985 BRUCKNER BOULEVARD APARTMENTS

BRONX, NEW YORK

Remedial Action Report

NYC VCP Project Number 16CVCP028X

E-Designation Project Number 16EHAN141X

Prepared for:

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REMEDIAL ACTION REPORT

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List of Acronyms

Acronym	Definition
CAMP	Community Air Monitoring Plan
DER	NYSDEC Division of Environmental Remediation
DER-10	DER-10 / Technical Guidance for Site Investigation and Remediation
DUSR	Data Usability Summary Report
EC	Engineering Control
HASP	Health and Safety Plan
NYC VCP	New York City Voluntary Cleanup Program
NYSDEC	New York State Department of Environmental Conservation
ORC	Oxygen Release Compound
PCBs	Polychlorinated Biphenyls
PID	Photoionization Detector
QA/QC	Quality Assurance/Quality Control
QEP	Qualified Environmental Professional
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan
RCA	Recycled Concrete Aggregate
SCG	Standards, Criteria and Guidance
SCO	Soil Cleanup Objective
SMMP	Soil/Materials Management Plan
SMP	Site Management Plan
SOP	Standard Operating Procedures
SPDES	State Pollutant Discharge Elimination System
SSD	Sub-slab Depressurization
SVOCs	Semi-volatile Organic Compounds
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

Certification Statement(s)

I, Philip Bell, P.E., 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 985 Bruckner Boulevard Apartments site, site number 16CVCP028X.
- 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 December 2016 and Stipulations in a letter dated February 22, 2017 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.

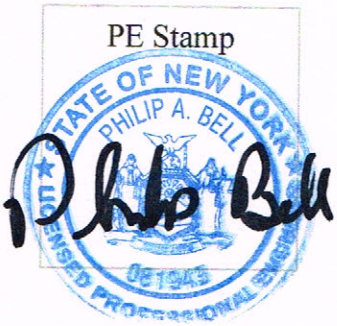
Name PHILIP BELL

PE License Number 081943

Signature Philip Bell

Date 4/17/20

PE Stamp



I, James Blaney, certify the following:

- I am a Qualified Environmental Professional. I had primary direct responsibility for implementation of the remedial program for the 985 Bruckner Boulevard Apartments (985 Bruckner Boulevard) site, site number #16CVCP028X.
- The OER-approved Remedial Action Work Plan dated December 2016 and Stipulations in a letter dated February 22, 2017 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.

Signature  , CHMM

Date 4/17/20

EXECUTIVE SUMMARY

Community Access, Inc. has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 985 Bruckner Boulevard in the Longwood section of 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 985 Bruckner Boulevard in the Longwood section of Bronx, New York and is identified as Block 2735 and Lot 28 on the New York City Tax Map. Figure 2 shows the Site location. The Site is 27,878 square feet (SF) and is bounded by a 1-story commercial/retail structure (formerly a filling station) to the north, Bruckner Boulevard to the east, a 3-story multi-family residential structure to the south, and multi-story mixed commercial and residential, and office and commercial structures to the west. Former on-site residential structures were demolished prior to 1983 and the site has since been vacant, overgrown land. The Site was excavated/graded to approximately 12 feet below street level circa 2005 to begin installation of a planned structure's foundation (this project was abandoned); however, the eastern-central portion of the Site was left unexcavated (remaining material contained subsurface fill and debris). The Site Boundary Map is shown in Figure 1.

Summary of Redevelopment Plan

The developed Site consists of a new ten-story, multi-family residential building containing 215 dwelling units (133 studios, 18 one-bedroom units and 64 two-bedroom units). The remainder of the Site consist of front landscaped areas, concrete walkways and a rear recreational area. The layout of the proposed site development is presented in Figure 3.

The building (173,723 +/- SF total; 155,480+/- SF above grade) contains residential and accessory uses, with a full, walkout basement (basement walls are exposed on the western side into the rear yard). The basement contains approximately 18,243 SF, the ground level contains 17,791 +/- SF, Levels 2, 4 and 6 combined contain a total of 49,183+/- SF, Levels 3, 5 and 7 combined contain a total of 47,911+/- SF, Level 8 contains 14,613 +/- SF and Levels 9-10 combined contain 25,982 +/- SF. The current zoning designation is Commercial – C4-5X, within which residential and community facility uses may be permitted. The proposed use is consistent with existing zoning for the property.

The basement level contains a tenant and bike storage area, fitness room, laundry room, computer room, lounge area, trash collection, commercial kitchen and mechanical/utility support areas. The first floor contains residential units (7 studios, 2 one-bedroom and 2 two-bedroom) and support uses including a reception area, program offices, kitchen and dining/community room, media and multipurpose rooms and a children's play room. The remaining dwelling units are located on the upper 9 floors of the building and include a mix of unit sizes. The rear recreation area (net area of approximately 9,400 SF) is located at basement level, and consists of fixed outdoor exercise equipment, shuffleboard and basketball courts, game area with ping-pong and air hockey table, synthetic lawn areas, and planted buffer areas with trees and understory vegetation.

Prior to site development, the Site was excavated/graded to approximately 12 feet below surface grade (bsg), with the exception of the eastern-central portion of the Site, which was left unexcavated. The following additional excavations took place during site development: the central portion of the building footprint to approximately 12 feet bsg; elevator pits approximately 8 feet bsg; and, the rear yard approximately 3 feet bsg. Final post-remediation excavation depths relative to sidewalk elevation were approximately 20 feet bsg within the area of the elevator pits, approximately 12 feet bsg within the footprint of the building, approximately 15 feet bsg in the rear yard and at least 2 feet bsg in the front landscaped and walkway areas. All excavation depths described in this Report and associated Figures reference final post-remediation depths of excavation. The water table was not encountered during excavation activities at the Site; therefore dewatering was not required during excavation.

The building footprint, front landscaped areas, concrete walkways and rear recreational area are shown in the Site Development Plan in Figure 3.

Summary of Description of Surrounding Property

The subject property is located in an urban, mixed-use area comprised primarily of multi-family residential and retail commercial properties. Surrounding land uses within a 250-foot radius of the Site include commercial and retail to the north (on a site that was previously a filling station), Bruckner Boulevard to the east, multi-family residential and mixed use to the south, and mixed use and commercial to the west. Surrounding land uses extending to 500 feet beyond the project Site include commercial and open space to the north, industrial and parking to the east along Bruckner Boulevard, mixed use, vacant and commercial property to the south and primarily mixed use and multi-family residential to the west. The Casita Maria Center for Arts and Education is located west of the project site on Simpson Street.

Zoning within the surrounding area consists of commercial districts C4-4 to the north with residential R7-1 beyond, manufacturing district M1-2 to the east, commercial district C2-4 and residential R7-1 to the south, and commercial districts C2-1 and C2-2 to the west.

Summary of Past Site Uses and Areas of Concern

A Phase I Environmental Site Assessment (Phase I ESA) was performed for the Site by Ecosystems Strategies, Inc. (ESI) in March 2015. Available historical data document that the property was undeveloped as early as 1896, and was first developed for residential use between 1903 and 1915. All on-site structures were demolished prior to 1983 and the Site had since been vacant, overgrown land. No evidence of industrial or significant commercial use of the property was found during the review of historical records. The property had an E designation for potential issues relating to hazardous materials, noise, and air quality but was not otherwise identified in regulatory records. The adjoining property to the north, redeveloped in 2016 with a 1-story commercial/retail structure, was identified as a former filling station.

