

1400 CROMWELL AVENUE

BRONX, NEW YORK

Remedial Action Report

NYC VCP Project Number 21CVCP021X

OER Project Number 21TMP0325X

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REMEDIAL ACTION REPORT

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LIST OF ACRONYMS

Acronym	Definition
CAMP	Community Air Monitoring Plan
DER-10	NYS DEC Division of Environmental Remediation Technical Guidance Manual 10
EC	Engineering Control
HASP	Health and Safety Plan
IC	Institutional Control
NYC VCP	New York City Voluntary Cleanup Program
NYC DEP	New York City Department of Environmental Protection
NYC DOHMH	New York City Department of Health and Mental Hygiene
NYC OER	New York City Office of Environmental Remediation
ORC	Oxygen Release Compound
PID	Photoionization Detector
QA/QC	Quality Assurance/Quality Control
QEP	Qualified Environmental Professional
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan
SCG	Standards, Criteria and Guidance
SCO	Soil Cleanup Objective
SMMP	Soil/Materials Management Plan
SMP	Site Management Plan
SVOCs	Semi-Volatile Organic Compounds
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds
RCA	Recycled concrete Aggregate
SPDES	State Pollutant Discharge Elimination System
NYSDEC	New York State Department of Environmental Conservation
DUSR	Data Usability Summary Report

CERTIFICATION

I, David Sivin, certify the following:

- I am currently a registered professional engineer licensed by the State of New York.
- I performed professional engineering services and had primary direct responsibility for implementation of the remedial program for the Family Life Academy Charter School (1400 Cromwell Avenue) site, site number 21CVCP021K.
- I have reviewed this document, to which my signature and seal are affixed.
- Engineering Controls implemented during this remedial action were designed by me or a person under my direct supervision and achieve the goals established in the Remedial Action Work Plan for this site.
- The Engineering Controls constructed during this remedial action were professionally observed by me or by a person under my direct supervision and (1) are consistent with the Engineering Control design established in the Remedial action Work Plan and (2) are accurately reflected in the text and drawings for as-built design reported in this Remedial Action Report.
- The OER-approved Remedial Action Work Plan dated January 2021 and Stipulations in a letter dated April 9, 2021 were implemented and that all requirements in those documents have been substantively complied with. I certify that contaminated soil, fill, liquid or other material from the property was taken to facilities licensed to accept this material in full compliance with applicable laws and regulations.

Name DAVID SIVIN

PE License Number 095217

Signature



Date JULY 8, 2024



I, Erik Draijer, certify the following:

- I am a Qualified Environmental Professional. I had primary direct responsibility for implementation of the remedial program for the Family Life Academy Charter School (1400 Cromwell Avenue) site, site number 21CVCP021K.
- The OER-approved Remedial Action Work Plan dated January 2021 and Stipulations in a letter dated April 9, 2021 were implemented and that all requirements in those documents have been substantively complied with. I certify that contaminated soil, fill, liquid or other material from the property was taken to facilities licensed to accept this material in full compliance with applicable laws and regulations.

QEP Name

ERIK DRAIJER

QEP Signature

Date

7/15/2024



EXECUTIVE SUMMARY

Highbridge Facilities has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 1400 Cromwell Avenue in the Highbridge section of the Bronx, New York. A Remedial Investigation (RI) was performed to compile and evaluate data and information necessary to develop a Remedial Action Work Plan (RAWP). A remedial action was performed pursuant to the OER-approved RAWP in a manner that has rendered the Site protective of public health and the environment consistent with the proposed use of the property. This RAR describes the remedial action performed under the RAWP. The remedial action described in this document provides for the protection of public health and the environment and complies with applicable environmental standards, criteria and guidance and applicable laws and regulations.

Site Location and Background

The Site is located at 1400 Cromwell Avenue in the Highbridge section in the Bronx, New York and is identified as Block 2857 and Lot 1 on the New York City Tax Map. The alternative address for this site is 1401 Inwood Avenue. The Site is 18,066-square feet and is bounded by a parking lot and parking garage to the north, West 170th Street to the south, Inwood Avenue to the east, and Cromwell Avenue to the west. A map of the site boundary is shown in Figure 2. During the property acquisition and remedial investigation activities in 2019, the Site was used as an unimproved parking lot with a small parking lot kiosk.

Summary of Redevelopment Plan

The Site consists of a 6-story charter school named Family Life Academy Charter School IV (FLAVS IV). Layout of the site development is presented in Figure 3. The current zoning designation is C2-4/R8A. The proposed use is consistent with existing zoning for the property. The building class is educational structure – school or academy (W3). The development consists of a school building with an outdoor plaza in the center of the school. The first floor consists of 11,952 square feet with a cafeteria, kitchen, mechanical room, and classrooms. The second through fourth floors consist of approximately 12,054 square feet with classrooms and administrative space. The fifth

floor consists of 12,055 square feet with classrooms, network offices, and other administrative space. The sixth floor consists of 7,278 square feet with a gymnasium, and 4,629 square feet of outdoor play area. The building was constructed slab-on-grade, with a small mechanical cellar along the southern boundary. Excavation for construction purposes was completed to a maximum depth of 6.0 feet below sidewalk grade for slab construction and 10.0 feet below sidewalk grade for pile cap construction.

Summary of Description of Surrounding Property

The adjoining properties consist of a parking lot and parking garage to the north, auto parts sales and auto repair commercial building across Cromwell Avenue to the west, Cube Smart self-storage across West 170th Street to the south, and auto parts sales and auto repair commercial building across Plaza Drive. Sensitive receptors in the area include Family Life Academy Charter School I and Public School Annex 64 located approximately 60-75 feet to the southeast of the subject property.

Summary of Past Site Uses and Areas of Concern

The subject property was historically developed as a one-story parking garage with a basement as identified in 1950 and 1977 Sanborn fire insurance maps. The maps indicate that automobile repair operated at the property, and four (4) buried 550-gallon storage tanks were present.

The AOCs identified for this site include:

1. Past use of site as a parking garage and auto repair facility, based on Sanborn fire insurance maps between 1950 and 1977;
2. Four (4) underground storage tanks in the center of the property, as depicted on Sanborn fire insurance maps between 1950 and 1977.

Summary of the Work Performed under the Remedial Investigation

Highbridge Facilities, LLC retained PVE Engineering to perform the following scope of work:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);

2. Installed eight (8) soil borings across the entire project Site, and collected sixteen (16) soil samples for chemical analysis from the soil borings to evaluate soil quality;
3. Installed two (2) groundwater monitoring wells throughout the Site to establish groundwater flow and collected two (2) groundwater samples for chemical analysis to evaluate groundwater quality;
4. Installed seven (7) soil vapor probes around Site perimeter and collected seven (7) samples for chemical analysis.

Summary of Findings of Remedial Investigation

1. Elevation of the property ranges from 32 to 36 feet above mean sea level (amsl) from east to west, respectively.
2. Depth to groundwater ranges from 20.0 to 23.0 feet bgs at the Site.
3. Groundwater is estimated to flow from southwest to northeast across the Site.
4. Bedrock was not encountered at the site.
5. The stratigraphy of the site, from the surface down, consists of 10 to 19 feet of urban historic fill. The fill is underlain by brown sand, silt, and some clays from 10 to 31 feet bgs, to an unknown depth below bedrock.
6. Soil/fill samples collected during the RI were compared to NYSDEC Part 375-6 Unrestricted Use and Restricted Residential Use Soil Cleanup Objective (UUSCOs and RRSCO's).
 - a. VOCs were detected at concentrations exceeding UUSCOs in two (2) (SB-2 (21-23') and SB-4 (21-23')) of the sixteen (16) soil samples. Methyl Ethyl Ketone (2-Butanone) (3,000 µg/kg), 1,3,5-Trimethylbenzene (17,000 µg/kg), Ethylbenzene (5,300 µg/kg), M-P-Xylene (4,400 µg/kg), N-Propylbenzene (max. 7,600 µg/kg), and Xylenes, Total (4,400 µg/kg) were detected above UUSCOs. 1,2,4-Trimethylbenzene (70,000 µg/kg) was detected above RRSCO's in SB-4 (21-23').
 - b. SVOCs were detected in nine (9) of the sixteen (16) soil samples at concentrations exceeding UUSCOs. SVOCs exceeding UUSCOs include

Benzo(K)Fluoranthene (max. 3,900 µg/kg). Benzo(A)Anthracene (max. 5,530 µg/kg), Benzo(A)Pyrene (max. 4,940 µg/kg), Benzo(B)Fluoranthene (max. 4,320 µg/kg), Chrysene (max. 5,280 µg/kg), Dibenz(A,H)Anthracene (max. 1,110 µg/kg), and Indeno(1,2,3-C,D)Pyrene (max 2,500 µg/kg) were detected at concentrations exceeding RRSCOs.

- c. Metals were detected in twelve (12) of the sixteen (16) soil samples at concentrations exceeding UUSCOs. Metals exceeding UUSCOs include Chromium, Total (max. 46.1 mg/kg), Copper (max. 251 mg/kg), Nickel (max. 40.8 mg/kg), Zinc (max. 617 mg/kg), and Mercury (max. 0.382 mg/kg). Metals exceeding RRSCOs include Barium (max. 1,220 mg/kg) and Lead (max. 614 mg/kg). The metal exceedances described above are typical of historic fill, with the exception of Mercury.
 - d. Pesticides were detected in nine (9) of the sixteen (16) soil samples at concentrations exceeding UUSCOs. Pesticides exceeding UUSCOs include Dieldrin (max 14.9 µg/kg), P,P'-DDE (max 13.8 µg/kg), and P,P'DDT (max 147 µg/kg). No pesticides were detected at concentrations exceeding RRSCOs.
 - e. No PCBs were detected at concentrations exceeding UUSCOs.
 - f. No PFAS compounds were detected in the one (1) sample analyzed for emerging contaminants [SB-4 (20-21')].
7. Groundwater samples collected during the RI were compared to NYSDEC 6NYCRR Part 703.5 Groundwater Quality Standards (GQS).
- a. VOCs were detected in two (2) (MW-1 and MW-3) of the three (3) groundwater samples at concentrations exceeding GQS. 1,2,4-Tremthylbenzene (61 µg/L), 1,3,5-Trimethylbenzene (24 µg/L), Ethylbenzene (27 µg/L), Isopropylbenzene (max. 32 µg/L), M-P-Xylene (42 µg/L), N-Butylbenzene (5.6 µg/L), N-Propylbenzene (max. 52 µg/L), Sec-Butylbenzene (20 µg/L), and Xylenes, Total (43 µg/L) were detected at concentrations exceeding GQS.

- b. SVOCs, Benzo(A)Anthracene (0.0900 µg/L), Benzo(A)Pyrene (0.0900 µg/L), Benzo(B)Fluoranthene (0.0900 µg/L), Benzo(K)Fluoranthene (0.0700 µg/L) Chrysene (0.0700 µg/L), Indeno(1,2,3-C,D)Pyrene (0.0500 µg/L), and Naphthalene (31.1 µg/L) were detected at concentrations exceeding GQS in MW-1.
 - c. Dissolved metals, Iron (max 2.45 µg/L), Magnesium (max 39.0 µg/L), Manganese (max 8.35 µg/L), and Sodium (max 312 µg/L), were detected in the three (3) groundwater samples at concentrations exceeding GQS.
 - d. No PCBs nor Pesticides were detected in any of the three (3) groundwater samples at concentrations exceeding GQS.
 - e. MW-1 contained two (2) PFAS compounds at concentrations exceeding 6 NYCRR Part 375 Maximum Contaminant Limits (MCL); Perfluorooctanesulfonic Acid (PFOS) (16.0 ng/kg), and Perfluorooctanoic Acid (PFOA) (19.5 ng/kg). The total concentration of PFOS and PFOA detected was 35.5 ng/L. PFAS concentrations ranged between 3.13 ng/L and 19.5 ng/L.
8. Soil vapor samples collected during the RI were compared to the NYSDOH 2006 Final Guidance for Evaluating Soil Vapor Intrusion's decision matrices. VOCs were detected in all seven (7) of the soil vapor samples collected. Tetrachloroethylene (PCE) was detected in all seven (7) soil vapor samples collected and ranged from 9.5 µg/m³ (SV-6) to 200 µg/m³ in SV-3, which may require monitoring or mitigation according to the NYSDOH.
- a. The chlorinated VOCs, trichloroethene (TCE) (max. 3.2 µg/m³), vinyl chloride (0.25 µg/m³), methylene chloride (max. 6.1 µg/m³) and carbon tetrachloride (max. 0.56 µg/m³) were detected in one or more samples, but at concentrations below their respective monitoring level ranges established within the State DOH soil vapor guidance matrix. The chlorinated VOCs, 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethene, and cis-1,2-dichloroethene, were not detected in the seven soil vapor samples.

- b. Low levels of petroleum-related VOCs were also present in each of the seven samples. The total concentration of petroleum-related VOCs (Total BTEX) ranged from 63.2 $\mu\text{g}/\text{m}^3$ in SV-3 to 84.0 $\mu\text{g}/\text{m}^3$ in SV-4. Individual BTEX compounds included benzene (max. 14.0 ug/m^3), ethylbenzene (max. 6.0 ug/m^3), toluene (max. 37.0 ug/m^3), m&p xylenes (max. 25.0 ug/m^3) and o-xylene (max. 12.0 ug/m^3)

Summary of the Remedial Action

The Remedial Action achieved protection of public health and the environment for the intended use of the property. The Remedial Action achieved all of the Remedial Action Objectives established for the project; addressed applicable standards, criteria, and guidance; reduced mobility, toxicity and volume of contaminants; was cost effective and implementable; and used standard methods that are well established in the industry. The remedial action is effective in the short-term and long-term.

A summary of the milestones achieved in the Remedial Action is as follows:

- A Pre-Application Meeting was held on October 6, 2020.
- A Remedial Investigation (RI) was performed from June 22, 2020. A RI Report was prepared to evaluate data and information necessary to develop a Remedial Action Work Plan (RAWP).
- A Site Contact List was established. A RAWP was prepared and released with a Fact Sheet on December 17, 2020 for a 30-day public comment period.
- The RAWP and Stipulation List dated April 9, 2021 was approved by the New York City Office of Environmental Remediation (OER) on April 9, 2021.
- Site briefings was conducted with New York State Department of Environmental Conservation (NYSDEC) in February 2021.
- A Pre-Construction meeting was held on April 21, 2021.
- A Fact Sheet providing notice of the start of the remedial action was issued on June 17, 2021.
- The remedial action began on June 10, 2021 with the advancement of six (6) test pits for waste characterization and investigation for buried underground storage tanks. Asphalt removal began on June 14, 2021, and excavation started on June

17, 2021. In January 2022, the site was shut down and the Construction Manager (Gilbane Construction) demobilized from the site for access agreement negotiations with the northern adjoining lot. No activities occurred on site until remobilizing in September of 2022. Remedial activities concluded on April 8, 2024 with the completion of the SSDS.

- A Post-Construction meeting was held on April 24, 2024.

