous Lead Hotspot
 Non-Hazardous Lead Hotspot



P.W. Grosser Consulting Engineer & Hydrogeologist, PC

630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS
DRAWING AND RELATED DOCUMENTS IS A VIOLATION
OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS
----------	------	---------	----------

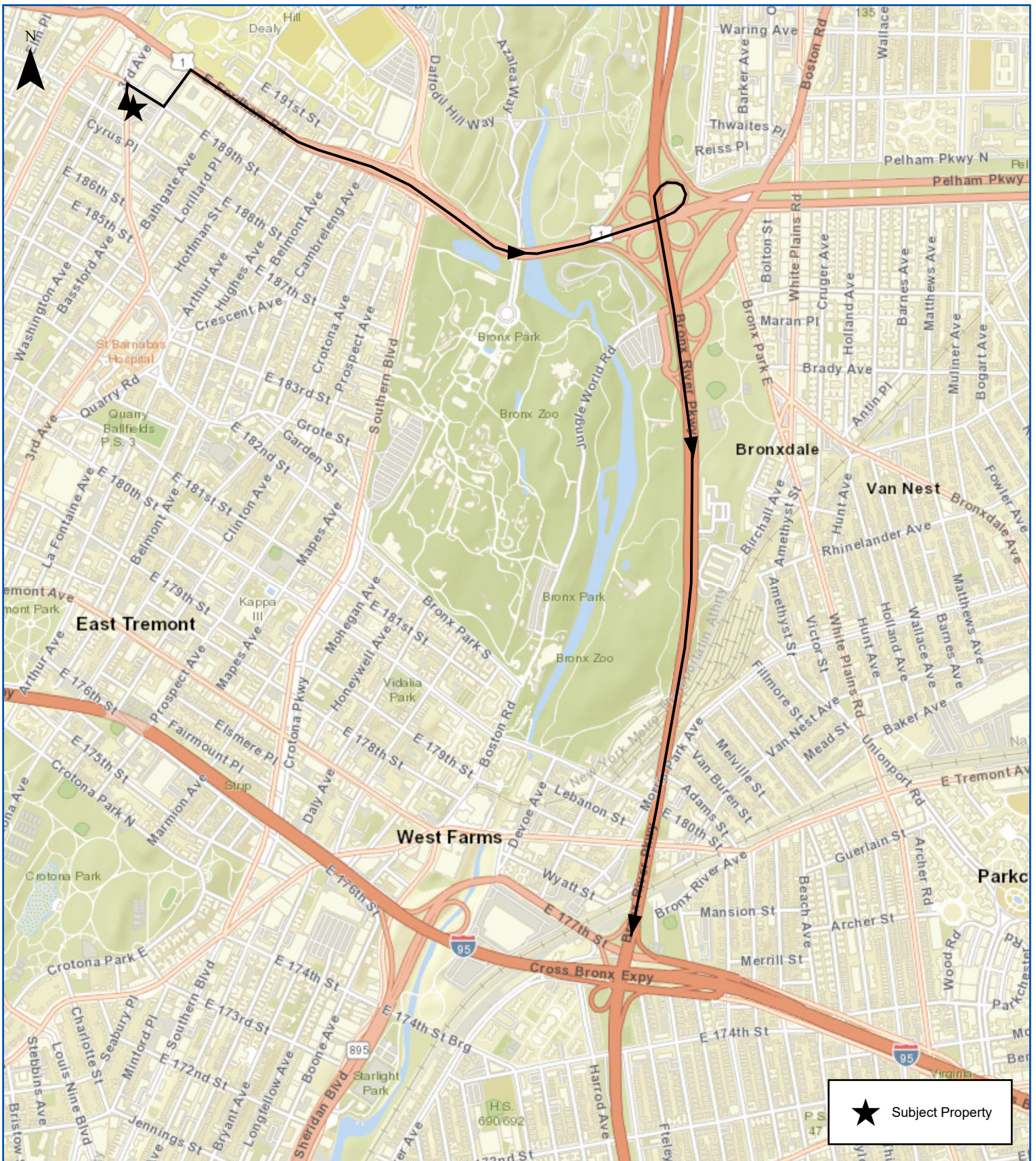
DRAWING INFORMATION:

Project:	OMN2102	Designed by:	MG
Date:	10/18/2022	Drawn by:	FT
Scale:	AS SHOWN	Approved by:	MG

Hotspot Locations

4720 Third Street
Bronx, NY

FIGURE NO:
4

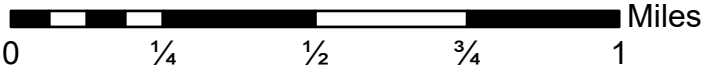


★ Subject Property



P.W. Grosser Consulting Engineer & Hydrogeologist, PC
 630 Johnson Ave., Suite 7
 Bohemia, NY 11716
 Ph: 631-589-6353 • Fax: 631-589-8705
 pwgc.info@pwgcs.com

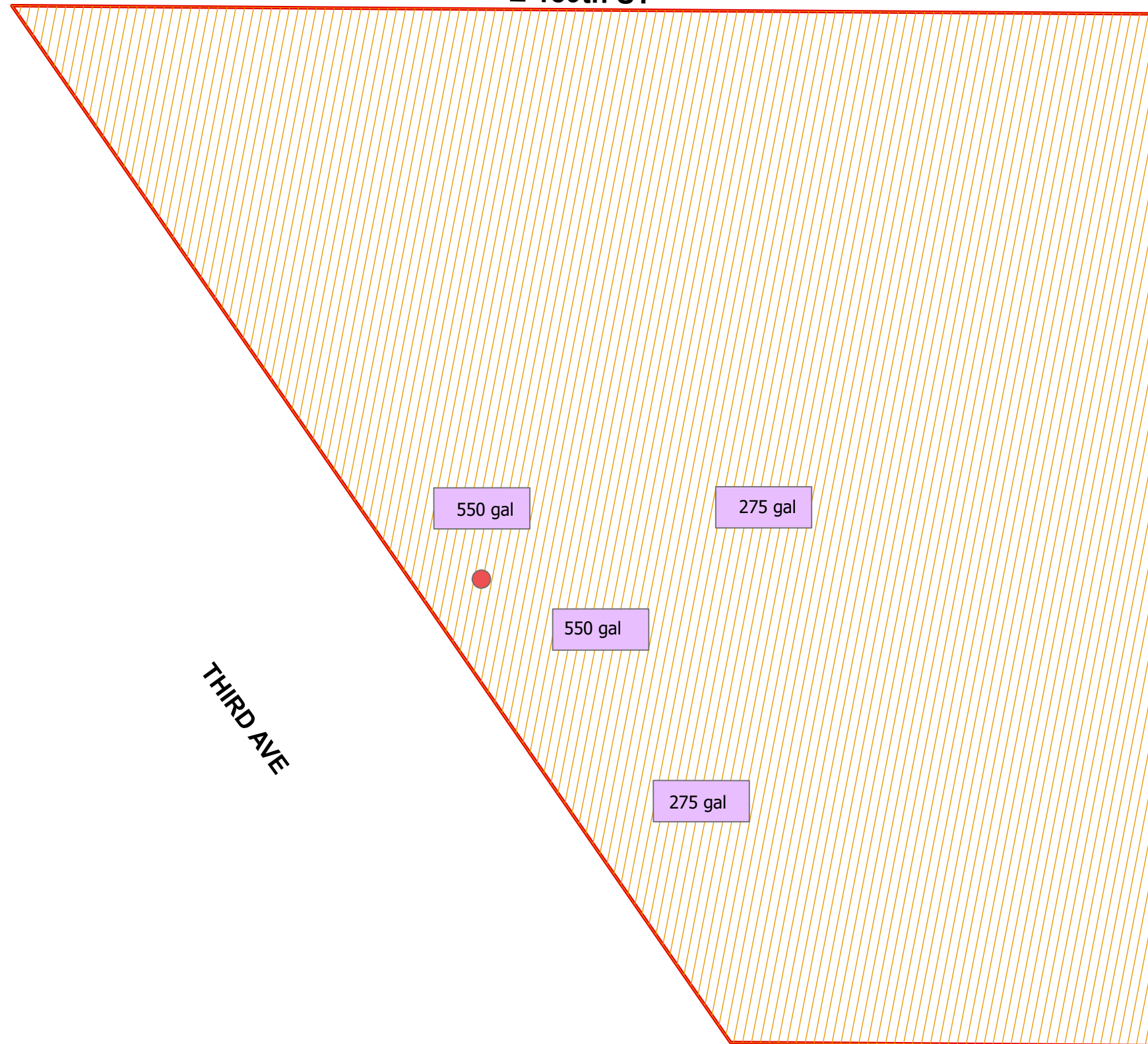
TRUCK ROUTE



Project:	OMN2102
Date:	10/18/2022
Designed by:	MG
Drawn by:	FT
Approved by:	MG
Figure No:	5



E 189th ST







THIRD AVE

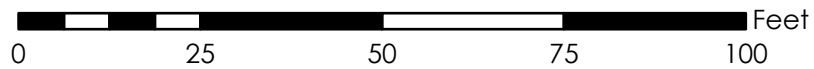
550 gal

275 gal

550 gal

275 gal

-  Historic Fill - from grade to approximately 3 to 11 ft bgs
-  Site Boundary
-  Former UST Location
-  Hydraulic Lift Cylinder



Document Path: W:\Projects\M-R\OMN\2102\ProjectFiles\FER_Figures\FER_Figures.aprx



P.W. Grosser Consulting Engineer & Hydrogeologist, PC

630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgros.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING AND RELATED DOCUMENTS IS A VIOLATION OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS

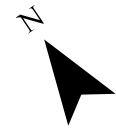
DRAWING INFORMATION:

Project:	OMN2102	Designed by:	MG
Date:	10/18/2022	Drawn by:	FT
Scale:	AS SHOWN	Approved by:	MG