The areas of concern (AOCs) identified during the Phase I ESA were:

1. The Site has received E-designations based on the suspected presence of hazardous or other environmentally significant materials, noise, and air quality;
2. Potential impacts from historical petroleum releases at the former filling station to the north; and,
3. Potential site-wide environmental impacts to soil, soil vapor and groundwater from historical on-site/off-site uses and operations, including the presence of documented fill materials.

A Phase II ESA was performed for the Site by ESI in June 2015 and included:

- A discarded, 500-gallon fuel oil tank was discovered in the southwestern portion of the Site. Observations made during the extension of test pits in the vicinity of the tank indicated the presence of sub-surface petroleum contamination (stained soils, elevated PID readings, and petroleum odors). Spill # 1501867, reported to NYSDEC based on these findings, was closed on May 6, 2016 following removal of the tank and surrounding contaminated soil, and submission of a spill file closure report;
- Extension of eleven (11) test pits to a maximum depth of approximately 9 feet bsg in the vicinity of the northern-adjoining former filling station and other areas of the property potentially impacted by historical site usage;
- Collection of five (5) soil vapor samples throughout the Site; and;
- Documentation of the presence or absence of contamination through sampling and laboratory analysis of soil vapor for volatile organic compounds (VOCs) and subsurface soil samples for VOCs, semi-volatile organic compounds (SVOCs), Target Analyte List (TAL) metals, pesticides, and PCBs.

Summary of the Work Performed Under the Remedial Investigation

Additional remedial investigation activities were conducted in April 2016 in accordance with an OER-approved Phase II Work Plan dated March 2, 2016. ESI (on behalf of Community Access) performed the following scope of work:

- Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
- Installed six (6) soil borings across the entire project Site, and collected fourteen soil samples for chemical analysis from the soil borings to evaluate soil quality;
- Installed three (3) groundwater monitoring wells throughout the Site to establish groundwater flow and collected four groundwater samples for chemical analysis to evaluate groundwater quality; and,
- Installed one soil vapor probe in the unexcavated portion of the Site and collected a sample for chemical analysis in April 2016. Five (5) soil vapor samples were obtained in March 2015.

Summary of Findings of Remedial Investigation

A remedial investigation was performed in accordance with an OER-approved Work Plan. The Remedial Investigation Report (RIR; May 2016) documented the following on-site conditions:

1. Elevation of the property ranged from approximately 38.6 to 41.2 feet in the excavated portion of the property, to 50 feet +/- in the unexcavated section of the Site.
2. Depth to groundwater at the Site averaged between 22.02 and 11.30 feet bsg at the street-level wells (MW-01 [off-site] and MW-02 [on-site]) and excavated areas (MW-03 and MW-04), respectively.
3. Groundwater flow was generally from northeast to southwest beneath the Site.
4. Depth to bedrock was approximately 26 feet bsg at the Site from sidewalk elevation.
5. The stratigraphy of the site, from the surface down, consisted of 12 feet of urban fill in the upper portion of the Site underlain by 14 feet of light brown to brown, moist medium silty sands.
6. Soil/fill samples collected during the RI were compared to NYSDEC Part 375-6 Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs). Volatile organic

compounds (VOCs) were detected in several soil samples, but none were found exceeding Unrestricted Use SCOs. Several semi-volatile organic compounds (SVOCs) were detected above their Unrestricted Use SCOs including benzo(a)anthracene (peak value 1.74 mg/kg), benzo(b)fluoranthene (peak value 1.01 mg/kg), benzo(k)fluoranthene (peak value 1.04 mg/kg), chrysene (peak value 1.39 mg/kg), dibenzo(a,h)anthracene (peak value 0.345 mg/kg), indeno(1,2,3-cd)pyrene (peak value 0.65 mg/kg). No SVOCs were detected exceeding Restricted Residential SCOs. Two pesticides, 4,4'-DDE (peak value 0.00544 mg/kg), and 4,4'-DDT (peak value 0.0215 mg/kg), were detected exceeding Unrestricted Use SCOs, but below Restricted Residential standards. No PCBs were detected in any soil samples. Several metals including barium (peak value 1,110 mg/kg), chromium (peak value 74.7 mg/kg), lead (peak value 217 mg/kg), mercury (peak value 0.302 mg/kg), nickel (peak value 65.2 mg/kg), selenium (peak value 5.58 mg/kg), and zinc (peak value 403 mg/kg) were detected exceeding Unrestricted Use SCOs. Of these, barium and chromium also exceeded Restricted Residential SCOs.

7. Groundwater samples collected during the RI showed elevated levels of VOCs (i.e. benzenes, xylenes and methyl tert-butyl ether) and naphthalene (an SVOC) detected in groundwater are commonly associated with refined petroleum products and are likely derived from releases from the adjoining former filling station property and/or the discarded fuel oil tank at the Site. Contamination from dissolved metals is limited to high levels of magnesium, manganese, and sodium. Elevated levels of total chromium, copper, cobalt, iron, lead, selenium, and vanadium were also identified. Metals contamination in groundwater at the Site is likely derived from on-site fill and/or natural site conditions. Groundwater is expected to be located well below the planned excavation depths and is not expected to be encountered during redevelopment activities.

8. Soil vapor samples collected during the RI showed no regulated VOCs were detected at elevated concentrations in the soil vapor sample submitted for analysis. Methylene chloride, PCE, TCE, 111-TCA, and carbon tetrachloride were not detected. Aliphatic hydrocarbons (2-butanone at 760 $\mu g/m^3$, 1,3-butadiene at 32 $\mu g/m^3$ and propylene at

530 µg/m^3) and aromatic hydrocarbons (benzene at 21 µg/m^3 and toluene at 12 µg/m^3) were detected at low concentrations. The following trace levels of VOCs typically encountered in urban environments (including compounds associated with gasoline and solvents) were also detected: 1,2,4-trimethylbenzene (21 µg/m^3) and 1,3,5-trimethylbenzene (10 µg/m^3).

For more detailed results, consult the RIR, provided in Appendix 1.

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 September 10, 2015.
- A Remedial Investigation (RI) was performed from April 11 to April 14, 2016. 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 draft RAWP was prepared and released with a Fact Sheet on February 13, 2017 for a 30-day public comment period.
- The RAWP and Stipulation List dated February 10, 2017 was approved by the New York City Office of Environmental Remediation (OER) on February 15, 2017.
- OER briefed NYSDEC and NYCDOHMH in November 2015 and November 2016.
- A Pre-Construction Meeting was held on January 4, 2018.
- A Fact Sheet providing notice of the start of the remedial action was issued on January 8, 2018.
- The remedial action began on January 10, 2018 and completed on January 3, 2020.

Appendix 2 contains the RAWP.