The remedial action consisted of the following tasks:

1. Prepared a Community Protection Statement and implemented a Citizen Participation Plan.
2. Mobilized site security and equipment, completed utility mark outs, and marked and staked excavation areas.
3. Performed Waste Characterization Study prior to excavation activities. Generic hybrid sampling protocols were implemented for disposal options in New York, New Jersey, or Pennsylvania. Waste characterization soil samples were collected on January 28, 2021 for laboratory analysis. Waste characterization samples were collected at a frequency dictated by disposal facilities, which included Kingsland Landfill (NY), Clean Earth of Carteret (NJ), and Bayshore Soil Management (NJ).
4. Performed a Community Air Monitoring Program for particulates and volatile organic carbon compounds. Several acute exceedances were detected during CAMP implementation, including PM-10 fugitive dusts on 6/10/21, 6/21/21, 7/14/21, 8/3/21, 8/4/21, 8/5/21, and 1/4/2023. One (1) 15-minute average concentration of dust was detected above action levels, on 7/20/2021 between 11:34 and 11:42 in the downwind station. Dust measures were applied, and the concentrations reduced below action levels. No other 15-minute average exceedances were detected.
5. Established Track 4 Site Specific Soil Cleanup Objectives (SCOs). The following Track 4 Site-Specific SCOs were utilized: lead: 800 ppm; barium: 800 ppm; total SVOCs: 250 ppm.

6. The following excavations were performed, in three separate phases. These phases were established for remedial activities only and were not referenced for construction purposes. Excavation diagrams for each of these phases described below are included as Figure 5A, Figure 5B, and Figure 5C.
- a. First Phase: The entire footprint of the Site was excavated to a depth between two (2) and six (6) feet below pre-development grade. The pre-development elevation of the site from east to west was 42.0 to 46.0 feet above mean sea level (amsl), respectively. The entire footprint was excavated to an elevation of 40.0 feet amsl.
 - b. Second Phase: Several underground storage tank (UST) pads were discovered at the conclusion of the first phase of excavation. Two (2) tank vaults in the southwest and northeast corners of the site contained a combined eight (8) USTs. Additional excavation totaling approximately 10 feet in depth, to an elevation of 30.0 feet amsl, was continued in these two locations to remove the vaults. Excavation of the southern wall was continued for utility/mechanical services and plumbing installation, as well as an elevator pit totaling an additional 5.0 feet of excavation to an elevation of 35.0 feet amsl.
 - c. Third Phase: Foundation design included a network of grade beams connecting pile caps and footings along foundation walls. The top of pile caps/bottom of slab at an elevation of 40.0 feet amsl was excavated an additional 4.0-6.0 feet across the site for forming, pouring, and construction of these foundation components (pile caps and grade beams). The bottom elevation of pile caps was approximately 35.0 feet amsl across the site. Lastly, two (2) post-excavation endpoint samples exceeded the Site-Specific SCOs established for the Site at location EP-4 and EP-7. These two locations were over-excavated an additional 2.0 feet and 1.0 feet below elevation 40.0 feet amsl, consisting of 7' by 7' lateral grids.
 - d. A total of 4,075 cubic yards of soil/fill was excavated and removed from the property.

7. Screened excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.
8. Conducted materials management of excavated materials including temporarily stockpiling and segregating in accordance with defined material types and to prevent co-mingling of contaminated material and non-contaminated materials.
9. Transported and disposed all soil/fill material at the following permitted facilities in accordance with all applicable laws and regulations for handling, transporting, and disposing, and the RAWP:
 - a. 1,275 cubic yards of non-hazardous petroleum-contaminated soil/urban fill to Bayshore Soil Management, 75 Crows Mill Road, Keasbey, NJ, 08832;
 - b. 625 cubic yards of non-hazardous petroleum-contaminated soil/urban fill to Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ, 07008;
 - c. 2,175 cubic yards of NJDEP-defined Alternative Fill for beneficial use to Kingsland Landfill Closure Project (Lyndhurst East Landfill) located at Disposal Road and Valley Brook Avenue in Lyndhurst, NJ, 07071.
10. Collected and analyzed a total of eleven (11) post-excavation end-point samples to determine attainment of SCOs. Two of the post-excavation endpoint samples (EP-4 and EP-7) were recollected following over-excavation to remove SCO exceedances. Six (6) endpoint samples were collected in July 2021 for the removal of USTs #1-4, five (5) endpoint samples were collected in August 2021 following the removal of USTs #5-7, and one endpoint sample was collected on December 21, 2022, following the removal of a tank located to the southeast of the property. Track 4 Site Specific SCOs were achieved for all post-excavation and UST endpoint samples.
11. Removed eight (8) underground storage tanks in compliance with applicable laws and regulations. FDNY tank removal affidavit was obtained and registration of tanks with NYSDEC.
12. Remediated NYSDEC Petroleum Spill number 2008388 which was opened on June 22, 2020 during investigation activities.

13. Constructed an engineered Composite Cover System consisting of a four-inch-thick concrete building slab and two inches of rigid insulation with grade beam and tie beam foundation components below. The building sub-slab consists of 8 inches of clean granular sub-base (ASTM 5 and bluestone), with an additional 2 inches of stone surrounding SSDS piping. The central courtyard cover system consists of a minimum of 10 inches of granular sub-base (ASTM 57), with up to 5 feet of stone surrounding a 54"-diameter detention tank. The central courtyard has 4-inch poured concrete over the mechanical equipment storage area and 4 inches of rubberized Pour & Play fill above the stone in the remainder of the area. All cover systems are installed to prevent human exposure to residual soil/fill remaining under the Site. The contractor for the cover construction was Long Island Concrete.
14. Installed a Vapor Barrier System that consisted of vapor barrier beneath the building slab and outside of sub-grade foundation sidewalls to mitigate soil vapor migration into the building. The vapor barrier system consists of 1.2-mm GCP Technologies PrePrufe 300R waterproofing installed on the exterior of all subgrade foundation walls to grade, perimeter grade beams, and below/around the elevator pit. The 20-mil ViaFlex VaporBlock Plus vapor barrier membrane below the slab was installed throughout the full building area. All welds, seams and penetrations are properly sealed to prevent preferential pathways for vapor migration. The vapor barrier system is an Engineering Control for the remedial action.
15. Installed and operating an active Sub-Slab Depressurization System (SSDS) consisting of a network of horizontal pipe set in the middle of a gas permeable layer immediately beneath the building slab and vapor barrier system. The horizontal piping consists of fabric wrapped, perforated schedule 40 4-inch PVC pipe connected to two (2) 6-inch cast iron riser pipes that penetrates the slab and routes vertically via enclosed risers through the building to the roof in two locations. The gas permeable layer is one (1) continuous layer beneath the building footprint. Sub-slab features consist of a 10-inch thick layer of 3/4-inch clean stone around 36-inch wide trenches for all underground piping, and an 8-

inch thick layer of ¾-inch clean stone in the remainder of the footprint. Sub-slab piping penetrates through grade beams where needed throughout the foundation of the building. SSDS risers terminates above the roof line with a straight rain cap cone at the top of the pipe to prevent rain infiltration. The active SSDS includes two (2) hard-wired RadonAway RP265 blowers installed on the roof line and a RadonAway pressure gauge and alarm located in accessible areas on first floor and on the roof. The system's exhaust points are located at least 10 feet away from windows and publicly accessible outdoor areas, and at least 15 feet away from air-intakes serving indoor ventilation systems. Nine (9) permanent pressure monitoring points were installed on the first floor to allow for continued monitoring of sub-slab conditions. The active SSDS is an Engineering Control for the remedial action. The contractor for the Active Sub-Slab Depressurization System construction was Gilbane Construction.

16. Residual soil is present beneath the cover layer and is be subject to Site Management under this Remedial Action.
17. Performed all activities required for the Remedial Action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
18. Implemented storm-water pollution prevention measures in compliance with applicable laws and regulations.
19. Imported gravel to be used for backfill and cover in compliance with the Remedial Action Work Plan and in accordance with applicable laws and regulations.
20. Submitted daily reports during construction oversight activities. Daily, weekly, and monthly reports were intermittently submitted from June 10, 2021 to March 2024.
21. Submitted a Sustainability Report.
22. Submitted an RAR that describes the Remedial Action, certifies that the remedial requirements defined in the Remedial Action Work Plan have been achieved; defines the Site boundaries; describes all Engineering and Institutional Controls applicable to the Site; and describes any changes from the RAWP.

23. Submitted a Site Management Plan (SMP) for long-term management of residual soil, including plans for operation, maintenance, inspection and certification of the performance of Engineering Controls and Institutional Controls. Inspections will be performed annually. Inspection and Certification reports will be submitted by July 30, 2026 (for the reporting period calendar year 2024-2025), July 30, 2027 (for the reporting period calendar years 2025-2026) and every year thereafter (for the reporting period consisting of the prior calendar year). Inspection and Certification Reports will cover all calendar years since the prior reporting period.
24. Recorded a Declaration of Covenants and Restrictions with the property deed with the County Clerk that includes a listing of Engineering Controls and Institutional Controls and a requirement that management of these controls must be in compliance with an approved Site Management Plan (SMP). Institutional Controls including the following: (1) prohibition of vegetable gardening and farming in residual soil; (2) prohibition of the use of groundwater beneath the site without treatment rendering it safe for the intended use; (3) prohibition of disturbance of residual soil unless it is conducted in accordance with the SMP; and (4) prohibition of higher levels of land usage than the restricted residential uses addressed by this Remedial Action without prior notification and approval by OER.

REMEDIAL ACTION REPORT

1.0 SITE BACKGROUND

Highbridge Facilities has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 1400 Cromwell Avenue in the Highbridge section of the Bronx, New York. The boundary of the property subject to this Remedial Action is shown in Figure 1 and includes, in its entirety, Bronx Block 2857, Lot 1. The Remedial Action was performed pursuant to the OER-approved RAWP in a manner that has rendered the property protective of public health and the environment consistent with its intended use. This RAR describes the Remedial Action performed under the RAWP. The Remedial Action described in this document provides for the protection of public health and the environment and complies with applicable environmental standards, criteria and guidance (SCGs) and applicable laws and regulations.

1.1 SITE LOCATION AND BACKGROUND

The Site is located at 1400 Cromwell Avenue in the Highbridge section in the Bronx, New York and is identified as Block 2857 and Lot 1 on the New York City Tax Map. Figure 1 shows the Site location. The alternative address for this site is 1401 Inwood Avenue. The Site is 18,066-square feet and is bounded by a parking lot and parking garage to the north, West 170th Street to the south, Inwood Avenue to the east, and Cromwell Avenue to the west. A map of the site boundary is shown in Figure 2. During the property acquisition and remedial investigation activities in 2019, the Site was used as an unimproved parking lot with a small parking lot kiosk.

1.2 REDEVELOPMENT PLAN

The Site consists of a 6-story charter school named Family Life Academy Charter School IV (FLAVS IV). Layout of the site development is presented in Figure 3. The current zoning designation is C2-4/R8A. The proposed use is consistent with existing zoning for the property. The building class is educational structure – school or academy (W3). The development consists of a school building with an outdoor plaza in the center

of the school. The first floor consists of 11,952 square feet with a cafeteria, kitchen, mechanical room, and classrooms. The second through fourth floors consist of approximately 12,054 square feet with classrooms and administrative space. The fifth floor consists of 12,055 square feet with classrooms, network offices, and other administrative space. The sixth floor consists of 7,278 square feet with a gymnasium, and 4,629 square feet of outdoor play area. The building was constructed slab-on-grade, with a small mechanical cellar along the southern boundary. Excavation for construction purposes was completed to a maximum depth of 6.0 feet below sidewalk grade for slab construction and 10.0 feet below sidewalk grade for pile cap construction.

1.3 DESCRIPTION OF SURROUNDING PROPERTY

The adjoining properties consist of a parking lot and parking garage to the north, auto parts sales and auto repair commercial building across Cromwell Avenue to the west, Cube Smart self-storage across West 170th Street to the south, and auto parts sales and auto repair commercial building across Plaza Drive. Sensitive receptors in the area include Family Life Academy Charter School I and Public School Annex 64 located approximately 60-75 feet to the southeast of the subject property.

1.4 SUMMARY OF PAST SITE USES AND AREAS OF CONCERN

The subject property was historically developed as a one-story parking garage with a basement as identified in 1950 and 1977 Sanborn fire insurance maps. The maps indicate that automobile repair operated at the property, and four (4) buried 550-gallon storage tanks were present.

The AOCs identified for this site include:

1. Past use of site as a parking garage and auto repair facility, based on Sanborn fire insurance maps between 1950 and 1977;
2. Four (4) underground storage tanks in the center of the property, as depicted on Sanborn fire insurance maps between 1950 and 1977.

1.5 SUMMARY OF WORK PERFORMED UNDER THE REMEDIAL INVESTIGATION

Highbridge Facilities, LLC retained PVE Engineering to perform the following scope of work:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Installed eight (8) soil borings across the entire project Site, and collected sixteen (16) soil samples for chemical analysis from the soil borings to evaluate soil quality;
3. Installed two (2) groundwater monitoring wells throughout the Site to establish groundwater flow and collected two (2) groundwater samples for chemical analysis to evaluate groundwater quality;
4. Installed seven (7) soil vapor probes around Site perimeter and collected seven (7) samples for chemical analysis.

1.6 SUMMARY OF FINDINGS OF REMEDIAL INVESTIGATION

1. Elevation of the property ranges from 32 to 36 feet above mean sea level (amsl) from east to west, respectively.
2. Depth to groundwater ranges from 20.0 to 23.0 feet bgs at the Site.
3. Groundwater is estimated to flow from southwest to northeast across the Site.
4. Bedrock was not encountered at the site.
5. The stratigraphy of the site, from the surface down, consists of 10 to 19 feet of urban historic fill. The fill is underlain by brown sand, silt, and some clays from 10 to 31 feet bgs, to an unknown depth below bedrock.
6. Soil/fill samples collected during the RI were compared to NYSDEC Part 375-6 Unrestricted Use and Restricted Residential Use Soil Cleanup Objective (UUSCOs and RRSCO).
 - a. VOCs were detected at concentrations exceeding UUSCOs in two (2) (SB-2 (21-23') and SB-4 (21-23')) of the sixteen (16) soil samples. Methyl Ethyl Ketone (2-Butanone) (3,000 µg/kg), 1,3,5-Trimethylbenze (17,000

µg/kg), Ethylbenzene (5,300 µg/kg), M-P-Xylene (4,400 µg/kg), N-Propylbenzene (max. 7,600 µg/kg), and Xylenes, Total (4,400 µg/kg) were detected above UUSCOs. 1,2,4-Trimethylbenzene (70,000 µg/kg) was detected above RRSCOs in SB-4 (21-23').

