

**126 BRUCKNER BOULEVARD  
BRONX, NEW YORK**

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**REMEDIAL INVESTIGATION REPORT**

**OER Project Numbers: 23TMP0364X, 23EH-N058X  
CEQR Number 05DCP005X  
E-Designation Number: E-143  
Port Morris Special Mixed-Use District**

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**OCTOBER 2022**

## REMEDIAL INVESTIGATION REPORT

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## LIST OF ACRONYMS

| Acronym  | Definition                                                             |
|----------|------------------------------------------------------------------------|
| AGV      | Air Guidance Value                                                     |
| AOC      | Area of Concern                                                        |
| ASTM     | American Society for Testing and Materials                             |
| AWQSGV   | Ambient Water Quality Standards and Guidance Values                    |
| BTEX     | A group of VOCs comprising benzene, toluene, ethylbenzene, and xylenes |
| CEQR     | City Environmental Quality Review                                      |
| CVOC     | Chlorinated Volatile Organic Compound                                  |
| DER      | Division of Environmental Remediation                                  |
| DPP      | Direct-push Probe                                                      |
| ELAP     | New York State Environmental Laboratory Approval Program               |
| EPA      | United States Environmental Protection Agency                          |
| ESA      | Environmental Site Assessment                                          |
| GPR      | Ground Penetrating Radar                                               |
| HASP     | Health and Safety Plan                                                 |
| HAZWOPER | Hazardous Waste Operations and Emergency Response                      |
| IRM      | Interim Remedial Measure                                               |
| MW       | Monitoring Well                                                        |
| NY       | New York                                                               |
| 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                                    |
| OER      | New York City Office of Environmental Remediation                      |
| OSHA     | United States Occupational Safety and Health Administration            |
| PAH      | Polycyclic Aromatic Hydrocarbon                                        |
| PCB      | Polychlorinated Biphenyl                                               |
| PCE      | Tetrachloroethylene                                                    |
| PFAS     | Per- and Polyfluoroalkyl Substances                                    |
| PFOA     | Perfluorooctanoic Acid                                                 |
| PFOS     | Perfluorooctanesulfonic Acid                                           |
| PID      | Photoionization detector                                               |
| PVC      | Polyvinyl Chloride                                                     |
| QA       | Quality Assurance                                                      |
| QC       | Quality Control                                                        |
| QEP      | Qualified Environmental Professional                                   |
| RCNY     | Rules of the City of New York                                          |
| RI       | Remedial Investigation                                                 |
| RIR      | Remedial Investigation Report                                          |
| ROD      | Record of Decision                                                     |
| RRGV     | Restricted Residential Use Guidance Value                              |

| <b>Acronym</b> | <b>Definition</b>                             |
|----------------|-----------------------------------------------|
| RRSCO          | Restricted Residential Soil Cleanup Objective |
| SB             | Soil Boring                                   |
| SCO            | Soil Cleanup Objective                        |
| SIM            | Selective Ion Monitoring                      |
| SV             | Soil Vapor                                    |
| SVE            | Soil Vapor Extraction                         |
| SVOC           | Semivolatile Organic Compound                 |
| TAL            | Target Analyte List                           |
| TCE            | Trichloroethylene                             |
| UST            | Underground Storage Tank                      |
| UUGV           | Unrestricted Use Guidance Value               |
| UUSCO          | Unrestricted Use Soil Cleanup Objective       |
| VOC            | Volatile Organic Compound                     |

## **CERTIFICATION**

I, Stephen Malinowski, am a Qualified Environmental Professional, as defined in RCNY § 43-1402(ar). I have primary direct responsibility for implementation of the Remedial Investigation for the 126 Bruckner Boulevard site (OER Site Numbers 23TMP0364X, 23EH-N025X). I am responsible for the content of this Remedial Investigation Report (RIR), have reviewed its contents and certify that this RIR is accurate to the best of my knowledge and contains all available environmental information and data regarding the property.

Stephen Malinowski, QEP

10-18-2022

Qualified Environmental Professional

Date

Signature

## EXECUTIVE SUMMARY

The Remedial Investigation Report (RIR) provides sufficient information for establishment of remedial action objectives, evaluation of remedial action alternatives, and selection of a remedy pursuant to RCNY§ 43-1407(f). The remedial investigation (RI) described in this document is consistent with applicable guidance.

### Site Location and Current Usage

The Site is located at 122-126 Bruckner Boulevard, 517-519 East 132<sup>nd</sup> Street and 521-529 East 132<sup>nd</sup> in the Mott Haven section of The Bronx, New York and is identified as Block 2260, Lots 1, 4, 34 and 38 on the New York City Tax Map. The Site is 42,470 sf (0.975 acres) and is bounded by Bruckner Boulevard to the north, East 132<sup>nd</sup> Street to the south, Brook Avenue to the west and St. Ann's Avenue to the east. Lot 1 is currently used as a staging area for local grocery delivery service for the surrounding neighborhood, and is improved with a warehouse, security shack and asphalt-paved parking areas. The Lot is enclosed with a sheet metal fence with gate fronting along East 132<sup>nd</sup> Street to the south. A retaining wall is present along the northeastern portions of the parcel, abutting Lot 4. Lot 4 is improved with an active retail gasoline filling station (Speedway) with six fuel dispenser stations and a small, one-story convenience store and cashiers' office on the center of the parcel with an overhead canopy. A compressed air dispenser and a small one-story building (likely storage) and/or control equipment is located in the southeastern portions of the parcel. Lot 34 is improved two (2) one-story, slab-on-grade steel frame commercial structures. The easternmost structure is currently vacant and the westernmost building is currently occupied by Sparkz Iron Works and utilized for metal product fabrication. A gated storage yard is present between the buildings on the central portions of the parcel, which is open-air with a partially overhead sheet metal canopy. Lot 38 is improved with a three-story, slab-on-grade steel frame commercial structure that spans the majority of the parcel which is currently occupied by a motorcycle service and repair business on the ground floor. The upper floors are currently vacant.

### Summary of Proposed Redevelopment Plan

The proposed redevelopment will feature demolition of the existing gasoline filling station on Lot 4, and existing buildings on Lots 1, 34 and 38. The proposed future use of the Site will consist of a residential building with retail on the ground floor that includes an affordable housing component. Development plans for the proposed redevelopment have not yet been finalized; however, the proposed building footprint is expected to occupy the entire Site across all parcels. It is unknown if the future building will feature slab-on-grade construction or if it will include a cellar. Slab-on-grade construction would feature minimal excavation approximately 1 to 4 feet below grade [bg]) for utility trenches, elevator and sump pits, and other various structural foundation elements. A proposed site-wide cellar would feature excavation into the water table, which was recorded between approximately 5-to-7.5 feet bg during previous investigations. A side-wide cellar, if implemented, would feature either subgrade parking or common/utility spaces. Development plans, upon completion, will be incorporated into a Remedial Action Work Plan (RAWP) which will be submitted to OER for review and approval prior to the start of construction.

The current zoning designation is M1-5/R8A and is located in the Special Port Morris Mixed Use Zoning District (MX-1). The proposed use is consistent with existing zoning for the property.

### Summary of Past Uses of Site and Areas of Concern

Lot 4 (126 Bruckner Boulevard) was undeveloped from as early as 1891 into the 1920s. Lot 4 was developed by 1935 (likely by 1922 or shortly thereafter) with a two-story building with a basement (a wagon works), a one-story building (utilized for welding), and a one-story blacksmith building. From 1944 through 1951, the blacksmith building was replaced with a store fronting Bruckner Boulevard, and the wagon works building was repurposed to a machine shop and manufacturing building. The Site

became vacant between 1951 and 1969. By 1977, the Site was improved with a retail gasoline filling station and has continued to operate as a gasoline filling station since that time.

Lot 1 (122 Bruckner Boulevard) was previously occupied by two railroad spurs, which lead into a former machine shop on the parcel from the 1890s to the 1920s. A blacksmith shop was present in the northern portions of the parcel in 1908. By the 1920s, the parcel was occupied by a garage. The parcel remained improved with a garage from the 1980s to the 2000s, which was formerly occupied by the Crystal Spring Water Company facility (in 1986) and Gassman Coal & Oil Co. facility between 1986 and 2002. The parcel was in its current configuration in the early 2000s, consisting of an asphalt-paved parking lot and warehouse.

Lot 38 (517-519 East 132nd Street) was previously vacant as early as 1892 through at least 1903. Between 1903 and 1908, the parcel was improved with the existing three-story commercial building which was occupied by a stable on the first floor and was also utilized for storage of piano plates. Between 1928 and 1935, the parcel was occupied by the Crystal Spring Water Company. The parcel remained of similar configuration and occupied by the Crystal Springs Water Company until at least 1984. Between 1984 and 1986, the parcel became occupied by the Gassman Coal & Oil Company and remained occupied through at least 2007.

Lot 34 (521-529 East 132nd Street) was previously vacant as early as 1891 through at least 1928. By 1935, the parcel was occupied by the Crystal Spring Water Company and was improved with the existing one-story commercial building in the western portions. In addition, several small one-story stores were located in the eastern portions of the parcel, with a one-story accessory building in the northwestern corner. Between 1946 and 1947, the one-story stores were replaced with the existing one-story building (now vacant) in the eastern portions of the Site and the parcel was at its current configuration. The parcel remained occupied by the Crystal Spring Water Company through at least 1984. Between 1984 and 1986, the parcel became occupied by the Gassman Coal & Oil Company and remained occupied through at least 2007.

Based on previous environmental assessments and investigations performed at the Site, the following areas of concern (AOCs) were identified:

- Historical uses on Lot 1 include two railroad spurs, machine and blacksmith shops and the previous Gassman Coal & Oil Co. that occupied the parcel. Prior to its current use as a staging area for local grocery delivery service, Lot 1 was most recently occupied by Upright Hoisting. Poor housekeeping practices (i.e., open chemical storage containers, poorly maintained spray paint booth, and paint spills/spatters on pavement) were documented in connection with this former use. Historic Sanborn maps also indicate the presence of gasoline underground storage tanks (USTs) on this parcel. Historic usage and the potential presence of abandoned gasoline USTs could have affected subsurface conditions on Lot 1.
- Historical Site uses on Lot 4 include a gasoline filling station, a wagon works (converted to machine shop and manufacturing), welding operations and blacksmith shop.
- Lot 4 is registered on the New York State Department of Environmental Conservation (NYSDEC) Petroleum Bulk Storage (PBS) Program under Facility ID 2-297658 with two closed-removed 550-gallon USTs (product not specified), one closed-removed 600-gallon UST (product not specified), 36 closed in-place 550-gallon gasoline USTs, two closed-removed 2,000-gallon gasoline USTs, one closed-removed 2,000-gallon No. 2 fuel oil UST, four closed-removed 4,000-gallon gasoline USTs, and five in-service 4,000-gallon gasoline/ethanol USTs. The two 2,000-gallon and four 4,000-gallon gasoline USTs were reportedly removed in 1994, and a 550-gallon wastewater tank was reportedly removed in 2010. The 36 closed in-place 550-gallon gasoline USTs were removed from Lot 4 between 1994 and 1995.