The remedial action consisted of the following tasks:

1. Prepared a Community Protection Statement and implemented a Citizen Participation Plan.
2. Performed Waste Characterization Study prior to excavation activities. Six (6) waste characterization soil samples (WC-01 through WC-06) were collected on October 19, 2017, one (1) waste characterization sample (WC-07) was collected on February 21, 2018 and one (1) waste characterization sample (WC-08) was collected on May 8, 2018. Waste characterization samples were collected at a frequency dictated by disposal facility(s);
3. Mobilized site security and equipment (January 2018); completed utility mark outs; and marked and staked excavation areas.
4. Performed a Community Air Monitoring Program (CAMP) for particulates and volatile organic carbon compounds. CAMP was performed from January 10, 2018 to July 17, 2018. Dust levels exceeded monitoring matrix and dust suppression measures were implemented to control dust.
5. Established Track 4 Site Specific Soil Cleanup Objectives (SCOs). The following Track 4 SCOs were utilized: Total SVOCs=100 ppm; lead=800 ppm; mercury=1.5 ppm; and barium=800ppm.
6. The following excavations were performed: soil was removed to a maximum depth of 20 feet bsg for elevator pits and to a depth of approximately 12 feet bsg in the area of the new building footprint. A total of 8,154.88 tons of soil/fill material and 990.54 tons of Class B material (including demolition debris, concrete and concrete blocks) were excavated and removed from the Site.
7. Transported and disposed 9,145.42 tons of material at permitted facilities in accordance with all applicable laws and regulations for handling, transporting, and disposing, and the RAWP. The following materials were removed from this site:

- 6,569.63 tons of non-hazardous soil/fill at Soil Safe Metro 12 facility, 300 Salt Meadow Road, Carteret, New Jersey;
- 1,585.25 tons of non-regulated petroleum contaminated soil at Soil Safe Metro 12 facility; and,
- 990.54 tons of Class B material (including demolition debris, concrete and concrete blocks) disposed at Impact Recovery and Reuse Center facility, 1000 Page Avenue, Lyndhurst, New Jersey.

8. Screened excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.
9. 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.
10. Removed one 550-gallon underground storage tank (UST) at the central portion of the Site in compliance with applicable laws and regulations.
11. Collected and analyzed twelve (12) end-point samples to determine attainment of SCOs. Track 4 site-specific SCOs were achieved in all samples.
12. Constructed an engineered Composite Cover System to prevent human exposure to residual soil/fill remaining under the Site. The cover system consists of: 5 inches of concrete slab underlain by six inches of ¾-inch crushed bluestone in the building area; 4 inches of concrete underlain by 6 inches of ¾-inch crushed bluestone in the concrete walkways; 2 feet of clean structural fill and 1 foot of clean topsoil underlain by a demarcation layer (orange snow fencing) in the rear yard; and, 2 feet of clean topsoil underlain by orange snow fencing in front landscaped areas. The contractor for the cover construction was United Industries.
13. Installed a Vapor Barrier System that consisted of a 15-mil Stego Wrap Vapor Barrier beneath the building slab and up the foundation sidewalls. Stego Wrap red polyethylene tape was used to seal all seams and penetrations during installation. The contractor for the Vapor Barrier System construction was United Industries.

14. Installed and operated a Passive Sub-Slab Depressurization System at the northern and southern portions of the building, each consisting of an "H" design with associated horizontal piping wrapped in filter fabric and installed within a gas permeable layer comprised of a minimum of 3 inches of ¾" clean crushed stone. Sub-slab piping consists of 4-inch perforated, Schedule 40 PVC aligned horizontally beneath the building slab. The sub-slab piping was connected via solid PVC tees then to solid PVC elbows connected to 4-inch vertical PVC pipes. The vertical pipes run up to and traverse the cellar ceilings, connecting to 4-inch solid PVC risers in the northern-central and southern-central portions of the building; vapors are conveyed via the 4-inch riser pipe aligned vertically through the building and vented above the roof. An Empire Ventilator model 126 CFM 4" turbine was installed inline on the roof level. The remedial engineer 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 contractor for the passive Sub-Slab Depressurization System installation was United Industries.
15. Residual soil was demarcated using geosynthetic material (orange snow fence) placed beneath the cover layer in the rear yard and front landscaped areas and will be subject to Site Management under this Remedial Action.
16. Performed all activities required for the Remedial Action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
17. Implemented storm-water pollution prevention measures in compliance with applicable laws and regulations.
18. Imported material was used for backfill and cover in compliance with the Remedial Action Work Plan and in accordance with applicable laws and regulations. Approximately 151 cubic yards of clean topsoil was imported from DeLea Landscape Supplies, Inc. located at 444 Elwood Road, East Northport, New York. The following materials were imported form Impact Reuse and Recovery Center facility located at 1000 Page Avenue, Lyndhurst, New Jersey:

- 186.25 tons of 1 ½" clean bluestone;
- 923.96 tons of ¾" clean bluestone;
- 57.19 tons of general fill; and,
- 3,200.78 tons of structural fill – bluestone.

19. Submitted daily reports during construction oversight activities. Intermittent Daily reports and monthly reports were submitted from January 10, 2018 to January 3, 2020.
20. Submitted a Sustainability Report.
21. Submitted this Remedial Action Report 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.
22. Submitted a Site Management Plan (SMP) for long-term management of residual soil, including plans for, 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, 2021 (for the reporting period calendar year 2020-2021), July 30, 2026 (for the reporting period calendar years 2021-2025) and every three years thereafter. Inspection and Certification Reports will cover all calendar years since the prior reporting period.
23. The property will continue to be registered with an E-Designation by the NYC Department of Buildings. Engineering Controls and Institutional Controls will be managed in compliance with the SMP. Institutional Controls will include prohibition of 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 material 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

Community Access, Inc. has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 985 Bruckner Boulevard in the Longwood section of Bronx, New York. The boundary of the property subject to this Remedial Action is shown in Figure 1 and includes, in its entirety, Borough of Bronx Block 2735 and Lot 28. 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 985 Bruckner Boulevard in the Longwood section of Bronx, New York and is identified as Block 2735 and Lot 28 on the New York City Tax Map. Figure 2 shows the Site location. The Site is 27,878 square feet (SF) and is bounded by a 1-story commercial/retail structure (formerly a filling station) to the north, Bruckner Boulevard to the east, a 3-story multi-family residential structure to the south, and multi-story mixed commercial and residential, and office and commercial structures to the west. Former on-site residential structures were demolished prior to 1983 and the site has since been vacant, overgrown land. The Site was excavated/graded to approximately 12 feet below street level circa 2005 to begin installation of a planned structure's foundation (this project was abandoned); however, the eastern-central portion of the Site was left unexcavated (remaining material contained subsurface fill and debris). The Site Boundary Map is shown in Figure 1.

1.2 Redevelopment Plan

The developed Site consists of a new ten-story, multi-family residential building containing 215 dwelling units (133 studios, 18 one-bedroom units and 64 two-bedroom units). The

remainder of the Site consist of front landscaped areas, concrete walkways and a rear recreational area. The layout of the proposed site development is presented in Figure 3.

The building (173,723 +/- SF total; 155,480+/- SF above grade) contains residential and accessory uses, with a full, walkout basement (basement walls are exposed on the western side into the rear yard). The basement contains approximately 18,243 SF, the ground level contains 17,791 +/- SF, Levels 2, 4 and 6 combined contain a total of 49,183+/- SF, Levels 3, 5 and 7 combined contain a total of 47,911+/- SF, Level 8 contains 14,613 +/- SF and Levels 9-10 combined contain 25,982 +/- SF. The current zoning designation is Commercial – C4-5X, within which residential and community facility uses may be permitted. The proposed use is consistent with existing zoning for the property.

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encountered during excavation activities at the Site; therefore dewatering was not required during excavation.

The building footprint, front landscaped areas, concrete walkways and rear recreational area are shown in the Site Development Plan in Figure 3.

1.3 Description of Surrounding Property

The subject property is located in an urban, mixed-use area comprised primarily of multi-family residential and retail commercial properties. Surrounding land uses within a 250-foot radius of the Site include commercial and retail to the north (on a site that was previously a filling station), Bruckner Boulevard to the east, multi-family residential and mixed use to the south, and mixed use and commercial to the west. Surrounding land uses extending to 500 feet beyond the project Site include commercial and open space to the north, industrial and parking to the east along Bruckner Boulevard, mixed use, vacant and commercial property to the south and primarily mixed use and multi-family residential to the west. The Casita Maria Center for Arts and Education is located west of the project site on Simpson Street.