Location of Former Areas of Concern

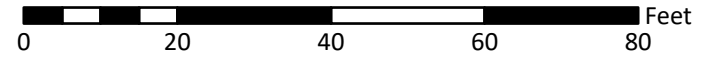
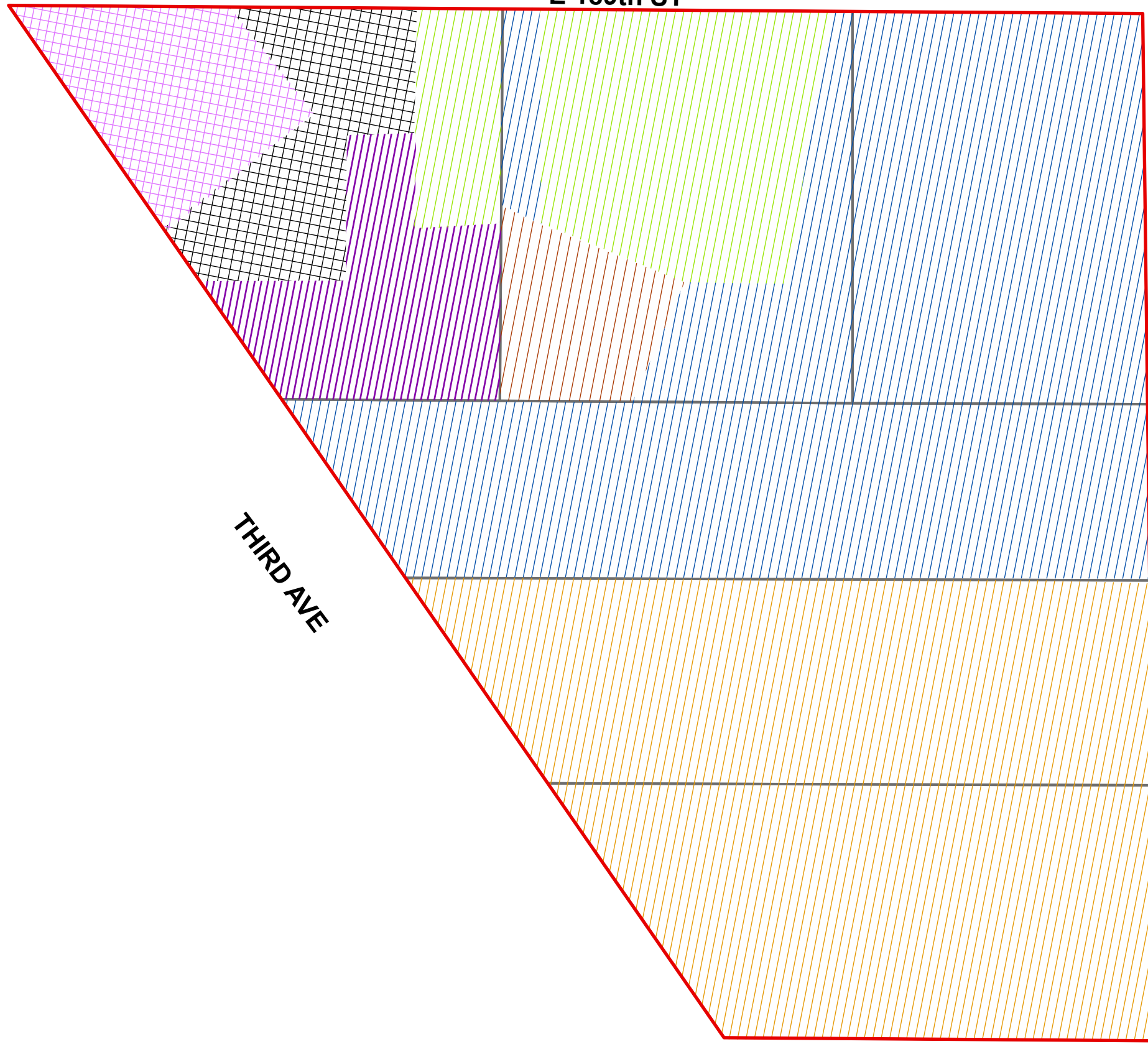
4720 THIRD AVE
BRONX, NY

FIGURE NO: 6



E 189th ST

THIRD AVE



	Grid
	Site Boundary
	~19-23' Remedial Excavation Depth - Weathered Bedrock
	~23.5' Remedial Excavation Depth - Weathered Bedrock
	~18.5' Remedial Excavation Depth - Weathered Bedrock
	Excavation Ended at 20' bgs
	~18' Remedial Excavation Depth - Weathered Bedrock
	~19' Remedial Excavation Depth - Weathered Bedrock
	~12' Remedial Excavation Depth - Weathered Bedrock



P.W. Grosser Consulting Engineer & Hydrogeologist, PC

630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgros.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING AND RELATED DOCUMENTS IS A VIOLATION OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:			
Project:	OMN2102	Designed by:	MG
Date:	10/24/2022	Drawn by:	FT
Scale:	AS SHOWN	Approved by:	MG

Remedial Excavation Depths

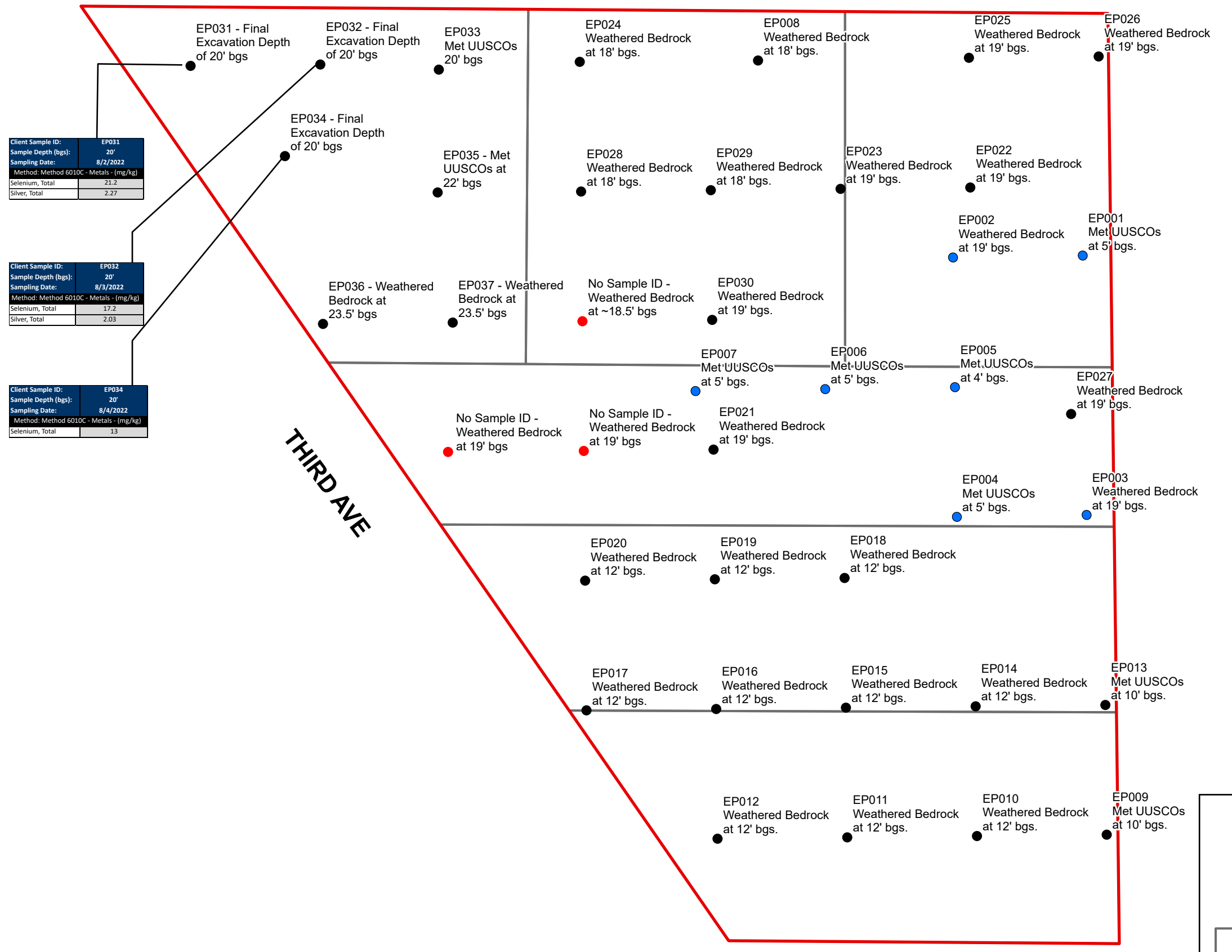
4720 Third Street
Bronx, NY

FIGURE NO:
7



E 189th ST

THIRD AVE

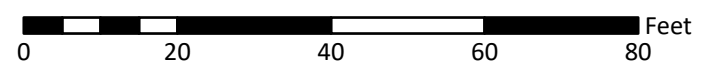


Client Sample ID:	EP031
Sample Depth (bgs):	20'
Sampling Date:	8/2/2022
Method:	Method 6010C - Metals - (mg/kg)
Selenium, Total	21.2
Silver, Total	2.27

Client Sample ID:	EP032
Sample Depth (bgs):	20'
Sampling Date:	8/3/2022
Method:	Method 6010C - Metals - (mg/kg)
Selenium, Total	17.2
Silver, Total	2.03

Client Sample ID:	EP034
Sample Depth (bgs):	20'
Sampling Date:	8/4/2022
Method:	Method 6010C - Metals - (mg/kg)
Selenium, Total	13

●	Remedial Confirmation Endpoint Sample Location
●	Exempted Remedial Confirmation Endpoint (20' bgs)
●	IRM Confirmation Endpoint Sample Location
□	Grid
□	Site Boundary



