

TAYSTEE BAKERY REDEVELOPMENT

MANHATTAN, NEW YORK

Remedial Action Report

NYC VCP Project Number 15CVCP131M
E-Designation Project Number 13EH-A210M

Prepared For:

TSTY OWNER LLC (FORMERLY TSTY CREATE LLC)
423 West 127th Street, 7th Floor, New York, NY 10027
jerry@janusproperty.com
(212) 932-2388 ext. 3

Prepared By:

Chris Longo, P.E.
VHB Engineering, Surveying, Landscape Architecture and Geology, P.C.
One Penn Plaza, Suite 715, New York, New York 10119
(212) 857-7350
clongo@vhb.com

MAY 2020

REMEDIAL ACTION REPORT

TABLE OF CONTENTS

LIST OF ACRONYMS	i
CERTIFICATION	ii
EXECUTIVE SUMMARY	1
1.0 REMEDIAL ACTION REPORT	14
1.1 Site Background.....	14
1.2 Site Location and Background.....	14
1.3 Redevelopment Plan	15
1.4 Description of Surrounding Property.....	16
1.5 Summary of Past Site Uses and Areas of Concern.....	17
1.6 Summary of Work Performed Under the Remedial Investigation.....	18
1.7 Summary of Findings of Remedial Investigation	18
2.0 DESCRIPTION OF REMEDIAL ACTIONS.....	21
3.0 COMPLIANCE WITH REMEDIAL ACTION WORK PLAN.....	27
3.1 Construction Health & Safety Plan.....	27
3.2 Community Air Monitoring Plan.....	27
3.3 Soil/Materials Management Plan.....	28
3.4 Storm Water Pollution Prevention	29
3.5 Deviations from the Remedial Action Work Plan	29
4.0 REMEDIAL PROGRAM	33
4.1 Project Organization	33
4.2 Site Controls.....	33
4.3 Materials Excavation and Removal Action	36
4.4 Materials Disposal	44
4.5 Backfill Import.....	46
4.6 Demarcation	46
5.0 ENGINEERING CONTROLS.....	47
6.0 INSTITUTIONAL CONTROLS	49
7.0 SITE MANAGEMENT PLAN	50
8.0 SUSTAINABILITY Report.....	51

FIGURES

Figure 1: Site Boundary Map

Figure 1: Site Location Map

Figure 3A: Development Plan – Building Location

Figure 3B: Development Plan – Cellar Configuration

Figure 3C: Development Plan – Open Space

Figure 3D: Development Plan – Grade-Level Uses

Figure 4: Endpoint Sample Map

Figure 5: Depths of Excavation

Figure 6: Composite Cover System

Figure 7: Hotspot and Tank Map

Figure 8: Backfill Placement Map

Figure 9: Vapor Barrier Map

TABLES

Table 1: Endpoint Soil Analytical Results

Table 2: Soil Cleanup Objectives

Table 3A: Supplemental Soil Analytical Results

Table 3B: Supplemental Groundwater Analytical Results

Table 4: Disposal Shipments and Quantities

Table 5: Imported Fill Shipments

Table 6: Imported Material Analytical Results

APPENDICES

Appendix A: Remedial Investigation Report

Appendix B: Remedial Action Work Plan & Stipulation List

Appendix C: Daily and Monthly Reports to OER

Appendix D: Photographs of Remedial Action

Appendix E: Disposal Facility Requests, Historic Fill Notification Forms, and Approval Letters

Appendix F: Shipping and Disposal Manifests

Appendix G: Disposal Characterization Sample Laboratory Testing Results

Appendix H: End-point sample analytical laboratory data

Appendix I: Documentation for Vapor Barrier and Waterproofing

Appendix J: UST Tank closure documentation

Appendix K: Imported backfill laboratory analytical data reports

Appendix L: Soil Erosion and Control Plan

Appendix M: Monitoring Well Decommissioning Information

Appendix N: Community Air Monitoring Plan Results

LIST OF ACRONYMS

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

CERTIFICATION

I, Chris Longo, 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 Taystee Bakery Redevelopment (450 West 126th Street) site, site number 15CVCP131M.
- 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 vapor barrier and composite cover system constructed during this remedial action were professionally observed by me or by a person under my direct supervision 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 May 2015 and Stipulations in a letter dated June 8, 2015 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

Christopher Longo

PE License Number

083709

Signature



Date 05/28/2020

PE Stamp



I, Bryan S. Murty, certify the following:

- I am a Qualified Environmental Professional. I had primary direct responsibility for implementation of the remedial program for the Taystee Bakery Redevelopment (450 West 126th Street) site, site number 15CVCP131M.
- The OER-approved Remedial Action Work Plan dated May 2015 and Stipulations in a letter dated June 8, 2015 were implemented and that all requirements in those documents have been substantively complied with. I certify that contaminated soil, fill, liquid or other material from the property was taken to facilities licensed to accept this material in full compliance with applicable laws and regulations.

QEP Name

BRYAN S. MURTY

QEP Signature



Date **5/28/2020**

EXECUTIVE SUMMARY

TSTY Owner LLC (formerly TSTY Create LLC) has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 426-458 West 126th Street (a.k.a. 450 West 126th Street) in the West Harlem section of Manhattan, 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 426-458 West 126th Street (a.k.a. 450 West 126th Street) in the Harlem neighborhood of Manhattan, New York and is identified as Block 1966 and Lot 95 on the New York City Tax Map. The Site is 38,383 square feet (sf) and is bounded by West 126th Street to the north, the rear yards of mixed-use buildings located on West 125th Street to the south, a former parking lot to the east under redevelopment, and a residential building to the west. The Site is currently improved with a newly constructed eleven-story unoccupied building that is projected to be utilized for mixed-uses for future life sciences, institutional and commercial tenants.