- Three closed NYSDEC petroleum spills were identified on Lot 4 associated with gasoline filling station operations (Spill Nos. 8606553, 9205097, and 9405017). The spill cases documented evidence of soil and groundwater impacts to Lot 4, which required long-term remediation and monitoring, including tank removal, soil excavation and the installation of a soil vapor extraction (SVE)/air sparge system, and groundwater monitoring. Although the spills achieved regulatory closure, residual contamination likely remains on Lot 4. NYSDEC indicated any future redevelopment of the Site would require vapor mitigation to mitigate vapor intrusion concerns.
- Historic operations on Lot 34 include previous structures of unknown use, and occupation by Gassman Coal & Oil Co. Further, residual contamination may be present in soil and groundwater associated with NYSDEC Spill 01-01831 that was closed without remedial action. The spill incident was attributed to soil contamination associated with removal of two USTs and one abandoned-in-place UST. Soil samples collected from the removed tank grave indicated benzene and methyl tert butyl ether (MTBE) at elevated concentrations. Additional soil and groundwater sampling within the location of the former tanks revealed volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) above standards in soil and low-level VOCs and SVOCs in groundwater. NYSDEC required quarterly groundwater monitoring which Further soil and groundwater sampling conducted Quarterly groundwater monitoring was required for the spill incident and a cleanup plan. A RAP and subsequent RAP Addendum outlining plans for excavation of contaminated soil and the application of ORC to the excavation. Although the RAP and RAP Addendum was reviewed and approved by the NYSDEC, cleanup was never implemented on Lot 34. Further, although NYSDEC closed the spill incident by determining soil and groundwater contamination was minimal and not a threat to the public or the environment, residual contamination may still exist on Lot 34.
- Historic operations on Lot 38 include occupation by Gassman Coal & Oil Co. Current uses include a motorcycle repair shop which could affect subsurface conditions on Lot 38.

### **Summary of the Work Performed under the Remedial Investigation**

For the Remedial Investigation of the Site, AKRF performed the following scope of work in October 2019 and July 2022:

1. Conducted geophysical investigations across accessible portions of the Site to clear the proposed boring locations for subsurface utilities, locate the presence of any USTs, and locate other potential buried structures;
2. Installed 24 soil borings across the Site and collected 50 soil samples for laboratory analysis to evaluate soil quality;
3. Installed 6 temporary groundwater monitoring wells and collected a sample from each well for laboratory analysis to evaluate groundwater quality; and
4. Installed 9 soil vapor probes and collected 9 soil vapor samples for chemical analysis. One ambient outdoor air sample were also collected.

### **Summary of Environmental Findings**

AKRF performed the following scope of work at the Site on behalf of 122 Bruckner Partners LLC, 122 Bruckner Development LLC and 126 Bruckner Owner LLC that included geophysical investigations, advancement of 24 soil borings across the Site with collection of 50 soil samples, installation of 6 temporary groundwater monitoring wells and collected a sample from each well, and installation of 9 soil vapor probes and collected 9 soil vapor samples and one ambient outdoor air sample.

1. Elevation of the property ranges from approximately 12 to 18 feet above the North American Vertical Datum of 1929 (an approximation of mean sea level).

2. Groundwater was encountered between 5.37 and 8.12 feet below grade (bg) during the RI.
3. General groundwater flow direction is expected to be in a north-northeasterly direction based on available groundwater monitoring data from the NYSDEC spill investigations for Lot 4. However, it is expected that regional groundwater the vicinity of the Site travels in a southerly direction, toward the nearest water body (Bronx Kill), located approximately 550 feet south of the Site. Groundwater in this part of Bronx is not generally used as a source of drinking water.
4. Bedrock was not encountered during the RI.
5. Based on this RIR, the stratigraphy of the Site, from the surface down, consists of up to five feet of historic fill material (including sand, gravel, silt and brick) underlain by sand, silt, gravel and clay.
6. Bedrock was not encountered during RI.
7. The geophysical surveys conducted in both September 2019 and July 2022 did not identify any anomalies consistent with a potential UST; however, they were able to identify underground utilities.
8. Soil sample analytical results from the 15 soil samples collected by AKRF in October 2019 and 35 soil samples collected in July 2022 were compared to NYSDEC 6 New York Codes, Rules and Regulations (NYCRR) Part 375 Unrestricted Use Soil Cleanup Objectives (UUSCOs) and Restricted Residential Soil Cleanup Objectives (RRSCOs).
  - Volatile organic compounds (VOCs), with the exception of acetone, benzene, and toluene were not detected above their respective UUSCOs in the samples analyzed. Benzene was detected in two samples (max. concentration of 0.83 milligrams per kilogram [mg/kg]) exceeding its UUSCO of 0.06 mg/kg, but well below its RRSCO of 4.8 mg/kg. Toluene was detected in sample SB-01\_9-11\_20191004 on Lot 4 at a concentration of 1.1 mg/kg, which exceeds its UUSCO of 0.07 mg/kg, but is well below its RRSCO of 100 mg/kg. Acetone was detected in 2 samples (max. concentration 0.081 mg/kg), which exceeds its UUSCO of 0.05 mg/kg, but well below its RRSCO of 100 mg/kg.
  - SVOCs were detected in 6 of the 50 samples above applicable standards. The SVOCs benzo(a)anthracene (max. concentration of 3.3 mg/kg), benzo(a)pyrene (max. concentration of 5.5 mg/kg), benzo(b)fluoranthene (max. concentration of 7.5 mg/kg), dibenz(a,h)anthracene (detected at 0.91 mg/kg) and indeno(1,2,3-cd)pyrene (max. concentration of 4.5 mg/g) were detected in one or more soil samples in exceedance of their respective RRSCOs. The SVOCs benzo(k)fluoranthene (max. concentration 2.6 mg/kg) and chrysene (max. concentration of 3.5 mg/kg) were also detected in one or more samples in exceedance of their respective UUSCOs.
  - Five metals exceeded their RRSCOs in one or more samples, including arsenic (detected at 88.1 mg/kg), barium (detected at 538 mg/kg), copper (max. concentration of 3,730 mg/kg), lead (max. concentration of 1,000 mg/kg), and mercury (max. concentration of 2.6 mg/kg). Four metals were detected exceeded their UUSCOs in one or more samples including cadmium (detected at 2.9 mg/kg), hexavalent chromium (max. concentration of 15.4 mg/kg), selenium (detected at 13.9 mg/kg), and zinc (max. concentration of 328 mg/kg).
  - Polychlorinated biphenyls (PCBs) were not detected in any of the samples analyzed on Lots 1, 34 and 38.
  - Three pesticides including 4,4'-DDT (max. concentration of 0.27 mg/kg), 4,4'-DDD (max. concentration of 0.01 mg/kg) and 4,4'-DDE (max. concentration of 0.095 mg/kg) were detected in one or more soil samples at concentrations exceeding their UUSCOs, but well below their RRSCOs.

9. Groundwater sample analytical data from the two samples collected by AKRF in October 2019 and five samples collected in July 2022 were compared to NYSDEC Technical & Operational Series (TOGS) Ambient Water Quality Standards and Guidance Values (AWQSGV).
  - Eight VOCs were detected in one or more samples at concentrations exceeding their respective AWQSGVs, including benzene (max. concentration of 90 micrograms per liter [ $\mu\text{g/L}$ ]), ethylbenzene (detected at 420  $\mu\text{g/L}$ ), isopropylbenzene (max. concentration of 49  $\mu\text{g/L}$ ), m,p-xylenes (detected at 1,200  $\mu\text{g/L}$ ), o-xylene (detected at 600  $\mu\text{g/L}$ ), tert-butyl methyl ether (max. concentration of 41  $\mu\text{g/L}$ ), toluene (max. concentration of 78  $\mu\text{g/L}$ ) and naphthalene (detected at 78  $\mu\text{g/L}$ ).
  - SVOCs were not detected in any groundwater samples analyzed above AWQSGVs.
  - The metals beryllium, chromium, iron, lead, magnesium, manganese, mercury, sodium, and thallium were detected above AWQSGVs in one or more of the unfiltered samples (total metals analysis) on Lots 1, 34 and 38. Manganese (max. concentration of 1,160  $\mu\text{g/L}$ ) and sodium (maximum of 1,290,000  $\mu\text{g/L}$ ) were also detected above AWQSGVs in one or more of the filtered samples (dissolved metals analysis).
  - PCBs and pesticides were not detected in any of groundwater samples analyzed above AWQSGVs.
10. Soil vapor results from the four samples collected by AKRF in October 2019 and five samples collected in July 2022, in the absence of federal/state standards or guidelines, were compared to the New York State Department of Health (NYSDOH's) *Final Guidance for Evaluating Soil Vapor Intrusion*, dated October 2006 (updated May 2017), matrices.
  - 41 VOCs in the samples, specifically benzene, toluene, ethylbenzene, xylenes (collectively referred to as BTEX), dichlorodifluoromethane, chlorodifluoromethane, chloromethane, n-Butane, 1,3-Butadiene, chloroethane, trichlorofluoromethane, 1,1,2-Trichlorotrifluoroethane, acetone, isopropyl alcohol, carbon disulfide, methylene chloride, tert-butyl alcohol, methyl tert-butyl ether, n-hexane, methyl ethyl ketone (2-Butanone), chloroform, 1,1,1-Trichloroethane, cyclohexane, carbon tetrachloride, 2,2,4-Trimethylpentane, n-Heptane, trichloroethene, methyl methacrylate, 4-methyl-2-pentanone (methyl isobutyl ketone), PCE, methyl butyl ketone (2-Hexanone), chlorobenzene, n-propylbenzene, 4-Ethyltoluene, 1,3,5-Trimethylbenzene, 1,2,4-Trimethylbenzene, 4-isopropyltoluene, 1,3-dichlorobenzene, n-butylbenzene, hexachlorobutadiene and naphthalene at concentrations ranging from an estimated 0.31  $\mu\text{g/m}^3$  to 2,900  $\mu\text{g/m}^3$  from a diluted sample.
  - Several chlorinated-VOC (CVOC) compounds subject to NYSDOH Soil Vapor/Indoor Air decision matrices were detected in one or more soil vapor samples. Carbon tetrachloride was detected in one or more soil vapor samples at a maximum concentration of 1.4  $\mu\text{g/m}^3$ . PCE was detected at a maximum concentration of 540  $\mu\text{g/m}^3$  in a diluted sample. 1,1,1-trichloroethane was detected in one or more soil vapor samples at a maximum concentration of 1.8  $\mu\text{g/m}^3$ . TCE was detected in one or more soil vapor samples at a maximum concentration of soil vapor sample at a maximum concentration of 180  $\mu\text{g/m}^3$ . Methylene chloride was detected in one or more soil vapor samples at a maximum concentration of 66  $\mu\text{g/m}^3$ . Cis-1,2-dichloroethene was detected in one soil vapor sample at a concentration of 2  $\mu\text{g/m}^3$ . Comparison to the respective NYSDOH Soil Vapor/Indoor Air decision matrices indicates no further action is required for carbon tetrachloride, PCE, 1,1,1-trichloroethane, methylene chloride and cis-1,2-dichloroethene. However, TCE was detected in one soil vapor sample (SV-04\_20220708 on Lot 34) at a concentration of 180  $\mu\text{g/m}^3$ , which exceeds mitigation threshold of 60  $\mu\text{g/m}^3$  specified in NYSDOH Soil Vapor/Indoor Air Matrix A.