P.W. Grosser Consulting Engineer & Hydrogeologist, PC

630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgros.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING AND RELATED DOCUMENTS IS A VIOLATION OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:			
Project:	OMN2102	Designed by:	MG
Date:	10/18/2022	Drawn by:	FT
Scale:	AS SHOWN	Approved by:	MG

Remedial Endpoint Soil Sampling Locations

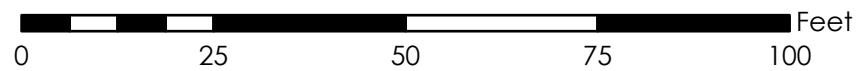
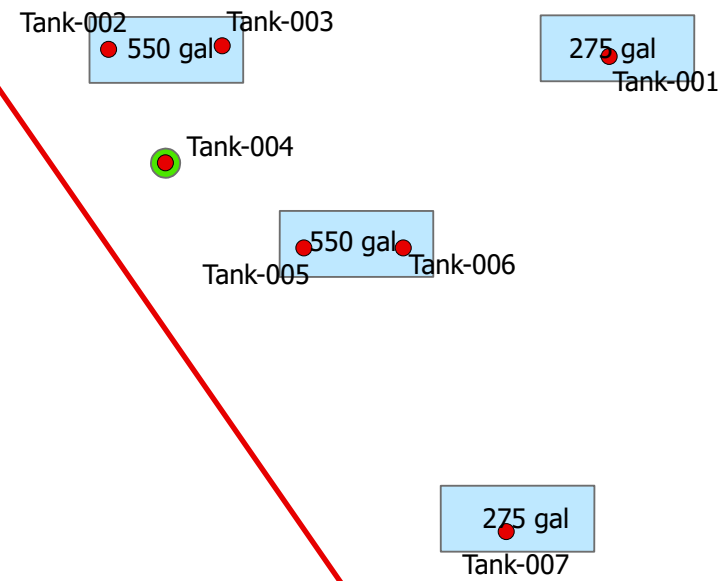
4720 Third Street
Bronx, NY

FIGURE NO:
8



E 189th ST

THIRD AVE



Document Path: W:\Projects\M-R\OMN\2102\ProjectFiles\FER_Figures\FER_Figures.aprx

- Site Boundary
- Hydraulic Lift Cylinder
- Former UST Locations
- Tank Bottom Confirmation Samples



P.W. Grosser Consulting Engineer & Hydrogeologist, PC

630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING AND RELATED DOCUMENTS IS A VIOLATION OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:			
Project:	OMN2102	Designed by:	MG
Date:	10/18/2022	Drawn by:	FT
Scale:	AS SHOWN	Approved by:	MG

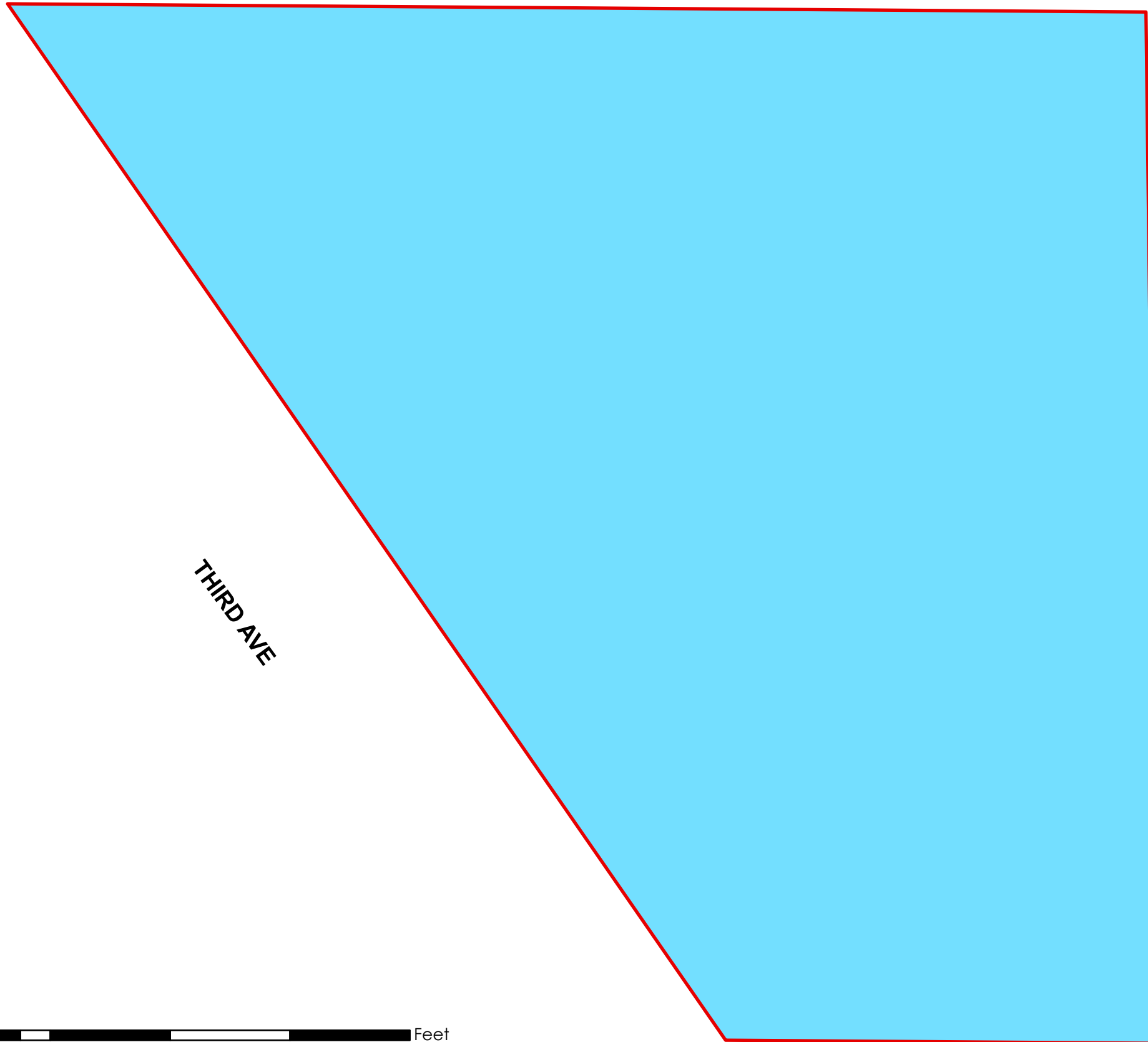
Former UST Locations
4720 THIRD AVE
BRONX, NY

FIGURE NO: 9



E 189th ST

Site Boundary
 At least 6" of 3/4" Concrete Stone or NYSDOT #703 Crushed Stone used as Sub-Base



THIRD AVE



Document Path: W:\Projects\M-R\OMN\2102\ProjectFiles\FER_Figures\FER_Figures.aprx



P.W. Grosser Consulting Engineer & Hydrogeologist, PC

630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS
DRAWING AND RELATED DOCUMENTS IS A VIOLATION
OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

Project:	OMN2102	Designed by:	MG
Date:	10/18/2022	Drawn by:	FT
Scale:	AS SHOWN	Approved by:	MG