- b. SVOCs were detected in nine (9) of the sixteen (16) soil samples at concentrations exceeding UUSCOs. SVOCs exceeding UUSCOs include Benzo(K)Fluoranthene (max. 3,900 µg/kg), Benzo(A)Anthracene (max. 5,530 µg/kg), Benzo(A)Pyrene (max. 4,940 µg/kg), Benzo(B)Fluoranthene (max. 4,320 µg/kg), Chrysene (max. 5,280 µg/kg), Dibenz(A,H)Anthracene (max. 1,110 µg/kg), and Indeno(1,2,3-C,D)Pyrene (max 2,500 µg/kg) were detected at concentrations exceeding RRSCOs.
 - c. Metals were detected in twelve (12) of the sixteen (16) soil samples at concentrations exceeding UUSCOs. Metals exceeding UUSCOs include Chromium, Total (max. 46.1 mg/kg), Copper (max. 251 mg/kg), Nickel (max. 40.8 mg/kg), Zinc (max. 617 mg/kg), and Mercury (max. 0.382 mg/kg). Metals exceeding RRSCOs include Barium (max. 1,220 mg/kg) and Lead (max. 614 mg/kg). The metal exceedances described above are typical of historic fill, with the exception of Mercury.
 - d. Pesticides were detected in nine (9) of the sixteen (16) soil samples at concentrations exceeding UUSCOs. Pesticides exceeding UUSCOs include Dieldrin (max 14.9 µg/kg), P,P'-DDE (max 13.8 µg/kg), and P,P'-DDT (max 147 µg/kg). No pesticides were detected at concentrations exceeding RRSCOs.
 - e. No PCBs were detected at concentrations exceeding UUSCOs.
 - f. No PFAS compounds were detected in the one (1) sample analyzed for emerging contaminants [SB-4 (20-21')].
7. Groundwater samples collected during the RI were compared to NYSDEC 6NYCRR Part 703.5 Groundwater Quality Standards (GQS).

- a. VOCs were detected in two (2) (MW-1 and MW-3) of the three (3) groundwater samples at concentrations exceeding GQS. 1,2,4-Tremthylbenzene (61 µg/L), 1,3,5-Trimethylbenzene (24 µg/L), Ethylbenzene (27 µg/L), Isopropylbenzene (max. 32 µg/L), M-P-Xylene (42 µg/L), N-Butylbenzene (5.6 µg/L), N-Propylbenzene (max. 52 µg/L), Sec-Butylbenzene (20 µg/L), and Xylenes, Total (43 µg/L) were detected at concentrations exceeding GQS.
 - b. SVOCs, Benzo(A)Anthracene (0.0900 µg/L), Benzo(A)Pyrene (0.0900 µg/L), Benzo(B)Fluoranthene (0.0900 µg/L), Benzo(K)Fluoranthene (0.0700 µg/L) Chrysene (0.0700 µg/L), Indeno(1,2,3-C,D)Pyrene (0.0500 µg/L), and Naphthalene (31.1 µg/L) were detected at concentrations exceeding GQS in MW-1.
 - c. Dissolved metals, Iron (max 2.45 µg/L), Magnesium (max 39.0 µg/L), Manganese (max 8.35 µg/L), and Sodium (max 312 µg/L), were detected in the three (3) groundwater samples at concentrations exceeding GQS.
 - d. No PCBs nor Pesticides were detected in any of the three (3) groundwater samples at concentrations exceeding GQS.
 - e. MW-1 contained two (2) PFAS compounds at concentrations exceeding 6 NYCRR Part 375 Maximum Contaminant Limits (MCL); Perfluorooctanesulfonic Acid (PFOS) (16.0 ng/kg), and Perfluorooctanoic Acid (PFOA) (19.5 ng/kg). The total concentration of PFOS and PFOA detected was 35.5 ng/L. PFAS concentrations ranged between 3.13 ng/L and 19.5 ng/L.
8. Soil vapor samples collected during the RI were compared to the NYSDOH 2006 Final Guidance for Evaluating Soil Vapor Intrusion's decision matrices. VOCs were detected in all seven (7) of the soil vapor samples collected. Tetrachloroethylene (PCE) was detected in all seven (7) soil vapor samples collected and ranged from 9.5 µg/m³ (SV-6) to 200 µg/m³ in SV-3, which may require monitoring or mitigation according to the NYSDOH.
- a. The chlorinated VOCs, trichloroethene (TCE) (max. 3.2 µg/m³), vinyl

chloride ($0.25 \mu\text{g}/\text{m}^3$), methylene chloride (max. $6.1 \mu\text{g}/\text{m}^3$) and carbon tetrachloride (max. $0.56 \mu\text{g}/\text{m}^3$) were detected in one or more samples, but at concentrations below their respective monitoring level ranges established within the State DOH soil vapor guidance matrix. The chlorinated VOCs, 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethene, and cis-1,2-dichloroethene, were not detected in the seven soil vapor samples.

- b. Low levels of petroleum-related VOCs were also present in each of the seven samples. The total concentration of petroleum-related VOCs (Total BTEX) ranged from $63.2 \mu\text{g}/\text{m}^3$ in SV-3 to $84.0 \mu\text{g}/\text{m}^3$ in SV-4. Individual BTEX compounds included benzene (max. $14.0 \mu\text{g}/\text{m}^3$), ethylbenzene (max. $6.0 \mu\text{g}/\text{m}^3$), toluene (max. $37.0 \mu\text{g}/\text{m}^3$), m&p xylenes (max. $25.0 \mu\text{g}/\text{m}^3$) and o-xylene (max. $12.0 \mu\text{g}/\text{m}^3$).

Appendix 1 includes the RIR.

2.0 DESCRIPTION OF REMEDIAL ACTIONS

The Remedial Action was performed in accordance with an OER-approved Remedial Action Work Plan and achieved the Remedial Action Objectives established for the project. The Remedial Action was evaluated in an alternatives analysis and was determined to be protective of human health and the environment, compliant with standards, criteria, and guidelines (SCGs), effective in the short-term, effective in the long-term, capable of attaining appropriate levels of reduction of toxicity, mobility, or volume of contaminated material, implementable, cost effective, acceptable to the community, consistent with land uses, and sustainable.

A summary of the milestones achieved in the Remedial Action is as follows:

- A Pre-Application Meeting was held on October 6, 2020. A Remedial Investigation (RI) was performed from June 22, 2020.
- A RI Report was prepared to evaluate data and information necessary to develop a Remedial Action Work Plan (RAWP).
- A Site Contact List was established. A RAWP was prepared and released with a Fact Sheet on December 17, 2020 for a 30-day public comment period.
- The RAWP January 2021 and Stipulation List dated January 18, 2021 was approved by the New York City Office of Environmental Remediation (OER) on April 9, 2021.
- Site briefings was conducted with New York State Department of Environmental Conservation (NYSDEC) and New York City Department of Health and Mental Hygiene in November 17, 2020.
- A Pre-Construction meeting was held on April 21, 2021.
- A Fact Sheet providing notice of the start of the remedial action was issued on June 17, 2021.
- The remedial action began on June 10, 2021 with the advancement of six (6) test pits for waste characterization and investigation for buried underground storage tanks. Asphalt removal began on June 14, 2021, and excavation started on June 17, 2021. In January 2022, the site was shut down and the Construction Manager (Gilbane Construction) demobilized from the site for access agreement

negotiations with the northern adjoining lot. No activities occurred on site until remobilizing in September of 2022. Remedial activities concluded on April 8, 2024 with the completion of the SSDS installation.

- A Post-Construction meeting was held on April 24, 2024. Appendix 2 includes the RAWP.

The remedial action consisted of the following tasks:

1. Prepared a Community Protection Statement and implemented a Citizen Participation Plan.
2. Mobilized site security and equipment, completed utility mark outs, and marked and staked excavation areas.
3. Performed Waste Characterization Study prior to excavation activities. Generic hybrid sampling protocols were implemented for disposal options in New York, New Jersey, or Pennsylvania. Waste characterization soil samples were collected on January 28, 2021 for laboratory analysis. Waste characterization samples were collected at a frequency dictated by disposal facilities, which included Kingsland Landfill (NY), Clean Earth of Carteret (NJ), and Bayshore Soil Management (NJ).
4. Performed a Community Air Monitoring Program for particulates and volatile organic carbon compounds. Several acute exceedances were detected during CAMP implementation, including PM-10 fugitive dusts on 6/10/21, 6/21/21, 7/14/21, 8/3/21, 8/4/21, 8/5/21, and 1/4/2023. One (1) 15-minute average concentration of dust was detected above action levels, on 7/20/2021 between 11:34 and 11:42 in the downwind station. Dust measures were applied, and the concentrations reduced below action levels. No other 15-minute average exceedances were detected.
5. Established Track 4 Site Specific Soil Cleanup Objectives (SCOs). The following Track 4 Site-Specific SCOs were utilized: lead: 800 ppm; barium: 800 ppm; total SVOCs: 250 ppm.
6. The following excavations were performed, in three separate phases. These phases were established for remedial activities only and were not referenced for

construction purposes. Excavation diagrams for each of these phases described below are included as Figure 5A, Figure 5B, and Figure 5C.

- a. First Phase: The entire footprint of the Site was excavated to a depth between two (2) and six (6) feet below pre-development grade. The pre-development elevation of the site from east to west was 42.0 to 46.0 feet above mean sea level (amsl), respectively. The entire footprint was excavated to an elevation of 40.0 feet amsl.
 - b. Second Phase: Several underground storage tank (UST) pads were discovered at the conclusion of the first phase of excavation. Two (2) tank vaults in the southwest and northeast corners of the site contained a combined eight (8) USTs. Additional excavation totaling approximately 10 feet in depth, to an elevation of 30.0 feet amsl, was continued in these two locations to remove the vaults. Excavation of the southern wall was continued for utility/mechanical services and plumbing installation, as well as an elevator pit totaling an additional 5.0 feet of excavation to an elevation of 35.0 feet amsl.
 - c. Third Phase: Foundation design included a network of grade beams connecting pile caps and footings along foundation walls. The top of pile caps/bottom of slab at an elevation of 40.0 feet amsl was excavated an additional 4.0-6.0 feet across the site for forming, pouring, and construction of these foundation components (pile caps and grade beams). The bottom elevation of pile caps was approximately 35.0 feet amsl across the site. Lastly, two (2) post-excavation endpoint samples exceeded the Site-Specific SCOs established for the Site at location EP-4 and EP-7. These two locations were over-excavated an additional 2.0 feet and 1.0 feet below elevation 40.0 feet amsl, consisting of 7' by 7' lateral grids.
 - d. A total of 4,075 cubic yards of soil/fill was excavated and removed from the property.
7. Screened excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.

8. Conducted materials management of excavated materials including temporarily stockpiling and segregating in accordance with defined material types and to prevent co-mingling of contaminated material and non-contaminated materials.
9. Transported and disposed all soil/fill material at the following permitted facilities in accordance with all applicable laws and regulations for handling, transporting, and disposing, and the RAWP:
 - a. 1,275 cubic yards of non-hazardous petroleum-contaminated soil/urban fill to Bayshore Soil Management, 75 Crows Mill Road, Keasbey, NJ, 08832;
 - b. 625 cubic yards of non-hazardous petroleum-contaminated soil/urban fill to Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ, 07008;
 - c. 2,175 cubic yards of NJDEP-defined Alternative Fill for beneficial use to Kingsland Landfill Closure Project (Lyndhurst East Landfill) located at Disposal Road and Valley Brook Avenue in Lyndhurst, NJ, 07071.
10. Collected and analyzed a total of eleven (11) post-excavation end-point samples to determine attainment of SCOs. Two of the post-excavation endpoint samples (EP-4 and EP-7) were recollected following over-excavation to remove SCO exceedances. Six (6) endpoint samples were collected in July 2021 for the removal of USTs #1-4, five (5) endpoint samples were collected in August 2021 following the removal of USTs #5-7, and one endpoint sample was collected on December 21, 2022, following the removal of a tank located to the southeast of the property. Track 4 Site Specific SCOs were achieved for all post-excavation and UST endpoint samples.
11. Removed eight (8) underground storage tanks in compliance with applicable laws and regulations. FDNY tank removal affidavit was obtained and registration of tanks with NYSDEC.
12. Remediated NYSDEC Petroleum Spill number 2008388 which was opened on June 22, 2020 during investigation activities.
13. Constructed an engineered Composite Cover System consisting of a four-inch-thick concrete building slab and two inches of rigid insulation with grade beam and tie beam foundation components below. The building sub-slab consists of 8

inches of clean granular sub-base (ASTM 5 and bluestone), with an additional 2 inches of stone surrounding SSDS piping. The central courtyard cover system consists of a minimum of 10 inches of granular sub-base (ASTM 57), with up to 5 feet of stone surrounding a 54"-diameter detention tank. The central courtyard has 4-inch poured concrete over the mechanical equipment storage area and 4 inches of rubberized Pour & Play fill above the stone in the remainder of the area. All cover systems are installed to prevent human exposure to residual soil/fill remaining under the Site. The contractor for the cover construction was Long Island Concrete.

14. Installed a Vapor Barrier System that consisted of vapor barrier beneath the building slab and outside of sub-grade foundation sidewalls to mitigate soil vapor migration into the building. The vapor barrier system consists of 1.2-mm GCP Technologies PrePrufe 300R waterproofing installed on the exterior of all subgrade foundation walls to grade, perimeter grade beams, and below/around the elevator pit. The 20-mil ViaFlex VaporBlock Plus vapor barrier membrane below the slab was installed throughout the full building area. All welds, seams and penetrations are properly sealed to prevent preferential pathways for vapor migration. The vapor barrier system is an Engineering Control for the remedial action.
15. Installed and operating an active Sub-Slab Depressurization System (SSDS) consisting of a network of horizontal pipe set in the middle of a gas permeable layer immediately beneath the building slab and vapor barrier system. The horizontal piping consists of fabric wrapped, perforated schedule 40 4-inch PVC pipe connected to two (2) 6-inch cast iron riser pipes that penetrates the slab and routes vertically via enclosed risers through the building to the roof in two locations. The gas permeable layer is one (1) continuous layer beneath the building footprint. Sub-slab features consist of a 10-inch thick layer of 3/4-inch clean stone around 36-inch wide trenches for all underground piping, and an 8-inch thick layer of 3/4-inch clean stone in the remainder of the footprint. Sub-slab piping penetrates through grade beams where needed throughout the foundation of the building. SSDS risers terminates above the roof line with a straight rain

cap cone at the top of the pipe to prevent rain infiltration. The active SSDS includes two (2) hard-wired RadonAway RP265 blowers installed on the roof line and a RadonAway pressure gauge and alarm located in accessible areas on first floor and on the roof. The system's exhaust points are located at least 10 feet away from windows and publicly accessible outdoor areas, and at least 15 feet away from air-intakes serving indoor ventilation systems. Nine (9) permanent pressure monitoring points were installed on the first floor to allow for continued monitoring of sub-slab conditions. The active SSDS is an Engineering Control for the remedial action. The contractor for the Active Sub-Slab Depressurization System construction was Gilbane Construction.