The Site Boundary Map is shown in Figure 1. The Site Location Map is shown in Figure 2.

Summary of Redevelopment Plan

The Site was previously improved with the former Taystee Bakery, consisting of a series of interconnected, multi-story buildings that ranged in height and size across the footprint of the Site. The vast majority of the Site was completely occupied with former manufacturing-use or commercial buildings, with little outdoor/common areas with the exception of small concrete areas along the rear (southern) exteriors and a small parking

area along West 126th Street. The former buildings consisted primarily of concrete block or brick masonry construction. The former buildings were demolished/leveled into the former basement areas as part of demolition. The redevelopment procedures that were subject to the RAWP began with the removal of construction and demolition (C&D) debris as part of site clearing activities prior to erection of the newly-constructed eleven-story building.

A map showing the building location, basement location and open space location is shown in the Development Plans in Figures 3A, 3B, 3C and 3D. Upon removal of C&D debris and associated subgrade features, excavation of fill materials and soils was performed between depths ranging from approximately five-feet to the basement slab elevation of 17 feet seven inches above mean sea level (amsl) (and deeper in pit areas) across much of this site (as described in this RAR). Construction of the current building (the “subject building”) commenced in stages upon completion of remedial action across the Site. The new construction consists of an eleven-story mixed-use building that occupies the majority of the parcel. A 20-foot rear yard is present along the southern exterior of the subject building on the western portions of the parcel. Additionally, an exterior side yard is present on the western portions of the subject property, and consists primarily of impervious surfaces/brick pavers. Together, the at-grade open space areas total 8,481 sf. Limited planter areas are present on the western portions. Less than 100 sf of landscaped areas are present along the western boundary of the site.

The building features a full basement utilized for utility and mechanical rooms within the western portions in support of building operations, as well as reserved office space within the central and eastern basement areas for future tenant space. Specifically, the western portions of the building basement features a telecom/data room, an electric switchgear room, three (3) network protector compartments, a water meter room, a detention tank and neutralization tank room, two (2) fire suction compartment rooms, a superintendent workshop, a gas meter room, an elevator lobby with three passenger elevators and a stairwell (Stair A). It should be noted that portions of the building basement (the telcom/data room, superintendent workshop and fire suction tank rooms) extend west beyond the limits of the at-grade building footprint, partially beneath the western side yard. The central and eastern portions of the building basement are reserved

for office space for a future tenant(s). The south-central portions of the building basement will also feature an additional stairwell (Stair B), a freight elevator and an additional passenger elevator, a bicycle parking room, restrooms and additional mechanical rooms. An additional stairwell (Stair C) is present within the eastern portions of the building basement.

As previously indicated, the Site was previously improved with several interconnected manufacturing buildings of varying height and size. The majority of these buildings were associated with the former Taystee Bakery. The buildings were improved with garden level or full basements. It should be noted that due to the varying depths of the former building slabs, excavation throughout the Site varied until the uniform basement slab elevation (17 feet seven inches above mean sea level [amsl]) or appropriate pit depths (12 feet one inch amsl for elevator pits and ten feet one inch amsl for sump pit) were achieved in association with the new building. The water table interface was not encountered during excavation activities.

Summary of Description of Surrounding Property

The Site is located in a mixed-use area in West Harlem. The area includes many existing and former manufacturing, community facility and residential/retail uses. To the north, across West 126th Street, there is a community facility for alcohol rehabilitation, a vacant lot that is used as at-grade parking and multi-family residential buildings owned by the non-profit organization ECDO. To the east is a vacant lot formerly used as an at-grade parking lot currently under redevelopment. To the south are the backyards of a series of multi-family residential buildings that range in height from four-to-six stories with ground floor retail uses. To the west is a five-story multi-family residential building.

Summary of Past Site Uses and Areas of Concern

A Phase I Environmental Site Assessment (ESA) was prepared by VHB for TSTY Owner LLC (formerly TSTY Create LLC) dated February 2012. As part of the Phase I ESA, VHB was able to establish a history for the Site dating back to 1902. According to a review of New York City records, Sanborn maps, aerial photographs, as well as personnel interviews, the Site was improved with nine small buildings as early as 1902. Between 1902 and 1912, portions of the existing Site were constructed, including the

building that was known as 432 through 434 West 126th Street. Between 1912 and 1951, based on a review of Sanborn maps, the remaining portions of the Site were built and connected to the previously existing structures. Specifically, the building that was known as 426 through 430 West 126th Street was constructed in 1916, and the building that was known as 436 through 454 West 126th Street was constructed in 1923. The Site was formerly utilized as a wholesale bakery and associated offices prior to being vacated approximately 40 years ago. The property located at 456 West 126th Street was likely renovated circa 2001 into a gourmet food store, which was subsequently vacated between 2010 and 2011.

Upon completion of the Phase I ESA, there were no Areas of Concern (AOCs) identified. However, in accordance with the (E) Designation requirements, a Remedial Investigation (RI) was performed at the Site to identify any potential contaminants of concern (see Section 1.5). Upon completion of the RI, a RAWP was developed to address historic fill materials that were in exceedance of applicable NYSDEC Part 375 Cleanup Criteria (i.e., Track One and Track Two Soil Cleanup Objectives [SCOs]). However, several new AOCs were identified during the course of remedial action, which are listed below:

- Pulverized C&D debris was determined to be impacted with SVOCs during site demolition activities across the site. Therefore, additional regulatory actions were implemented under the approved RAWP.
- Six (6) underground storage tanks (USTs) were discovered during the removal of former building C&D debris.
- A suspected coal ash deposit was unearthed during excavation activities on the south-central portions of the site.