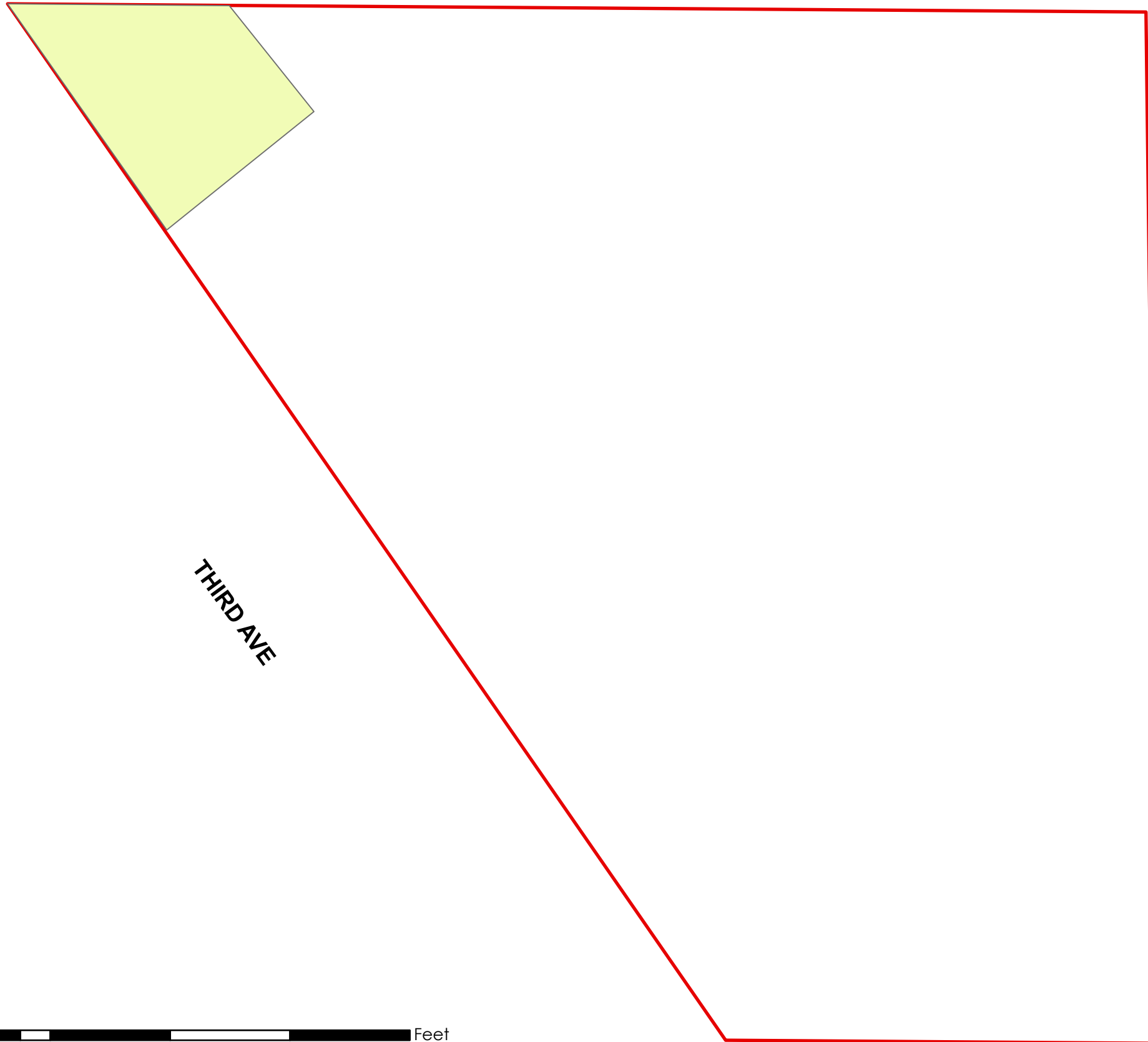
Backfill Placement

4720 THIRD AVE
BRONX, NY

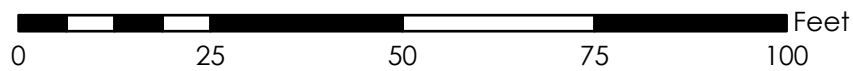
FIGURE NO: 10





E 189th ST



THIRD AVE



Document Path: W:\Projects\M-R\OMN\2102\ProjectFiles\FER_Figures\FER_Figures.aprx

	Site Boundary
	Track 2 Residential Area



P.W. Grosser Consulting Engineer & Hydrogeologist, PC

630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS
DRAWING AND RELATED DOCUMENTS IS A VIOLATION
OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS
----------	------	---------	----------

DRAWING INFORMATION:

Project:	OMN2102	Designed by:	MG
Date:	10/18/2022	Drawn by:	FT
Scale:	AS SHOWN	Approved by:	MG



Remaining Contamination

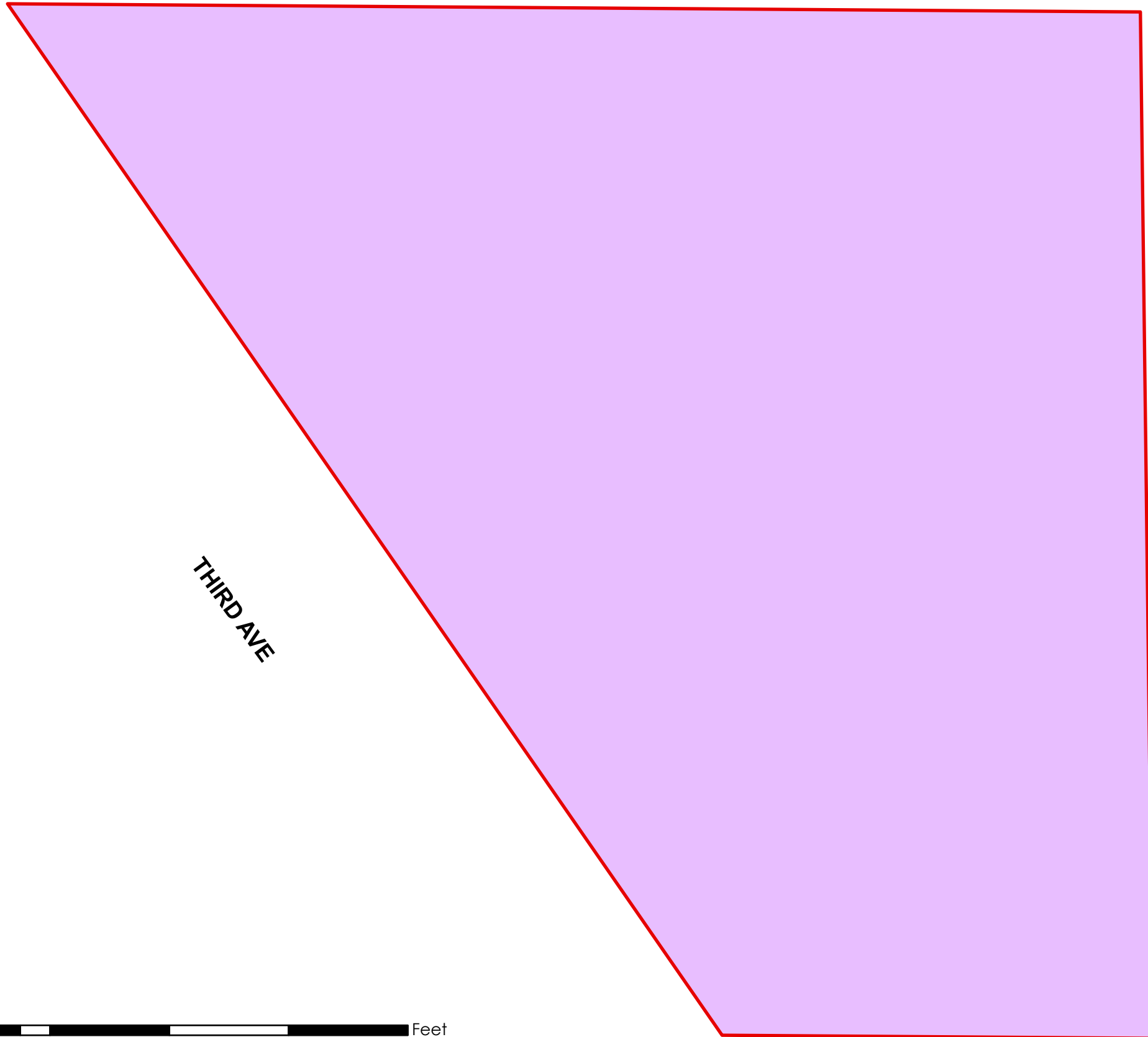
4720 THIRD AVE
BRONX, NY

FIGURE NO: 11



E 189th ST

	Site Boundary
	Approximately 18" Thick Concrete Slab with Approximately 6" Thick Stone Sub-Base



THIRD AVE



Document Path: W:\Projects\M-R\OMN\2102\ProjectFiles\FER_Figures\FER_Figures.aprx



P.W. Grosser Consulting Engineer & Hydrogeologist, PC

630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS
DRAWING AND RELATED DOCUMENTS IS A VIOLATION
OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS
----------	------	---------	----------

DRAWING INFORMATION:

Project:	OMN2102	Designed by:	MG
Date:	10/18/2022	Drawn by:	FT
Scale:	AS SHOWN	Approved by:	MG

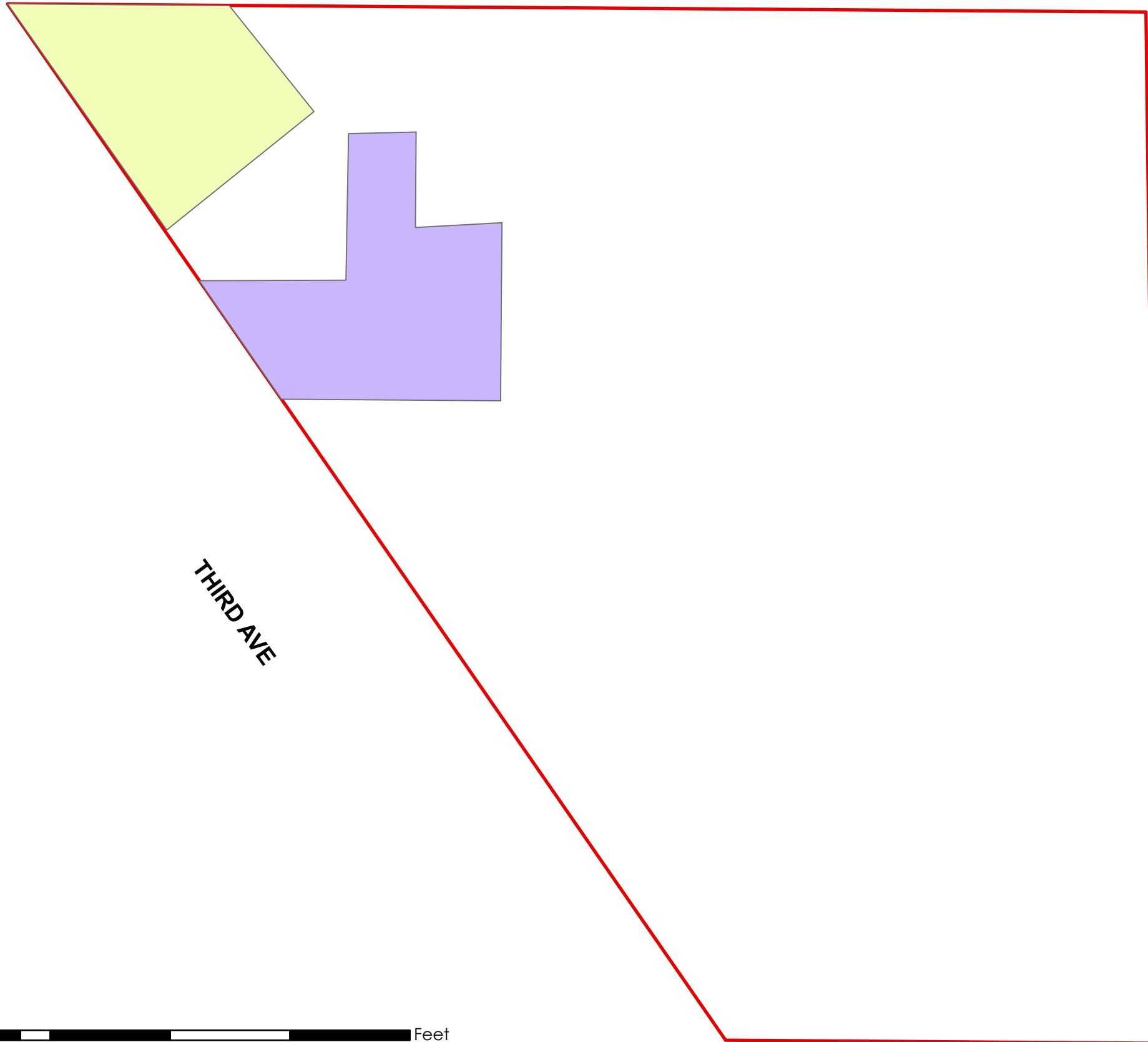
Sitewide Cover System

4720 THIRD AVE
BRONX, NY

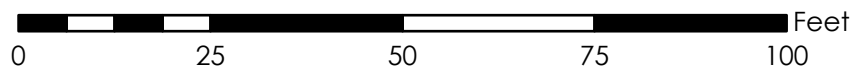
FIGURE NO:
12



E 189th ST



THIRD AVE



Document Path: W:\Projects\M-R\OMN\2102\ProjectFiles\FER_Figures\FER_Figures.aprx