16. Residual soil is present beneath the cover layer and is be subject to Site Management under this Remedial Action.
17. Performed all activities required for the Remedial Action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
18. Implemented storm-water pollution prevention measures in compliance with applicable laws and regulations.
19. Imported gravel to be used for backfill and cover in compliance with the Remedial Action Work Plan and in accordance with applicable laws and regulations.
20. Submitted daily reports during construction oversight activities. Daily, weekly, and monthly reports were intermittently submitted from June 10, 2021 to March 2024.
21. Submitted a Sustainability Report.
22. Submitted an RAR that describes the Remedial Action, certifies that the remedial requirements defined in the Remedial Action Work Plan have been achieved; defines the Site boundaries; describes all Engineering and Institutional Controls applicable to the Site; and describes any changes from the RAWP.
23. Submitted a Site Management Plan (SMP) for long-term management of residual soil, including plans for operation, maintenance, inspection and certification of the performance of Engineering Controls and Institutional Controls. Inspections

will be performed annually. Inspection and Certification reports will be submitted by July 30, 2026 (for the reporting period calendar year 2024-2025), July 30, 2027 (for the reporting period calendar years 2025-2026) and every year thereafter (for the reporting period consisting of the prior calendar year). Inspection and Certification Reports will cover all calendar years since the prior reporting period.

24. Recorded a Declaration of Covenants and Restrictions with the property deed with the County Clerk that includes a listing of Engineering Controls and Institutional Controls and a requirement that management of these controls must be in compliance with an approved Site Management Plan (SMP). Institutional Controls including the following: (1) prohibition of vegetable gardening and farming in residual soil; (2) prohibition of the use of groundwater beneath the site without treatment rendering it safe for the intended use; (3) prohibition of disturbance of residual soil unless it is conducted in accordance with the SMP; and (4) prohibition of higher levels of land usage than the restricted residential uses addressed by this Remedial Action without prior notification and approval by OER.

3.0 COMPLIANCE WITH REMEDIAL ACTION WORK PLAN

3.1 CONSTRUCTION HEALTH & SAFETY PLAN

The remedial construction activities performed under this program were in compliance with the Construction Health and Safety Plan and applicable laws and regulations. The Site Safety Coordinator was Erik Draijer.

3.2 COMMUNITY AIR MONITORING PLAN

The Community Air Monitoring Plan provided for the collection and analysis of air samples during remedial construction activities to ensure proper protections were employed to protect workers and the neighboring community. Monitoring was performed from June 14, 2021 to March 20, 2023 in compliance with the Community Air Monitoring Plan in the approved RAWP. On July 20, 2021, one fifteen (15) minute running average PM10 was detected above the background concentrations during air monitoring at the downwind air monitoring station. Dust mitigation measures were incorporated into excavation activities. The results of Community Air Monitoring are shown in Appendix 3.

3.3 SOIL/MATERIALS MANAGEMENT PLAN

The Soil/Materials Management Plan provided detailed plans for managing all soil/materials that were disturbed at the Site, including excavation, handling, storage, transport and disposal. It also included a series of controls to assure effective, nuisance-free remedial activity in compliance with applicable laws and regulations. Remedial construction activities performed under this program were in compliance with the SMMP in the approved RAWP.

3.4 STORM-WATER POLLUTION PREVENTION

Storm water pollution prevention included physical methods and processes to control

and/or divert surface water flows and to limit the potential for erosion and migration of Site soils, via wind or water. Remedial construction activities performed under this program were in full compliance with methods and processes defined in the RAWP for storm water prevention and applicable laws and regulations.

3.5 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN

As noted in the January 2021 Stipulation List, a 20-mil vapor barrier was proposed beneath the structure's slab and along foundation sidewalls. The barrier chosen for this project is manufactured by Raven Industries (now Viaflex), Vapor Block Plus. A 30-mil vapor barrier, Viaflex Absolute Barrier Y30BAC, was proposed to be installed beneath the structure's slab in areas where SSDS piping is not accessible including below the Center Hall, Stairwell C, elevator, and Guidance 1 on the first floor. Due to manufacturer difficulties, the Absolute Barrier 30 was unable to be procured in a timely manner for the installation of the sub-slab depressurization system (SSDS) and associated vapor barrier system. PVE reviewed the specification sheets from the manufacturer for both the Y30BAC and VaporBlock Plus 20. The aqueous phase film permeance established for Absolute Barrier Y30BAC for VOCs, including benzene, ethylbenzene, toluene, xylenes (BTEX), and tetrachloroethylene (PCE) and trichloroethylene (TCE), range from 1.35×10^{-10} to 2.95×10^{-10} m² /second. The aqueous phase film permeance established for VaporBlock Plus 20 for VOCs, specifically BTEX, range from 1.10×10^{-10} to 1.57×10^{-10} m² /second. However, the aqueous phase film permeance established for PCE and TCE are 7.22×10^{-11} and 7.66×10^{-11} , respectively. Therefore, the ViaFlex VaporBlock 20-mil vapor barrier's aqueous phase film permeance rating outperforms the Y30BAC, and the VaporBlock 20-mil vapor barrier was used exclusively across the building foundation. The vapor barrier specification sheet and proposal letter are included in Appendix 12.

On December 20, 2022, PVE prepared a construction update as a deviation from the OER-approved RAWP to request soil re-use approval in the western foundation area, separated into four (4) zones based on grade beam design (from south to north, Zone 1, Zone, 2, Zone 3, and Zone 4). Soil re-use commenced prior to OER approval, and PVE

held a meeting with OER and Gilbane to review. Approximately 140 cubic yards of material were required for backfill within the interiors of all grade beam and pile cap areas to raise the elevation approximately 1.0 foot to the bottom of slab. Material generated during the sloping excavation of all pile cap areas for form work and concrete pouring was stockpiled in the central and future courtyard area of the site. Backfill operations on the western portion of the foundation were completed prior to December 22, 2022, therefore four (4) endpoint samples previously collected from the backfilled areas were used as representative analytical data. Soil sample samples collected from the backfilled areas on December 13, 2022 and labeled as EP-1 20221213, EP-2 20221213, EP-3 20221213 and EP-4 20221213 were used to represent the four grids of grade beam and pile cap sections. Soil samples were compared to the Site-Specific SCOs to confirm backfilled material meets Track 4 Cleanup Objectives, and OER approved this deviation. EP-1 20221213, EP-2 20221213, and EP-3 20221213 soil samples met Track 4 Site-Specific SCOs, and EP-4 20221213 exceeded Track 4 Site-Specific SCOs for the following compounds: Barium, 1330 mg/kg. Supplemental excavation at the location of was proposed and implemented. EP-4 20221213 met Track 4 Site-Specific SCOs.

On February 26, 2021, Bayshore Soil Management provided an approval letter for up to 4,800 tons of material under BSM#2721-0193, On June 23, 2021, Modern Industries provided an approval letter of up to 3,000 cubic yards of material at the Lyndhurst East Landfill Closure (Kingsland Landfill) as NJDEP Alternative Fill. On March 2, 2023, Clean Earth of Carteret provided an approval letter for disposal of up to 700 cubic yards of material. Letters from LIC/Modern Industries to disposal facility providing materials type, source and data, were not provided to PVE, as they were not prepared.

In January 2022, the site was shut down and the Construction Manager (Gilbane Construction) demobilized from the site for access agreement negotiations with the northern adjoining lot (Block 2857, Lot 6). No activities occurred on site until remobilizing in September of 2022. Several drawing sets were submitted to NYC DOB for removal of the field stone wall along the northern lot line. The wall encroached onto the adjoining property owner's lot to the north, therefore filings were filed at 1408 Cromwell Avenue (Block 2857, Lot 6). Filing included removal of retaining wall, concrete and steel permanent structural bracing, and temporary bracing. This lot also

contained an E-Designation as a part of the Jerome Avenue Rezoning (E-442), therefore a Soils & Material Management Plan (SMMP) was required by OER to approve a Notice of No Objection (NNO) for this work. PVE prepared an SMMP in April 2022 and the project number 18TMP1405X was created for this work. The SMMP Satisfaction Report is included as Appendix 18.

Four (4) loads of stone import was completed prior to OER's review of proposed stone import. The surrounding of excavation area for UST 1-5 was backfilled with approximately 59.55 tons of ¾" recycled concrete aggregate, delivered on August 9, 2021, by Modern Industries, originating from IRRC in Lyndhurst, NJ. The submittal was provided to OER on April 22, 2021, as part of an initial SSDS import package, however the material was utilized for UST backfill instead. The request was not explicitly made for stone import for the USTs, however this material was the only submittal provided at this time and was available for purchase by the contractor.

One approximately 200-gallon underground tank was encountered during pile installation along the southern foundation wall to the east of the elevator pit (Figure 6) and was removed during excavation activities for house trap construction at 38 feet amsl. During removal, no tank contents were observed, no pipe connections were present, and no evidence of petroleum was identified surrounding the tank. PVE collected an endpoint sample at the final house trap elevation (UST EP-5) on December 21, 2022. The tank was removed and determined to have not contained fuel oil, therefore the tank was not included on the PBS registration. UST EP-5 analytical results contained concentrations that were below all Track 4 Site-Specific SCOs. No other documentation was recorded. FDNY affidavits were not provided to PVE.

4.0 REMEDIAL PROGRAM

4.1 PROJECT ORGANIZATION

Principal personnel who participated in the remedial action include:

- Mariana Verri, Assistant Project Manager;
- Courtney Milot, Environmental Technician;
- Fredric LeClair, Environmental Technician;
- Michel Tettey, Environmental Technician;

The Professional Engineer (PE) and Qualified Environmental Professionals (QEP) for this project are:

- Erik Draijer, Senior Project Manager
- David Sivin, PE, Project Engineer

4.2 SITE CONTROLS

Site Preparation

Mobilization

Mobilization was conducted as necessary for each phase of work at the Site. Mobilization included field personnel orientation, equipment mobilization (including securing all sampling equipment needed for the field investigation), marking/staking sampling locations and utility mark-outs. Each field team member attended an orientation meeting to become familiar with the general operation of the Site, health and safety requirements, and field procedures.

Fencing

The site was secured with plywood fencing along all four sides of the property.

Utility marker layout

The presence of utilities and easements on the Site was fully investigated prior to the performance of invasive work such as excavation or drilling under this plan by using, at a minimum, the One-Call System (811). All invasive activities were performed in

compliance with applicable laws and regulations to assure safety.

The integrity and safety of on-Site and off-Site structures was maintained during all invasive, excavation or other remedial activity performed under the RAWP.

Acquisition of agency approvals

All required agency approvals were obtained.

Soil Screening

A visual and olfactory assessment of excavated materials was performed under the supervision of a Qualified Environmental Professional. PID meters were continually operated by field personnel to monitor the ambient VOC levels at the downwind perimeter during all invasive work. No 15-minute running total VOC concentrations were detected above the background (upwind) concentrations during air monitoring at the downwind air-monitoring station.

Stockpile Management

Excavated soil was stockpiled separately, and segregated based on material type, and segregated from construction materials, (concrete and asphalt, or non-hazardous soil respectively). Excavated soils were stockpiled on double layers of 8-mil sheeting, and kept covered at all times with appropriately anchored plastic tarps, and were routinely inspected.

Truck Inspection

A gravel ramp was installed as a truck inspection pad at both entrances to the site. All trucks hauling the contaminated material were brushed to remove contaminated material adhering to their surfaces. Trucks hauling the contaminated material were covered in order to control the generation of fugitive dust and/or leakage from the trucks during transport. Trucks were inspected for mud/dirt on the tires as they exited the subject property in order to prevent debris from being tracked out onto the sidewalk and subsequent public street. The sidewalk and street were swept as necessary due to minor debris for the duration of the workday and at the end of each workday.

Site Security

The subject property was surrounded by plywood fence on all sides encapsulating it from the general public. At the end of the workday, the main gates of the subject property were locked with a heavy-duty chain and lock. Camera security was provided 24/7.

Nuisance Controls

The Community Air Monitoring Program included the use of a TSI DustTrak to measure dust/particulate matter upwind and downwind of active excavations. PIDs were used for volatile organic compound detection upwind and downwind of active excavations. Upwind and downwind measurements were collected for the entire duration of remedial action activities.

Reporting

Daily reports were sent to OER between June 10, 2021 and August 3, 2023, and included the following: date, weather, work activities performed, work location, samples collected, problems encountered, planned activities for the subsequent day, waste transported offsite and pictures of the day's work. Monthly reports were provided to OER during superstructure construction.

All daily, weekly and monthly reports are included in Appendix 3. Digital photographs of the Remedial Action are included in Appendix 3.

4.3 MATERIALS EXCAVATION AND REMOVAL ACTION

Soil/Fill Excavation and Removal

The following excavations were performed, in three separate phases. These phases are established for remedial activities only, and were not referenced for construction purposes. Excavation diagrams for each of the phases described below are included as Figure 5A, Figure 5B, and Figure 5C.

- a. First Phase: The entire footprint of the Site was excavated to a depth between two (2) and six (6) feet below pre-development grade. The pre-development elevation of the site from east to west was 42.0 to 46.0 feet

above mean sea level (amsl), respectively. The entire footprint was excavated to an elevation of 40.0 feet amsl.

- b. Second Phase: Several underground storage tank (UST) pads were discovered at the conclusion of the first phase of excavation. Two (2) tank vaults in the southwest and northeast corners of the site contained a combined eight (8) USTs. Additional excavation totaling approximately 10 feet in depth, to an elevation of 30.0 feet amsl, was continued in these two locations to remove the vaults. Excavation of the southern wall was continued for utility/mechanical services and plumbing installation, as well as an elevator pit totaling an additional 5.0 feet of excavation to an elevation of 35.0 feet amsl.
- c. Third Phase: Foundation design included a network of grade beams connecting pile caps and footings along foundation walls. The top of pile caps/bottom of slab at an elevation of 40.0 feet amsl was excavated an additional 4.0-6.0 feet across the site for forming, pouring, and construction of these foundation components (pile caps and grade beams). The bottom elevation of pile caps was approximately 35.0 feet amsl across the site. Lastly, two (2) post-excavation endpoint samples exceeded the Site-Specific SCOs established for the Site at location EP-4 and EP-7. These two locations were over-excavated an additional 2.0 feet and 1.0 feet below elevation 40.0 feet amsl, consisting of 7' by 7' lateral grids. The detention tank area was excavated to a depth of approximately 35 feet amsl in the courtyard area in March 2023.

Excavation diagrams for each of the phases described below are included as Figure 5A, Figure 5B, and Figure 5C. A total of 4,075 cubic yards (of soil/fill were excavated and removed from the property during the Removal Action.

Material was excavated totaling 1,000 cubic yards of non-hazardous petroleum-contaminated soil/urban fill and transported to Bayshore Soil Management, 75 Crows Mill Road, Keasbey, NJ, 08832. Excavation of 625 cubic yard of non-hazardous petroleum-contaminated soil/urban fill was transported to Clean Earth of Carteret, 24

Middlesex Avenue, Carteret, NJ, 07008; Excavation of 2,175 cubic yards of NJDEP-defined Alternative Fill for beneficial use was transported to Kingsland Landfill Closure Project (Lyndhurst East Landfill) located at Disposal Road and Valley Brook Avenue in Lyndhurst, NJ, 07071.