Zoning within the surrounding area consists of commercial districts C4-4 to the north with residential R7-1 beyond, manufacturing district M1-2 to the east, commercial district C2-4 and residential R7-1 to the south, and commercial districts C2-1 and C2-2 to the west.

1.4 Summary of Past Site Uses and Areas of Concern

A Phase I Environmental Site Assessment (Phase I ESA) was performed for the Site by Ecosystems Strategies, Inc. (ESI) in March 2015. Available historical data document that the property was undeveloped as early as 1896, and was first developed for residential use between 1903 and 1915. All on-site structures were demolished prior to 1983 and the Site had since been vacant, overgrown land. No evidence of industrial or significant commercial use of the property was found during the review of historical records. The property had an E designation for potential issues relating to hazardous materials, noise, and air quality but was not otherwise identified in regulatory records. The adjoining property to the north, redeveloped in 2016 with a 1-story commercial/retail structure, was identified as a former filling station.

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- Extension of eleven (11) test pits to a maximum depth of approximately 9 feet bsg in the vicinity of the northern-adjoining former filling station and other areas of the property potentially impacted by historical site usage;
- Collection of five (5) soil vapor samples throughout the Site; and;
- Documentation of the presence or absence of contamination through sampling and laboratory analysis of soil vapor for volatile organic compounds (VOCs) and subsurface soil samples for VOCs, semi-volatile organic compounds (SVOCs), Target Analyte List (TAL) metals, pesticides, and PCBs.

1.5 Summary of Work Performed Under the Remedial Investigation

Additional remedial investigation activities were conducted in April 2016 in accordance with an OER-approved Phase II Work Plan dated March 2, 2016. ESI (on behalf of Community Access) performed the following scope of work:

- Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
- Installed six (6) soil borings across the entire project Site, and collected fourteen soil samples for chemical analysis from the soil borings to evaluate soil quality;
- Installed three (3) groundwater monitoring wells throughout the Site to establish groundwater flow and collected four groundwater samples for chemical analysis to evaluate groundwater quality; and,
- Installed one soil vapor probe in the unexcavated portion of the Site and collected a sample for chemical analysis in April 2016. Five (5) soil vapor samples were obtained in March 2015.

1.6 Summary of Findings of Remedial Investigation

A remedial investigation was performed in accordance with an OER-approved Work Plan. The Remedial Investigation Report (RIR; May 2016) documented the following on-site conditions:

1. Elevation of the property ranged from approximately 38.6 to 41.2 feet in the excavated portion of the property, to 50 feet +/- in the unexcavated section of the Site.
2. Depth to groundwater at the Site averaged between 22.02 and 11.30 feet bsg at the street-level wells (MW-01 [off-site] and MW-02 [on-site]) and excavated areas (MW-03 and MW-04), respectively.
3. Groundwater flow was generally from northeast to southwest beneath the Site.
4. Depth to bedrock was approximately 26 feet bsg at the Site from sidewalk elevation.
5. The stratigraphy of the site, from the surface down, consisted of 12 feet of urban fill in the upper portion of the Site underlain by 14 feet of light brown to brown, moist medium silty sands.
6. Soil/fill samples collected during the RI were compared to NYSDEC Part 375-6 Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs). Volatile organic

compounds (VOCs) were detected in several soil samples, but none were found exceeding Unrestricted Use SCOs. Several semi-volatile organic compounds (SVOCs) were detected above their Unrestricted Use SCOs including benzo(a)anthracene (peak value 1.74 mg/kg), benzo(b)fluoranthene (peak value 1.01 mg/kg), benzo(k)fluoranthene (peak value 1.04 mg/kg), chrysene (peak value 1.39 mg/kg), dibenzo(a,h)anthracene (peak value 0.345 mg/kg), indeno(1,2,3-cd)pyrene (peak value 0.65 mg/kg). No SVOCs were detected exceeding Restricted Residential SCOs. Two pesticides, 4,4'-DDE (peak value 0.00544 mg/kg), and 4,4'-DDT (peak value 0.0215 mg/kg), were detected exceeding Unrestricted Use SCOs, but below Restricted Residential standards. No PCBs were detected in any soil samples. Several metals including barium (peak value 1,110 mg/kg), chromium (peak value 74.7 mg/kg), lead (peak value 217 mg/kg), mercury (peak value 0.302 mg/kg), nickel (peak value 65.2 mg/kg), selenium (peak value 5.58 mg/kg), and zinc (peak value 403 mg/kg) were detected exceeding Unrestricted Use SCOs. Of these, barium and chromium also exceeded Restricted Residential SCOs.

7. Groundwater samples collected during the RI showed elevated levels of VOCs (i.e. benzenes, xylenes and methyl tert-butyl ether) and naphthalene (an SVOC) detected in groundwater are commonly associated with refined petroleum products and are likely derived from releases from the adjoining former filling station property and/or the discarded fuel oil tank at the Site. Contamination from dissolved metals is limited to high levels of magnesium, manganese, and sodium. Elevated levels of total chromium, copper, cobalt, iron, lead, selenium, and vanadium were also identified. Metals contamination in groundwater at the Site is likely derived from on-site fill and/or natural site conditions. Groundwater is expected to be located well below the planned excavation depths and is not expected to be encountered during redevelopment activities.

8. Soil vapor samples collected during the RI showed no regulated VOCs were detected at elevated concentrations in the soil vapor sample submitted for analysis. Methylene chloride, PCE, TCE, 111-TCA, and carbon tetrachloride were not detected. Aliphatic hydrocarbons (2-butanone at 760 $\mu g/m^3$, 1,3-butadiene at 32 $\mu g/m^3$ and propylene at

530 µg/m^3) and aromatic hydrocarbons (benzene at 21 µg/m^3 and toluene at 12 µg/m^3) were detected at low concentrations. The following trace levels of VOCs typically encountered in urban environments (including compounds associated with gasoline and solvents) were also detected: 1,2,4-trimethylbenzene (21 µg/m^3) and 1,3,5-trimethylbenzene (10 µg/m^3).

For more detailed results, consult the RIR, provided in Appendix 1.

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 September 10, 2015.
- A Remedial Investigation (RI) was performed from April 11 to April 14, 2016. 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 February 13, 2017 for a 30-day public comment period.
- The RAWP and Stipulation List dated February 10, 2017 was approved by the New York City Office of Environmental Remediation (OER) on February 15, 2017.
- OER briefed NYSDEC and NYCDOHMH in November 2015 and November 2016.
- A Pre-Construction meeting was held on January 4, 2018.
- A Fact Sheet providing notice of the start of the remedial action was issued on January 8, 2018.
- The remedial action began on January 10, 2018 and completed on January 3, 2020.