	Site Boundary
	Soil Reuse Origin and Destination- Soil from 20-24' bgs (~ 240 cubic yards)
	Soil Reuse Origin- Soil from 20-23.5' bgs (~ 250 cubic yards)



P.W. Grosser Consulting Engineer & Hydrogeologist, PC

630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING AND RELATED DOCUMENTS IS A VIOLATION OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS
----------	------	---------	----------

DRAWING INFORMATION:

Project:	OMN2102	Designed by:	MG
Date:	10/18/2022	Drawn by:	FT
Scale:	AS SHOWN	Approved by:	MG

Soil Reuse

4720 THIRD AVE
BRONX, NY

FIGURE NO: 13



TABLES

Table 2
4720 Third Ave, Bronx, NY
Interim Endpoint Sample Analytical Results - Metals

Client Sample ID	NYSDC Soil Cleanup Objective	EP001	EP002	EP003	EP004	EP005	EP006	EP007	EP008	EP009	EP010	EP011	DU001	DU003
Sample Depth	Unrestricted Use (1)	8.10	8.6	8.10	8.4	8.6	8.10	8.4	8.6	8.10	8.4	8.6	8.10	8.4
Location ID	21X1383-02	21X1383-03	21X1383-04	21X1383-05	21X1383-06	21X1383-07	21X1383-08	21X1383-09	21X1383-10	21X1383-11	21X1383-12	21X1383-13	21X1383-14	21X1383-15
Sampling Date	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021
Total Metals by USEPA Method 6010 in mg/kg														
Aluminum Total	95	18,000	7,400	5,200	9,700	13,400	1,900	18,900	10,900	11,400	16,600	28,700	15,700	17,200
Antimony Total	95	0.20	0.08	0.25	0.17	0.26	0.20	0.26	0.20	0.26	0.26	0.26	0.27	0.27
Asbestos Total	13	1.87	0.11	0.17	0.81	2.31	1.85	1.83	0.73	2.29	0.57	1.26	1.83	1.85
Bismuth Total	100	242	221	221	221	221	221	221	221	221	221	221	221	221
Boron Total	7.2	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
Barium Total	10	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Calcium Total	95	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000
Chromium Total	95	10.1	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Cobalt Total	95	0.1	0.05	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Copper Total	95	0.65	11.4	4.8	11.3	23.7	0.71	0.65	1.00	19.8	200	14	0.74	29.3
Iron Total	95	46,200	113,000	6,900	13,000	4,900	10,000	19,400	44,000	19,700	2,400	17,900	40,000	40,000
Lead Total	95	14	14	2.88	0.84	2.88	0.38	1.8	1,000	12.4	12.4	7.85	4.97	7.60
Magnesium Total	95	14,400	117,000	70,000	174	17,400	10,400	19,400	6,600	13,400	13,400	14,400	14,400	14,400
Manganese Total	1,000	380	860	860	860	860	860	860	860	860	860	860	860	860
Mercury Total	13.8	0.144	0.0021	0.0012	0.001	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012
Nickel Total	95	22.4	4.00	1.04	0.7	6	1.08	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Phosphorus Total	95	41,000	490	2,100	227	47	4,100	10,500	2,000	490	1,000	1,000	1,000	1,000
Potassium Total	9.9	2.70	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171
Silver Total	9	0.08	0.11	1.47	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
Selenium Total	95	2.01	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Thallium Total	95	2.70	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Zinc Total	95	12.7	13.5	7.90	8.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4
Zinc Total	100	101	6.88	20.5	14.4	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
Chromium by USEPA method 6010 in mg/kg														
Chromium Hexavalent	1	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550
Chromium Trivalent	95	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Notes:
 (1) NYSDC & NYCRR Environmental Remediation Programs Part 275 Unrestricted Use of Soil Cleanup Objective Table 375-6.6-12/06
 (2) Brief descriptions were DU001 (E-4) and DU003 (E-4)
 (3) No Standard
 (4) Not Tested
 (5) - The analyte was analyzed for, but was not detected above the reported sample quantification limit.
 (6) - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 (7) - Analyte found in the analysis batch blank.
 (8) Highlighted text denotes concentrations exceeding NYSDC Unrestricted Use SOC.

Table 3
 4720 Third Ave. Bronx, NY
 Waste Disposal Tonnages and Facilities

Facility Name	Clean Earth of Carteret	Clean Earth of North Jersey	Clean Earth of North Jersey	Impact Reuse and Recovery Center	PPark NJ	Clean Earth of Bethlehem
Type of Waste	Non-Hazardous Soils	Non-Hazardous Soils	Hazardous Lead Soils	Non-Hazardous Soils	Non-Hazardous Soils	Non-Hazardous Soils
Total Volume (Tons)	4,993.16	53.48	54.60	598.87	25,434.05	11,805.60

Table 4

4720 Third Ave. Bronx, NY

Tank Confirmation Sample Analytical Results - VOCs and SVOCs

Client Sample ID:	CAS Number	CP-51 Soil Cleanup Levels ¹	NYSDEC Restricted Residential SCOs ²	TANK-001 1/20/2022 L2203207-01	TANK-002 2/12/2022 L2207812-03	TANK-003 2/12/2022 L2207812-04	TANK-004 2/12/2022 L2207812-05	TANK-005 2/12/2022 L2207812-06	TANK-006 2/12/2022 L2207812-07	TANK-007 2/12/2022 L2207812-08	
Volatile Organic Compounds by EPA 5035 (mg/kg)											
1,2,4-Trimethylbenzene	95-63-6	3.6	3.6	0.0029 U	0.0022 U	0.0025 U	0.00087 J	0.0022 U	0.0026 U	0.0026 U	
1,3,5-Trimethylbenzene	108-67-8	8.4	8.4	0.0029 U	0.00026 J	0.0025 U	0.00037 J	0.0022 U	0.0026 U	0.0026 U	
Benzene	71-43-2	0.06	0.06	0.00073 U	0.00055 U	0.00062 U	0.00083 U	0.00055 U	0.00064 U	0.00065 U	
Ethylbenzene	100-41-4	1	1	0.0015 U	0.0011 U	0.0012 U	0.0017 U	0.0011 U	0.0013 U	0.0013 U	
Isopropylbenzene	98-82-8	2.3	NS	0.0015 U	0.0011 U	0.0012 U	0.0017 U	0.0011 U	0.0013 U	0.0013 U	
Methyl tert butyl ether	1634-04-4	0.93	0.93	0.0029 U	0.0022 U	0.0025 U	0.0033 U	0.0022 U	0.0026 U	0.0026 U	
n-Butylbenzene	104-51-8	12	12	0.0015 U	0.0011 U	0.0012 U	0.0017 U	0.0011 U	0.0013 U	0.0013 U	
n-Propylbenzene	103-65-1	3.9	3.9	0.0015 U	0.0011 U	0.0012 U	0.0017 U	0.0011 U	0.0013 U	0.0013 U	
Naphthalene	91-20-3	12	12	0.0058 U	0.0044 U	0.0049 U	0.0067 U	0.0044 U	0.0051 U	0.0052 U	
o-Xylene	95-47-6	0.26	NS	0.0015 U	0.0011 U	0.0012 U	0.0017 U	0.0011 U	0.0013 U	0.0013 U	
p-Isopropyltoluene	99-87-6	10	NS	0.0015 U	0.0011 U	0.0012 U	0.00026 J	0.0011 U	0.0013 U	0.0013 U	
p/m-Xylene	179601-23-1	0.26	NS	0.0029 U	0.0022 U	0.0025 U	0.0033 U	0.0022 U	0.0026 U	0.0026 U	
sec-Butylbenzene	135-98-8	11	11	0.0015 U	0.0011 U	0.0012 U	0.0017 U	0.0011 U	0.0013 U	0.0013 U	
tert-Butylbenzene	98-06-6	5.9	5.9	0.0029 U	0.0022 U	0.0025 U	0.0033 U	0.0022 U	0.0026 U	0.0026 U	
Toluene	108-88-3	0.7	0.7	0.0015 U	0.0011 U	0.0012 U	0.0017 U	0.0011 U	0.0013 U	0.0013 U	
Semi-Volatile Organic Compounds by GC/MS (mg/kg)											
Acenaphthene	83-32-9	20	20	0.14 J	0.038 J	0.13 U	0.15 U	0.15 U	0.14 U	0.16 U	
Acenaphthylene	208-96-8	100	100	0.083 J	0.052 J	0.026 J	0.041 J	0.062 J	0.14 U	0.12 J	
Anthracene	120-12-7	100	100	0.42	0.13	0.1 U	0.037 J	0.068 J	0.1 U	0.082 J	
Benzo(a)anthracene	56-55-3	1	1	1.6	0.5	0.11	0.22	0.32	0.043 J	0.66	
Benzo(a)pyrene	50-32-8	1	1	1.5	0.54	0.14	0.26	0.4	0.05 J	0.76	
Benzo(b)fluoranthene	205-99-2	1	1	1.6	0.57	0.19	0.34	0.51	0.071 J	1	
Benzo(ghi)perylene	191-24-2	100	100	0.84	0.3	0.098 J	0.19	0.29	0.032 J	0.45	
Benzo(k)fluoranthene	207-08-9	0.8	0.8	0.42	0.2	0.055 J	0.11	0.18	0.1 U	0.31	
Chrysene	218-01-9	1	1	1.7	0.54	0.12	0.24	0.34	0.041 J	0.63	
Dibenzo(a,h)anthracene	53-70-3	0.33	0.33	0.2	0.076 J	0.024 J	0.11 U	0.063 J	0.1 U	0.12	
Fluoranthene	206-44-0	100	100	3	0.71	0.17	0.36	0.55	0.057 J	0.99	
Fluorene	86-73-7	30	30	0.13 J	0.043 J	0.17 U	0.19 U	0.18 U	0.17 U	0.2 U	
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	0.5	0.84	0.32	0.11 J	0.21	0.31	0.041 J	0.56	
Naphthalene	91-20-3	12	12	0.13 J	0.03 J	0.17 U	0.19 U	0.028 J	0.17 U	0.029 J	
Phenanthrene	85-01-8	100	100	2.6	0.54	0.046 J	0.15	0.21	0.1 U	0.25	
Pyrene	129-00-0	100	100	3.8	0.95	0.15	0.33	0.51	0.052 J	0.89	