Stained soils, consistent with previous investigations, were observed in association with an abandoned-in-place 10,000-gallon No. 6 fuel oil UST previously located beneath the slab of the former building located at 458 West 126th Street. Due to

these conditions, NYSDEC Spill No. 18-05898 was opened and connected to former NYSDEC Spill No. 11-12132, which was closed due to site constraints and previous testing results.

Summary of the Work Performed under the Remedial Investigation

TSTY Owner LLC (formerly TSTY Create LLC) using VHB as a contractor performed the following scope of work, as approved by NYCOER:

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

Summary of Findings of Remedial Investigation

1. Elevation of the property ranges from 26.9 to 28.9 feet above mean sea level (amsl).
2. Depth to groundwater ranges from 23.58 to 24.92 feet below street level (a.k.a. below grade level [bgs] at the Site.
3. Groundwater flow beneath the Site is generally from east-to-west, consistent with the regional trend, toward the Hudson River.
4. Bedrock was not encountered during VHB's subsurface investigation.
5. The stratigraphy of the site, from the surface down, revealed the presence of C&D debris from zero to approximately 12-to-13-feet bgs, conditions which were primarily uniform throughout the Site. Former building foundations

were encountered around 12-to-13 feet bgs. Beneath building foundation generally consisted of red/brown silty sands with traces of gravel down to terminal soil boring depths.

6. Soil/fill samples results were compared to NYSDEC Unrestricted Use Soil Cleanup Objectives (Track 1) and Restricted Residential Use Soil Cleanup Objectives (Track 2) as presented in 6NYCRR Part 375-6.8. Soil samples collected during the RI revealed no volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) or polychlorinated biphenyls (PCBs) at detectable concentrations and all were below Unrestricted Use Soil Cleanup Objectives. Metals, including aluminum (max. of 15,000 mg/kg), chromium (maximum of 34 mg/kg), iron (max. of 26,000 mg/kg), nickel (max. of 31 mg/kg) and vanadium (max. of 49 mg/kg) were detected above Track 1 Unrestricted Use SCOs, but did not exceed Track 2 Restricted Residential Use SCOs. Two pesticides, 4,4'-DDE (max. of 12.5 µg/kg) and 4,4'-DDT (max. of 22.1 µg/kg) were detected at concentrations above Track 1 Unrestricted Use SCOs in one soil boring. Overall, the soil chemistry is unremarkable and does not indicate any disposal.
7. Groundwater samples collected during the RI showed no pesticide or PCB exceedances of New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and guidance values for drinking water (Class GA). Several VOCs, including 1,2-dichloroethene (max. of 41 µg/L), cis-1,2-dichloroethene (max. of 40 µg/L), tetrachloroethene (PCE) (max. of 33 µg/L) and trichloroethene (TCE) (max. of 45 µg/L) were detected above AWQSGVs. Two SVOCs, benzo[a]anthracene (max. of 0.11 µg/L) and chrysene (max. of 0.09 µg/L) were identified above NYSDEC AWQSGVs. Several metals were identified in groundwater, but only manganese (max. of 5.078 µg/L), sodium (max. of 268 µg/L), iron (0.412 µg/L) and magnesium (max. of 62.3 µg/L) were identified above AWQSGVs in dissolved phase. None of these chemical findings appear to be linked to the

past usage of the site as a bakery and office and the RI indicates that groundwater is not impacted by site conditions and did not reveal any sources of contaminants onsite.

8. Seven soil vapor samples collected during the RI were compared to the compounds listed in Vapor Intrusion Matrices in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion, dated October 2006. Soil vapor results show petroleum related and associated derivatives at trace concentrations. The maximum concentrations of BTEX compounds were at $71\mu\text{g}/\text{m}^3$. Most compounds were detected at concentrations less than $20\mu\text{g}/\text{m}^3$ except for acetone (max. of $447\mu\text{g}/\text{m}^3$), carbon disulfide (max. of $101\mu\text{g}/\text{m}^3$), and isopropyl alcohol (max. of $204\mu\text{g}/\text{m}^3$). The chlorinated VOC, PCE was detected in one of seven samples at $4.3\mu\text{g}/\text{m}^3$. TCA, TCE and carbon tetrachloride were not detected in soil vapor samples. Concentrations of PCE are below the NYSDOH matrix for monitoring.

Appendix A includes the RIR.

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 November 21, 2012.
- A Remedial Investigation (RI) was performed in January 2012. 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 in May 2015 for a 30-day public comment period.

- The RAWP dated May 2015 and Stipulation List dated June 8, 2015 was approved by the New York City Office of Environmental Remediation (OER) on June 12, 2015.
- Several briefings were conducted with NYSDEC Spills group during Site remediation.
- A Pre-Construction and Site kickoff meeting with OER was held on June 26, 2018.
- A Fact Sheet providing notice of the start of the remedial action was issued on May 1, 2015.
- The remedial action was begun on July 20, 2018 and substantially completed on January 11, 2020.
- Appendix B includes the RAWP.