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. Performed Waste Characterization Study prior to excavation activities. Six (6) waste characterization soil samples (WC-01 through WC-06) were collected on October 19, 2017, one (1) waste characterization sample (WC-07) was collected on February 21, 2018 and one (1) waste characterization sample (WC-08) was collected on May 8, 2018. Waste characterization samples were collected at a frequency dictated by disposal facility(s);
3. Mobilized site security and equipment (January 2018); completed utility mark outs; and marked and staked excavation areas.
4. Performed a Community Air Monitoring Program (CAMP) for particulates and volatile organic carbon compounds. CAMP was performed from January 10, 2018 to July 17, 2018. Dust levels exceeded monitoring matrix and dust suppression measures were implemented to control dust.
5. Established Track 4 Site Specific Soil Cleanup Objectives (SCOs). The following Track 4 SCOs were utilized: Total SVOCs=100 ppm; lead=800 ppm; mercury=1.5 ppm; and barium=800ppm.
6. The following excavations were performed: soil was removed to a maximum depth of 20 feet bsg for elevator pits and to a depth of approximately 12 feet bsg in the area of the new building footprint. A total of 8,154.88 tons of soil/fill material and 990.54 tons of Class B material (including demolition debris, concrete and concrete blocks) were excavated and removed from the Site.
7. Transported and disposed 9,145.42 tons of material at permitted facilities in accordance with all applicable laws and regulations for handling, transporting, and disposing, and the RAWP. The following materials were removed from this site:
    - 6,569.63 tons of non-hazardous soil/fill at Soil Safe Metro 12 facility, 300 Salt Meadow Road, Carteret, New Jersey;
    - 1,585.25 tons of non-regulated petroleum contaminated soil at Soil Safe Metro 12 facility; and,

- 990.54 tons of Class B material (including demolition debris, concrete and concrete blocks) disposed at Impact Recovery and Reuse Center facility, 1000 Page Avenue, Lyndhurst, New Jersey.

8. Screened excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.
9. 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.
10. Removed a 550-gallon underground storage tank (UST) at the central portion of the Site in compliance with applicable laws and regulations.
11. Collected and analyzed twelve (12) end-point samples to determine attainment of SCOs. Track 4 site-specific SCOs were achieved in all samples.
12. Constructed an engineered Composite Cover System to prevent human exposure to residual soil/fill remaining under the Site. The cover system consists of: 5 inches of concrete slab underlain by six inches of ¾-inch crushed bluestone in the building area; 4 inches of concrete underlain by 6 inches of ¾-inch crushed bluestone in the concrete walkways; 2 feet of clean structural fill and 1 foot of clean topsoil underlain by a demarcation layer (orange snow fencing) in the rear yard; and, 2 feet of clean topsoil underlain by orange snow fencing in front landscaped areas. The contractor for the cover construction was United Industries.
13. Installed a Vapor Barrier System that consisted of a 15-mil Stego Wrap Vapor Barrier beneath the building slab and up the foundation sidewalls. Stego Wrap red polyethylene tape was used to seal all seams and penetrations during installation. The contractor for the Vapor Barrier System construction was United Industries.
14. Installed and operated a Passive Sub-Slab Depressurization System at the northern and southern portions of the building, each consisting of an “H” design with associated horizontal piping wrapped in filter fabric and installed within a gas permeable layer comprised of a minimum of 3 inches of ¾” clean crushed stone. Sub-slab piping consists of 4-inch perforated, Schedule 40 PVC aligned horizontally

beneath the building slab. The sub-slab piping was connected via solid PVC tees then to solid PVC elbows connected to 4-inch vertical PVC pipes. The vertical pipes run up to and traverse the cellar ceilings, connecting to 4-inch solid PVC risers in the northern-central and southern-central portions of the building; vapors are conveyed via the 4-inch riser pipe aligned vertically through the building and vented above the roof. An Empire Ventilator model 126 CFM 4" turbine was installed inline on the roof level. The remedial engineer 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 contractor for the passive Sub-Slab Depressurization System installation was United Industries.

15. Residual soil was demarcated using geosynthetic material (orange snow fence) placed beneath the cover layer and will be subject to Site Management under this Remedial Action.

16. Performed all activities required for the Remedial Action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.

17. Implemented storm-water pollution prevention measures in compliance with applicable laws and regulations.

18. All material was imported in compliance with the Remedial Action Work Plan and in accordance with applicable laws and regulations. Imported material was used for backfill and cover in compliance with the Remedial Action Work Plan and in accordance with applicable laws and regulations. Approximately 151 cubic yards of clean topsoil was imported from DeLea Landscape Supplies, Inc. located at 444 Elwood Road, East Northport, New York. The following materials were imported form Impact Reuse and Recovery Center facility located at 1000 Page Avenue, Lyndhurst, New Jersey:

    - 186.25 tons of 1 ½" clean bluestone;
    - 923.96 tons of ¾" clean bluestone;
    - 57.19 tons of general fill; and,

- 3,200.78 tons of structural fill – bluestone.

19. Submitted daily reports during construction oversight activities. Intermittent daily and monthly reports were submitted from January 10, 2018 to August 1, 2018.
20. Submitted a Sustainability Report.
21. Submitted this 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.
22. 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, 2021 (for the reporting period calendar year 2020-2021), July 30, 2022 (for the reporting period calendar years 2021-2022) and every three years thereafter. Inspection and Certification Reports will cover all calendar years since the prior reporting period.
23. The property will continue to be registered with an E-Designation by the NYC Department of Buildings. Engineering Controls and Institutional Controls will be managed in compliance with the SMP. Institutional Controls will include prohibition of 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 material 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 and 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 Joshua Cupriks.

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 January 10, 2018 to July 17, 2018 in compliance with the Community Air Monitoring Plan in the approved RAWP. Transient event generated large quantities of dust during concrete demolition. Contractor modified work practices and dust levels decreased to within normal range. Dust suppression measures were implemented during these activities, as needed. 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

The following describes deviations in the Remedial Action from the RAWP:

- The rear landscaped area was proposed to consist of wood deck and walkways, planted buffer with trees and understory vegetation, a recessed amphitheater with seating, patio, and children's natural play area. Landscaping plans for the rear yard were revised to consist of fixed outdoor exercise equipment, shuffleboard and basketball courts, game area with ping-pong and air hockey table, synthetic lawn areas, and planted buffer areas with trees and understory vegetation.

4.0 REMEDIAL PROGRAM

4.1 Project Organization

Principal personnel who participated in the remedial action include the Professional Engineer (PE), Philip Bell of Bell Engineering, PLLC, and the Qualified Environmental Professionals (QEP), Paul Ciminello and James Blaney. Mr. Ciminello was the QEP until his retirement on December 31, 2018 and Mr. Blaney thereafter. Other qualified personnel have been utilized and the Community Access, Inc. reserves the right to have selected other principal personnel, subject to OER approval. The developer was Community Access, Inc. and the general contractor was Monadnock Construction.

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 was required to attend an orientation meeting to become familiar with the general operation of the Site, health and safety requirements, and field procedures.

Utility Marker Layouts, Easement Layouts

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 guidelines provided in the approved RAWP 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. Utility companies and other responsible authorities were contacted to locate and mark the locations, and a copy of the Markout Ticket was retained by the contractor prior to the start of drilling, excavation or other invasive subsurface operations. Electrical hazards associated with

drilling in the vicinity of overhead utilities were prevented by maintaining a safe distance between overhead power lines and drill rig masts.

Proper safety and protective measures pertaining to utilities and easements, and compliance with all laws and regulations were employed during completion of the remedial action.

An OER Project Notice was erected at the project entrance and was in place during all phases of the Remedial Action.

Soil Screening

Visual, olfactory and PID soil screening and assessment were performed under the supervision of a Qualified Environmental Professional; no field evidence of contamination was identified, with the exception of low PID reading (0.3 ppm) associated with the former 550-gallon underground storage tank (UST) that was excavated and removed from the central portion of the Site. No other field evidence of contamination (elevated PID readings, odors or obvious NAPL/sheen) was observed in the vicinity of this tank; all soils in the vicinity of this tank were disposed off-site as non-hazardous soil/fill.