## REMEDIAL INVESTIGATION REPORT

### 1.0 SITE BACKGROUND

126 Bruckner Owner, LLC is working with the New York City (NYC) Office of Environmental Remediation (OER) to investigate and remediate a 42,470 square foot (sf) site located at 122-126 Bruckner Boulevard, 517-519 East 132<sup>nd</sup> Street and 521-529 East 132<sup>nd</sup> in the Mott Haven section of The Bronx, New York (the "Site"). The Remedial Investigation (RI) work was performed on July 7 and 8, 2022. Additionally, soil, groundwater and soil vapor data generated during a Subsurface (Phase II) Investigation conducted in October 2019 was used to supplement the data obtained from the RI. This Remedial Investigation Report (RIR) along with data documented in October 2019, provides sufficient information for establishment of remedial action objectives, evaluation of remedial action alternatives, and selection of a remedy pursuant to Rules of the City of New York § 43-1407(f). The remedial investigation (RI) described in this document is consistent with applicable guidance.

#### 1.1 Site Location and Current Usage

The Site is located at 122-126 Bruckner Boulevard, 517-519 East 132<sup>nd</sup> Street and 521-529 East 132<sup>nd</sup> in the Mott Haven section of The Bronx, New York and is identified as Block 2260, Lots 1, 4, 34 and 38 on the New York City Tax Map. The Site is 42,470 sf (0.975 acres) and is bounded by Bruckner Boulevard to the north, East 132<sup>nd</sup> Street to the south, Brook Avenue to the west and St. Ann's Avenue to the east. Lot 1 is currently used as a staging area for local grocery delivery service for the surrounding neighborhood, and is improved with a warehouse, security shack and asphalt-paved parking areas. The Lot is enclosed with a sheet metal fence with gate fronting along East 132<sup>nd</sup> Street to the south. A retaining wall is present along the northeastern portions of the parcel, abutting Lot 4. Lot 4 is improved with an active retail gasoline filling station (Speedway) with six fuel dispenser stations and a small, one-story convenience store and cashiers' office on the center of the parcel with an overhead canopy. A compressed air dispenser and a small one-story building (likely storage) and/or control equipment is located in the southeastern portions of the parcel. Lot 34 is improved two (2) one-story, slab-on-grade steel frame commercial structures. The easternmost structure is currently vacant and the westernmost building is currently occupied by Sparkz Iron Works and utilized for metal product fabrication. A gated storage yard is present between the buildings on the central portions of the parcel, which is open-air with a partially overhead sheet metal canopy. Lot 38 is improved with a three-story, slab-on-grade steel frame commercial structure that spans the majority of the parcel which is currently occupied by a motorcycle service and repair business on the ground floor. The upper floors are currently vacant.

The Site boundary location is shown on Figure 1, and Site details are shown on Figure 2.

#### 1.2 Proposed Redevelopment Plan

The proposed redevelopment will feature demolition of the existing gasoline filling station on Lot 4, and existing buildings on Lots 1, 34 and 38. The proposed future use of the Site will consist of a residential building with retail on the ground floor that includes an affordable housing component. Development plans for the proposed redevelopment have not yet been finalized; however, the proposed building footprint is expected to occupy the entire Site across all parcels. It is unknown if the future building will feature slab-on-grade construction or if it will include a cellar. Slab-on-grade construction would feature minimal excavation approximately 1 to 4 feet below grade [bg]) for utility trenches, elevator and sump pits, and other various structural foundation elements. A proposed site-wide cellar would feature excavation into the water table, which was recorded between approximately 5-to-7.5 feet bg during previous investigations. A

side-wide cellar, if implemented, would feature either subgrade parking or common/utility spaces. Development plans, upon completion, will be incorporated into a Remedial Action Work Plan (RAWP) which will be submitted to OER for review and approval prior to the start of construction.

The current zoning designation is M1-5/R8A and is located in the Special Port Morris Mixed Use Zoning District (MX-1). The proposed use is consistent with existing zoning for the property.

### **1.3 Description of Surrounding Property**

The Site is bound by Brook Avenue to the west, with a five-story warehouse along the west side of Brook Avenue. The northern adjacent properties across Bruckner Boulevard are primarily one- and two-story industrial-use properties including a sheet metal supply facility. The adjacent property to the south across East 132<sup>nd</sup> Street is improved with a one-story commercial property currently occupied by a wholesale fast food supply depot. The adjacent property to the east is improved with a former bakery (Zaro's) that fronts along both Bruckner Boulevard to the north, and East 132<sup>nd</sup> Street to the south, which is a New York State Department of Environmental Conservation's (NYSDEC) Brownfield Cleanup Program (BCP) site (Site C203127).

The former Zaro's Bakery (Zaro's) site located at 138 Bruckner Boulevard and 107 Saint Ann's Avenue, consists of two tax parcels on approximately 1.16-acres. Based upon the findings of the NYSDEC RIR, the primary contaminants of concern at this site include semivolatile organic compounds (SVOCs) (specifically polycyclic aromatic hydrocarbons [PAHs]) and metals in soil, SVOCs and perfluoro-alkyl substances (PFOAs) in groundwater, and solvent- and petroleum-related VOCs in soil vapor. Contaminants in soil at this site were attributed to historic fill material. Groundwater was similarly impacted with PAHs, and metals. Soil vapor exhibited petroleum and solvent-related volatile organic compounds (VOCs). However, no solvent-related VOCs were detected at concentrations that exceeded their respective New York State Department of Health (NYSDOH) decision matrix values.

According to OER's Searchable Property Environmental E-Database (SPEED) database, no day care facilities, schools or hospitals are located within 500-feet of the Site. Surrounding land usage is shown on Figure 3.

## 2.0 SITE HISTORY

### 2.1 Past Uses and Ownership

Lot 4 (126 Bruckner Boulevard) was undeveloped from as early as 1891 into the 1920s. Lot 4 was developed by 1935 (likely by 1922 or shortly thereafter) with a two-story building with a basement (a wagon works), a one-story building (utilized for welding), and a one-story blacksmith building. From 1944 through 1951, the blacksmith building was replaced with a store fronting Bruckner Boulevard, and the wagon works building was repurposed to a machine shop and manufacturing building. The Site became vacant between 1951 and 1969. By 1977, the Site was improved with a retail gasoline filling station and has continued to operate as a gasoline filling station since that time.

Lot 1 (122 Bruckner Boulevard) was previously occupied by two railroad spurs, which lead into a former machine shop on the parcel from the 1890s to the 1920s. A blacksmith shop was present in the northern portions of the parcel in 1908. By the 1920s, the parcel was occupied by a garage. The parcel remained improved with a garage from the 1980s to the 2000s, which was formerly occupied by the Crystal Spring Water Company facility (in 1986) and Gassman Coal & Oil Co. facility between 1986 and 2002. The parcel was in its current configuration in the early 2000s, consisting of an asphalt-paved parking lot and warehouse.

Lot 38 (517-519 East 132nd Street) was previously vacant as early as 1892 through at least 1903. Between 1903 and 1908, the parcel was improved with the existing three-story commercial building which was occupied by a stable on the first floor and was also utilized for storage of piano plates. Between 1928 and 1935, the parcel was occupied by the Crystal Spring Water Company. The parcel remained of similar configuration and occupied by the Crystal Springs Water Company until at least 1984. Between 1984 and 1986, the parcel became occupied by the Gassman Coal & Oil Company and remained occupied through at least 2007.

Lot 34 (521-529 East 132nd Street) was previously vacant as early as 1891 through at least 1928. By 1935, the parcel was occupied by the Crystal Spring Water Company and was improved with the existing one-story commercial building in the western portions. In addition, several small one-story stores were located in the eastern portions of the parcel, with a one-story accessory building in the northwestern corner. Between 1946 and 1947, the one-story stores were replaced with the existing one-story building (now vacant) in the eastern portions of the Site and the parcel was at its current configuration. The parcel remained occupied by the Crystal Spring Water Company through at least 1984. Between 1984 and 1986, the parcel became occupied by the Gassman Coal & Oil Company and remained occupied through at least 2007.

### 2.2 Previous Investigations

#### 2.2.1 126 Bruckner Boulevard (Lot 4)

Underground Storage Tank Closure Report – Merit Bruckner, 126 Bruckner Boulevard, Bronx, New York, Groundwater & Environmental Services, Inc., April 1993

Groundwater & Environmental Services, Inc. (GES) oversaw the removal of one 550-gallon UST and one 2,000-gallon UST from Lot 4 in July 1992. The tanks were replaced with a new 550-gallon UST. During the tank removal activities, groundwater was encountered at approximately 8.5 feet bgs and a sheen was visible on the water surface. GES notified NYSDEC and Spill No. 9205095 was assigned to the Site. A total of 46 tons of petroleum-impacted soil was removed from the Site. Upon completion of the tank removal, GES collected a total of four post-excavation endpoint samples from the

sidewalls of the excavation, above the water table. The samples were analyzed for total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylenes (collectively referred to as BTEX). TPH concentrations were detected up to 1,654 parts per million (ppm) and total BTEX was detected up to 20.4 ppm.

Underground Storage Tank Closure Report – Merit Oil of New York, Inc., Merit Bruckner Gasoline Station, 126-128 Bruckner Boulevard, Bronx, New York, Leggette, Brashears, & Graham, Inc., July 1995

Leggette, Brashears, & Graham, Inc. (LBG) was retained to oversee the removal of four 4,000-gallon gasoline USTs, two 2,000-gallon gasoline USTs, 36 previously abandoned 550-gallon gasoline USTs, and one 550-gallon waste-water UST at the Site.

During removal of the 4,000-gallon and 2,000-gallon USTs, the tank contents were pumped out and the tanks were subsequently cleaned. Soil within the tank grave was reported to have a gasoline-like odor; however, no free product was detected. All excavated soil was stockpiled on and covered with plastic sheeting for off-site disposal. A total of 20 soil samples were collected for laboratory analysis from the base of the excavation area.

LBG also oversaw the removal of product dispenser islands and associated piping connected to the 4,000-gallon and 2,000-gallon USTs. One post-excavation sample was collected for laboratory analysis from beneath each dispenser island for a total of four samples.