The remedial action consisted of the following tasks:

1. Prepared a Community Protection Statement and implemented a Citizen Participation Plan.
2. Mobilized site security and equipment; completed utility mark outs; and marked and staked excavation areas.
3. Additional soil and groundwater investigations were performed to supplement investigation. Specifically, additional investigations were conducted due to the discovery of a hot spot encountered during excavation (suspect coal ash) and in association with the removal of a 10,000-gallon UST (in association with NYSDEC Spill No. 18-05898. The results of the investigative sample from the hot spot (suspect coal ash) were submitted to OER on November 12, 2018. The results of one soil sample and one groundwater sample associated with NYSDEC Spill No. 18-05898 was submitted to OER and NYSDEC on November 14, 2018.
4. Performed Waste Characterization Study prior to excavation activities and supplemental analyses during excavation activities as warranted. In order to represent demolition debris/soil from surface to nine feet bgs, eight (8) waste characterization debris/soil samples were collected on July 3, 2018; three (3) waste characterization soil samples were collected on July 16, 2018 and three (3) additional waste characterization soil samples were collected on July 18, 2018.

Five (5) additional soil samples collected on October 18, 2018 and six (6) soil samples collected on November 1, 2019 represented fill material from beneath the former building slabs and soil proposed for beneficial use. These waste characterization samples were collected at a frequency dictated by the disposal facility(s). Furthermore, discrete soil samples were collected in association with the AOCs identified during remedial action. One (1) waste characterization soil sample was collected from residual waste removed from inside a 550-gallon UST, one (1) waste characterization soil sample was collected with respect to the waste generated from excavation around the 10,000-gallon No. 6 oil UST. Two (2) soil samples in association with a cluster of four (4) 550-gallon suspected petroleum USTs and one (1) sample of the hot spot (suspect coal ash) deposit were also submitted for additional analyses to facilitate disposal facility approval.

5. Performed a Community Air Monitoring Program (CAMP) for particulates and volatile organic carbon compounds. CAMP was performed intermittently beginning July 30, 2018 to November 29, 2018. No CAMP time-weighted average exceedances were noted during the course of the remedial action or construction activities that required mitigation.
6. Selected NYSDEC Part 375 Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs).
7. The following excavations were performed:
 - a. Fine materials were encountered during the removal of C&D debris associated with former buildings. 9,877 tons of fines were transported and disposed from the Site during C&D debris removal. The majority of the former building slabs were encountered at approximately five feet bgs and approximately 12 feet bgs and were subsequently removed as part of site prep/demolition activities.
 - b. Excavation of fill materials beneath the former building slabs took place down to the new building basement slab elevation of 17 feet seven inches amsl. 11,084 tons of fill material were removed.
 - c. A hot spot (suspect coal ash) was encountered during excavation. Following investigation and supplemental waste characterization

- analyses, 903 tons of hot spot (dark) material were excavated on the southern portions of the Site (30 feet by 22 feet [660 sf]).
- d. 2,047 tons of soils exhibiting degraded petroleum impacts (visual/olfactory) from beneath the former 10,000-gallon No. 6 fuel oil UST were excavated and removed from the Site in association with NYSDEC Spill No. 18-05898.
 - e. Excavation and disposal of 84 tons of impacted soils from a tank cluster consisting of four (4) 550-gallon USTs discovered during excavation activities on the eastern portions of the Site.
 - f. A total of 23,994 tons of soil/fill (including fine C&D materials) was excavated and removed from the property.
- 8. Excavated 10,258 tons of non-hazardous soil/fill and transported it to Doremus Avenue Redevelopment Project at 173-269 Doremus Avenue in Newark, New Jersey; excavated 12,910 tons of petroleum contaminated soil/fill including screened C&D fines and transported to Bayshore Recycling Corporation at 75 Crows Mill Road in Keasbey, New Jersey; excavated 826 tons of clean soil and transported to Liberty Stone & Aggregates, LLC Clinton Quarry at 5 Route 173 in Union Township, New Jersey.
 - 9. Screened excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.
 - 10. 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.
 - 11. Appropriately segregated excavated media onsite prior to disposal. Transported and disposed all soil/fill material at permitted facilities in accordance with all applicable laws and regulations for handling, transporting, and disposing, and the RAWP.
 - 12. Collected and analyzed end-point samples to determine attainment of SCOs. Track 2 Restricted Residential Use SCOs were achieved. Track 1 SCOs were proposed within the RAWP. However, Track 1 SCOs were not achieved due to elevated concentrations of three VOCs (1,2,4-trimethylbenzene, benzene and

total xylenes) in soils beneath a removed No. 6 fuel oil UST on the western portions of the project site. These concentrations exceeded Track 1 SCOs, but were well within Track 2 SCOs. As further indicated in this RAR, it was not feasible to remove all soils from this area due to site constraints and geotechnical concerns. As such, Track 2 SCOs were achieved within this location.

13. Removed seven (7) underground storage tanks in compliance with applicable laws and regulations. Six (6) undocumented underground storage tanks were encountered during excavation activities (five [5] 550-gallon and one [1] 1,000-gallon suspect petroleum USTs) and one existing (1) 10,000-gallon No. 6 fuel oil UST were removed. FDNY affidavits were obtained for the tank removal activities, and the respective NYSDEC petroleum bulk storage (PBS) registrations were updated, accordingly.
14. Remedial action associated with NYSDEC Spill No. 18-05898 was conducted during the excavation activities. NYSDEC Spill No. 18-05898 was opened on August 30, 2018 and was connected to closed NYSDEC Spill No. 11-12132 which was associated with a 10,000-gallon No. 6 fuel oil UST. The new spill number was opened in order to address residual contamination that was documented during the previous spill incident but could not be addressed due to site constraints at the time. NYSDEC Spill No. 18-05898 was also connected to the removal of four (4) 550-gallon suspect petroleum USTs encountered during excavation. Four (4) initial endpoint samples were collected, and two additional supplemental post-excavation endpoint samples were collected from the graves of the four (4) 550-gallon suspect petroleum USTs. Endpoint samples ultimately met Track 1 Unrestricted Use SCOs. One soil sample was collected from beneath the 10,000-gallon No. 6 fuel oil UST and was utilized as an endpoint sample. Although soils beneath the tank exhibited visual/olfactory evidence of petroleum impacts, analytical results indicate the soils met Track 2 Restricted Residential Use SCOs. Furthermore, a pre-existing monitoring well was installed on the site adjacent and downgradient of the 10,000-gallon No. 6 fuel oil UST in association with closed NYSDEC Spill No. 11-12132. The groundwater monitoring well was sampled, as required by NYSDEC. Laboratory results indicated groundwater was

unimpacted from the former 10,000-gallon No. 6 fuel oil UST. Therefore, after, consultation with the NYSDEC spill case manager and OER representatives, it was determined that no further excavation or sampling within these areas were required, and that NYSDEC Spill No. 18-05898 will be closed to standards upon review and acceptance of the RAR.