Notes:

1 - New York DEC CP-51 Soil Cleanup Levels Criteria per NY CP-51 Soil Cleanup Levels dated October 21, 2010.

2 - New York DER-10 Restricted Residential Use Allowable Constituent Levels for Imported Fill & Soil Criteria per DER-10 Technical Guidance for Site Investigation & Remediation issued May 3, 2010.

NS - No Standard

U - Not detected at the reported detection limit for the sample.

J - Estimated value

Highlighted text denotes concentrations exceeding the NYSDEC Restricted-Residential Use SCO and the NYSDEC CP-51 SCO

Table 5
4720 Third Ave. Bronx, NY
Soil Cleanup Objectives (SCOs) for the Project

Contaminant	CAS Number	Unrestricted Use	Restricted Residential Use
Volatile organic compounds			
1,1,1-Trichloroethane f	71-55-6	0.68	100
1,1-Dichloroethane f	75-34-3	0.27	26
1,1-Dichloroethene f	75-35-4	0.33	100
1,2-Dichlorobenzene f	95-50-1	1.1	100
1,2-Dichloroethane	107-06-2	0.02 c	3.1
cis -1,2-Dichloroethene f	156-59-2	0.25	100
trans-1,2-Dichloroethene f	156-60-5	0.19	100
1,3-Dichlorobenzene f	541-73-1	2.4	49
1,4-Dichlorobenzene	106-46-7	1.8	13
1,4-Dioxane	123-91-1	0.1 b	13
Acetone	67-64-1	0.05	100
Benzene	71-43-2	0.06	4.8
n-Butylbenzene f	104-51-8	12	100
Carbon tetrachloride f	56-23-5	0.76	2.4
Chlorobenzene	108-90-7	1.1	100
Chloroform	67-66-3	0.37	49
Ethylbenzene f	100-41-4	1	41
Hexachlorobenzene f	118-74-1	0.33b	1.2
Methyl ethyl ketone	78-93-3	0.12	100
Methyl tert-butyl ether f	1634-04-4	0.93	100
Methylene chloride	75-09-2	0.05	100
n - Propylbenzene f	103-65-1	3.9	100
sec-Butylbenzene f	135-98-8	11	100
tert-Butylbenzene f	98-06-6	5.9	100
Tetrachloroethene	127-18-4	1.3	19
Toluene	108-88-3	0.7	100
Trichloroethene	79-01-6	0.47	21
1,2,4-Trimethylbenzene f	95-63-6	3.6	52
1,3,5-Trimethylbenzenef	108-67-8	8.4	52
Vinyl chloridef	75-01-4	0.02	0.9
Xylene (mixed)	1330-20-7	0.26	100
Semivolatle organic compounds			
Acenaphthene	83-32-9	20	100
Acenaphthylene f	208-96-8	100 a	100
Anthracene f	120-12-7	100 a	100
Benzo(a)anthracene f	56-55-3	1c	1
Benzo(a)pyrene	50-32-8	1c	1
Benzo(b)fluoranthene f	205-99-2	1c	1
Benzo(g,h,i)perylene f	191-24-2	100	100
Benzo(k)fluoranthene f	207-08-9	0.8 c	3.9
Chrysene f	218-01-9	1c	3.9
Dibenz(a,h)anthracene f	53-70-3	0.33 b	0.33
Fluoranthene f	206-44-0	100 a	100
Fluorene	86-73-7	30	100
Indeno(1,2,3-cd)pyrene f	193-39-5	0.5 c	0.5
m-Cresol f	108-39-4	0.33 b	100 g
Naphthalene f	91-20-3	12	100
o-Cresol f	95-48-7	0.33 b	100
p-Cresol f	106-44-5	0.33 b	NS
Pentachlorophenol	87-86-5	0.8 b	6.7
Phenanthrene f	85-01-8	100	100
Phenol	108-95-2	0.33 b	100
Pyrene f	129-00-0	100	100

Contaminant	CAS Number	Unrestricted Use	Restricted Residential Use
Metals			
Arsenic	7440-38-2	13 c	16
Barium	7440-39-3	350 c	400
Beryllium	7440-41-7	7.2	72
Cadmium	7440-43-9	2.5 c	4.3
Chromium, hexavalent e	18540-29-9	1b	110
Chromium, trivalent e	16065-83-1	30 c	180
Copper	7440-50-8	50	270
Total Cyanide e, f	57-12-5	27	27
Lead	7439-92-1	63 c	400
Manganese	7439-96-5	1,600 c	2,000
Total Mercury	7439-97-6	0.18 c	0.81
Nickel	7440-02-0	30	310
Selenium	7782-49-2	3.9c	180
Silver	7440-22-4	2	180
Zinc	7440-66-6	109 c	10,000
PCBs/Pesticides			
2,4,5-TP Acid (Silvex) f	93-72-1	3.8	100
4,4'-DDE	72-55-9	0.0033 b	8.9
4,4'-DDT	50-29-3	0.0033 b	7.9
4,4'-DDD	72-54-8	0.0033 b	13
Aldrin	309-00-2	0.005 c	0.097
alpha-BHC	319-84-6	0.02	0.48
beta-BHC	319-85-7	0.036	0.36
Chlordane (alpha)	5103-71-9	0.094	4.2
delta-BHC g	319-86-8	0.04	100
Dibenzofuran f	132-64-9	7	59
Dieldrin	60-57-1	0.005 c	0.2
Endosulfan I d, f	959-98-8	2.4	24
Endosulfan II d, f	33213-65-9	2.4	24
Endosulfan sulfate d, f	1031-07-8	2.4	24
Endrin	72-20-8	0.014	11
Heptachlor	76-44-8	0.042	2.1
Lindane	58-89-9	0.1	1.3
Polychlorinated biphenyls	1336-36-3	0.1	1
PFOS/PFOA			
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	0.88	8.8
Perfluorooctanoic Acid (PFOA)	335-67-1	0.66	6.6

Notes:

All concentrations are mg/kg (ppm)

a - The SCOs for unrestricted use were capped at a maximum value of 100 ppm. See Technical Support Document (TSD), section 9.3.

b - For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value

c - For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background

d - SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

e - The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO

f - Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with "NS". Where such contaminants appear in Table 375-6.8(a), the applicant may be required

g - The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

Table 8
4720 Third Ave., Bronx, NY
Remedial Endpoint Sample Analytical Results - Metals