The thirty-six 550-gallon USTs were observed to be previously filled with water. The water was pumped out from each tank and disposed of off-site. A total of 35 post-excavation samples were collected at the base of the excavation beneath the thirty-six USTs. A gasoline-like odor was noted in the surrounding soil at various locations; however, no free product was reported.

Laboratory analytical results of the post-excavation samples indicated elevated concentrations of methyl tertiary-butyl ether (MTBE) (up to 260 ppm) and BTEX (up to 832 ppm). The highest concentrations were detected in samples collected beneath the 550-gallon USTs, previously located in the central portion of the Site.

Additional Subsurface Investigation – Merit “Bruckner” Gasoline Station, 126-128 Bruckner Boulevard, Bronx, New York, Leggette, Brashears, & Graham, Inc., January 1998

LBG conducted two investigations at the Site in May 1996 and June 1997. The investigations included the installation of 14 soil borings and three monitor/vapor extraction wells. Groundwater beneath the Site was encountered at approximately 7 to 11 feet bgs and flowing in a northeasterly direction.

Based on the soil analytical results, petroleum-related compounds including BTEX was detected in the soil samples at concentrations up to 217.71 ppm. Groundwater analytical results indicated that BTEX was detected at concentrations up to 8,801 micrograms per liter (µg/L). MTBE was detected in groundwater samples at concentrations up to 15,300 µg/L. No free-phase product was detected in any of the monitoring wells.

LBG recommended that a Remedial Investigation Work Plan (RIWP) be prepared for the Site and that quarterly groundwater monitoring be conducted.

Subsurface Investigation – Merit Bruckner Gasoline Station, 126-128 Bruckner Boulevard, Bronx, New York, Leggette, Brashears, & Graham, Inc., January 2000

In June 1998, 7 soil borings were advanced across Lot 4. Free-phase product was detected in two monitor/vapor extraction wells and all seven borings. LBG recommended that a sample of the free product be collected and submitted to a laboratory for fingerprint analysis.

Monitoring Well Installation Report – Hess Station #32506, 126 Bruckner Boulevard, Bronx, New York, Geologic Services Corporation, August 2002

Geologic Services Corporation (GSC) oversaw the installation of two permanent groundwater monitoring wells as part of an ongoing subsurface investigation at Lot 4. During well installation, groundwater was encountered at approximately 9 to 10 feet bgs. Soil samples collected from above the water table, indicated elevated levels of VOCs, including BTEX, naphthalene, n-butylbenzene, and 1,2,4-trimethylbenzene. Groundwater samples were not reported.

Remedial Action Plan – Hess Station #32506, 126-128 Bruckner Boulevard, Bronx, New York, EnviroTrac, Ltd., August 2010

EnviroTrac Ltd. (EnviroTrac) prepared a Remedial Action Plan (RAP) for the Site to address Spill No. 9405017. The RAP included pilot testing for a soil vapor extractor (SVE) system. Based on the previous site characterization sampling, groundwater sampling, and the SVE pilot testing, EnviroTrac determined that adsorbed and dissolved hydrocarbon impacts were present at the Site. EnviroTrac recommended that remedial measures, such as an SVE system and air sparging be conducted to remediate the Site, and that quarterly groundwater and air effluent monitoring would be conducted.

UST Closure Report – Hess Station #32506, 126-128 Bruckner Boulevard, Bronx, New York, EnviroTrac, Ltd., February 2011

EnviroTrac documented the removal of one 550-gallon wastewater UST. The tank contents were pumped and the tank was cleaned prior to being disposed of off-site. Soil beneath the tanks was excavated down to approximately 8 to 12 feet bgs, and post-excavation samples were collected from three of the sidewalls and from the base of the excavation. The samples were analyzed for COCs and SVOCs. The laboratory analytical results indicated that only minor levels of the VOCs isopropylbenzene and n-propylbenzene were detected in one sample. Low levels of select SVOCs were detected in three of the four samples. EnviroTrac indicated that Site conditions would continue to be monitored under Spill No. 9405017 and an SVE/air sparge system was scheduled to be operational by spring 2011.

Quarterly Groundwater Monitoring Reports – Speedway #7811/Hess Station #32506, 126-128 Bruckner Boulevard, Bronx, NY, EnviroTrac, Ltd. and Spill Closure

EnviroTrac issued several reports documenting quarterly groundwater sampling events between 2009 and 2014. During each event, groundwater samples were collected from 13 on-site monitoring wells and analyzed for BTEX and MTBE.

EnviroTrac submitted a separate spill closure request letter to NYSDEC, dated March 2015. EnviroTrac indicated that concentrations of BTEX decreased by approximately 99.82% and concentrations of MTBE decreased by approximately 99.85%. Remediation efforts that were performed at the Site including source soil excavation, injection of oxygen release compound (ORC), and installation of an SVE/air sparge system.



In a letter dated March 2016, NYSDEC closed Spill No. 9405017 based on the data reported to date. NYSDEC indicated that all monitoring wells should be properly decommissioned. If any subsurface contamination is encountered during future redevelopment of the Site, it must be properly remediated and vapor mitigations efforts must be taken to prevent vapor intrusion concerns.

*Phase I Environmental Site Assessment, 126 Bruckner Boulevard, Bronx, NY, AKRF, Inc., August 2019.*

AKRF performed a Phase I Environmental Site Assessment (ESA) in August 2019 for Lot 4 (126 Bruckner Boulevard) in accordance with the American Society for Testing and Materials (ASTM) Standard E1527-13 and the United States Environmental Protection Agency (USEPA) All Appropriate Inquiry (AAI) rule. AKRF's Phase I ESA included and summarized the previous assessments and investigations noted, above, and incorporated the results of the previous documentation associated with Lot 4 into the findings. The findings in the Phase I ESA are as follows:

- Lot 4 consists of an active gasoline filling station and is listed on multiple regulatory agency databases including the Resource Conservation and Recovery Information System (RCRIS), NY SPILLS, MANIFEST, Petroleum Bulk Storage List of Underground Storage Tanks (PBS-UST), E-Designation and Leaking Underground Storage Tanks (LTANKS).
- Lot 4 is listed in the NYSDEC database with 3 closed petroleum spills (Spill Nos. 8606553, 9205097 and 9405017). The spill cases documented evidence of soil and groundwater impacts to Lot 4 which required long-term remediation and monitoring, including tank removal, soil excavation, installation of a soil vapor extraction/air sparge system, and groundwater monitoring. The spills achieved regulatory closure; however, residual contamination remains likely at Lot 4. NYSDEC indicated future redevelopment at Lot 4 would require vapor mitigation to mitigate vapor intrusion concerns.
- Lot 4 is listed in the NYSDEC Petroleum Bulk Storage (PBS) database under Facility ID 2-297658 with two closed-removed 550-gallon USTs (product not specified), one closed-removed 600-gallon UST (product not specified), 36 closed in-place 550-gallon gasoline USTs, two closed-removed 2,000-gallon gasoline USTs, one closed-removed 2,000-gallon No. 2 fuel oil UST, four closed-removed 4,000-gallon gasoline USTs, and five in-service 4,000-gallon gasoline/ethanol USTs. The two 2,000-gallon and four 4,000-gallon gasoline USTs were reportedly removed in 1994, and a 550-gallon waste water tank was reportedly removed in 2010. Based on a review of previous reports provided included in the Phase I ESA, the 36 closed in-place 550-gallon gasoline USTs were removed from Lot 4 between 1994 and 1995 under the oversight of LBG.
- Historical Sanborn maps and the regulatory database information identified the Property uses to have included a machine shop, manufacturing, welding, and filling station.
- Historical Sanborn maps and the regulatory database information identified numerous industrial and automotive uses in the surrounding area. Such uses with the potential to affect subsurface conditions beneath the Property included a locomotive repair shop, garages with gasoline tanks, auto repair shops, gasoline stations, machine

shops, sheet metal works, iron works, Gassman Coal and Oil Co., and Fireproof Products Co. Inc.

- Lot 4 is mapped with a hazardous material E-Designation (E-143) in the 2005 Port Morris/ Bruckner Boulevard Rezoning, which requires that redevelopment of the parcel includes investigation, and, if applicable remediation, under the oversight of OER.
- The origin of fill material at the Site is unknown. Based on the age of the current and historical Site structures, suspect asbestos-containing materials (ACM) lead-based paint (LBP) may be present within subsurface fill material. Fluorescent lighting fixtures, electrical equipment, and caulking may contain polychlorinated biphenyls (PCBs). No evidence of leaks or stains from such equipment was observed.

Subsurface (Phase II) Investigation Report, 126 Bruckner Boulevard, Bronx, NY, AKRF, Inc., October 2019

AKRF conducted a Subsurface (Phase II) Investigation at Lot 4 in October 2019. The investigation included: a geophysical investigation to scan the subsurface for potential tanks, utilities or other potential obstructions near proposed boring location, the installation of 12 soil borings with the collection and analysis of 15 soil samples; the installation of two temporary groundwater monitoring wells with the collection of two groundwater samples; and the installation of 4 temporary soil vapor probes with the collection and analysis of 4 soil vapor samples and 1 ambient air sample.

Soil sample results were compared to 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives (UUSCOs) and Part 375 Restricted Residential Soil Cleanup Objectives (RRSCOs). A summary of soil sample results is provided as follows:

- VOCs were not detected above their RRSCOs in any of the soil samples. Benzene was detected above its UUSCO of 0.06 mg/kg but below its RRSCO of 4.9 mg/kg in SB-01\_9-11\_20191004 and SB-03\_13.5-15.5\_20191004 at 0.83 mg/kg and 0.19 mg/kg, respectively. Toluene was detected above its UUSCO of 0.7 mg/kg but below its RRSCO of 100 mg/kg in SB-02\_9-11\_20191004 at a concentration of 1.1 mg/kg. Benzene and toluene are petroleum-related compounds, which are likely related to historical operations or current gasoline filling station operations at the Site.
- SVOCs were not detected above applicable standards in any of the soil samples.
- Six metals (arsenic, barium, cadmium, lead, selenium, and mercury) were detected at concentrations exceeding UUSCOs in at least one sample. Lead and mercury were also detected at concentrations exceeding their respective RRSCOs. Lead exceeded its RRSCO of 400 mg/kg in six soil samples, with a maximum concentration of 2,000 mg/kg in SB-08\_0-2\_20191004. Mercury exceeded its RRSCO of 0.81 mg/kg in four soil samples, with a maximum concentration of 1.2 mg/kg. These metal detections are likely related to historic filling and/or historic operations at the Site.
- 4,4-DDT was detected above its UUSCO of 0.0033 mg/kg but below its RRSCO of 7.9 mg/kg in SB-04\_0-4\_20191002 and SB-02\_0-4.5\_20191003 at 0.0048 mg/kg and 0.0060 mg/kg, respectively. These pesticide detections are likely attributable to the historical fill material observed in the soil borings, and not to a release or other source area.