15. As part of development, constructed an engineered Composite Cover System consisting of six inches of clean sub-base (bluestone) material, overlain by the vapor or waterproofing barrier (see below) and five-inch, fiber mesh-reinforced concrete slab within the building footprint. Walkways along the west and southern exterior consist of brick pavers. Limited landscaped areas (tree plantings) along the western portions and sidewalks consist of two feet of clean top soil. The contractor for the Composite Cover System construction was Darcon Construction Corporation.
16. As part of development, installed a combination Soil Vapor Barrier and Waterproofing System that consisted of products by various manufactures to create a continuous seal in accordance with ASTM E1643 standard practice. A 1.2 millimeter (mil) Grace PrePruf 300R high-density polyethylene (HDPE) liner with Tape LT, a 20 mil Yellow Guard Vapor Barrier with Crete Lock concrete gripping tape and/or a 20 mil Stego Wrap Vapor Barrier/ Retarder with Stego Tap and Stego Mastic were placed laterally beneath the elevator, ejector/sump pits and building slab and a Bituthene System 4000 membrane/vapor barrier was affixed to the walls of elevator and ejector/sump pits as well as outside foundation walls.
17. Performed all activities required for the Remedial Action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
18. Implemented storm-water pollution prevention measures in compliance with applicable laws and regulations.
19. Imported approximately 511 tons of clean sand to be used for backfill and cover in compliance with the Remedial Action Work Plan and in accordance with applicable laws and regulations. Imported approximately 1,380 tons of crushed

stone and gravel utilized for truck ramps for traction control as well as beneath the building slab.

20. Submitted daily, monthly and weekly reports during remediation and construction oversight activities. Weekly reports to OER were submitted for the week of July 30, 2018 through October 26, 2018. Daily reports to OER were submitted from October 1, 2018 to March 22, 2019. VHB was on-site observing remedial activities. Monthly Reports were submitted from April 2018 to March 2020.
21. Submitted a Sustainability Report.
22. Submitted this RAR that describes the Remedial Action; certifies that the remedial requirements defined in the RAWP have been achieved; defines the Site boundaries; and lists any changes from the RAWP.

1.0 REMEDIAL ACTION REPORT

1.1 SITE BACKGROUND

TSTY Owner LLC (formerly TSTY Create LLC) has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 426-458 West 126th Street (a.k.a. 450 West 126th Street) in the West Harlem section of Manhattan, New York. The boundary of the property subject to this Remedial Action is shown in Figure 1 and includes, in its entirety, Manhattan Block 1966 and Lot 95. 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.

1.2 SITE LOCATION AND BACKGROUND

The Site is located at 426-458 West 126th Street (a.k.a. 450 West 126th Street) in the Harlem neighborhood of Manhattan, New York and is identified as Block 1966 and Lot 95 on the New York City Tax Map. The Site is 38,383 square feet (sf) and is bounded by West 126th Street to the north, the rear yards of mixed-use buildings located on West 125th Street to the south, a former parking lot to the east under redevelopment, and a residential building to the west. The Site is enrolled in the New York City VCP. The Site is currently improved with a newly constructed eleven-story unoccupied building that is projected to be utilized for mixed-uses for future life sciences, institutional and commercial tenants.

The Site Boundary Map is shown in Figure 1. The Site Location Map is shown in Figure 2.

1.3 REDEVELOPMENT PLAN

The Site was previously improved with the former Taystee Bakery, consisting of a series of interconnected, multi-story buildings that ranged in height and size across the footprint of the Site. The vast majority of the Site was completely occupied with former manufacturing-use or commercial buildings, with little outdoor/common areas with the exception of small concrete areas along the rear (southern) exteriors and a small parking area along West 126th Street. The former buildings consisted primarily of concrete block or brick masonry construction. The former buildings were demolished/leveled into the former basement areas as part of demolition. The redevelopment procedures that were subject to the RAWP began with the removal of construction and demolition (C&D) debris as part of site clearing activities prior to erection of the newly-constructed eleven-story building.

A map showing the building location, basement location and open space location is shown in the Development Plans in Figures 3A, 3B, 3C and 3D. Upon removal of C&D debris and associated subgrade features, excavation of fill materials and soils was performed between depths ranging from approximately five-feet to the basement slab elevation of 17 feet seven inches above mean sea level (amsl) (and deeper in pit areas) across much of this site (as described in this RAR). Construction of the current building (the “subject building”) commenced in stages upon completion of remedial action across the Site. The new construction consists of an eleven-story mixed-use building that occupies the majority of the parcel. A 20-foot rear yard is present along the southern exterior of the subject building on the western portions of the parcel. Additionally, an exterior side yard is present on the western portions of the subject property, and consists primarily of impervious surfaces/brick pavers. Together, the at-grade open space areas total 8,481 sf. Limited planter areas are present on the western portions. Less than 100 sf of landscaped areas are present along the western boundary of the site.