Stockpile Management

Most material was live loaded; stockpiles were used only when necessary and were removed as soon as practicable. While stockpiles were in place, they were inspected daily, and before and after every storm event. Results from all inspections were recorded in a logbook and maintained at the Site and available for inspection by NYC OER. Excavated soils were stockpiled on, at minimum, double layers of 6-mil minimum sheeting, were kept covered at all times with appropriately anchored plastic tarps, and were routinely inspected. Broken or ripped tarps were promptly replaced.

All stockpile activities were compliant with applicable laws and regulations. Soil stockpile areas were appropriately graded to control run-off in accordance with applicable laws and regulations. Stockpiles of excavated soils and other materials were located at least of 50 feet from the property boundaries, where possible.

Truck Inspection

An outbound-truck inspection station was set up close to the Site exit along Bruckner Boulevard. The Site exit was stabilized with ¾" and 1½" clean bluestone approved product (this material was used as sub-slab base), which prevented truck tires contacting site soils. Before exiting the NYC VCP Site, trucks were required to stop at the truck inspection station and were examined for evidence of contaminated soil on the undercarriage, body, and wheels. Soil and debris were removed. Brooms, shovels and potable water were utilized for the removal of soil from vehicles and equipment, as necessary. No soil was tracked onto the street.

Site Security

Site access was controlled by gated entrances to the fenced property.

Nuisance Controls

Odor Control

An Odor Control Plan was implemented in accordance with the RAWP, which called for (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. Soil removal activities did not result in conditions requiring active odor control measures. No complaints were received.

Dust Control

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

- Use of a dedicated water spray methodology for roads, excavation areas and stockpiles.
- Use of properly anchored tarps to cover stockpiles.
- Use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface.

This dust control plan was capable of controlling emissions of dust. Work did not have to be halted due to nuisance dust emissions during the Remedial Action. The presence of VOCs

and airborne dust was monitored using a RAE Systems MiniRAE 3000 PID (or equivalent) and a TSI 8530 DustTrak II aerosol monitor, respectively, during all intrusive activity. No nuisance complaints were received during the Remedial Action.

Other Nuisances

Noise control was exercised during the remedial program. All remedial work conformed, at a minimum, to NYC noise control standards.

Rodent control was provided during Site clearing and grubbing activities and during the remedial program, as necessary, to prevent nuisances.

Reporting

Daily reports providing a general summary of activities for each day of active remedial work were emailed to the OER Project Manager and uploaded to OER's Environmental Project Information Center (EPIC). Those reports included:

- Project number and statement of the activities and an update of progress made and locations of work performed;
- Quantities of material imported and exported from the Site;
- Status of on-Site soil/fill stockpiles;
- A summary of all citizen complaints, with relevant details (basis of complaint; actions taken; etc.);
- A summary of CAMP excursions, if any; and,
- Photograph of notable Site conditions and activities.

The frequency of the reporting period was revised in consultation with NYC OER project manager based on planned project tasks. Daily email reports were not intended to be the primary mode of communication for notification to OER of emergencies (accidents, spills), requests for changes to the RAWP or other sensitive or time critical information. However, such information was included in the daily reports. Emergency conditions and changes to the RAWP were communicated directly to the OER project manager by personal communication.

An alpha-numeric site map was used to identify locations described in reports submitted to OER.

Job-site record keeping for all remedial work was performed. These records were maintained on-Site during the project and were available for inspection by OER staff. Representative photographs were taken of the Site prior to any remedial activities and during major remedial activities to illustrate remedial program elements and contaminant source areas. Photographs were submitted at the completion of the project in this RCR in digital format (i.e. jpeg files).

All daily, weekly and monthly reports are included in Appendix 3. Digital photographs of the remedial action are included in Appendix 4.

4.3 Materials Excavation and Removal Action

Soil/Fill Excavation and Removal

The Site was excavated between January and July 2018 to allow for the installation of the basement and new building slab, utilities and foundation elements for the new ten-story, multi-family residential building. Prior to site development, the Site was excavated/graded to approximately 12 feet below surface grade (bsg), with the exception of the eastern-central portion of the Site, which was left unexcavated. Final post-remediation excavation depths relative to sidewalk elevation were as follows: approximately 20 feet bsg within the area of the elevator pits; approximately 12 feet bsg within the footprint of the building; approximately 15 feet bsg in the rear yard; and, at least 2 feet bsg in the front landscaped and walkway areas. A map showing approximate final post-remediation depths of excavation for the Site is shown in Figure 5.

A total of 6,569.63 tons of non-hazardous soil/fill, 1,585.25 tons of non-regulated petroleum contaminated soil and 990.54 tons of Class B material (including demolition debris, concrete and concrete blocks) were excavated and removed from the property during the Removal Action. Materials excavated from the southwestern corner of WC-01 and WC-03 were removed from the Site as non-regulated petroleum contaminated soil. The Removal Action was performed under the oversight of Paul Ciminello and James Blaney of WCD (QEP).

Removal Action

Materials removed from the property under this Removal Action is generally classified as follows: non-hazardous soil/fill consisting of urban fill and light brown to brown, moist medium silty sands; and, Class B material (including demolition debris, concrete and concrete blocks). The Removal Action was performed under the oversight of James Blaney, QEP for the project. Trucking began on January 25, 2018 and concluded on July 17, 2018. Material was disposed of at Soil Safe Metro 12 facility, 300 Salt Meadow Road, Carteret, New Jersey (6,569.63 tons of non-hazardous soil/fill and 1,585.25 tons of non-regulated petroleum contaminated soil) and at Impact Recovery and Reuse Center facility located at 1000 Page Avenue, Lyndhurst, New Jersey (Class B material, 990.54 tons).

Removal Action Performance Criteria

All excavation activities were performed to accommodate construction of the new building and the front and rear yards.

Material Type

The RIR showed urban fill to a depth of approximately 12 feet bsg, underlain by 14 feet of light brown to brown, moist medium silty sands. During construction excavations, urban fill was encountered during excavation of the basement and rear yard to depths of at least 12 feet bsg. Materials excavated from the southwestern corner of WC-01 and WC-03 were removed from the Site as non-regulated petroleum contaminated soil. All other soils removed from the property were disposed of as non-hazardous soil/fill. According to Soil Safe, non-regulated petroleum contaminated soil and non-hazardous soil/fill are considered to be the same type of material. Class B material (including demolition debris, concrete and concrete blocks) was encountered throughout excavation activities, and was removed from the property from January 23 to July 13, 2018.

Onsite Reuse

Based on results of all waste characterization (WC) sampling data from October 2017, as well as earlier soil data (Phase II ESA, RIR and spill closure endpoint soil sampling, plus all

boring logs), WCD requested that on-site soils from the following WC grid locations be reused: eastern portion of WC-01 and WC-02 through WC-05. OER approved this request on November 20, 2017. On-site soils were reused to increase the rear yard elevation and as sub-grade material beneath the approved cover layer.

A map showing the locations where soil was not reused and the location of placement of reused soil is shown in Figure 7.

UST Removal

During excavation activities, a discarded, steel 550-gallon UST was encountered just below ground surface on January 16, 2018. No overt field evidence of contamination (elevated PID readings, odors or obvious NAPL/sheen) was observed within the tank or at exterior areas underlying or near the tank. Enviro Waste Oil Recovery LLC (Enviro Waste) was on-site on January 18, 2018 and 841 gallons of waste liquid/water was pumped out of the tank. Enviro Waste returned to the Site on January 26, 2018. The tank was cut open and 165 gallons of sludge was cleaned out of the tank. The tank shell was disposed of off-site.