A summary of the analytical results for groundwater samples based on a comparison to the NYSDEC Class GA AWQS is as follows:

- Benzene was detected above its AWQS of 1 µg/L in both TW-01\_20191004 and TW-03\_20191004, at 4.8 µg/L and 90 µg/L, respectively. Isopropylbenzene was detected above its AWQS of 5 µg/L in both TW-01\_20191004 and TW-03\_20191004, at 42 µg/L and 49 µg/L, respectively. MTBE was detected above its AWQS of 10 µg/L in both TW-01\_20191004 and TW-03\_20191004, at 41 µg/L and 21 µg/L, respectively. Ethylbenzene was detected above its AWQS of 5 µg/L in TW-03\_20191004 at a concentration of 420 µg/L. Xylene was detected above its AWQS of 5 µg/L in TW-03\_20191004 at a concentration of 600 µg/L. Toluene was detected above its AWQS of 5 µg/L in TW-03\_20191004 at a concentration of 270 µg/L. These exceedances are petroleum-related compounds, which are likely related to historical operations and/or current gasoline filling station operations at the Site.
- SVOCs were not detected above applicable standards in any of the groundwater samples.

A summary of the analytical results for soil vapor samples is as follows:

- VOCs associated with petroleum [including BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,3-butadiene, 1,3-dichlorobenzene, 2,2,4-trimethylpentane, 2-hexanone, 4-ethyltoluene, benzyl chloride, cymene, isopropanol, isopropylbenzene, n-butylbenzene, n-heptane, n-hexane, n-propylbenzene, sec-butylbenzene, and styrene] were detected at individual concentrations up to 380 micrograms per cubic meter (µg/m<sup>3</sup>) (xylene). Solvent-related VOCs [including 1,1,1-trichloroethane (1,1,1-TCA), 1,1,2-trichloro-1,2,2-trifluoroethane, acetone, carbon disulfide, carbon tetrachloride, chloroform, chloromethane, cis-1,2-dichloroethylene (cis-1,2-DCE), cyclohexane, dichlorodifluoromethane, methyl ethyl ketone (MEK), methyl isobutyl ketone, methylene chloride, tert-butyl alcohol, tert-butyl methyl ether, trichlorofluoromethane, PCE, and TCE] were detected at individual concentrations up to 630 µg/m<sup>3</sup> (chloroform).

## 2.2.2 122 Bruckner Boulevard (Lot 1)

Phase I Environmental Site Assessment, 122 Bruckner Boulevard, Bronx, NY, Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C., August 15, 2018

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. (Langan) performed a Phase I ESA in August 2018 for Lot 1 (122 Bruckner Boulevard) in accordance with the ASTM Standard E1527-13 and USEPA AAI rule. The findings of the Phase I ESA included the following:

- At the time of Phase I ESA preparation, Lot 1 was occupied by Upright Hoisting and was used as a staging lot for hoisting materials and equipment elevators, motors, scaffolding) and construction tools and vehicles. Numerous open chemical storage containers, a poorly maintained paint spray booth and generally poor housekeeping was observed at the time. Red paint spills/splatters were visible on concrete paving throughout the parcel. Concrete and asphalt were similarly observed to be in poor condition. Historical use of the parcel included former railroad spurs, a former machine/repair shop, a former blacksmith's shop, and a former garage with at least two 250-gallon USTs.

- The site was identified on the PBS database under the name 220 East Realty, Inc. (ID No. 14069) at the address 511-517 East 132<sup>nd</sup> Street (which are alternate addresses for Lot 1). Langan was unable to determine if the petroleum storage tanks registered under this listing was associated with Lot 1 or the eastern adjacent parcel (Lot 34; 517 East 132<sup>nd</sup> Street). The following tanks were registered under this listing:
  - Two 250-gallon gasoline USTs which were also noted on Sanborn maps from 1925 to 1946;
  - One gasoline tank with an unknown capacity, which was also noted on Sanborn maps from 1947 to 1984;
  - Two 550-gallon No. 2 fuel oil USTs, one closed-in-place on July 1, 1994 and one closed-in-place on an unknown date;
  - One 3,000-gallon diesel UST close-in-place on an unknown date; and
  - Two 3,000-gallon No. 2 fuel oil USTs closed and removed on an unknown date.
- Lot 1 was also identified on the NYSPILLS database under the facility name “Former Gassman Fuel Company.” According to spill case notes, soil contamination was observed in association with the excavation of three USTs. Subsequent soil and groundwater investigations identified VOC and SVOC contamination. No remediation was conducted in association with this spill case, and the spill was closed in 2015 based on the determination that contamination was minimal and not a threat to the public or the environment. It was similarly determined that the adjacent gasoline filling station (Lot 4 of the Site) was not adversely impacting subsurface conditions on Lot 1.<sup>1</sup>
- Adjoining and surrounding parcels include filling stations, metalworks, auto repair facilities/garages, burlap and paper bag manufacturer, a fireproof products company, and sheet metal works. A railroad yard with locomotive house was present to the south across East 132<sup>nd</sup> Street. Further, multiple adjacent PBS facilities were identified ad adjacent parcels and six closed NYSDEC spill incidents were identified within 400 feet of the parcel.

### 2.2.3 517-519 East 132nd Street (Lot 38)

Phase I Environmental Site Assessment, 517-519 East 132nd Street, Bronx, NY, Team Environmental Consultants, Inc., November 15, 2021.

Team prepared a Phase I ESA in November 2021 for Lot 38. The findings of the Phase I ESA included the following:

- At the time of Phase I ESA preparation, Lot 38 was improved with the existing partially-occupied three story slab-on-grade steel frame commercial structure constructed circa 1900. The ground floor was improved with the existing motorcycle service and repair shop and contained an office area, open repair shop, equipment and supply storage sections, motorcycle storage space and utility services. The unoccupied upper floors were accessed from a freight elevator formerly contained warehouse space and a privately-operated radio station and offices.

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<sup>1</sup> It should be noted that this spill incident was determined to be located on Lot 34, which is summarized further summarized in its respective section of this RIR.

- No previous subsurface investigations or known environmental conditions were identified on Lot 38 as part of the Phase I ESA preparation. However, the Phase I ESA indicated the presence of containerized lubrication and servicing fluids, a 275-gallon waste oil AST, servicing equipment and assorted tools and supplies.

#### 2.2.4 521-529 East 132<sup>nd</sup> Street (Lot 34)

New York State Department of Environmental Conservation Spill Case 0101831, Former Gassman Fuel Co.

This spill incident was reported on May 17, 2001 on the northern portions of Lot 34 when contamination was found in the area of two tanks being removed and one abandoned-on-place. One endpoint soil sample was collected from the tank grave from the associated tank pull. Samples indicated benzene was detected at 120 parts per billion (ppb). Two groundwater samples in the vicinity of the tank in 2002 indicated benzene was detected at 11.8 ppb and methyl tert butyl ether (MTBE) detected at 26.8 ppb. Additional soil and groundwater samples collected in 2002 indicate contamination from the previously removed and abandoned-in-place USTs but the size and location of the plum is not clear due to a lack of cleanup plan. In 2007, a Work Plan was prepared by P.W. Grosser Consulting (PWG) and was submitted to, and was subsequently approved by the NYSDEC for the installation of four soil borings and three monitoring wells within the former tank locations. A Soil and Groundwater Delineation report issued to the NYSDEC indicated four monitoring wells were installed, and groundwater flow was to the northeast. VOCs and SVOCs were detected in soils above applicable standards. Low level VOCs and SVOCs were also detected in groundwater. MTBE was present at 100 ppb in one monitoring well; however, there is no record of gasoline tanks on Lot 34. Based upon the data, NYSDEC required quarterly groundwater sampling and reporting. After reviewing quarterly monitoring data, NYSDEC required a Remedial Action Plan (RAP) be prepared in 2010 to address soil and groundwater impacts. PWG prepared a RAP and subsequent RAP Addendum outlining plans for excavation of contaminated soil and the application of Oxygen Release Compound (ORC) to the excavation. The RAP and RAP Addendum was subsequently reviewed and approved by the NYSDEC on August 26, 2010 with post-excavation quarterly groundwater monitoring planned.

It should be noted the RAP and RAP Addendum was never implemented by PWG in association with the spill incident. However, based upon the data collected to date, NYSDEC determined soil and groundwater contamination was minimal and not a threat to the public or the environment. Further, NYSDEC determined that the adjacent gasoline filling station (Lot 4) was not significant impacting conditions beneath Lot 34. As such, NYSDEC issued a letter of no further action on October 7, 2015 without implementation of the approved RAP and RAP Addendum.

Phase I Environmental Site Assessment, 521-529 East 132<sup>nd</sup> Street, Bronx, NY, Team Environmental Consultants, Inc., November 15, 2021.

Team prepared a Phase I ESA in November 2021 for Lot 34. The findings of the Phase I ESA included the following:

- At the time of Phase I ESA preparation, Lot 34 was improved with the 2 one-story (both slab-on-grade) buildings constructed circa 1930. The southeasternmost structure (now vacant) was occupied by Fred Smith Plumbing for the storage of water filtration system equipment and supplies. The northwesternmost building was

occupied by Sparkz Iron Works and was (and is presently) utilized for metal product fabrication work.

- No RECs associated with Lot 34 were identified.

Each of the above assessments and investigations are included in Appendix A of this RIR.

## 2.3 Site Inspection

Site inspections were performed for each of the previous assessments and investigations by AKRF. The inspections were performed under the direction of the Qualified Environmental Professional (QEP). During the various inspections, all areas of the Site were accessible and/or visually inspected.