The building features a full basement utilized for utility and mechanical rooms within the western portions in support of building operations, as well as reserved office space within the central and eastern basement areas for future tenant space. Specifically, the western portions of the building basement features a telecom/data room, an electric switchgear room, three (3) network protector compartments, a water meter room, a

detention tank and neutralization tank room, two (2) fire suction compartment rooms, a superintendent workshop, a gas meter room, an elevator lobby with three passenger elevators and a stairwell (Stair A). It should be noted that portions of the building basement (the telcom/data room, superintendent workshop and fire suction tank rooms) extend west beyond the limits of the at-grade building footprint, partially beneath the western side yard. The central and eastern portions of the building basement are reserved for office space for a future tenant(s). The south-central portions of the building basement will also feature an additional stairwell (Stair B), a freight elevator and an additional passenger elevator, a bicycle parking room, restrooms and additional mechanical rooms. An additional stairwell (Stair C) is present within the eastern portions of the building basement.

As previously indicated, the Site was previously improved with several interconnected manufacturing buildings of varying height and size. The majority of these buildings were associated with the former Taystee Bakery. The buildings were improved with garden level or full basements. It should be noted that due to the varying depths of the former building slabs, excavation throughout the Site varied until the uniform basement slab elevation (17 feet seven inches above mean sea level [amsl]) or appropriate pit depths (12 feet one inch amsl for elevator pits and ten feet one inch amsl for sump pit) were achieved in association with the new building. The water table interface was not encountered during excavation activities.

1.4 DESCRIPTION OF SURROUNDING PROPERTY

The Site is located in a mixed-use area in West Harlem. The area includes many existing and former manufacturing, community facility and residential/retail uses. To the north, across West 126th Street, there is a community facility for alcohol rehabilitation, a vacant lot that is used as at-grade parking and multi-family residential buildings owned by the non-profit organization ECDO. To the east is a vacant lot formerly used as an at-grade parking lot currently under redevelopment. To the south are the backyards of a series of multi-family residential buildings that range in height from four-to-six stories with ground floor retail uses. To the west is a five-story multi-family residential building.

1.5 SUMMARY OF PAST SITE USES AND AREAS OF CONCERN

A Phase I Environmental Site Assessment (ESA) was prepared by VHB for TSTY Owner LLC (formerly TSTY Create LLC) dated February 2012. As part of the Phase I ESA, VHB was able to establish a history for the Site dating back to 1902. According to a review of New York City records, Sanborn maps, aerial photographs, as well as personnel interviews, the Site was improved with nine small buildings as early as 1902. Between 1902 and 1912, portions of the existing Site were constructed, including the building that was known as 432 through 434 West 126th Street. Between 1912 and 1951, based on a review of Sanborn maps, the remaining portions of the Site were built and connected to the previously existing structures. Specifically, the building that was known as 426 through 430 West 126th Street was constructed in 1916, and the building that was known as 436 through 454 West 126th Street was constructed in 1923. The Site was formerly utilized as a wholesale bakery and associated offices prior to being vacated approximately 40 years ago. The property located at 456 West 126th Street was likely renovated circa 2001 into a gourmet food store, which was subsequently vacated between 2010 and 2011.

Upon completion of the Phase I ESA, there were no Areas of Concern (AOCs) identified. However, in accordance with the (E) Designation requirements, a Remedial Investigation (RI) was performed at the Site to identify any potential contaminants of concern (see Section 1.5). Upon completion of the RI, a RAWP was developed to address historic fill materials that were in exceedance of applicable NYSDEC Part 375 Cleanup Criteria (i.e., Track One and Track Two Soil Cleanup Objectives [SCOs]). However, several new AOCs were identified during the course of remedial action, which are listed below:

- Pulverized C&D debris was determined to be impacted with SVOCs during site demolition activities across the site. Therefore, additional regulatory actions were implemented under the approved RAWP.
- Six (6) underground storage tanks (USTs) were discovered during the removal of former building C&D debris.

- A suspected coal ash deposit was unearthed during excavation activities on the south-central portions of the site.
- Stained soils, consistent with previous investigations, were observed in association with an abandoned-in-place 10,000-gallon No. 6 fuel oil UST previously located beneath the slab of the former building located at 458 West 126th Street. Due to these conditions, NYSDEC Spill No. 18-05898 was opened and connected to former NYSDEC Spill No. 11-12132, which was closed due to site constraints and previous testing results.

1.6 SUMMARY OF WORK PERFORMED UNDER THE REMEDIAL INVESTIGATION

TSTY Owner LLC (formerly TSTY Create LLC) using VHB as a contractor performed the following scope of work, as approved by NYCOER:

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

1.7 SUMMARY OF FINDINGS OF REMEDIAL INVESTIGATION

Summary of Environmental Findings

1. Elevation of the property ranges from 26.9 to 28.9 feet above mean sea level (amsl).

2. Depth to groundwater ranges from 23.58 to 24.92 feet below street level (a.k.a. below grade level [bgs] at the Site.
3. Groundwater flow beneath the Site is generally from east-to-west, consistent with the regional trend, toward the Hudson River.
4. Bedrock was not encountered during VHB's subsurface investigation.
5. The stratigraphy of the site, from the surface down, revealed the presence of C&D debris from zero to approximately 12-to-13-feet bgs, conditions which were primarily uniform throughout the Site. Former building foundations were encountered around 12-to-13 feet bgs. Beneath building foundation generally consisted of red/brown silty sands with traces of gravel down to terminal soil boring depths.
6. Soil/fill samples results were compared to NYSDEC Unrestricted Use Soil Cleanup Objectives (Track 1) and Restricted Residential Use Soil Cleanup Objectives (Track 2) as presented in 6NYCRR Part 375-6.8. Soil samples collected during the RI revealed no volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) or polychlorinated biphenyls (PCBs) at detectable concentrations and all were below Unrestricted Use Soil Cleanup Objectives. Metals, including aluminum (max. of 15,000 mg/kg), chromium (maximum of 34 mg/kg), iron (max. of 26,000 mg/kg), nickel (max. of 31 mg/kg) and vanadium (max. of 49 mg/kg) were detected above Track 1 Unrestricted Use SCOs, but did not exceed Track 2 Restricted Residential Use SCOs. Two pesticides, 4,4'-DDE (max. of 12.5 µg/kg) and 4,4'-DDT (max. of 22.1 µg/kg) were detected at concentrations above Track 1 Unrestricted Use SCOs in one soil boring. Overall, the soil chemistry is unremarkable and does not indicate any disposal.
7. Groundwater samples collected during the RI showed no pesticide or PCB exceedances of New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and guidance values for drinking

water (Class GA). Several VOCs, including 1,2-dichloroethene (max. of 41 µg/L), cis-1,2-dichloroethene (max. of 40 µg/L), tetrachloroethene (PCE) (max. of 33 µg/L) and trichloroethene (TCE) (max. of 45 µg/L) were detected above AWQSGVs. Two SVOCs, benzo[a]anthracene (max. of 0.11 µg/L) and chrysene (max. of 0.09 µg/L) were identified above NYSDEC AWQSGVs. Several metals were identified in groundwater, but only manganese (max. of 5.078 µg/L), sodium (max. of 268 µg/L), iron (0.412 µg/L) and magnesium (max. of 62.3 µg/L) were identified above AWQSGVs in dissolved phase. None of these chemical findings appear to be linked to the past usage of the site as a bakery and office and the RI indicates that groundwater is not impacted by site conditions and did not reveal any sources of contaminants onsite.

8. Seven soil vapor samples collected during the RI were compared to the compounds listed in Vapor Intrusion Matrices in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion, dated October 2006. Soil vapor results show petroleum related and associated derivatives at trace concentrations. The maximum concentrations of BTEX compounds were at 71 µg/m³. Most compounds were detected at concentrations less than 20 µg/m³ except for acetone (max. of 447 µg/m³), carbon disulfide (max. of 101 µg/m³), and isopropyl alcohol (max. of 204 µg/m³). The chlorinated VOC, PCE was detected in one of seven samples at 4.3 µg/m³. TCA, TCE and carbon tetrachloride were not detected in soil vapor samples. Concentrations of PCE are below the NYSDOH matrix for monitoring.

Appendix A includes the RIR.

2.0 DESCRIPTION OF REMEDIAL ACTIONS

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

A summary of the milestones achieved in the Remedial Action is as follows: A Pre-Application Meeting was held on November 21, 2012. A Remedial Investigation (RI) was performed in January 2012. 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 in May 2015 for a 30-day public comment period. The RAWP dated May 2015 and Stipulation List dated June 8, 2015 was approved by the New York City Office of Environmental Remediation (OER) on June 12, 2015. A Pre-Construction and Site kickoff meeting with OER was held on June 26, 2018. A Fact Sheet providing notice of the start of the remedial action was issued on May 1, 2015. The remedial action was begun on June 20, 2017 and substantially completed on January 11, 2020 Appendix B includes the RAWP.

The remedial action consisted of the following tasks:

1. Prepared a Community Protection Statement and implemented a Citizen Participation Plan.
2. Mobilized site security and equipment; completed utility mark outs; and marked and staked excavation areas.
3. Additional soil and groundwater investigations were performed to supplement investigation. Specifically, additional investigations were conducted due to the discovery of a hot spot encountered during excavation (suspect coal ash) and in association with the removal of a 10,000-gallon UST (in association with NYSDEC Spill No. 18-05898. The results of the investigative sample from the

hot spot (suspect coal ash) were submitted to OER on November 12, 2018. The results of one soil sample and one groundwater sample associated with NYSDEC Spill No. 18-05898 was submitted to OER and NYSDEC on November 14, 2018.

4. Performed Waste Characterization Study prior to excavation activities and supplemental analyses during excavation activities as warranted. In order to represent demolition debris/soil from surface to nine feet bgs, eight (8) waste characterization debris/soil samples were collected on July 3, 2018; three (3) waste characterization soil samples were collected on July 16, 2018 and three (3) additional waste characterization soil samples were collected on July 18, 2018. Five (5) additional soil samples collected on October 18, 2018 and six (6) soil samples collected on November 1, 2019 represented fill material from beneath the former building slabs and soil proposed for beneficial use. These waste characterization samples were collected at a frequency dictated by the disposal facility(s). Furthermore, discrete soil samples were collected in association with the AOCs identified during remedial action. One (1) waste characterization soil sample was collected from residual waste removed from inside a 550-gallon UST, one (1) waste characterization soil sample was collected with respect to the waste generated from excavation around the 10,000-gallon No. 6 oil UST. Two (2) soil samples in association with a cluster of four (4) 550-gallon suspected petroleum USTs and one (1) sample of the hot spot (suspect coal ash) deposit were also submitted for additional analyses to facilitate disposal facility approval.
5. Performed a Community Air Monitoring Program for particulates and volatile organic carbon compounds. CAMP was performed intermittently beginning July 30, 2018 to November 29, 2018. No CAMP time-weighted average exceedances were noted during the course of the remedial action or construction activities that required mitigation.
6. Selected NYSDEC Part 375 Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs).
7. The following excavations were performed:
 - a. Fine materials were encountered during the removal of C&D debris associated with former buildings. 9,877 tons of fines were transported and

disposed from the Site during C&D debris removal. The majority of the former building slabs were encountered at approximately five feet bgs and approximately 12 feet bgs and were subsequently removed as part of site prep/demolition activities.