A map showing the location of the tank removal is shown in Figure 6. Tank removal documentation, including a screenshot of spill closure, is provided in Appendix 10.

Dewatering

Dewatering was not required during excavation activities.

Soil Cleanup Objectives

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

Contaminant	**Site-Specific SCOs**
Total SVOCs	100 ppm
Lead	800 ppm
Mercury	1.5 ppm
Barium	800 ppm

End Point Sample Results

To evaluate attainment of Track 4 Site-specific SCOs, end-point samples should have been analyzed for analytes for which SCOs were developed, including total SVOCs and metals; however, end-point samples were analyzed for VOCs, SVOCs, pesticides, PCBs and metals. There were no exceedances of Track 2 Restricted Residential Use SCOs in any sample for those additional analytes. End-point sample results are only discussed for analytes for which SCOs were developed. Removal actions for development were performed in conjunction with confirmation end-point soil sampling. Final endpoint sample locations were determined in the field.

Twelve end-point samples (EP-01 through EP-12) were collected from the Site excavations. EP-01 through EP-03 (collected February 1, 2018), EP-04 (collected February 15, 2018), EP-05 (collected March 6, 2018), and EP-09 (collected April 24, 2018) were collected from the building footprint excavation at approximately 12 feet bsg. EP-06 and EP-07 (collected April 4, 2018) were collected from the front landscaped area and concrete walkways excavation at approximately 2 feet bsg. EP-08 (collected April 4, 2018), EP-10 and EP-11 (collected May 14, 2018) and EP-12 (collected June 29, 2018) were collected from the rear yard excavation at approximately 15 feet bsg.

The SCOs for this project were achieved. Total SVOCs were not detected at concentrations above the Track 4 Site Specific SCO of 100 ppm. The peak total SVOC concentration detected was at 12.33 ppm in sample EP-06. Barium was not detected above the Track 4 Site Specific SCO of 800 ppm. The peak barium concentration was detected at 423 ppm in sample EP-09A (sample EP-09B was a duplicate of EP-09A). Lead was not detected above the Track 4 Site Specific SCO of 800 ppm. The peak lead concentration was 147 and 150 ppm in samples EP-09A and EP-09B, respectively. Mercury was not detected above the Track 4 SCO of 1.5 ppm. All material represented by the RIR samples were removed during the remedial action.

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 1. Full laboratory reports are included in Appendix 8.

4.4 Materials Disposal

All soil/fill material was disposed of at the Soil Safe Metro 12 facility, 300 Salt Meadow Road, Carteret, New Jersey, and all Class B material (including demolition debris, concrete and concrete blocks) was disposed of at Impact Recovery and Reuse Center facility, 1000 Page Avenue, Lyndhurst, New Jersey. Correspondence with repositories and approval documentation is included in Appendix 7 and disposal documentation is provided in Appendix 8. A total of 6,569.63 tons of non-hazardous soil/fill, 1,585.25 tons of non-regulated petroleum contaminated soil and 990.54 tons of Class B material (including demolition debris, concrete and concrete blocks) were excavated and removed from the property.

All transport of materials was performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers were appropriately licensed and trucks properly placarded. Loaded vehicles leaving the Site were appropriately tarped, securely covered, and manifested in accordance with appropriate local, State, Federal and New York State Department of Transportation requirements (and all other applicable transportation requirements).

Waste Characterization sampling was performed as required by the disposal facilities. Waste Characterization sample results and a summary of waste characterization data are attached in Appendix 9.

The type, quantity and disposal location of each material removed and disposed off-Site is presented below:

Disposal Location/Address	Type of Material	Quantity
Soil Safe Metro 12 300 Salt Meadow Road Carteret, NJ 07008	Non-Hazardous Soil/Fill	6,569.63 tons
Soil Safe Metro 12 300 Salt Meadow Road Carteret, NJ 07008	Non-Regulated Petroleum Contaminated Soil	1,585.25 tons
Impact Reuse & Recovery 1000 Page Avenue Lyndhurst, NJ 07071	Class B material	990.54 tons

Materials excavated from the southwestern corner of WC-01 and WC-03 were removed from the Site as non-regulated petroleum contaminated soil. All other soils removed from the property were disposed of as non-hazardous soil/fill. According to Soil Safe, non-regulated petroleum contaminated soil and non-hazardous soil/fill are considered to be the same type of material.

Letters from WCD Group and Monadnock Construction (on behalf of Enrollee, Community Access) to disposal facility providing materials type, source and data, and acceptance letters from 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 7. A table of individual truck transport and material disposal quantities is included in Table 3.

4.5 Backfill Import

General fill was imported to the Site to use as backfill in the rear yard. A total of 57.19 tons of general fill were imported on July 10 and 11, 2018 from Impact Reuse and Recovery Center facility located at 1000 Page Avenue, Lyndhurst, New Jersey.

Clean topsoil and clean structural fill was imported to the site for use as a protective cover layer at portions of the site not covered by impervious surfaces. Imported soil cover was installed in front landscaped areas and rear yard above a bright orange demarcation layer (snow fence). Clean topsoil was installed to 2 feet bsg in front landscaped areas, and clean structural fill was installed from 2 to 3 feet bsg under 1 foot of clean topsoil in the rear yard. Thickness was confirmed by direct measurement and was documented in the photographic record. All soil imported to the property achieved the lower of 6NYCRR Part 375-6.8(b) Restricted-Use SCOs for Protection of Groundwater or Restricted-Residential Use. Approximately 151 cubic yards of clean topsoil were imported from DeLea Landscape Supplies, Inc. located at 444 Elwood Road, East Northport, New York, and 3,200.78 tons of clean structural fill were imported form Impact Reuse and Recovery Center facility located at 1000 Page Avenue, Lyndhurst, New Jersey.

Clean ¾" and 1 ½" crushed blue stone was imported to the Site for use as clean sub-base material beneath the entire building footprint and paved areas. All sub-base material

imported to the Site was virgin material from a NYSDEC approved source and pass a sieve test (less than 10% through a #80) sieve. 186.25 tons of 1 ½" clean bluestone and 923.96 tons of ¾" clean bluestone were imported from Impact Reuse and Recovery Center facility located at 1000 Page Avenue, Lyndhurst, New Jersey.

All soil imported to the property achieved the lower of 6NYCRR Part 375-6.8 Groundwater Protection Standards and Restricted Residential SCOs. Table 4 shows all sources of backfill with quantities for each source. Tables summarizing chemical analytical results for backfill are included in Appendix 11. Full laboratory reports are included in Appendix 11. A map showing backfill placement locations at the Site is shown in Figure 7.

4.6 Demarcation

Orange snow fence was inserted as a visible demarcation layer between the remaining soil and a two-foot thick cover of clean fill in the rear yard and front landscaped areas of the Site. Soil below the final cover is residual soil that will be addressed by Site Management under this Remedial Action. A map showing demarcation locations is shown in Figure 13.