## 2.4 Areas of Concern

Based on previous environmental assessments and investigations performed at the Site, the following areas of concern (AOCs) were identified:

- Historical uses on Lot 1 include two railroad spurs, machine and blacksmith shops and the previous Gassman Coal & Oil Co. that occupied the parcel. Prior to its current use as a staging area for local grocery delivery service, Lot 1 was most recently occupied by Upright Hoisting. Poor housekeeping practices (i.e., open chemical storage containers, poorly maintained spray paint booth, and paint spills/spatters on pavement) were documented in connection with this former use. Historic Sanborn maps also indicate the presence of gasoline USTs on this parcel. Historic usage and the potential presence of abandoned gasoline USTs could have affected subsurface conditions on Lot 1.
- Historical Site uses on Lot 4 include a gasoline filling station, a wagon works (converted to machine shop and manufacturing), welding operations and blacksmith shop.
- Lot 4 is registered on the NYSDEC Petroleum Bulk Storage (PBS) Program under Facility ID 2-297658 with two closed-removed 550-gallon USTs (product not specified), one closed-removed 600-gallon UST (product not specified), 36 closed in-place 550-gallon gasoline USTs, two closed-removed 2,000-gallon gasoline USTs, one closed-removed 2,000-gallon No. 2 fuel oil UST, four closed-removed 4,000-gallon gasoline USTs, and five in-service 4,000-gallon gasoline/ethanol USTs. The two 2,000-gallon and four 4,000-gallon gasoline USTs were reportedly removed in 1994, and a 550-gallon wastewater tank was reportedly removed in 2010. The 36 closed in-place 550-gallon gasoline USTs were removed from Lot 4 between 1994 and 1995.
- Three closed NYSDEC petroleum spills were identified on Lot 4 associated with gasoline filling station operations (Spill Nos. 8606553, 9205097, and 9405017). The spill cases documented evidence of soil and groundwater impacts to Lot 4, which required long-term remediation and monitoring, including tank removal, soil excavation and the installation of a SVE/air sparge system, and groundwater monitoring. Although the spills achieved regulatory closure, residual contamination likely remains on Lot 4. NYSDEC indicated any future redevelopment of the Site would require vapor mitigation to mitigate vapor intrusion concerns.
- Historic operations on Lot 34 include previous structures of unknown use, and occupation by Gassman Coal & Oil Co. Further, residual contamination may be present in soil and groundwater associated with NYSDEC Spill 01-01831 that was closed without remedial action. The spill incident was attributed to soil contamination associated with removal of two USTs and one abandoned-in-place UST. Soil samples collected from the removed tank grave indicated benzene

and MTBE at elevated concentrations. Additional soil and groundwater sampling within the location of the former tanks revealed VOCs and SVOCs above standards in soil and low-level VOCs and SVOCs in groundwater. NYSDEC required quarterly groundwater monitoring which Further soil and groundwater sampling conducted Quarterly groundwater monitoring was required for the spill incident and a cleanup plan. A RAP and subsequent RAP Addendum outlining plans for excavation of contaminated soil and the application of ORC to the excavation. Although the RAP and RAP Addendum was reviewed and approved by the NYSDEC, cleanup was never implemented on Lot 34. Further, although NYSDEC closed the spill incident by determining soil and groundwater contamination was minimal and not a threat to the public or the environment, residual contamination may still exist on Lot 34.

- Historic operations on Lot 38 include occupation by Gassman Coal & Oil Co. Current uses include a motorcycle repair shop which could affect subsurface conditions on Lot 38.

Previous assessments and investigations are included in Appendix A.

### **3.0 PROJECT MANAGEMENT**

#### **3.1 Project Organization**

The Qualified Environmental Profession (QEP) responsible for preparation of this RIR is Stephen Malinowski. Mr. Malinowski also serves as the Quality Assurance Officer. The Project Manager is Bryan Murty.

#### **3.2 Health and Safety**

All work described in this RIR performed by AKRF was conducted in full compliance with applicable laws and regulations, site-specific Health and Safety Plans (HASPs), Occupation Safety and Health Administration (OSHA) worker safety requirements, and Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements.

#### **3.3 Materials Management**

All material encountered during the RI was managed in accordance with applicable laws and regulations.



## 4.0 REMEDIAL INVESTIGATION ACTIVITIES

AKRF performed the following scope of work at the Site on behalf of 122 Bruckner Partners LLC, 122 Bruckner Development LLC and 126 Bruckner Owner LLC:

11. Conducted geophysical investigations across accessible portions of the Site to clear the proposed boring locations for subsurface utilities, locate the presence of any USTs, and locate other potential buried structures;
12. Installed 24 soil borings across the Site and collected 50 soil samples for laboratory analysis to evaluate soil quality;
13. Installed 6 temporary groundwater monitoring wells and collected a sample from each well for laboratory analysis to evaluate groundwater quality; and
14. Installed 9 soil vapor probes and collected 9 soil vapor samples for chemical analysis. One ambient outdoor air sample were also collected.

### 4.1 Geophysical Investigation

On September 5, 2019, a geophysical survey was conducted by Enviroprobe Service, Inc. on Lot 4. During the geophysical survey, linear anomalies consistent with subsurface utilities (including communications, electric, storm water, fuel piping, sanitary and unknown utilities) were marked out with spray paint prior to drilling and boring locations were adjusted accordingly.

On July 7, 2022, a geophysical survey was conducted by GeoScan LLC on Lots 1, 34 and 38. During the geophysical survey, no subsurface anomalies were identified that could be indicative of USTs. Piping, sanitary, stormwater (on Lot 1) among other subgrade features were marked with spray paint prior to drilling. Boring locations were offset accordingly to avoid these features.

The Geophysical Survey Reports are provided Appendix B of this RIR. Significant Site features are shown on Figure 2.

### 4.2 Borings and Monitoring Wells

#### 4.2.1 Drilling and Soil Logging

Between October 1 and 4, 2019, 12 soil borings were advanced on Lot 4, and on July 7-8, 2022, 12 additional soil borings were advanced on Lots 1, 34 and 38 using a mobile Geoprobe® Direct-Push Probe (DPP) drill rig. The boring locations are shown on Figure 2. These locations were selected to obtain a representative sampling of the Site. Utility mark outs were requested from the NYC/Long Island One Call Center prior to the commencement of drilling.

Soil borings were advanced across the Site to depths ranging from 1.5 to 25 feet below grade. On Lot 4, soil boring SB-01 was advanced to 16 feet bg, SB-02 and SB-04 to 4 feet bg, SB-03 to 25 feet bg, SB-05 to 5 feet bg, and SB-06 through SB-12 to two feet bg. Borings were advanced deeper at SB-01 and SB-03 to facilitate installation of temporary groundwater monitoring wells. On Lots 1, 34 and 38, soil borings SB-01, SB-02, SB-03, SB-04, SB-06, SB-08, and SB-11 were advanced to 10 feet bg. Soil borings SB-05, SB-07, SB-09, SB-10 and SB-12 were advanced to 8 feet bg. Temporary groundwater monitoring wells were installed in SB-03, SB-04, SB-06, SB-08 and SB-11. It should be noted that SB-06 and the associated temporary groundwater monitoring well and soil vapor probe (as later discussed) were installed within the area of closed NYSDEC Spill 0101831 to investigate potential residual contamination.

Soil cores were obtained in a stainless steel, macro-core sampler with an internal disposable acetate liner.

At each boring, AKRF field personnel prepared NYSDEC Technical Guide 10 (DER-10)-compliant boring logs and evaluated the soil cores for visual and olfactory impacts prior to collecting environmental samples. Soil cores were also screened with a PID, which measures relative concentrations of VOCs in the soil. The PID was calibrated at the beginning of the field day with 100 ppm isobutylene standard gas. All field work was recorded in a field log.

Up to three discrete (grab) samples were selected for laboratory analysis from each of the borings: with one soil sample at each location collected from the surficial (shallow) horizon. For borings advanced deeper than 4 feet bg, a second deeper soil sample was collected for laboratory analysis. A third soil sample was also collected at certain deeper soil boring locations based upon site history and the temporary groundwater monitoring well locations.

Soil boring locations are shown on Figure 2. Soil boring logs are included in Appendix C.

#### **4.2.2 Groundwater Monitoring Well Construction**

Two temporary groundwater (TW-01 and TW-03) monitoring wells were installed on Lot 4 between October 1 and 4, 2019, and 5 temporary groundwater monitoring wells (TW-01 through TW-05) were installed on Lots 1, 34 and 38 on July 7-8, 2022 for the collection of groundwater samples. The temporary wells were installed to approximately 3-to-4 feet below the groundwater table with a 10-foot 0.020-inch slotted screen and up to 20 feet pf PVC riser, and J-plug. The seven temporary wells were developed via pumping and surging using new polyethylene tubing and a peristaltic pump. The wells were purged of three times their volume prior to sampling using the pump and dedicated polyethylene tubing. The samples were field screened for evidence of contamination (i.e., PID, odor, or sheen). The monitoring wells were gauged with an oil/water interface meter prior to sampling to record a depth to groundwater reading (1/100 foot).

The locations of the temporary groundwater wells are shown on Figure 2. Temporary groundwater well information is included in Appendix C.

#### **4.2.3 Soil Vapor Probe Installation**

Four soil vapor probes were installed on Lot 4 between October 1 and 4, 2019. Five soil vapor probes were installed on July 7-8, 2022 on Lots 1, 34 and 38. On Lot 4, one soil vapor probe, SV-02, was installed at a depth of 4.5 feet bg; SV-03 and SV-05 installed at a depth of 5 feet bg, and SV-03 installed at a depth of 4 feet bg. On Lots 1, 34 and 38, 2 soil vapor probes (SV-01 and SV-02) were installed at a depth of 2 feet (24 inches) below the building slabs, with the remaining soil vapor probes in areas without structures (SV-03, SV-04 and SV-05) were installed at a depth of 6 feet (72 inches) below grade. The soil vapor sampling points were installed using a DPP drill rig and fitted with an expendable six-inch long stainless-steel screened drive point. Soil vapor probe depths were selected based upon field conditions (i.e., observed depth-to-groundwater and to obtain representative soil vapor data at the Site). Dedicated Teflon-lined polyethylene tubing with threaded fittings was connected to the stainless steel probe. The borings were backfilled with clean silica sand. Hydrated bentonite was used to fill the remaining void around the sampling tubing to the ground surface. The locations of the soil vapor

sampling points are shown on Figure 2. Soil vapor sampling logs are attached as Appendix D.

#### 4.2.4 Water Level Measurement

Groundwater levels were recorded from the seven temporary groundwater monitoring wells using a Solinst® 122 oil/water interface probe. Gauging measurements were taken from the northern side of the PVC riser. No floating petroleum products were measured in any of the wells. The water level data is presented in the table below.

| Site Lot# | Well Number | Depth to Water<br>(in Feet) | Total Boring Depth<br>(in feet) |
|-----------|-------------|-----------------------------|---------------------------------|
| Lot 4     | TW-01       | 7.64                        | 18.00                           |
| Lot 4     | TW-03       | 7.15                        | 16.00                           |
| Lot 1     | TW-01       | 5.31                        | 10                              |
| Lot 1     | TW-02       | 5.20                        | 10                              |
| Lot 34    | TW-03       | 6.31                        | 10                              |
| Lot 34    | TW-04       | 5.56                        | 10                              |
| Lots 38   | TW-05       | 5.90                        | 10                              |

#### 4.3 Sample Collection and Chemical Analysis

Sampling performed during the field investigations was conducted for the AOCs and also considered other means for bias of sampling based on Site history, field instrument measurements, odors, or other field indicators, and future redevelopment plans. All media including soil, groundwater, and soil vapor have been sampled and evaluated in the RIR. Discrete (grab) samples have been used for final delineation of the nature and extent of contamination and to determine the impact of contaminants on public health and the environment. The sampling performed and presented in this RIR provides sufficient basis for evaluation of remedial action alternatives, establishment of a qualitative human health exposure assessment, and selection of a final remedy.