Material was excavated and stockpiled during the first phase of excavation, with all material removed from site via stockpile or live-loading. Petroleum-contaminated soil during UST removal in the two UST areas was stockpiled or temporarily backfilled within the former vault location for support of an excavation extending more than 5.0 feet, as SOE design was not prepared for UST vaults. Material generated during the third phase of excavation was stockpiled in the center of the Site in the location of the future courtyard. A majority of material generated during pile cap and grade beam excavation was disposed of, however sloped excavation surrounding the pile caps and grade beams was performed to prepare forms for concrete pours and reused in these areas.

Onsite Reuse

Material generated during pile cap and grade beam excavation was predominately disposed of, however sloped excavation surrounding the pile caps and grade beams was performed to prepare forms for concrete pours. PVE requested re-use of this material to backfill slopes surrounding the forms following concrete pour, as well as areas in between grade beams to raise the site elevation to top of grade beam which required between 0 and 18 inches of backfill. A map depicting backfill placement locations is included as Figure 7.

On December 20, 2022, PVE prepared a construction update as a deviation from the OER-approved RAWP to request soil re-use approval in the western foundation area, separated into four (4) zones based on grade beam design (from south to north, Zone 1, Zone 2, Zone 3, and Zone 4). Soil re-use commenced prior to OER approval, and PVE held a meeting with OER and Gilbane to review. Approximately 140 cubic yards of material were required for backfill within the interiors of all grade beam and pile cap areas to raise the elevation approximately 1.0 foot to the bottom of slab. Material generated during the sloping excavation of all pile cap areas for form work and concrete

pouring was stockpiled in the central and future courtyard area of the site. Backfill operations on the western portion of the foundation were completed prior to December 22, 2022, therefore four (4) endpoint samples previously collected from the backfilled areas were used as representative analytical data. Soil sample samples collected from the backfilled areas on December 13, 2022 and labeled as EP-1 20221213, EP-2 20221213, EP-3 20221213 and EP-4 20221213 were used to represent the four grids of grade beam and pile cap sections. Soil samples were compared to the Site-Specific SCOs to confirm backfilled material meets Track 4 Cleanup Objectives, and OER approved this deviation. EP-1 20221213, EP-2 20221213, and EP-3 20221213 soil samples met Track 4 Site-Specific SCOs, and EP-4 20221213 exceeded Track 4 Site-Specific SCOs for the following compounds: Barium, 1330 mg/kg. Supplemental excavation at the location of was proposed and implemented, which included removal of backfilled re-use around footings. Following over-excavation, endpoint sample EP-4 20230306 was collected and met Track 4 Site-Specific SCOs.

On January 6, 2023, PVE proposed a soil re-use plan for the eastern portion of the foundation in similar scope to the western portion of the Site. Material generated during the sloping excavation of all pile cap areas for form work and concrete pouring was stockpiled in the central and future courtyard area of the site. Approximately 50 cubic yards of material was excavated from these foundation trenches and stockpiled. On January 6, 2023, PVE collected a 5-point composite soil sample (EAST RE-USE COMP 20230106) from the east re-use composite stockpile to represent the proposed re-use for the top 1.0 feet within the foundation grids. The composite sample met Track 4 Site-Specific SCOs and results were presented to OER for approval prior to soil re-use on January 16, 2023 with the York Labs SDG 23A0358. OER acceptance is attached in Appendix 17.

NYSDEC Petroleum Spills

During remedial investigation activities, visual and olfactory indications of petroleum contaminated soil were observed in the subsurface on the eastern portion of the property in soil borings between 23 and 31 feet bgs. Four (4) 550-gallon USTs were referenced on

Sanborn fire insurance maps for the subject property between 1950 and 1977, however the locations were not explicitly depicted. Based on this information, OER requested PVE to report a petroleum spill to NYSDEC, and the case was assigned Spill #2008388 on December 28, 2020. On July 7, 2021, five (5) 750-gallon USTs encased in a concrete vault were encountered on the southwestern portion of the Site during excavation activities. One approximately 200-gallon underground tank was encountered during pile installation along the southern foundation wall to the east of the elevator pit (Figure 6) and was removed during excavation activities for house trap construction at 38 feet amsl. During removal, no tank contents were observed, no pipe connections were present, and no evidence of petroleum was identified surrounding the tank. PVE collected a supplemental endpoint sample at the final house trap elevation (UST EP-5) on December 21, 2022. The tank was removed and determined to have not contained fuel oil, therefore the tank was not included on the PBS registration. Spill #2008388 is in the process of being closed. Spill remediation and UST closure are further discussed below in the UST Removal section.

Correspondence associated with the NYS DEC Petroleum Spill is located in Appendix 10.

UST Removal

A total eight (8) USTs were encountered in two locations during excavation activities. The USTs were identified in concrete vaults and were unregistered. Removal activities are described below. Additional obstructions were discovered during pile installation, however pile construction in the vicinity of these obstructions did not allow for excavation activities to occur, therefore these obstructions were not confirmed to be USTs.

USTs #1-5

Five (5) 750-gallon USTs, encased in concrete, were identified during excavation of the southwest portion of the site on July 7, 2021. A fuel pump was located at the top of the vault, suggesting these previously contained gasoline. The tanks were entirely filled with water. Soil was carefully removed to unearth the tank and concrete encasement and was

stockpiled on poly-sheeting. The maximum PID reading was recorded at 3.3 parts per million (ppm). No petroleum odors or visibly contaminated soil were noted. On July 9 and 12, 2021, AARCO Environmental Services was subcontracted to pump out the oil/gasoline mixture remaining in the tanks. On July 9, 2021, AARCO Environmental Services (AARCO) was on site to pump out the water/gasoline mixture remaining in each tank (approximately 4,000 gallons on July 9 and July 12, 2021). The gasoline/water mixture was transferred by AARCO for disposal at Advanced Wastewater Treatment Corp. (AWWT) in Farmingdale, New York. Supplemental excavation was performed to a depth of 10.0 below elevation at the time (to 30.0 feet amsl), however a majority of the excavation consisted of removing the concrete encasement. The tanks were cut, cleaned, and removed from the site on July 20, 2021 by AARCO. Wash water was contained in a 55-gallon drum and transferred with the five (5) tanks for disposal at the AWWT facility in Farmingdale, New York. Material was temporarily backfilled into the UST area to establish a safe slope and stabilize the fall zone to be less than 5 feet deep. Material was removed from the Site in this excavation area when general transportation and disposal activities resumed for construction. After temporary backfill material was removed, the tank cavity was backfilled with imported ASTM 57 in February 2023.

Post-excavation soil samples were collected on July 14, 2021. One (1) sample was collected from each of the sidewalls and two (2) from the bottom (EP-N, EP-S, EP-E, EP-W, EP-B-1, & EP-B2) of the former tank area. Soil samples were retained in laboratory provided containers, packed on ice, and shipped via courier to a New York State Department of Health (NYSDOH) ELAP-certified laboratory for analysis of CP-51 VOCs via USEPA Method 8260 and CP-51 Semi-Volatile Organic Compounds (SVOCs) via USEPA Method 8270 in accordance with the CP-51 Soil Cleanup Guidance Document.

USTs #6-8

Between August 3 and August 4, 2021, three (3) 550-gallon USTs encased in concrete were identified during excavation of the eastern portion of the site. Soil was carefully removed to expose each tank and the concrete encasement and stockpiled on

poly-sheeting. No petroleum odors or visibly contaminated soil were noted. On August 5, 2021, AARCO Environmental Services was subcontracted to pump out the water/gasoline mixture remaining in the tanks. Approximately 1,300 gallons was pumped out and the gasoline/water mixture was transferred by AARCO for disposal at the Dale Transfer Station in West Babylon, New York.

Post-excavation soil samples were collected on August 6, 2021. One (1) sample was collected from each of the sidewalls and the bottom (EP-North, EP-South, EP-East, EP-West, & EP-Bottom) of the vault area. Each sample was submitted for analysis of CP-51 VOCs and SVOCs. The tanks were cut, cleaned, and removed from the site on August 10, 2021, by AARCO. Wash water was contained in a 55-gallon drum and transferred with the three (3) tanks for disposal at the AWWT facility in Farmingdale, New York. Supplemental excavation was performed to a depth of 10.0 below elevation at the time (to 30.0 feet amsl), until excavation was discontinued for consideration of foundation pile stability. The surrounding area was backfilled with approximately 59.55 tons of ¾" recycled concrete aggregate, delivered on August 9, 2021, by Modern Industries, originating from IRRC in Lyndhurst, NJ. The submittal was provided to OER on April 22, 2021, as part of an initial SSDS import package, however the material was utilized for UST backfill instead.

No VOCs were identified at concentrations exceeding CP-51 SCOs in any of the six (6) post-excavation soil samples collected surrounding the vault for USTs #1 through 5. SVOCs were identified in only one (1) of the six (6) samples collected at a concentration exceeding CP-51 SCOs (Indeno(1,2,3-C,D)Pyrene in EP-N). This concentration is typical of historic fill background levels. Several VOCs and SVOCs were identified at concentrations exceeding CP-51 SCOs within the eastern, northern, and bottom endpoint soil samples collected in the vicinity of the former vault for USTs 6 through 8. Excavation of additional soil beyond 30 feet amsl elevation in the vicinity of USTs 6, 7, and 8 was not feasible considering the construction activities in the area, including the foundation piles in the immediate vicinity. Post-excavation soil samples from the bottom of the excavation largely meet the CP-51 standards implying remaining petroleum contaminated soils, if any, are minimal. All UST endpoint samples meet the

established Track 4 Site-Specific SCOs (included as Table 1B).

A UST Closure Report was submitted to NYSDEC on September 3, 2021.

On April 13, 2021, Ryan Piper of NYSDEC Region 2 provided written confirmation that the OER-approved Remedial Action Work Plan was an acceptable remediation for petroleum contamination and USTs that may exist on Site. Mr. Piper also requested an effort to over-excavate UST areas when given the opportunity during construction activities. The approximate location of USTs are shown in Figure 6. FDNY tank removal affidavits and tank closure documentation is included in Appendix 13. All tanks were registered with NYSDEC as closed-removed.

Pile Installation Obstructions

On October 29, 2021, petroleum contamination was reported by Gilbane Construction during pile installation along the eastern portion of the site. Petroleum contamination (odors, visual staining) was identified in the soil generated during pile installation from the annular space of hollow stem augers. Additionally, obstructions were encountered during the installation of two (2) piles along Column Line 3G and 3F (Figure 14). These piles were abandoned at approximately 23.0 feet below excavation grade (17.0'amsl). Current elevation at the time of pile installation in this area was 40.0 feet amsl. Petroleum contaminated material generated from drill cuttings during pile installation was stockpiled and containerized into four (4) 55-gallon drums on November 29, 2021. AARCO Environmental Services disposed of four (4) 55-gallon drums at their transfer facility in West Babylon, NY for bulk disposal.

On November 23, 2021, AARCO Environmental Services mobilized to the site with their vacuum truck to recover petroleum-contaminated material from the abandoned pile borehole. Weekly reporting provided to OER at this time reported the two (2) obstructions as USTs, however this was unable to be confirmed. AARCO recovered 160 gallons of oil/water/fill material mixture with a vacuum truck from approximately 23.0 feet below excavation grade within the annular space of the pile casing. A concrete

slurry mixture was injected into the steel casing to stabilize the tanks, piles, and any residual contamination in place prior to the pile being abandoned.

At the request of OER and NYSDEC, supplemental soil borings were proposed for the collection of soil quality and soil samples to delineate potential impacts or source material from the above-referenced obstruction. Four (4) soil borings were attempted on December 30, 2021 using a GeoProbe 7822 Direct Push track-mounted rig, however the maximum depth of soil borings reached 15.0 feet below bottom of excavation (25' amsl). Refusal was encountered in soil borings SB-1 (13.0 feet below bottom of excavation/27' amsl), SB-2 (15.0 feet below bottom of excavation/25' amsl), SB-3 (15.0 feet below bottom of excavation/25' amsl), and SB-4 (12.0 feet below bottom of excavation/28' amsl). On January 12, 2022, AARCO returned to the site to advance the four soil borings to a depth of 35 feet below grade using a GeoProbe 8150LS sonic rig.

On January 12, 2022, four (4) soil samples were collected from four (4) soil borings advanced to a maximum depth of 35.0 feet below grade. The following soil samples were collected and analyzed for CP-51 VOCs and CP-51 SVOCs:

- SB-1 collected from 30.0-32.0 feet bgs, maximum PID reading of 250 ppm;
- SB-2 collected from 20.0-23.0 feet bgs, maximum PID reading of 391 ppm;
- SB-3 collected from 20.0-23.0 feet bgs, maximum PID reading of 999 ppm;
- SB-4 collected from 20.0-25.0 feet bgs, maximum PID reading of 300 ppm;

One groundwater sample was collected from a temporary monitoring well (TMW) as indicated in Figure 14. The depth to water was approximately 28.0 feet bgs. Soil and groundwater samples were submitted to the laboratory for analysis of CP-51 VOCs and SVOCs. Samples SB-1 20220112 and SB-4 20220112 did not contain detectable concentrations of VOCs or SVOCs. Several VOCs were detected at concentrations exceeding CP-51 VOCs in SB-3 (20-23') 20220112, including xylenes, Isopropylbenzene, ethylbenzene, and N-Propylbenzene. SB-2 (20-23') 20220112 contained concentration of N-Propylbenzene exceeding CP-51 SCOs. None of the soil samples contained concentrations exceeding Track 4 Site Specific SCOs. Several PAHs were detected in the temporary monitoring well groundwater sample (GW-1) collected on

January 12, 2022. The analytical report and table summary of analytical results are provided in Appendix 10.

One approximately 200-gallon underground tank was encountered during pile installation along the southern foundation wall to the east of the elevator pit (Figure 6) and was removed during excavation activities for house trap construction at 38 feet amsl. During removal, no tank contents were observed, no pipe connections were present, and no evidence of petroleum was identified surrounding the tank. PVE collected an endpoint sample at the final house trap elevation (UST EP-5) on December 21, 2022. The tank was removed and determined to have not contained fuel oil, therefore the tank was not included on the PBS registration. UST EP-5 analytical results contained concentrations that were below all Track 4 Site-Specific SCOs. No other documentation was recorded. FDNY affidavits were not provided to PVE.

Over-Excavation/Spill Activities

At the request of Ryan Piper, DEC Spill Case Manager, over-excavation was performed in the vicinity of USTs 6, 7, and 8 following the closure of USTs. Over-excavation was requested as a supplemental spill remediation measure to recover as much petroleum-contaminated soil as feasible as piles were being installed surrounding this UST area. Endpoint soil sample EP-7 20230320 was collected approximately five (5) feet below previous excavation elevation 35.0' amsl in the vicinity of UST 6, 7, and 8 removal following final grading on March 20, 2023 for analysis of VOCs, SVOCs, PCBs/Pesticides, and Metals. Analytical results were compared to Track 4 Site-Specific Soil Cleanup Objectives, and no exceedances above Track 4 SCOs were identified within soil sample EP-7.