Sample ID: Sample Depth: Sampling Date: Lab Sample ID:	CAS Number	NYSDEC Soil Cleanup Objectives Restricted-Residential Use ⁽¹⁾	NYSDEC Soil Cleanup Objectives Unrestricted Use ⁽¹⁾	EP001 5' 2/28/2022 L2210476-01	EP004 5' 3/9/2022 L2212313-04	EP005 5' 2/15/2022 L2207988-05	EP006 5' 3/9/2022 L2212313-05	EP007 5' 3/9/2022 L2212313-06	EP009 10' 3/14/2022 22C1087-03	EP013 10' 3/16/2022 22C1087-04	EP031 20' 8/2/2022 22H0130-03	EP032 20' 8/3/2022 22H0229-04	EP033 20' 8/3/2022 22H0229-05	EP034 20' 8/4/2022 22H0312-05	EP035 22' 8/5/2022 22H0405-04	DUP#006 20' 8/4/2022 22H0312-11	
Metals by USEPA Method 6010C in mg/kg																	
Aluminum, Total	7429-90-5	NS	NS	9,900	6,320	12,300	2,750	5,220	11,200	9,720	5,280	7,140	5	U	5,690	13,800	4,640
Antimony, Total	7440-36-0	NS	NS	4.16	4.58	4.46	4.12	4.2	3.89	2.76	2.73	2.62	2.66	U	2.7	6.03	2.69
Arsenic, Total	7440-38-2	16	13	0.491	0.476	3.14	0.181	0.841	1.7	1.86	5.6	3.76	1.6	U	4.57	1.84	4.22
Barium, Total	7440-39-3	400	350	51.5	34.9	60.6	22.1	20.7	69.4	52.5	20.1	46.9	2.66	U	45.8	49.2	20.6
Beryllium, Total	7440-41-7	72	7.2	0.158	0.256	0.419	0.206	0.387	0.057	0.055	0.055	0.052	0.163	U	0.073	B	0.061
Cadmium, Total	7440-43-9	4.3	2.5	0.158	0.182	0.16	0.14	0.193	0.341	0.331	0.337	0.620	0.319	U	0.45	0.368	0.323
Calcium, Total	7440-70-2	NS	NS	1,460	2,920	173,000	166,000	3,710	43,400	227,000	177,000	10	B	184,000	B	1,030	B
Chromium, Total	7440-47-3	NS	NS	27.3	15.7	29.4	6.57	6.1	29.8	22.9	8.07	14	0.532	U	10.8	19.1	9.08
Cobalt, Total	7440-48-4	NS	NS	9.58	7.24	9.82	2.35	2.63	10.3	8.57	3.5	7.53	0.426	U	5.98	10.1	5.51
Copper, Total	7439-89-6	270	50	22.4	11.9	15.1	4.18	4.29	25.5	24	7.54	10.9	2.13	U	8.32	22.1	5.83
Iron, Total	7439-89-6	NS	NS	14,000	10,900	19,500	5,850	8,210	19,700	16,800	8,420	10,700	27	U	8,620	24,200	7,760
Lead, Total	7439-92-1	400	63	5.93	4.35	36.3	3.09	4.01	9.21	6.99	3.84	13.9	0.532	U	19	11.6	5.68
Magnesium, Total	7439-95-4	NS	NS	3,930	2,960	5,420	106,000	107,000	6,710	26,700	123,000	102,000	5	U	119,000	4,200	120,000
Manganese, Total	7439-96-5	2,000	1,600	326	210	389	304	311	369	409	472	0.532	U	356	286	343	
Mercury, Total	7439-97-6	0.81	0.18	0.075	0.073	0.144	0.067	0.069	0.0341	0.0311	0.0327	0.0315	0.0314	U	0.0318	U	0.0335
Nickel, Total	7440-03-0	310	30	17.5	10.2	18.5	5.8	5.68	25.2	19.2	8.32	10.6	1.14	B	16.6	B	14.1
Potassium, Total	7440-09-7	NS	NS	1,660	1,870	1,590	805	601	2,830	2,460	656	724	5	U	936	1,210	892
Selenium, Total	7782-49-2	180	3.9	1.66	1.83	0.437	0.313	1.68	2.84	2.76	21.2	17.2	2.66	U	13	3.06	14.2
Silver, Total	7440-22-4	180	2	0.832	0.916	0.892	0.824	0.841	0.568	0.552	2.27	2.09	0.532	U	0.539	U	0.538
Sodium, Total	7440-23-5	NS	NS	204	66.1	435	395	72.6	178	159	54.5	52.5	53.2	U	64.8	61.3	53.8
Thallium, Total	7440-28-0	NS	NS	1.66	1.83	1.78	1.65	1.68	2.84	2.76	2.73	2.62	2.66	U	2.7	3.06	2.69
Vanadium, Total	7440-62-2	NS	NS	27.7	19.4	33.1	8.08	9.51	35.5	30.1	10.1	16.3	1.06	U	12.6	32.1	10.5
Zinc, Total	7440-66-6	10,000	109	37.1	28.4	56.7	11	17.5	43.5	40.6	44.9	99.5	2.66	U	93.2	69	68.7
General Chemistry in mg/kg																	
Chromium, Hexavalent	18540-29-9	110	1	0.418	0.933	0.28	0.848	0.861	0.568	0.552	0.545	0.525	0.523	U	0.53	U	0.529
Chromium, Trivalent	16065-83-1	180	30	27	16	29	6.6	6.1	29.8	22.9	0.5	14	0.5	U	10.8	19.1	9.08
Cyanide, Total	57-12-5	27	27	1.1	1.1	1.1	0.28	1.1	0.568	0.552	0.545	0.525	0.523	U	0.53	U	0.529

Notes:
⁽¹⁾ NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Restricted Use of Soil Cleanup Objective Table 375-6.8b 12/C
⁽²⁾ NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestricted Use of Soil Cleanup Objective Table 375-6.8a 12/C
 NA- Not Analyzed
 NS- No Standard
 J- Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
 U- Indicates the analyte was analyzed for but not detected
 B- Analyte found in the analysis batch blank
 DUP#006- Duplicate of EP034 at 20'
 Highlighted text denotes concentrations exceeding the NYSDEC Unrestricted Use SCC
 Highlighted text denotes concentrations exceeding the NYSDEC Restricted-Residential Use SCC

Table 9
4720 Third Ave., Bronx, NY
Remedial Endpoint Sample Analytical Results - Pesticides, Herbicides, PCBs

Sample ID:	CAS Number	NYSDEC Soil Cleanup Objectives Restricted-Residential Use ⁽¹⁾	NYSDEC Soil Cleanup Objectives Unrestricted Use ⁽²⁾	EP001 5' 2/28/2022 L2210476-01	EP004 5' 3/9/2022 L2212313-04	EP005 4' 2/15/2022 L2207938-05	EP006 5' 3/9/2022 L2212313-05	EP007 5' 3/9/2022 L2212313-06	EP009 10' 3/18/2022 22C1087-03	EP013 10' 3/19/2022 22C1087-04	EP031 20' 8/2/2022 22H0130-03	EP032 20' 8/3/2022 22H0229-04	EP033 20' 8/3/2022 22H0229-05	EP034 20' 8/4/2022 22H0312-05	EP035 22' 8/5/2022 22H0405-04	DUP/EP006 20' 8/4/2022 22H0312-11	
Organochlorine Pesticides by USEPA Method 8081 in mg/kg																	
4,4'-DDD	72-54-8	13	0.0033	0.00169 U	0.00181 U	0.00177 U	0.00166 U	0.00168 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
4,4'-DDE	72-55-9	8.9	0.0033	0.00169 U	0.00181 U	0.00177 U	0.00166 U	0.00168 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
4,4'-DDE	50-29-2	7.9	0.0033	0.00166 U	0.00181 U	0.00177 U	0.00166 U	0.00168 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Aldrin	309-00-2	0.097	0.005	0.00169 U	0.00181 U	0.00177 U	0.00166 U	0.00168 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Alpha-BHC	319-84-6	0.48	0.02	0.000703 U	0.000754 U	0.000739 U	0.000669 U	0.000702 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Beta-BHC	319-85-7	0.36	0.036	0.00169 U	0.00181 U	0.00177 U	0.00166 U	0.00168 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Chlordane	57-74-9	NS	NS	0.014 U	0.0151 U	0.0148 U	0.0138 U	0.014 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane, total	12789-03-6	NS	NS	NA	NA	NA	NA	NA	0.0369 U	0.036 U	0.0359 U	0.0345 U	0.0344 U	0.0344 U	0.0391 U	0.0343 U	
Cis/alpha-Chlordane	5103-71-9	4.2	0.094	0.00211 U	0.00226 U	0.00222 U	0.00207 U	0.00211 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Delta-BHC	319-86-8	100	0	0.00169 U	0.00181 U	0.00177 U	0.00166 U	0.00168 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Dieldrin	60-57-1	0.2	0.005	0.00105 U	0.00113 U	0.00111 U	0.00104 U	0.00105 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Endosulfan I	959-98-8	24	2.4	0.00169 U	0.00181 U	0.00177 U	0.00166 U	0.00168 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Endosulfan II	33213-65-9	24	2.4	0.00169 U	0.00181 U	0.00177 U	0.00166 U	0.00168 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Endosulfan sulfate	1031-07-8	24	2.4	0.000703 U	0.000754 U	0.000739 U	0.000669 U	0.000702 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Endrin	72-20-8	11	0.014	0.000703 U	0.000754 U	0.000739 U	0.000669 U	0.000702 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Endrin aldehyde	7421-93-4	NS	NS	0.00211 U	0.00226 U	0.00222 U	0.00207 U	0.00211 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Endrin ketone	53494-70-5	NS	NS	0.00169 U	0.00181 U	0.00177 U	0.00166 U	0.00168 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
gamma-Chlordane	5566-34-7	NS	NS	NA	NA	NA	NA	NA	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Heptachlor	76-44-8	2.1	0.042	0.000844 U	0.000905 U	0.000887 U	0.000808 U	0.000843 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Heptachlor epoxide	1024-57-3	NS	NS	0.00216 U	0.00239 U	0.00233 U	0.00211 U	0.00216 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Lindane (gamma-BHC)	58-89-9	1.3	0.1	0.000703 U	0.000754 U	0.000739 U	0.000669 U	0.000702 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Methoxychlor	72-43-5	NS	NS	0.00339 U	0.00339 U	0.00333 U	0.00311 U	0.00316 U	0.00184 U	0.0018 U	0.0018 U	0.00179 U	0.00173 U	0.0017 U	0.00172 U	0.00196 U	0.00172 U
Toxaphene	8001-35-2	NS	NS	0.0316 U	0.0339 U	0.0333 U	0.0311 U	0.0316 U	0.184 U	0.18 U	0.179 U	0.173 U	0.173 U	0.173 U	0.172 U	0.196 U	0.172 U
trans-Chlordane	5103-74-2	NS	NS	0.00211 U	0.00226 U	0.00222 U	0.00207 U	0.00211 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls (PCBs) by USEPA Method 8082A in mg/kg																	
Aroclor 1016	12674-11-2	1	0.1	0.036 U	0.0377 U	0.038 U	0.0351 U	0.0357 U	0.0186 U	0.0182 U	0.0181 U	0.0174 U	0.0172 U	0.0174 U	0.0198 U	0.0173 U	0.0173 U
Aroclor 1221	11104-28-2	1	0.1	0.036 U	0.0377 U	0.038 U	0.0351 U	0.0357 U	0.0186 U	0.0182 U	0.0181 U	0.0174 U	0.0172 U	0.0174 U	0.0198 U	0.0173 U	0.0173 U
Aroclor 1232	11141-16-5	1	0.1	0.036 U	0.0377 U	0.038 U	0.0351 U	0.0357 U	0.0186 U	0.0182 U	0.0181 U	0.0174 U	0.0172 U	0.0174 U	0.0198 U	0.0173 U	0.0173 U
Aroclor 1242	53469-21-9	1	0.1	0.036 U	0.0377 U	0.038 U	0.0351 U	0.0357 U	0.0186 U	0.0182 U	0.0181 U	0.0174 U	0.0172 U	0.0174 U	0.0198 U	0.0173 U	0.0173 U
Aroclor 1248	12672-29-6	1	0.1	0.036 U	0.0377 U	0.038 U	0.0351 U	0.0357 U	0.0186 U	0.0182 U	0.0181 U	0.0174 U	0.0172 U	0.0174 U	0.0198 U	0.0173 U	0.0173 U
Aroclor 1254	11097-69-1	1	0.1	0.036 U	0.0377 U	0.038 U	0.0351 U	0.0357 U	0.0186 U	0.0182 U	0.0181 U	0.0174 U	0.0172 U	0.0174 U	0.0198 U	0.0173 U	0.0173 U
Aroclor 1260	11096-82-5	1	0.1	0.036 U	0.0377 U	0.038 U	0.0351 U	0.0357 U	0.0186 U	0.0182 U	0.0181 U	0.0174 U	0.0172 U	0.0174 U	0.0198 U	0.0173 U	0.0173 U
Aroclor 1262	37324-23-5	1	0.1	0.036 U	0.0377 U	0.038 U	0.0351 U	0.0357 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	11100-14-4	1	0.1	0.036 U	0.0377 U	0.038 U	0.0351 U	0.0357 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1280	11100-14-4	1	0.1	0.036 U	0.0377 U	0.038 U	0.0351 U	0.0357 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs, Total	1336-36-3	1	0.1	0.036 U	0.0377 U	0.038 U	0.0351 U	0.0357 U	0.0186 U	0.0182 U	0.0181 U	0.0174 U	0.0172 U	0.0174 U	0.0198 U	0.0173 U	0.0173 U
Chlorinated Herbicides by USEPA Method 8161 in mg/kg																	
2,4,5-T	93-76-5	NS	NS	NA	NA	NA	NA	NA	0.0223 U	0.0219 U	0.0216 U	0.0207 U	0.0206 U	0.0211 U	0.0238 U	0.0207 U	0.0207 U
2,4-D	94-75-7	NS	NS	NA	NA	NA	NA	NA	0.0223 U	0.0219 U	0.0216 U	0.0207 U	0.0206 U	0.0211 U	0.0238 U	0.0207 U	0.0207 U
2,4,5-TP (Silvex)	93-72-1	100	3.8	0.182 U	0.19 U	0.192 U	0.171 U	0.176 U	0.0223 U	0.0219 U	0.0216 U	0.0207 U	0.0206 U	0.0211 U	0.0238 U	0.0207 U	0.0207 U