##### 4.3.1 Soil Sampling

Fifteen soil samples were collected between October 1 and 4, 2019 on Lot 4, and 35 soil samples were collected on Lots 1, 34 and 38 between July 7 and 8, 2022, for a total of 50 soil samples collected for laboratory analysis. Up to three soil samples were collected from each boring for laboratory analysis. A surface soil sample was collected from each soil boring location. Based upon the final depth of the soil boring, deeper soil samples (at the terminal boring depth) were collected at certain locations across the Site. Further, a third soil sample was also collected in certain deeper soil borings to evaluate subsurface conditions. Petroleum-like odors and PID detections up to 90.9 ppm were observed in soil borings SB-01 and SB-03 on Lot 4. Further, petroleum-like odors and PID detections up to 204.8 ppm were similarly observed in several soil borings on Lots 1, 34 and 38. No visual evidence of gross contamination (i.e., free product or petroleum sheens) was observed during the RI.

Sample containers were labeled and placed in ice-filled coolers and shipped to the laboratory via courier with appropriate chain-of-custody documentation.

Soil samples collected from Lot 4 were submitted to Eurofins-TestAmerica Laboratory of Edison, New Jersey (Eurofins), a New York State Department of Health (NYSDOH)-

certified laboratory for analysis of VOCs by United States Environmental Protection Agency (EPA) Method 8260, SVOCs by EPA Method 8270, pesticides by EPA Method 8081, and Resource Conservation and Recovery Act (RCRA) Metals by EPA Method 6020B and Mercury by EPA Method 7471B. One trip blank was included with the sample shipments each day and submitted to Eurofins for VOC analysis for QA/QC purposes.

Soil samples collected from Lots 1, 34 and 38 were submitted to Eurofins for analysis of VOCs by EPA Method 8260, SVOCs by EPA Method 8270, pesticides by EPA Method 8081, PCBs by EPA Method 8082, and TAL metals (including hexavalent chromium) by EPA Method 6000/7000 series.

All sampling equipment was either dedicated or decontaminated between sampling locations.

Data on soil sample collection for chemical analyses, including dates of collection and sample depths associated with Lots 1, 34 and 38 are reported in Tables 1 through 5, and in Tables 12 through 16 for Lot 4. Soil boring logs are included in Appendix C.

#### **4.3.2 Groundwater Sampling**

Groundwater samples were collected from the two temporary monitoring wells on Lot 4 between October 1 and 4, 2019. Groundwater samples were collected from the five temporary monitoring wells between July 7 and 8, 2022 on Lots 1, 34 and 38. Sample containers were labeled and placed in an ice-filled cooler and shipped to the laboratory via courier with appropriate chain-of-custody documentation.

Groundwater samples associated with Lot 4 were analyzed by Eurofins for VOCs using EPA Method 8260 and SVOCs using EPA Method 8270. One trip blank was included with the sample shipment and submitted to Eurofins for VOC analysis for QA/QC purposes.

Groundwater samples associated with Lots 1, 34 and 38 were analyzed by Eurofins for VOCs using EPA Method 8260, SVOCs using EPA Method 8270, pesticides using EPA Method 8081, PCBs using EPA Method 8082, and TAL metals (for unfiltered and filtered concentrations [a.k.a. total and dissolved concentrations, respectively]) by EPA Method 6000/7000 series.

Groundwater sample collection data for Lots 1, 34 and 38 is reported in Tables 6 through 11, and on Tables 17 and 18 for Lot 4. Temporary groundwater well information is included in Appendix C. Figure 2 shows the locations of samples collected during this investigation.

#### **4.3.3 Soil Vapor Sampling**

Nine soil vapor probes were installed and soil vapor samples were collected at each location for laboratory analysis. Methodologies used for soil vapor assessment conformed to the *NYSDOH Final Guidance on Soil Vapor Intrusion, October 2006*, updated May 2017.

Between October 1 and 4, 2019, four soil vapor points were sampled on Lot 4 as part of AKRF's previous investigation activities. In addition, five soil vapor points were sampled on Lots 1, 34 and 38 between July 7 and 8, 2022. Prior to collection, each sampling point was purged of at least three sample volumes using a GilAir Plus air sampling pump at a flow rate of approximately 0.2 liter/minute. During purging, a helium shroud was placed

over each sampling point and helium gas was introduced through brass fitting ports in the shroud to saturate the atmosphere around the sample port. Purged vapors were collected in a Tedlar<sup>®</sup> bag and field-screened for organic vapors using a PID. The purged air was also monitored using a portable helium detector to check for short-circuiting of ambient air into the vapor sampling point. All soil vapor points were found to pass the required seal integrity tests. PID readings were recorded at all soil vapor locations ranging from 1.6 to 9.3 ppm.

After purging, each probe was connected via Teflon-lined polyethylene tubing to a laboratory-supplied, batch-certified 6-liter SUMMA<sup>®</sup> canister equipped with a flow regulator set to collect a sample over two hours. Immediately after opening the flow control valve, the initial canister vacuum (inches of mercury) was noted. After approximately two hours, the flow controller valve was closed, the final vacuum noted, and the canister placed in a shipping carton for delivery to Eurofins for analysis of VOCs via EPA Method TO-15. Each canister was labeled to identify the sample ID, date, time, and vacuum readings. The identification numbers for both the canister and flow controller were noted on the chain-of-custody documentation and the samples were transported by courier directly to Eurofins's laboratory.

Soil vapor sample collection data associated with Lots 1, 34 and 38 is reported in Table 12, and on Table 19 for Lot 4. Soil vapor sampling logs are included in Appendix D. Methodologies used for soil vapor assessment conformed to the [\*NYSDOH Final Guidance on Soil Vapor Intrusion, October 2006\*](#), updated May 2017.

#### 4.3.4 Chemical Analysis

Chemical analytical work presented in this RIR has been performed in the following manner:

| Factor                         | Description                                                                                                                                                                                                                                                |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Quality Assurance Officer      | The chemical analytical quality assurance is directed by Stephen Malinowski.                                                                                                                                                                               |
| Chemical Analytical Laboratory | The chemical analytical laboratory used for samples in AKRF's previous investigations is NYSDOH ELAP-certified Eurofins TestAmerica Laboratories, Inc. of Edison, New Jersey (soil and groundwater samples) and South Burlington, VT (soil vapor samples). |

| Factor                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chemical Analytical Methods | <p>Soil analytical methods:</p> <ul style="list-style-type: none"> <li>• VOCs by EPA Method 8260C (rev. 2006);</li> <li>• SVOCs (including 1,4-dioxane) by EPA Method 8270D (rev. 2007);</li> <li>• PCBs by EPA Method 8082A (rev. 2000) (Lots 1, 34 and 38 only);</li> <li>• Pesticides by EPA Method 8081B (rev. 2000);</li> <li>• TAL Metals (including hexavalent chromium) by EPA Method 6010C (rev. 2007) (Lots 1, 34 and 38 only); and</li> <li>• RCRA Metals by EPA Method 6020B, Mercury by EPA Method 7471B (Lot 4 only).</li> </ul> <p>Groundwater analytical methods:</p> <ul style="list-style-type: none"> <li>• VOCs by EPA Method 8260C (rev. 2006);</li> <li>• SVOCs by EPA Method 8270D (rev. 2007);</li> <li>• PCBs by EPA Method 8082A (rev. 2000) (Lots 1, 34 and 38 only);</li> <li>• Pesticides by EPA Method 8081B (rev. 2000) (Lots 1, 34 and 38 only); and</li> <li>• TAL Metals by EPA Method 6010C (rev. 2007) (filtered and unfiltered) (Lots 1, 34 and 38 only);</li> </ul> <p>Soil vapor analytical methods:</p> <ul style="list-style-type: none"> <li>• VOCs by EPA Method TO-15</li> </ul> |

#### 4.3.5 Results of Chemical Analyses

Laboratory data for soil, groundwater, and soil vapor is summarized in Section 5.0 – Environmental Evaluation. Laboratory data deliverables for all samples evaluated in this RIR are provided in digital form in Appendix E.

## 5.0 ENVIRONMENTAL EVALUATION

### 5.1 Geological and Hydrogeological Conditions

The topography of the area is generally level. The Site lies approximately 12 to 18 feet above the North American Vertical Datum of 1929 (an approximation of mean sea level).

#### 5.1.1 Stratigraphy

Stratigraphy at the Site consists of up to five feet of historic fill material (including sand, gravel, silt and brick) underlain by sand, silt, gravel and clay. Bedrock was not encountered during this investigation.

#### 5.1.2 Hydrogeology

Groundwater was encountered between 5.37 and 8.12 feet bg during the RI and general groundwater flow direction is expected to be in a north-northeasterly direction based on available groundwater monitoring data from the NYSDEC spill investigations for Lot 4. However, it is expected that regional groundwater the vicinity of the Site travels in a southerly direction, toward the nearest water body (Bronx Kill), located approximately 550 feet south of the Site. Groundwater in this part of Bronx is not generally used as a source of drinking water.

A table of water level data collected from the temporary monitoring wells is included in Section 4.2.4.

### 5.2 Soil Chemistry

Fifty soil samples were collected for laboratory analysis as part of the RI. Soil sample analytical results were compared to 6 New York Codes, Rules and Regulations (NYCRR) 375-6 Unrestricted Use Soil Cleanup Objectives (UUSCOs) and Restricted Residential Use Soil Cleanup Objectives (RRSCOs). The complete laboratory analytical data sheets are provided in Appendix E. Analytical results of the soil samples collected for Lots 1, 34 and 38 are summarized in Tables 1 through 5, and in Tables 13 and 14 for Lot 4. Exceedances of SCOs are noted on the tables. Figure 2 shows the soil sample locations and Figures 4A and 4B shows sample concentrations exceeding the UUSCOs and/or RRSCOs. Data collected during the RI is sufficient to delineate the vertical and horizontal distribution of contaminants in soil/fill at the Site.

#### 5.2.1 Volatile Organic Compounds (VOCs)

VOCs, with the exception of acetone, benzene, and toluene were not detected above their respective UUSCOs in the samples analyzed. Benzene was detected in two samples (max. concentration of 0.83 mg/kg) exceeding its UUSCO of 0.06 mg/kg, but well below its RRSCO of 4.8 mg/kg. Toluene was detected in sample SB-01\_9-11\_20191004 on Lot 4 at a concentration of 1.1 mg/kg, which exceeds its UUSCO of 0.07 mg/kg, but is well below its RRSCO of 100 mg/kg. Acetone was detected in 2 samples (max. concentration 0.081 mg/kg), which exceeds its UUSCO of 0.05 mg/kg, but well below its RRSCO of 100 mg/kg. It should be noted that acetone can be a common laboratory artifact and detections may not be representative of subsurface conditions at the Site. Soil analytical results for VOCs are presented in Table 1 for Lots 1, 34 and 38, and in Table 13 for Lot 4.