5.0 ENGINEERING CONTROLS

Engineering Controls were employed in the Remedial Action to address residual material remaining at the site. The Site has three (3) primary Engineering Control Systems. These are:

1. Composite Cover System;
2. Vapor Barrier System; and,
3. Passive 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: 5 inches of concrete slab underlain by six inches of ¾-inch crushed bluestone in the building area; 4 inches of concrete underlain by 6 inches of ¾-inch crushed bluestone in the front concrete walkways; 2 feet of clean fill and 1 foot of clean topsoil underlain by a demarcation layer (orange snow fencing) in the rear yard; and, 2 feet of clean topsoil underlain by orange snow fencing in front landscaped areas. The contractor for the Composite Cover System construction was United Industries.

Figure 9 shows the as-built design for each cover type used in the Composite Cover System on this Site. Figure 8 shows a map of the location of each Composite Cover System type built at the Site. Photographs of construction of the Composite Cover System are included in Appendix 4.

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 a 15-mil Stego Wrap Vapor Barrier beneath the building slab and up the foundation sidewalls. Stego Wrap Vapor Barrier is a multi-layer plastic extrusion manufactured with only high grade prime, virgin, polyolefin resins. Stego Wrap red polyethylene tape was used to seal all seams and penetrations during installation. The contractor for the Vapor Barrier System construction was United Industries. The professional engineer for the Vapor Barrier System was Philip Bell.

Figure 11 shows the as-built engineering diagram for the Vapor Barrier System used on this Site. Figure 10 shows the location of the Vapor Barrier System at the Site. Photographs of installation of the Vapor Barrier System are included in Appendix 4. A copy of manufacturer's specifications for the Vapor Barrier System is included in Appendix 9.

Passive Sub-Slab Depressurization System

Exposure to soil vapor is prevented by a passive Sub-Slab Depressurization System (SSDS) that has been built on the Site. This passive SSDS is located at the northern and southern portions of the building, each consisting of an "H" design with associated horizontal piping wrapped in filter fabric and installed within a gas permeable layer comprised of a minimum of 3 inches of ¾" clean crushed stone. Sub-slab piping consists of 4-inch perforated, Schedule 40 PVC aligned horizontally beneath the building slab. The sub-slab piping was connected via solid PVC tees then to solid PVC elbows connected to 4-inch vertical PVC pipes. The vertical pipes run up to and traverse the cellar ceilings, connecting to 4-inch solid PVC risers in the northern-central and southern-central portions of the building; vapors are conveyed via the 4-inch riser pipe aligned vertically through the building and vented above the roof. An Empire Ventilator model 126 CFM 4" turbine was installed inline on the roof level. The remedial engineer 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 contractor for the passive Sub-Slab Depressurization System installation was United Industries.

The design engineer for the passive SSDS is Philip Bell. Figure 12 shows the location and as-built design for the passive SSDS installed in this Remedial Action. Figure 12b shows the SSDS roof plan with the riser pipe stack locations. Photographs showing the installation of the Active SSDS are shown in Appendix 4. SSDS documentation, including stack locations, is included in Appendix 9.

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. 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;
2. 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;
3. Engineering Controls will not be discontinued without prior OER approval;
4. OER has the right to enter the Site upon notice for the purpose of evaluating the performance of ECs and ICs;
5. Vegetable gardens and farming in residual soil/fill on the Site are prohibited;
6. Use of groundwater underlying the Site without treatment rendering it safe for its intended use is prohibited;
7. 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;
8. 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; and,
3. Passive 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. 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 Passive Sub-Slab Depressurization System

Chapter 5 describes the Passive 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 Passive SSDS will be operated and maintained as prescribed below.

- Conduct a visual inspection of the complete system.
- Inspect roof-top turbines for signs of abnormal operations, and repair or replace if required. Routine equipment maintenance will be conducted as per the Manufacturer's recommendations. An Operations and Maintenance Manual for Empire Ventilator Model TVOG4, 4-inch turbine is incorporated in this SMP.
- Inspect the discharge location of the vent pipe to ensure that no air intake or operable window has been located nearby.
- Determine, through discussions with building management, if any Heating, Ventilation, and Air Conditioning (HVAC) system modifications occurred that might affect the performance of the SSDS.
- Examine the building for structural or HVAC system changes, or other changes that may affect the performance of the depressurization system (e.g., new combustion appliances or deterioration of the concrete slab).
- Examine and address the operation of the visual fail-safe devices and the unit(s) generating sub-slab vacuum.
- Repair or adjust the SSDS as appropriate. Permanent system adjustments may warrant modifications to the SMP.

Non-routine maintenance typically occurs when audible and/or visual fail-safe devices indicate the system is not working properly, the system becomes damaged, or if the building's HVAC has undergone modifications that may reduce the effectiveness of the system. The scope of non-routine maintenance will vary depending upon the situation. For passive SSDS, non-routine maintenance will generally consist of examining the building for structural or HVAC system changes, or other changes that may affect the performance of the depressurization system (e.g., new combustion appliances or deterioration of the concrete slab).

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. 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;
2. 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;
3. Engineering Controls will not be discontinued without prior OER approval;
4. OER has the right to enter the Site upon notice for the purpose of evaluating the performance of ECs and ICs;
5. Vegetable gardens and farming in residual soil/fill on the Site are prohibited;
6. Use of groundwater underlying the Site without treatment rendering it safe for its intended use is prohibited;
7. 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;

8. 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 slabs, concrete paving and the cover layer of clean soil, and will include all accessible locations including the front entry, rear yard and all internal access points. The inspector will document any faulty or defective conditions observed during the inspection, broken or damaged concrete/asphalt, eroded/excavated soil cover, or any failure in the integrity of the cover system that would compromise the ability of the composite cover to perform as an engineering control.

Inspection of Vapor Barrier System

In the event that the inspection of the Composite Cover System as described above indicates any new penetrations or damage to the foundation slab, the vapor barrier will be inspected and repaired as appropriate prior to repair of the foundation slab.

Inspection of Passive Sub-Slab Depressurization System

The routine maintenance activities include annual visual inspections. Accessible piping, seals and couplings will be visually inspected for cracks and/or other signs of potential leaks.

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 2021, 2026 and every five years thereafter. Inspection and Certification Letter Reports will be submitted by July 30, 2021 (for the reporting period calendar years 2020-2021), July 30, 2026 (for the reporting period calendar years 2021-2025) and every three years 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 is 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 14. 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.

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 form 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.

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 ($\mu g/m^3$) 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 $\mu g/m^3$ 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 $\mu g/m^3$ 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 $\mu g/m^3$ 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 James Blaney. 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

James Blaney, QEP	(609) 281-7518
Office of Environmental Remediation	(212) 788-8841; 311
Gallagher Bassett Technical Services (GBTS)	(212) 631-9000

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 reusing on-site soil generated during construction excavations as subgrade fill.

Reduced Energy Consumption and Promotion of Greater Energy Efficiency

Reduced energy consumption lowers greenhouse gas emissions, improves local air quality, lessens in-city power generation requirements, and can lower traffic congestion and provide The following means were used to reduce energy consumption in this project: natural gas is utilized as the principal fuel in the new building.

Conversion to Clean Fuels

Use of clean fuel improves NYC's air quality by reducing harmful emissions. Natural gas is utilized as the principal fuel in the new building.

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.

Measures to prevent recontamination included proper handling of contaminated soil during transport and disposal, installation of a cover system throughout the Site and installation of a

passive SSDS to mitigate potential migration of soil vapor. The area of the Site that utilizes recontamination controls under this plan is 27,878 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.

An estimate of area of the property for which enhanced storm-water retention capability has been established for the redevelopment project is 18,243.

Paperless Brownfield Cleanup Program

Community Access, Inc. 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 50 pounds.

Low-Energy Project Management Program

Community Access, Inc. 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 500 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 40.