Based on the UST closures, source removal, petroleum contamination excavation and removal, and post-excavation endpoint soil sample results for both OER RAWP purposes and UST Closure purposes, PVE requested the closure of Spill 2008388.

Tank closure activities and excavations, spill remediation, and DEC correspondence are depicted in Figure 6, Appendix 10, and Appendix 13.

Soil Cleanup Objectives

The following Track 4 Site-Specific SCOs were utilized for this project:

<u>Contaminant</u>	<u>Site-Specific SCOs</u>
Total SVOCs	250 ppm
Lead	800 ppm
Barium	800 ppm

End Point Sample Results

A total of eleven (11) post-excavation endpoint samples (EP-1 20221213, EP-2 20221213, EP-3 20221213, EP-4 20221213, UST EP-5 20221221, EP-6 20230106, EP-7 20230130, EP-4 20230306, EP-7 20230320, EP-8 20230320, and EP-9 20230320) were collected, with two endpoint samples recollected (EP-4 and EP-7) following over-excavation in the vicinity of these samples, for a total of nine (9) useable endpoint samples.

Four (4) post-excavation endpoint samples were collected on December 13, 2022 (EP-1 20221213, EP-2 20221213, EP-3 20221213, and EP-4 20221213). EP-1 through EP-3 analytical results met the Track 4 Site Specific SCOs, however EP-4 20221213 contained analytes (Barium, 1330 mg/kg) that exceeded the Track 4 Site Specific SCOs. All four samples were collected from an elevation of approximately 40.0 feet amsl. Backfilled material around foundation components was removed and replaced, and over-excavation was performed at the previous EP-4 location. EP-4 20230306 was recollected on March 6, 2023 after additional excavation of two feet to 38 feet amsl, which indicated Barium to be below the Track 4 Site-Specific SCO. All analytes met the Site Specific SCOs for EP-4 20230306.

One (1) post-excavation endpoint soil sample (UST EP-5 20221221) was collected on December 21, 2022, in the vicinity of a steel obstruction encountered during pile installation. The obstruction was removed and determined to have not contained fuel

oil. UST EP-5 was collected in the vicinity of excavation for the house trap, elevator pit, and other utilities at an approximate elevation of 35.0 feet amsl.

One (1) post excavation endpoint soil sample (EP-6 20230106) was collected on January 6, 2023 in the vicinity of the pile cap along the eastern portion of the Site prior to backfill of proposed re-use material. This sample was collected from approximately 35.0 feet amsl, at the bottom of pile cap elevation. EP-7 20230130 was collected on January 30, 2023, however exceedances were detected in the soil sample with analytes (Barium, 1570 mg/kg) that exceeded the Track 4 Site Specific SCOs.

Three (3) post-excavation endpoint soil samples (EP-7 20230320, EP-8 20230320, and EP-9 20230320) were collected on March 20, 2023. EP-7 was collected in the northeast corner of the site following final excavation and backfill activities from an approximate elevation of 35.0 feet amsl. EP-8 and EP-9 were collected from the courtyard area at the base of the detention tank excavation prior to stone backfill and detention tank installation. These samples were collected from an approximate elevation of 35.0 feet amsl.

All samples collected were discrete grab samples that were submitted to a NYSDOH-ELAP laboratory, York Laboratories, for the analysis of VOCs, SVOCs, PCBs/Pesticides, and Metals. Samples were compared to 6NYCRR Part 375 RRSCOs and Track 4 Site-Specific SCOs. The Site Specific SCOs for this project were achieved.

Endpoint soil samples were collected on July 14, 2021 for UST closures for Tanks #1-5. One (1) sample was collected from each of the sidewalls and two (2) from the bottom (EP-N, EP-S, EP-E, EP-W, EP-B-1, & EP-B2) of the former tank area. On August 6, 2021, one (1) sample was collected from each of the sidewalls and the bottom (EP-North, EP-South, EP-East, EP-West, & EP-Bottom) of the vault area for USTs 6 to 8. Each sample was submitted for analysis of CP-51 VOCs and SVOCs. Although several CP-51 exceedances were detected in endpoint soil samples, the Site Specific SCOs for this project were achieved.

RI samples SB-13 (13-15'), SB-5 (21-23'), and SB-6 (23-25') were collected within 13 and 25 feet below grade, or 17 to 33 feet amsl elevation, which represent in-situ

data for soil that remains on the site. All RI in-situ samples remaining on site collected below the final excavation depth were compared to Track 4 Site Specific SCOs. None of these RI samples contained concentrations exceeding Track 4 SCOs.

A map of end-point sample locations is shown in Figure 4 and Figure 6. A tabular summary of end-point sampling results compared to SCOs is included in Table 1A and 1B. Full laboratory reports are included in Appendix 8.

End Point Data Usability Summary

York Analytical Laboratories, Inc. was retained to perform analytical services on end-point soil samples for Remedial Action. Summarized below are the Job Narratives and Data Qualifiers relating to the laboratory report attached in Appendix 8. Grab samples were collected and submitted to a NYSDOH ELAP-certified laboratory (York Laboratories). All post-excavation endpoint samples met the established Track 4 Site Specific SCOs, except those collected in areas that were over excavated (EP-4 20221213 and EP-7 20230130). All UST endpoint samples meet Track 4 SCOs.

A map of end-point sample locations is shown in Figure 4. A tabular summary of end-point sampling results compared to SCOs is included in Table 1A. Full laboratory reports are included in Appendix 8.

Analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained below:

J: Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.

B: Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants.

PCB-I: PCB calculations are based upon the average response of 5 peaks for each Aroclor. For this sample an interference was present, and the analyst was unable to use all 5 peaks.

CCVE: The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).

ICVE: The value reported is ESTIMATED. The value is estimated due to its behavior during initial calibration verification (recovery exceeded 30% of expected value).

CAL-E: The value reported is ESTIMATED. The value is estimated due to its behavior during initial calibration (average Rf>20%)

QL-02: This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.

P: This qualifier indicates the compound detected exhibited greater than 40% between the quantitation and confirmatory columns.

M-CCV1: The recovery for this element in the Continuing Calibration Verification (CCV) exceeded 110% of the expected value. Positive detections may be biased high.

4.4 MATERIALS DISPOSAL

Approximately 4,075 cubic yards/4,849.20 tons of material was disposed of at Bayshore Soil Management, Clean Earth of Carteret, and Kingsland Landfill Closure Project.

The type, quantity and disposal location of each material removed and disposed off-Site is presented below. A full disposal quantity and trucking log is provided as Table 3.

Table 4 - Disposal Quantities and Disposal Facilities

Disposal Location/Address	Type of Material	Quantity
Bayshore Soil Management, 75 Crows Mill Road, Keasbey, NJ, 08832	Non-hazardous petroleum- contaminated soil/urban fill	1,275 cubic yards (1,837.56 tons)
Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ, 07008	Non-hazardous petroleum- contaminated soil/urban fill	625 cubic yards (750.58 tons)
Kingsland Landfill Closure Project (Lyndhurst East Landfill) located at Disposal Road and Valley Brook Avenue in Lyndhurst, NJ, 07071	NJDEP-defined Alternative Fill for beneficial use	2,175 cubic yards (2,261.06 tons)

Disposal facility coordination and correspondence was performed by the foundation contractor, Long Island Concrete and Modern Industries, a sub-contractor for management of disposal activities (scheduling, coordination). Waste characterization reports completed by PVE in 2020 were provided to each of the facilities along with all OER-related documents and due diligence reports (Phase I ESA, Phase II ESA, RIR, RAWP). On February 26, 2021, Bayshore Soil Management provided an approval letter for up to 4,800 tons of material under BSM#2721-0193, On June 23, 2021, Modern Industries provided an approval letter of up to 3,000 cubic yards of material at the Lyndhurst East Landfill Closure (Kingsland Landfill) as NJDEP Alternative Fill. On March 2, 2023, Clean Earth of Carteret provided an approval letter for disposal of up to 700 cubic yards of material. Fill disposal notification forms were provided to LIC and Modern Industries. Letters from LIC/Modern Industries to disposal facility providing materials type, source and data, were not provided to PVE, as they were not prepared. Acceptance letters from each disposal facility stating it is approved to accept above materials are attached in Appendix 5. Manifests are included in Appendix 6. Waste

characterization report is presented in Appendix 14. A table of individual truck transport and material disposal quantities is included in Table 3.

4.5 BACKFILL IMPORT

Backfill material required at the site was approved in December 2022. Structural stone backfill (ASTM 57) was requested for backfill areas including around pile cap/grade beam locations, within the detention tank excavation, UST excavation areas, and utility areas. Sieve analysis reports were provided to OER by SOR Testing to demonstrate that structural backfill contained less than 10% fines passing a #80 sieve.

SSDS layer stone for the gas permeable layer (3/4" bluestone) was requested for backfill in the 6 to 10 inches below the bottom of slab. Tilcon and SOR Testing provided a sieve analysis for this material demonstrating that the material contained less than 10% of stone passing through a 1/2" sieve. Supplemental material (ASTM#5) was requested and approved, sourced from Tilcon Mt. Hope Quarry, and was delivered in June 2023. Delivery tickets, sieve analysis, and stone specifications are provided in Appendix 9.

The material source, purpose, specification, and approximate quantity are provided in the table below:

Table 4 – Backfill Quantities and Source

Impact Reuse and Recovery Center (IRRC) Structural Backfill	ASTM 57 / 3/4" Bluestone	149.81 tons
Mt. Hope Quarry via Tilcon Detention Tank Backfill	3/4" Bluestone	169.36 tons
Mt. Hope Quarry via Tilcon SSDS Gas Permeable Layer	1" ASTM 5 Stone	494.49 tons
Impact Reuse and Recovery Center (IRRC) Structural Backfill & Grade Beams	3/4" Bluestone / ASTM 57	301.15 tons
Wantage Quarry	3/4" ASTM 57	Approximately 100 tons

Bound Brook	$\frac{3}{4}$ " Bluestone	99.04 tons
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Table 5 – Backfill Summary

<i>Stone Spec</i>	<i>Location</i>	<i>Delivery Date</i>	<i>Mass (tonnage)</i>	<i>Number of Trucks</i>
Bluestone (3/4")	IRRC	8/9/2021	59.55	2
Bluestone (3/4")	IRRC	12/22/2022	23.32	1
Bluestone (3/4")	Bound Brook Quarry	11/20/2022	99.04	3
ASTM 57	Mt Hope	11/18/2022	24.4	1
ASTM 57	IRRC	1/24/2023	33.4	1
Bluestone (3/4")	IRRC	1/24/2023	23.1	1
Bluestone (3/4")	IRRC	1/24/2023	23.41	1
Bluestone (3/4")	IRRC	1/24/2023	24.54	1
Bluestone (3/4")	IRRC	1/24/2023	24	1
Bluestone (3/4")	IRRC	1/24/2023	24.55	1
Bluestone (3/4")	IRRC	1/24/2023	26.44	1
Bluestone (3/4")	IRRC	2/2/2023	24.21	1
ASTM 57	IRRC	2/3/2023	23.75	1
ASTM 57	IRRC	2/5/2023	22	1
ASTM 57	IRRC	2/6/2023	22	1
ASTM 57	IRRC	2/6/2023	24.63	1
ASTM 57	IRRC	2/8/2023	24.03	1
ASTM 57	Mt Hope	2/13/2023	48.8	2
ASTM 57	Mt Hope	2/13/2023	22.82	1
Bluestone (3/4")	IRRC	2/15/2023	48.03	2
ASTM 57	Mt Hope	5/17/2023	21.41	1
ASTM 57	Mt Hope	5/17/2023	42.97	4
ASTM 57	Mt Hope	5/17/2023	88.58	8
ASTM 5	Mt Hope	6/2/2023	134.05	6
ASTM 5	Mt Hope	6/2/2023	111.77	5
ASTM 5	Mt Hope	6/2/2023	89.64	4
ASTM 5	Mt Hope	6/2/2023	67.14	3
ASTM 5	Mt Hope	6/2/2023	45.16	2
ASTM 5	Mt Hope	6/2/2023	22.33	1

A map showing backfill placement locations for soil re-use at the Site is shown in Figure 7. All other backfills are associated with the SSDS, structure, or detention tank and are included in the Site-Wide Covery System layout in Figure 8.

4.6 DEMARACTION

Soil below the final cover is residual soil that will be addressed by Site Management under this Remedial Action.

5.0 ENGINEERING CONTROLS

Engineering Controls were employed in the Remedial Action to address residual soil and soil vapor remaining at the site. The Site has three primary Engineering Control Systems. These are:

1. Composite Cover System;
2. Vapor Barrier System;
3. Active Sub-Slab Depressurization System.

Composite Cover System

Exposure to residual soil/fill is prevented by an engineered Composite Cover System that has been built on the Site. This Composite Cover System is comprised of a building foundation with a central courtyard for exterior playground area, mechanical roof, and landscaping. The building area consists of a 4-inch building slab, followed by 2 inches of rigid insulation, 8 inches of compacted gravel, except for areas with SSDS piping that have 10 inches of gravel, and foundation components ranging from 12 to 36 inches thick for pile caps, grade beams, and foundation walls. A vapor barrier is situated between the rigid insulation and the compacted stone, with 10 inches of SSDS stone (1" ASTM 7 and 3/4" washed bluestone) in all SSDS piping areas, with structural backfill extending up to 5 feet for utilities/detention tank. The exterior courtyard area consists of five feet of ASTM 57 backfill around the detention tank with at least 10 inches of gravel sub-base above the tank, and 4 inches of pour and play rubberized fill or 4" concrete slab in the elevated mechanical roof area. The 54-inch diameter detention tank has up to 5 feet of stone backfilled around the tank. The contractor for the Composite Cover System construction was Long Island Concrete.

Figure 8 shows the as-built design and map of location for each cover type used in the Composite Cover System on this Site. Figure 9 includes as-built details for cover types. Photographs of construction of the Composite Cover System are included in Appendix 11.

Vapor Barrier System

Exposure to soil vapor is prevented by a Vapor Barrier System that has been built on the Site. This Vapor Barrier System consists of ViaFlex 20-mil VaporBlock Plus, and the waterproofing consists of GCP Technologies products, including GCP Preprufe 300R PLUS (1.2mm/47.2 mil) waterproofing membrane and associated double sided adhesives applied in accordance with manufacturer specifications. GCP Preprufe 300R was installed on the external face of foundation walls, perimeter grade beams, pile caps, and along the bottom/around the elevator pit. VaporBlock Plus encompasses the entire footprint of the building sealed up to 18 inches vertically along the foundation wall to grade and overlaps GCP waterproofing entirely. The professional engineer for the Vapor Barrier System was David Sivin. The contractor for the Vapor Barrier System construction was Long Island Concrete. All penetrations for mechanical systems were sealed to the penetration with double-sided tape and cover with a single-sided overlap of at least two inches. Welds and seams for vapor barrier and waterproofing connection were sealed using 12 inches of overlap with double-sided tape. Viaflex overlapped Preprufe products entirely prior to sealing to foundation walls.