### 5.2.2 Semivolatile Organic Compounds (SVOCs)

SVOCs were detected in 6 of the 50 samples above applicable standards. The SVOCs benzo(a)anthracene (max. concentration of 3.3 mg/kg), benzo(a)pyrene (max. concentration of 5.5 mg/kg), benzo(b)fluoranthene (max. concentration of 7.5 mg/kg), dibenz(a,h)anthracene (detected at 0.91 mg/kg) and indeno(1,2,3-cd)pyrene (max. concentration of 4.5 mg/g) were detected in one or more soil samples in exceedance of their respective RRSCOs. The SVOCs benzo(k)fluoranthene (max. concentration 2.6 mg/kg) and chrysene (max. concentration of 3.5 mg/kg) were also detected in one or more samples in exceedance of their respective UUSCOs. These SVOC exceedances were limited to polycyclic aromatic hydrocarbons (PAHs), a class of SVOCs commonly found in urban fill material and is consistent with the material observed in the subsurface at the Site. PAHs were detected above RRSCOs and/or UUSCOs in surficial soil samples SB-01\_0-2\_20220707, SB-07\_0-2\_20220708 and SB-08\_0-2\_20220708. PAH detected above RRSCOs and/or UUSCOs were also identified in deeper soil samples SB-07\_6-8\_20220708, SB-08\_2-4\_20220708 and SB-12\_2-4\_20220708.

Soil analytical results for SVOCs are presented in Tables 2 and 14.

### 5.2.3 Metals

Five metals exceeded their RRSCOs in one or more samples, including arsenic (detected at 88.1 mg/kg), barium (detected at 538 mg/kg), copper (max. concentration of 3,730 mg/kg), lead (max. concentration of 1,000 mg/kg), and mercury (max. concentration of 2.6 mg/kg). Four metals were detected exceeded their UUSCOs in one or more samples including cadmium (detected at 2.9 mg/kg), hexavalent chromium (max. concentration of 15.4 mg/kg), selenium (detected at 13.9 mg/kg), and zinc (max. concentration of 328 mg/kg). The elevated metals concentrations are likely attributable to the Site's fill material. Soil analytical results for metals are presented in Tables 3 and 15.

### 5.2.4 PCBs and Pesticides

PCBs were not detected in any of the samples analyzed on Lots 1, 34 and 38, an the samples from Lot 4 were not analyzed for PCBs. Three pesticides including 4,4'-DDT (max. concentration of 0.27 mg/kg), 4,4'-DDD (max. concentration of 0.01 mg/kg) and 4,4'-DDE (max. concentration of 0.095 mg/kg) were detected in one or more soil samples at concentrations exceeding their UUSCOs, but well below their RRSCOs. Soil analytical results for PCBs (for Lots 1, 34 and 38) are presented in Table 4. Soil results for pesticides are presented on Tables 3 and 16..

## 5.3 Groundwater Chemistry

Seven groundwater samples (two on Lot 4 and five on Lots 1, 34 and 38) were collected for laboratory analysis from temporary monitoring wells as part of the RI. Analytical results were compared to the NYSDEC Technical & Operational Series Class GA Ambient Water Quality Standards and Guidance Values (AWQSGVs). The complete laboratory analytical data sheets are provided in Appendix E. Analytical results of the groundwater samples associated with Lots 1, 34 and 38 are summarized in Tables 6 through 11, and Tables 17 and 18 for Lot 4. Figure 2 shows the groundwater sample locations and Figures 5 shows the groundwater sample concentrations that exceed the NYSDEC Class GA AWQSGVs. Data collected during the RI is sufficient to delineate the distribution of contaminants in groundwater at the Site.



### 5.3.1 Volatile Organic Compounds

Eight VOCs were detected in one or more samples at concentrations exceeding their respective AWQSGVs, including benzene (max. concentration of 90 µg/L), ethylbenzene (detected at 420 µg/L), isopropylbenzene (max. concentration of 49 µg/L), m,p-xylenes (detected at 1,200 µg/L), o-xylene (detected at 600 µg/L), tert-butyl methyl ether (max. concentration of 41 µg/L), toluene (max. concentration of 78 µg/L) and naphthalene (detected at 78 µg/L). The detection of the aforementioned petroleum-related VOCs may be indicative of residual contamination from gasoline filling station operations. Groundwater analytical results for VOCs are presented in Tables 6 and 17.

### 5.3.2 Semivolatile Organic Compounds

SVOCs were not detected in any of the samples analyzed above AWQSGVs. Groundwater analytical results for SVOCs are presented in Tables 7 and 18.

### 5.3.3 Metals

The metals beryllium, chromium, iron, lead, magnesium, manganese, mercury, sodium, and thallium were detected above AWQSGVs in one or more of the unfiltered samples (total metals analysis) on Lots 1, 34 and 38. Manganese (max. concentration of 1,160 µg/L) and sodium (maximum of 1,290,000 µg/L) were also detected above AWQSGVs in one or more of the filtered samples (dissolved metals analysis). The presence and levels of these metals is typical of groundwater quality in the Bronx and does not appear to be related to a release at the Site, nor could a source be corroborated with the soil screening/observation data from the soil borings nor soil boring analytical data. Groundwater analytical results associated with Lots 1, 34 and 38 for total (unfiltered) metals and dissolved (filtered) metals are presented in Tables 8 and Table 9, respectively. Groundwater on Lot 4 was not sampled for metals.

### 5.3.4 PCBs and Pesticides

PCBs and pesticides were not detected in any of the samples analyzed above AWQSGVs. Groundwater analytical results associated with Lots 1, 34 and 38 for PCBs and pesticides are presented in Tables 10 and Table 11 of this RIR, respectively. Groundwater on Lot 4 was not sampled for PCBs or pesticides.

## 5.4 Soil Vapor Chemistry

Summary data tables for the laboratory analyses performed on the 9 soil vapor samples are included as Tables 12 and 19. Figure 2 shows the sample locations and Figure 6 shows the soil vapor detections. A complete copy of the laboratory analytical report for the soil vapor samples is provided in Appendix E. Data collected during the RI is sufficient to delineate the distribution of contaminants in soil vapor at the Site.

Concentrations of VOCs detected in the soil vapor samples were compared to the NYSDOH 2006 *Guidance for Evaluating Soil Vapor Intrusion* matrices, incorporating subsequent updates. These values provide an extremely conservative means of comparison. Matrices have only been established for carbon tetrachloride, PCE, 1,1,1-trichloroethane, TCE, vinyl chloride, methylene chloride, 1,1-dichloroethene, and cis-1,2-dichloroethene.

The soil vapor sampling results identified 41 VOCs in the samples, specifically benzene, toluene, ethylbenzene, xylenes (collectively referred to as BTEX), dichlorodifluoromethane, chlorodifluoromethane, chloromethane, n-Butane, 1,3-Butadiene, chloroethane, trichlorofluoromethane, 1,1,2-Trichlorotrifluoroethane, acetone, isopropyl alcohol, carbon

disulfide, methylene chloride, tert-butyl alcohol, methyl tert-butyl ether, n-hexane, methyl ethyl ketone (2-Butanone), chloroform, 1,1,1-Trichloroethane, cyclohexane, carbon tetrachloride, 2,2,4-Trimethylpentane, n-Heptane, trichloroethene, methyl methacrylate, 4-methyl-2-pentanone (methyl isobutyl ketone), PCE, methyl butyl ketone (2-Hexanone), chlorobenzene, n-propylbenzene, 4-Ethyltoluene, 1,3,5-Trimethylbenzene, 1,2,4-Trimethylbenzene, 4-isopropyltoluene, 1,3-dichlorobenzene, n-butylbenzene, hexachlorobutadiene and naphthalene at concentrations ranging from an estimated  $0.31 \mu\text{g}/\text{m}^3$  to  $2,900 \mu\text{g}/\text{m}^3$  from a diluted sample.

As indicated above, several chlorinated-VOC (CVOC) compounds subject to NYSDOH Soil Vapor/Indoor Air decision matrices were detected in one or more soil vapor samples. Carbon tetrachloride was detected in one or more soil vapor samples at a maximum concentration of  $1.4 \mu\text{g}/\text{m}^3$ . PCE was detected at a maximum concentration of  $540 \mu\text{g}/\text{m}^3$  in a diluted sample. 1,1,1-trichloroethane was detected in one or more soil vapor samples at a maximum concentration of  $1.8 \mu\text{g}/\text{m}^3$ . TCE was detected in one or more soil vapor samples at a maximum concentration of  $180 \mu\text{g}/\text{m}^3$ . Methylene chloride was detected in one or more soil vapor samples at a maximum concentration of  $66 \mu\text{g}/\text{m}^3$ . Cis-1,2-dichloroethene was detected in one soil vapor sample at a concentration of  $2 \mu\text{g}/\text{m}^3$ . Comparison to the respective NYSDOH Soil Vapor/Indoor Air decision matrices indicates no further action is required for carbon tetrachloride, PCE, 1,1,1-trichloroethane, methylene chloride and cis-1,2-dichloroethene. However, TCE was detected in one soil vapor sample (SV-04\_20220708 on Lot 34) at a concentration of  $180 \mu\text{g}/\text{m}^3$ , which exceeds mitigation threshold of  $60 \mu\text{g}/\text{m}^3$  specified in NYSDOH Soil Vapor/Indoor Air Matrix A. Summary data tables for the laboratory analyses performed on the seven soil vapor samples are included as Tables 12 and 19.

## 5.5 Prior Activity

Based on an evaluation of the data and information from the RIR, disposal of significant amounts of hazardous waste is not suspected at the Site. However, the soil/fill will be pre-characterized for disposal facility acceptance before any potential excavation activities. The soil/fill will be disposed in accordance with federal, state, and local regulatory requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc.

OER approval of a RAWP will be required to obtain a Notice to Proceed and excavation permits from the DOB. The RAWP will include measures for excavation and off-site disposal of soil during construction. An accompanying Construction Health and Safety Plan will include measures for worker and community protection, including personal protective equipment, dust control, air monitoring, and emergency response procedures.

## 5.6 Impediments to Remedial Action

The Site is currently covered by several buildings and impervious asphalt-paved and concrete surfaces; however, demolition of these features would occur prior to redevelopment. Prior to soil disturbance or redevelopment of the Site, appropriate remedial activities are recommended. The presence of adjacent structures (sidewalks, roads, buildings, etc.) may inhibit lateral excavation. There are no known impediments to remedial action at the Site.

**APPENDIX A**  
**PREVIOUS ASSESSMENTS**

**APPENDIX B**  
**GEOPHYSICAL INVESTIGATION REPORTS**

**APPENDIX C**  
**SOIL BORING LOGS**

**APPENDIX D**  
**SOIL VAPOR SAMPLING LOGS**

**APPENDIX E**  
**LABORATORY ANALYTICAL REPORTS FOR SOIL, GROUNDWATER**  
**AND SOIL VAPOR ANALYTICAL DATA**