Notes:

⁽¹⁾ NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Restricted Use of Soil Cleanup Objective Table 375-6.8a 12/06

⁽²⁾ NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestricted Use of Soil Cleanup Objective Table 375-6.8a 12/06

U - Indicates the analyte was analyzed for but not detected

D - Result is from an analysis that required a dilution

DUP/EP006 - Duplicate of EP034 at 20'

Highlighted text denotes concentrations exceeding the NYSDEC Unrestricted Use SCO

Highlighted text denotes concentrations exceeding the NYSDEC Restricted-Residential Use SCO

Table 10
4720 Third Ave., Bronx, NY
Remedial Endpoint Sample Analytical Results - PFAS

Sample ID: Sample Depth: Sampling Date: Lab Sample ID:	CAS Number	NYSDC Soil Cleanup Objective Restricted- Residential Use ¹⁾	NYSDC Soil Cleanup Objective Unrestricted Use ²⁾	EP001 5' 2/8/2022 L2110476-01	EP004 5' 3/9/2022 L2212313-04	EP005 4' 2/15/2022 L2209938-05	EP006 5' 3/9/2022 L2121313-05	EP007 5' 3/9/2022 L2212313-06	EP009 10' 3/18/2022 22C1087-03	EP011 10' 3/18/2022 22C1087-04	EP031 20' 8/2/2022 22H0110-03	EP032 20' 8/3/2022 22H0229-04	EP033 20' 8/3/2022 22H0229-05	EP034 20' 8/4/2022 22H0312-05	EP035 22' 8/5/2022 22H0405-04	DUPE006 20' 8/4/2022 22H0312-11	
Perfluorinated Alkyl Acids by Isotopic Dilution by USEPA Method 8081 (U)																	
1,1,1,2,2,2-Hexafluoroethanesulfonic Acid (B-2175)	3958-34-4	NS	NS	0.499	U	0.534	U	0.558	U	0.496	U	0.502	U	0.277	U	0.265	U
1,1,1,2,2,2-Hexafluoroethanesulfonic Acid (B-2175)	27619-97-2	NS	NS	0.499	U	0.534	U	0.558	U	0.496	U	0.502	U	0.277	U	0.265	U
N-Ethyl Perfluorooctanesulfonamidecarboxylic Acid (NFPOCSA)	2991-50-6	NS	NS	0.499	U	0.534	U	0.558	U	0.496	U	0.502	U	0.277	U	0.265	U
N-Methyl Perfluorooctanesulfonamidecarboxylic Acid (MNFOSCA)	2355-51-9	NS	NS	0.499	U	0.534	U	0.558	U	0.496	U	0.502	U	0.277	U	0.265	U
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NS	NS	0.249	U	0.267	U	0.279	U	0.248	U	0.251	U	0.277	U	0.265	U
Perfluorobutanoic Acid (PFBA)	375-22-4	NS	NS	0.499	U	0.534	U	0.548	J	0.496	U	0.502	U	0.277	U	0.265	U
Perfluorodecane sulfonic Acid (PFDS)	335-77-3	NS	NS	0.499	U	0.534	U	0.558	U	0.496	U	0.502	U	0.277	U	0.265	U
Perfluorodecanoic Acid (PFDA)	335-76-2	NS	NS	0.249	U	0.267	U	0.279	U	0.248	U	0.251	U	0.277	U	0.265	U
Perfluorododecanoic Acid (PFDoA)	307-55-1	NS	NS	0.499	U	0.534	U	0.558	U	0.496	U	0.502	U	0.277	U	0.265	U
Perfluorohexanesulfonic Acid (PFHxS)	375-92-8	NS	NS	0.499	U	0.534	U	0.558	U	0.496	U	0.502	U	0.277	U	0.265	U
Perfluorooctanoic Acid (PFPA)	375-85-9	NS	NS	0.249	U	0.267	J	0.279	J	0.248	U	0.251	U	0.277	U	0.265	U
Perfluorooctanesulfonic Acid (PFOS)	351-46-4	NS	NS	0.249	U	0.267	J	0.279	J	0.248	U	0.251	U	0.277	U	0.265	U
Perfluorooctanesulfonic Acid (PFOS)	307-24-4	NS	NS	0.499	U	0.534	U	0.558	J	0.496	U	0.502	U	0.277	U	0.265	U
Perfluorooctanoic Acid (PFPA)	375-95-3	NS	NS	0.249	U	0.267	U	0.279	U	0.248	U	0.251	U	0.277	U	0.265	U
Perfluorooctanesulfonamide (FOSA)	754-91-6	NS	NS	0.499	U	0.534	U	0.558	U	0.496	U	0.502	U	0.277	U	0.265	U
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	8.8	0.88	0.249	U	0.267	U	0.279	U	0.248	U	0.251	J	0.277	J	0.265	J
Perfluorooctanoic Acid (PFDA)	335-67-1	6.6	0.66	0.249	U	0.267	J	0.279	J	0.248	U	0.251	J	0.277	J	0.265	J
Perfluoropentanoic Acid (PFPA)	2706-90-3	NS	NS	0.499	U	0.534	U	0.558	J	0.496	U	0.502	U	0.277	U	0.265	U
Perfluorotetra-decanoic Acid (PFTA)	375-66-7	NS	NS	0.499	U	0.534	U	0.558	U	0.496	U	0.502	U	0.277	U	0.265	U
Perfluorotridecanoic Acid (PFTA)	2765-94-8	NS	NS	0.499	U	0.534	U	0.558	U	0.496	U	0.502	U	0.277	U	0.265	U
Perfluorododecanoic Acid (PFDA)	2058-94-8	NS	NS	0.499	U	0.534	U	0.558	U	0.496	U	0.502	U	0.277	U	0.265	U
PFDA/PFDS, Total	-	NS	NS	0.249	U	0.267	J	0.279	J	0.248	U	0.251	J	0.277	J	0.265	J

Notes:
¹⁾ NYSDC Sampling, Analysis, and Assessment of PFAS Under NYSDC's Part 375 Remedial Programs, June 2021
²⁾ NYSDC Sampling, Analysis, and Assessment of PFAS Under NYSDC's Part 375 Remedial Programs, June 2021
 * Perfluorinated Alkyl Acids by NYSDC Target List
 NS: Not Analyzed
 NS: No Standard
 J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
 U: indicates the analyte was analyzed for but not detected.
 DUPE006: Duplicate of EP034 at 20'
 Highlighted text denotes concentrations exceeding the NYSDC Unrestricted Use SCO
 Highlighted text denotes concentrations exceeding the NYSDC Restricted Residential Use SCO

Table 11
 4720 Third Ave. Bronx, NY
 Material Import Quantities and Sources

Facility Name/Location	Thaille Industries - Elmsford Facility Elmsford, New York	Thaille Industries - Fishkill Quarry Fishkill, New York
Type of Fill Material	3/4" Concrete Stone	NYSDOT #2
Trucks and Volume	Tons	Tons
Total	2,975.97	121.08