Figure 10 shows the diagram of vapor barrier and Figure 11 includes the as-built engineering details for the Vapor Barrier System used on this Site. Photographs of installation of the Vapor Barrier System are included in Appendix 12. A copy of manufacturer's specifications for the Vapor Barrier System is included in Appendix 12.

Active Sub-Slab Depressurization System

Exposure to soil vapor is prevented by a Sub-Slab Depressurization System (SSDS) that has been built on the Site. This SSDS consists of two (2) separate networks of horizontal pipes set in the middle of a gas-permeable layer beneath the building slab and vapor barrier system. The horizontal piping consists of a network of perforated Schedule 40 PVC (4-inch diameter) that connect to two (2) 4-inch stub ups through the building slab on the eastern and western foundation portions of the building. Schedule 40 PVC pipe riser is connected to the stub-up locations and chase through the building to the roof where two ventilation points are completed with a RadonAway RP265 blower. The

ventilation points are installed at least 15 feet from fresh air intake, windows, or adjoining buildings in accordance with NYC Mechanical Code and are completed with a rain cap at the top for stormwater prevention. The permeable layer consists of a 8-inch layer of 1" ASTM 7 stone in the entire footprint of the building sub-base, and a 10-inch layer of ¾" washed bluestone trenches around all horizontal piping in a 3-foot wide trench.

Nine (9) monitoring points (MP-1 through MP-9) were installed around the perimeter of the building foundation and SSDS network. PVE completed performance testing on the SSDS on April 9, 2024. Both RadonAway RP265 blowers were installed and operating at the time of the post-installation performance testing. The blowers were operating for at least 24 hour prior to testing. Pressure readings were collected from all monitoring points using a Fluke 922 Micromanometer. Background conditions were collected from monitoring points during the April 9, 2024 visit prior to the fan installation, and readings of +1 Pascal were detected in all monitoring points. Sub-slab pressure differential readings collected from all monitoring points, and the maximum stabilized pressure reading was as follows:

Table 6 – SSDS Testing Summary

- MP-1 (-5 Pa)
- MP-3 (-249 Pa)
- MP-4 (-220 Pa)
- MP-5 (-139 Pa)
- MP-7 (-75 Pa)

MP-2, MP-6, MP-8, and MP-9 were inaccessible and not able to be measured.

During the post-construction meeting with OER held on April 24, 2024, sub-slab pressure differential readings were collected from all monitoring points, and the stabilized pressure readings were as follows:

- MP-1 (-0.009" WC)
- MP-2 (-0.010" WC)
- MP-3 (-0.003" WC)
- MP-4 (-0.004" WC)

- MP-6 (-0.007" WC)
- MP-7 (-0.002" WC)
- MP-8 (-0.076" WC)
- MP-9 (-0.060" WC)

All monitoring points met OER's requirement of a minimum 0.001" WC of negative pressure, therefore the system is sufficiently establishing a negative pressure beneath the entire building slab. The PE for the Remedial Action has inspected the system and confirmed that the effluent discharge point is a minimum of 10 feet from any operable window or air intake for any building. The mechanical set was filed with DOB in May, 2023 with DOB Job Number X00882689-I1.

The design engineer for the Active SSDS is David Sivin. The contractor for construction of the active SSDS was Long Island Concrete. Figure 13 shows the as-built design for the Active SSDS installed in this Remedial Action and includes the location and layout of sub-slab vapor collection piping, blower, alarm, pressure gauge and effluent. The location of the pressure test sampling locations is shown in Figure 13. Data for the pressure testing is included in Table 6. Photographs showing the installation of the Active SSDS are shown in Appendix 15.

6.0 INSTITUTIONAL CONTROLS

A series of Institutional Controls are required under this Remedial Action to assure permanent protection of public health by elimination of exposure to residual materials. These ICs define the program to operate, maintain, inspect and certify the performance of Engineering Controls and Institutional Controls on this property. These Institutional Controls will be implemented in accordance with the Site Management Plan included in this RAR.

Institutional Controls for this property are:

- (1) Recorded an OER-approved Declaration of Covenant and Restrictions (DCR) with the deed with the Bronx County Clerk. The recorded DCR is included in Appendix 16. The DCR includes a description of all ECs and ICs, summarizes the requirements of the Site Management Plan, and notes that the property owner and property owner's successors and assigns are required to comply with the approved SMP;
- (2) The property will continue to be registered with an E-Designation by the NYC Department of Buildings. Property owner and property owner's successors and assigns are required to comply with the approved SMP;
- (3) Compliance with an OER-approved Site Management Plan including procedures for appropriate operation, maintenance, inspection, and certification of performance of ECs and ICs. The property owner and property owner's successors and assigns will inspect ECs and ICs and submit to OER a written certification that evaluates their performance in a manner and at a frequency to be determined by OER;
- (4) Engineering Controls will not be discontinued without prior OER approval;
- (5) OER has the right to enter the Site upon notice for the purpose of evaluating the performance of ECs and ICs;
- (6) Vegetable gardens and farming in residual soil/fill on the Site are prohibited;
- (7) Use of groundwater underlying the Site without treatment rendering it safe for its intended use is prohibited;

- (8) All future activities on the Site that will disturb residual soil/fill must be conducted pursuant to the Soil/Materials Management provisions of the SMP, or otherwise approved by OER;
- (9) The Site is intended to be used for restricted residential use and will not be used for a higher level of use without prior approval by OER.

7.0 SITE MANAGEMENT PLAN

Site Management is the last phase of the remedial process and begins after the approval of the Remedial Action Report (RAR) and issuance of the Notice of Completion (NOC) by OER. It is the responsibility of the property owner to ensure that all Site Management responsibilities are performed. The penalty for failure to implement the SMP includes revocation of the Notice of Completion and all associated certifications and liability protections providing notice of the revocation to the NYC DOB.

Engineering Controls and Institutional Controls have been incorporated into this Remedial Action to ensure that the site remains protective of public health and the environment. Generally, ECs provide physical protective measures and ICs provide restrictions on Site usage and establish remedial operation, maintenance, inspection and certification measures. This Site Management Plan has been established to govern long-term performance of ECs and ICs for this property.

The SMP provides a detailed description of procedures required to manage residual material at the Site following the completion of remedial construction in accordance with the NYC Voluntary Cleanup Agreement with OER. This includes: (1) operation and maintenance of Engineering Controls; (2) inspection of ECs and ICs; and (3) certification of performance of ECs and ICs.

ENGINEERING CONTROLS

Engineering Controls were employed in the remedial action to address residual materials remaining at the site. The Site has three (3) Engineering Control Systems. Engineering Controls for this property are:

1. Composite Cover System;
2. Vapor Barrier System;
3. Active Sub-Slab Depressurization System.

Operation and Maintenance of Composite Cover System

Chapter 5 describes the Composite Cover System utilized in this Remedial Action and provides as-built design details and the location of each cover type. The Composite Cover System is a permanent Engineering Control for the Site. The system will be inspected and its performance certified at specified intervals defined in this SMP. A Soil/Materials Management Plan is included in this Site Management Plan and outlines the procedures to be followed in the event that the composite cover system and underlying residual soil/material must be disturbed after the Remedial Action is complete.

The Composite Cover System does not require any special operation or maintenance activities as the cover system consists of 100% coverage of building or courtyard area. If the system is breached during future construction activities [or “normal wear and tear”], the system will be rebuilt by reconstructing the system according to the original design and tying newly constructed cover layers into existing cover layers to form a continuous layer(s).

Operation and Maintenance of Vapor Barrier System

Chapter 5 describes the Vapor Barrier System utilized in this Remedial Action and provides as-built design details and the system location. The Vapor Barrier System is a permanent Engineering Control for the Site. The system will be inspected and its performance certified at specified intervals defined in this SMP.

The Vapor Barrier System does not require any special operation or maintenance activities. If the system is breached during future construction activities, the system will be rebuilt by reconstructing the vapor barrier layers and sealing the newly constructed materials with existing barrier materials in accordance with manufacturer specifications.

Operation and Maintenance of Active Sub-Slab Depressurization System

Chapter 5 describes the Active Sub-Slab Depressurization System utilized in this Remedial Action and provides as-built design details and the system location. The SSDS is a permanent Engineering Control for the Site. The system will be inspected and its performance certified at specified intervals defined in this SMP.

The Active SSDS will be operated and maintained as prescribed below. The system

shall be inspected monthly by a trained and competent individual to determine if the system has operated 24/7. Annual inspection by a licensed professional shall include inspection of ventilation points, blowers, manometers, and collection of sub-slab pressure readings from each monitoring point using a micromanometer. Values collected from each monitoring point will be included in the SMP report. Any replacement of fans, riser pipe, or other routine maintenance activities must be reported immediately to the licensed professional.

INSTITUTIONAL CONTROLS

A series of Institutional Controls are required under this Remedial Action to assure permanent protection of public health by elimination of exposure to residual materials. These ICs define the program to operate, maintain, inspect and certify the performance of Engineering Controls and Institutional Controls on this property. These Institutional Controls will be implemented in accordance with the Site Management Plan included in this RAR.

Institutional Controls are also designed to prevent future exposure to residual soil/materials by controlling disturbances in the subsurface, restricting higher uses of the property than those addressed by the Remedial Action and establishing restrictions on activities and site usage. Institutional Controls for this property are:

- (1) Recorded an OER-approved Declaration of Covenant and Restrictions (DCR) with the deed with the Bronx County Clerk. The recorded DCR is included in Appendix 16. The DCR includes a description of all ECs and ICs, summarizes the requirements of the Site Management Plan, and notes that the property owner and property owner's successors and assigns are required to comply with the approved SMP;
- (2) The property will continue to be registered with an E-Designation by the NYC Department of Buildings. Property owner and property owner's successors and assigns are required to comply with the approved SMP;

- (3) Compliance with an OER-approved Site Management Plan including procedures for appropriate operation, maintenance, inspection, and certification of performance of ECs and ICs. The property owner and property owner's successors and assigns will inspect ECs and ICs and submit to OER a written certification that evaluates their performance in a manner and at a frequency to be determined by OER;
- (4) Engineering Controls will not be discontinued without prior OER approval;
- (5) OER has the right to enter the Site upon notice for the purpose of evaluating the performance of ECs and ICs;
- (6) Vegetable gardens and farming in residual soil/fill on the Site are prohibited;
- (7) Use of groundwater underlying the Site without treatment rendering it safe for its intended use is prohibited;
- (8) All future activities on the Site that will disturb residual soil/fill must be conducted pursuant to the Soil/Materials Management provisions of the SMP, or otherwise approved by OER;
- (9) The Site is intended to be used for restricted residential use and will not be used for a higher level of use without prior approval by OER.

INSPECTIONS

Engineering Controls and Institutional Controls will be inspected on a periodic basis at a frequency established in this plan. The inspections will evaluate the following:

- If Engineering Controls or Institutional Controls employed at the Site continue to perform as designed and continue to be protective of human health and the environment;
- If anything has occurred that impairs the ability of the Engineering Controls or Institutional Controls to protect public health and the environment;
- If changes are needed to the remedial systems or controls;
- If compliance with this SMP has been maintained;
- If site records are complete and up to date; and

- General Site conditions at the time of inspection.

In addition, if an emergency occurs, such as a natural disaster, or if an unforeseen failure of any of the Engineering Controls occurs, an inspection of the Site will be performed within 30 days to evaluate the Engineering Controls, and a letter report of findings will be submitted to OER.

Inspection of Composite Cover System

Inspection of the composite cover will consist of a visual inspection of concrete slab and will include all accessible locations including the site perimeter and all internal access points on the ground floor. The inspector will document any faulty or defective conditions observed during the inspection, broken or damaged concrete, or any failure in the integrity of the floor that would compromise the ability of the composite cover to perform as an engineering control.

Inspection of Active Sub-Slab Depressurization System and Vapor Barrier

Inspection of the SSDS will include above ground piping and blower inspection to determine if they are intact and operating as designed. The vapor barrier will be inspected by inspecting the overlying cover system, and directly if rendered visible during an inspection of a breach to the composite cover. If the inspector observes a failure in the composite cover that exposes the vapor barrier, then the underlying vapor barrier will be inspected for any damage, including tears or perforations, which would prevent the vapor barrier from completing its intended purpose.

Site Use Prohibitions

Inspections to evaluate the status of site use prohibitions will include an evaluation of all of the ICs listed above, including:

- whether there is vegetable gardening or farming in residual soil/fill;
- whether groundwater underlying the site has been used without treatment rendering it safe for its intended use;
- whether activities that have disturbed site soil/fill have been conducted pursuant

to the Soil/Material Management provisions of the SMP, or otherwise approved by OER; and

- whether the site has been used for a higher level of use other than the restricted residential use addressed by the Remedial Action.

INSPECTION AND CERTIFICATION LETTER REPORT

Results of inspections performed during a reporting period and certification of performance of all Engineering Controls and Institutional Controls will be included in an Inspection and Certification Letter Report. Inspections will be performed in 2025, 2026 and annually thereafter. Inspection and Certification Letter Reports will be submitted by July 30, 2026 (for the reporting period calendar years 2024-2025), July 30, 2027 (for the reporting period calendar years 2025-2026) and every year thereafter (for the reporting period consisting of the prior calendar year). Inspection and Certification Reports will cover all calendar years since the prior reporting period. Inspection and Certification Letter Reports will be submitted to OER in digital format. The letter report will utilize a form established by OER. This form includes, at a minimum:

- Date of inspections;
- Personnel conducting inspections;
- Description of the inspection activities performed;
- Observations, conclusions, or recommendations;
- Copy of any monthly inspection forms;
- Photographs; and
- Certification of the performance of Engineering Controls and Institutional Controls executed by the P.E. or QEP responsible for this Inspection and Certification Letter Report, as discussed below.

The certification of the performance of ECs and ICs will establish:

- If Engineering Controls and Institutional Controls employed at the Site continue to be in place, perform as designed and continue to be protective of human health and the environment;

- If anything has occurred that impairs the ability of Engineering Controls or Institutional Controls to protect public health and the environment;
- If changes are needed to the remedial systems or controls;
- If compliance with this Site Management Plan has been maintained;
- If vegetable gardening and farming in residual soils has been prevented;
- If groundwater underlying the Site is being utilized without treatment rendering it safe for the intended purpose has been prevented;
- If activities on the Site that have disturbed residual soil/fill material have been in accordance with the Soil/Materials Management Plan in this SMP;
- If the Site has been used for a higher level of use other than the restricted residential use addressed by the Remedial Action;
- If site records are complete and up to date;
- If the Site continues to be registered as an E-Designated property by the NYC Department of Buildings;

OER may enter the Site upon notice for the purpose of evaluating the performance of ECs and ICs.

NOTIFICATIONS

Notifications will be submitted by the property owner to OER as described below:

- 60-day advance notice of any proposed changes in Site use, such as an upgrade from existing use to residential use that was not contemplated in the Remedial Action.
- Notice within 30 days of any emergency, such as a fire, flood, or earthquake that has the potential to reduce the effectiveness of Engineering Controls in place at the Site.

SOIL/MATERIALS MANAGEMENT PLAN

Any future intrusive work that will disturb residual soil/fill beneath the property, including modifications or repairs to the existing composite cover system, will be performed in compliance with this Soil/Materials Management Plan (SMMP). Intrusive work will also be conducted in accordance with the procedures defined in the Community Air Monitoring Plan (CAMP) included in this chapter and a Construction Health and Safety Plan (HASP). The HASP is the responsibility of the property owner and should be in compliance with NYSDEC DER-10 Technical Guide and 29 CFR 1910 and 1926, and all other applicable Federal, State and City regulations. Intrusive construction work should be compliant with this SMMP and described in the next Inspection and Certification Letter Report.

Soil Screening Methods

Visual, olfactory and PID soil screening and assessment will be performed under the supervision of a Qualified Environmental Professional (QEP). Soil screening will be performed during any future intrusive work.

Stockpile Methods

If stockpiles are used to isolate excavated soil they will be removed as soon as practicable. While stockpiles are in place, they will be inspected daily, and before and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. Excavated soils will be stockpiled on, at minimum, double layers of 6-mil minimum sheeting, will be kept covered at all times with appropriately anchored plastic tarps, and will be routinely inspected. Broken or ripped tarps will be promptly replaced.

All stockpile activities will be compliant with applicable laws and regulations. Soil stockpile areas will be appropriately graded to control run-off in accordance with applicable laws and regulations. Stockpiles of excavated soils and other materials shall be

located at least of 50 feet from the property boundaries, where possible. Hay bales or equivalent will surround soil stockpiles except for areas where access by equipment is required. Silt fencing and hay bales will be used as needed near catch basins, surface waters, and other discharge points.

Characterization of Excavated Materials

Soil/fill or other excavated media that is transported off-Site for disposal will be sampled in a manner required by the receiving facility, and in compliance with applicable laws and regulations. Excavated soil will only be reused on-site with prior approval by OER.

Materials Excavation, Load-Out and Departure

The PE/QEP overseeing the remedial action will:

- Oversee intrusive work and the excavation and load-out of excavated material;
- Ensure that there is a party responsible for the safe execution of invasive and other work performed under this management plan;
- Ensure that Site maintenance activities and maintenance-related grading cuts will not interfere with, or otherwise impair or compromise the remedial measures established during the remediation construction phase;
- Ensure that the presence of utilities and easements on the Site has been investigated and that any identified risks from work proposed under this plan are properly addressed by appropriate permits or authorized notifications.;;
- Ensure that all loaded outbound trucks are inspected and cleaned if necessary before leaving the Site; and
- Ensure that all egress points for truck and equipment transport from the Site will be kept clean of Site-derived materials during Site intrusive work.

Locations where vehicles exit the Site shall be inspected daily for evidence of soil

tracking off premises. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

Off-Site Materials Transport

Loaded vehicles leaving the Site will comply with all applicable materials transportation requirements (including appropriate covering, manifests, and placards) in accordance with applicable laws and regulations, including use of licensed haulers in accordance with 6 NYCRR Part 364. If loads contain wet material capable of causing leakage from trucks, truck liners will be used. Queuing of trucks will be performed on-Site, when possible, in order to minimize off Site disturbance.

Outbound truck transport routes are shown on Figure 8. This routing takes into account the following factors: (a) limiting transport through residential areas and past sensitive sites; (b) use of mapped truck routes; (c) minimizing off-Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport. To the extent possible, all trucks loaded with Site materials will travel from the Site using these truck routes. Trucks will not stop or idle in the neighborhood after leaving the project Site.

Materials Disposal Off-Site

The following documentation will be established and reported by the PE/QEP for each disposal destination used in this project to document that the disposal of regulated material exported from the Site conforms with applicable laws and regulations: (1) an OER Historical Fill Notification Form and letter from the PE/QEP or property owner to each disposal facility describing the material to be disposed and requesting written acceptance of the material. This letter will state that material to be disposed is regulated material generated at an environmental remediation Site in New York City under a governmental remediation program. The letter will provide the project identity and the name and phone number of the PE/QEP or Enrollee. The letter will include, as an attachment, a summary of all chemical data for the material being transported; and (2) a

letter from each disposal facility stating it is in receipt of the correspondence (1, above) and is approved to accept the material.

Documentation associated with disposal of all material will include records and approvals for receipt of the material. All impacted soil/fill or other waste excavated and removed from the Site will be managed as regulated material and will be disposed in accordance with applicable laws and regulations. Historic fill and contaminated soils taken off-Site will be handled as solid waste and will not be disposed at a Part 360-16 Registration Facility (also known as a Soil Recycling Facility).

Waste characterization will be performed for off-Site disposal in a manner required by the receiving facility and in conformance with its applicable permits. Waste characterization sampling and analytical methods, sampling frequency, analytical results and QA/QC will be retained and included in the following Inspection and Certification Report. A manifest system for off-Site transportation of exported materials will be employed. Hazardous wastes derived from on-Site will be stored, transported, and disposed of in compliance with applicable laws and regulations.

Materials Reuse On-Site

All of the non-hazardous soil excavated during any future repair or construction purposes will be placed in the same excavation it was derived from or will be disposed of off-site unless otherwise approved by OER beforehand.

Repair of Remedial Systems

After completion of invasive work, any damage to the engineering controls (composite cover system, vapor barrier, etc.) will be restored to the original condition established during initial construction.

Import of Backfill Soil from Off-Site Sources

In the event that soil importation is needed for the backfilling purposes, this Section

presents the requirements for imported fill materials. All imported soils will meet OER-approved backfill and cover soil quality objectives for this Site. The backfill and cover soil quality objectives include NYSDEC Part 375 Track 2 Residential SCOs and groundwater protections standards. A process will be established to evaluate sources of backfill and cover soil to be imported to the Site, and will include an examination of source location, current and historical use(s), and any applicable documentation. Material from industrial sites, spill sites, environmental remediation sites or other potentially contaminated sites will not be imported to the Site.

The following potential sources may be used pending attainment of backfill and cover soil quality objectives:

- Clean soil from construction projects at non-industrial sites in compliance with applicable laws and regulations;
- Clean soil from roadway or other transportation-related projects in compliance with applicable laws and regulations;
- Clean recycled concrete aggregate (RCA) from facilities permitted or registered by the regulations of NYS DEC; and
- Virgin quarried material or other materials with an approved Beneficial Use Determination (BUD) from NYSDEC for reuse as clean fill.
- [Asphalt Millings from approved Park Department facilities?]

All materials received for import to the Site will be approved by a PE/QEP and will be in compliance with provisions in this SMP. The Inspection and Certification Letter Report will report the source of the fill, evidence that an inspection was performed on the source, chemical sampling results, frequency of testing, and a Site map indicating the locations where backfill or soil cover was placed.

Source Screening and Testing

Inspection of imported fill material will include visual, olfactory, and PID screening for evidence of contamination. Materials imported to the Site will be subject to inspection, as

follows:

- Trucks with imported fill material will be in compliance with applicable laws and regulations and will enter the Site at designated locations;
- The PE/QEP is responsible to ensure that every truck load of imported material is inspected for evidence of contamination; and
- Fill material will be free of solid waste including pavement materials, debris, stumps, roots, and other organic matter, as well as ashes, oil, perishables or foreign matter.

Composite samples of imported material from the identified clean soil sources will be taken at a minimum frequency of one sample for every 500 cubic yards of material. One composite sample will be collected from each source of virgin quarried material or other material with an NYSDEC approved BUD, unless otherwise approved by OER. Once it is determined that the fill material meets imported backfill or cover soil chemical requirements, is non-hazardous, and lacks petroleum contamination, the material will be loaded onto trucks for delivery to the Site.

Recycled concrete aggregate (RCA) without fines may be imported from facilities permitted or registered by NYSDEC. A PE/QEP is responsible to ensure that the facility is compliant with 6NYCRR Part 360 registration and permitting requirements for the period of acquisition of RCA. RCA imported from compliant facilities will not require additional testing, unless required by NYSDEC under its terms for operation of the facility. RCA imported to the Site must be derived from recognizable and uncontaminated concrete. RCA will not be used as cover material. [Clarify use of Asphalt Millings]

Fluids Management

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported, and disposed in accordance with applicable laws and regulations. Liquids discharged into the New York City sewer system will receive prior approval by New York City Department of Environmental Protection (NYC DEP). The NYC DEP regulates discharges to the New York City sewers under Title 15, Rules of the City of

New York Chapter 19. If discharge to the City sewer system is not feasible, the dewatering fluids will be managed by transportation and disposal at an off-Site treatment facility or some other means compliant with applicable laws and regulations. Discharge of water generated during remedial construction to surface waters (i.e. a stream or river) is prohibited without a SPDES permit issued by NYSDEC.

Storm-water Pollution Prevention

Applicable laws and regulations pertaining to storm-water pollution prevention will be addressed during the remedial program. All existing storm-water systems will be inspected to ensure proper operation.

Odor Control

All necessary means will be employed to prevent on- and off-Site odor nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) use of foams to cover exposed odorous soils. If odors develop and cannot be controlled by these means, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; and (e) use of chemical odorants in spray or misting systems.

The odor control plan must be capable of controlling emissions of nuisance odors. If nuisance odors are identified, work will be halted, and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. OER will be notified of all odor complaint events. Implementation of all odor controls, including halt of work, will be the responsibility of the PE/QEP.

Dust Control

Dust management during invasive on-Site work will include, at a minimum:

- Use of a dedicated water spray methodology for roads, excavation areas and stockpiles;
- Use of properly anchored tarps to cover soil/fill stockpiles;
- Exercise extra care during dry and high-wind periods; and

- Use of asphalt millings, gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface.

If nuisance dust emissions are identified, work will be halted and the source of dust will be identified and corrected. Work will not resume until all nuisance dust emissions have been abated. OER will be notified of all dust complaint events. Implementation of all dust controls, including halt of work, will be the responsibility of the PE/QEPs.

Noise

Noise control will be exercised during the remedial program. All remedial work will conform, at a minimum, to NYC noise control standards.

COMMUNITY AIR MONITORING PLAN

Real-time air monitoring for volatile organic compounds (VOCs) and particulate levels at the perimeter of the exclusion zone or work area will be performed. Continuous monitoring will be performed for all ground intrusive activities and during the handling of contaminated or potentially contaminated media. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pit excavation or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be performed during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection, for instance, will consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. Depending upon the proximity of potentially exposed individuals, continuous monitoring may be performed during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence. Exceedences of action levels observed during performance of the Community Air Monitoring Plan (CAMP) will be reported to the OER Project Manager and included in the Daily Report.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis during invasive work. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.

If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less, but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shut down.

All 15-minute readings must be recorded and be available for OER personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The

particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

If the downwind PM-10 particulate level is 100 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed $150 \mu\text{g}/\text{m}^3$ above the upwind level and provided that no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than $150 \mu\text{g}/\text{m}^3$ above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within $150 \mu\text{g}/\text{m}^3$ of the upwind level and in preventing visible dust migration.

All readings will be recorded and available for OER personnel to review.

CONTINGENCY PLAN

This contingency plan is developed for the remedial construction or repair work to address the discovery of unknown structures or contaminated media during excavation. Identification of unknown contamination source areas during invasive Site work will be promptly communicated to OER's Project Manager. Petroleum spills will be reported to the NYS DEC Spill Hotline. If previously unidentified contaminant sources are found during on-Site remedial excavation or development-related excavation, sampling will be performed on contaminated source material and surrounding soils and reported to OER. Chemical analytical testing will be performed for TAL metals, TCL volatiles and semi-volatiles, TCL pesticides and PCBs, as appropriate.

Emergency Telephone Numbers

In the event of any emergency condition pertaining to these remedial systems, the Owner's representative(s) should contact the appropriate parties from the contact list below. Prompt contact should also be made to Erik Draijer, QEP. These emergency contact lists must be maintained in an easily accessible location at the Site.

Emergency Contact Numbers

Medical, Fire, and Police:	911
One Call Center: 3 day notice required for utility mark-out	(800) 272-4480
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Contact Numbers

Erik Draijer	973-975-7135
Office of Environmental Remediation	(212) 788-8841; 311

8.0 SUSTAINABILITY REPORT

This Remedial Action provided for sustainable remediation and redevelopment through a variety of means that are defined in this Sustainability Report.

Reuse of Clean, Recyclable Materials and Conservation of Natural Resources.

Reuse of clean, recyclable materials reduces consumption of non-renewable virgin resources and can provide energy savings and greenhouse gas reduction since these materials can be locally-derived.

Conservation of non-renewable resources was achieved by use of recycled material for structural backfill. An estimate of the tonnage of recycled material reused on this project is approximately 375 tons of recycled concrete aggregate ASTM 57.

Conversion to Clean Fuels. Use of clean fuel improves NYC's air quality by reducing harmful emissions.

Natural gas, electric, and net-metered solar-panels are utilized as the principal fuel in the new building. Net-metered solar panels will supply energy returned to the grid for any surplus not utilized.

Recontamination Control. Recontamination after cleanup and redevelopment is completed undermines the value of work performed, may result in a property that is less protective of public health or the environment, and may necessitate additional cleanup work later that could impede future redevelopment. Recontamination can arise from future releases that occur within the property or by influx of contamination from off-Site.

The area of the Site that utilizes recontamination controls under this plan is 100% of the site are (18,000 square feet).

Storm-water Retention. Storm-water retention improves water quality by lowering the rate of combined storm-water and sewer discharges to NYC's sewage treatment plants during periods of precipitation, and reduces the volume of untreated influent to local surface waters. A detention tank was installed in the sub-grade area of the courtyard for stormwater control. The 54-inch diameter tank is expected to manage stormwater for the entire site.

An estimate of area of the property for which enhanced storm-water retention capability has been established for the redevelopment project is 18,000 square feet. A

permeable paving system is utilized in the courtyard along with the on-site stormwater system to reduce stormwater runoff.

Linkage with Green Building. Green buildings provide a multitude of benefits to the city across a broad range of areas, such as reduction of energy consumption, conservation of resources, and reduction in toxic materials use. The insulation and glazing for façade components surpass code minimums for the building. Energy recover ventilation is also included for all pre-conditioned exhausted air from the building.

Paperless Brownfield Cleanup Program. Highbridge Facilities participated in OER's paperless Voluntary Cleanup Program. Under this program, submission of electronic documents replaced submission of hard copies for the review of project documents, communications and milestone reports. A best estimate of the mass (pounds) of paper saved under this plan is 100 pounds.

Low-Energy Project Management Program. Highbridge Facilities participated in OER's low-energy project management program. Under this program, whenever possible, meetings were held using remote communication technologies, such as videoconferencing and teleconferencing to reduce energy consumption and traffic congestion associated with personal transportation. A gross estimate of the number of miles of personal transportation that was conserved in this process is 1,000 miles.

Trees and Plantings. Trees and other plantings provide habitat and add to NYC's environmental quality in a wide variety of ways. Native plant species and native habitat provide optimal support to local fauna, promote local biodiversity, and require less maintenance. The number of trees planted as part of this redevelopment is four new trees along the sidewalk of Cromwell Avenue.