- b. Excavation of fill materials beneath the former building slabs took place down to the new building basement slab elevation of 17 feet seven inches amsl. 11,084 tons of fill material were removed.
 - c. A hot spot (suspect coal ash) was encountered during excavation. Following investigation and supplemental waste characterization analyses, 903 tons of hot spot (dark) material were excavated on the southern portions of the Site (30 feet by 22 feet [660 sf]).
 - d. 2,047 tons of soils exhibiting degraded petroleum impacts (visual/olfactory) from beneath the former 10,000-gallon No. 6 fuel oil UST were excavated and removed from the Site in association with NYSDEC Spill No. 18-05898.
 - e. Excavation and disposal of 84 tons of impacted soils from a tank cluster consisting of four (4) 550-gallon USTs discovered during excavation activities on the eastern portions of the Site.
 - f. A total of approximately 14,117 tons of soil/fill (including fine materials) was excavated and removed from the property.
8. Excavated 10,258 tons of non-hazardous soil/fill and transported it to Doremus Avenue Redevelopment Project at 173-269 Doremus Avenue in Newark, New Jersey; excavated 12,910 tons of petroleum contaminated soil/fill including screened C&D fines and transported to Bayshore Recycling Corporation at 75 Crows Mill Road in Keasbey, New Jersey; excavated 826 tons of clean soil and transported to Liberty Stone & Aggregates, LLC Clinton Quarry at 5 Route 173 in Union Township, New Jersey.
9. Screened excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.

10. 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.
11. Appropriately segregated excavated media onsite prior to disposal. Transported and disposed all soil/fill material at permitted facilities in accordance with all applicable laws and regulations for handling, transporting, and disposing, and the RAWP.
12. Collected and analyzed end-point samples to determine attainment of SCOs. Track 2 Restricted Residential Use SCOs were achieved. Track 1 SCOs were proposed within the RAWP. However, Track 1 SCOs were not achieved due to elevated concentrations of three VOCs (1,2,4-trimethylbenzene, benzene and total xylenes) in soils beneath a removed No. 6 fuel oil UST on the western portions of the project site. These concentrations exceeded Track 1 SCOs, but were well within Track 2 SCOs. As further indicated in this RAR, it was not feasible to remove all soils from this area due to site constraints and geotechnical concerns. As such, Track 2 SCOs were achieved within this location.
13. Removed seven (7) underground storage tanks in compliance with applicable laws and regulations. Six (6) undocumented underground storage tanks were encountered during excavation activities (five [5] 550-gallon and one [1] 1,000-gallon suspect petroleum USTs) and one existing (1) 10,000-gallon No. 6 fuel oil UST were removed. FDNY affidavits were obtained for the tank removal activities, and the respective NYSDEC petroleum bulk storage (PBS) registrations were updated, accordingly.
14. Remedial action associated with NYSDEC Spill No. 18-05898 was conducted during the excavation activities. NYSDEC Spill No. 18-05898 was opened on August 30, 2018 and was connected to closed NYSDEC Spill No. 11-12132 which was associated with a 10,000-gallon No. 6 fuel oil UST. The new spill number was opened in order to address residual contamination that was documented during the previous spill incident but could not be addressed due to site constraints at the time. NYSDEC Spill No. 18-05898 was also connected to the removal of four (4) 550-gallon suspect petroleum USTs encountered during

excavation. Four (4) initial endpoint samples were collected, and two additional supplemental post-excavation endpoint samples were collected from the graves of the four (4) 550-gallon suspect petroleum USTs. Endpoint samples ultimately met Track 1 Unrestricted Use SCOs. One soil sample was collected from beneath the 10,000-gallon No. 6 fuel oil UST and was utilized as an endpoint sample. Although soils beneath the tank exhibited visual/olfactory evidence of petroleum impacts, analytical results indicate the soils met Track 2 Restricted Residential Use SCOs. Furthermore, a pre-existing monitoring well was installed on the site adjacent and downgradient of the 10,000-gallon No. 6 fuel oil UST in association with closed NYSDEC Spill No. 11-12132. The groundwater monitoring well was determined to still be viable during the on-site remedial action and was sampled, as required by NYSDEC in association with the current NYSDEC Spill No. 18-05898. Laboratory results indicated groundwater was unimpacted from the former 10,000-gallon No. 6 fuel oil UST. Therefore, after, consultation with the NYSDEC spill case manager and OER representatives, it was determined that no further excavation or sampling within these areas were required, and that NYSDEC Spill No. 18-05898 will be closed to standards upon review and acceptance of the RAR.

15. As part of development, constructed an engineered Composite Cover System consisting of six inches of clean sub-base (bluestone) material, overlain by the vapor or waterproofing barrier (see below) and five-inch, fiber mesh-reinforced concrete slab within the building footprint. Walkways along the west and southern exterior consist of brick pavers. Open space/landscaped areas consist of two feet of clean top soil overlain with plantings. The contractor for the Composite Cover System construction was Darcon Construction Corporation.
16. As part of development, installed a combination Soil Vapor Barrier and Waterproofing System that consisted of products by various manufactures to create a continuous seal in accordance with ASTM E1643 standard practice. A 1.2 millimeter (mil) Grace PrePruf 300R high-density polyethylene (HDPE) liner with Tape LT, a 20 mil Yellow Guard Vapor Barrier with Crete Lock concrete gripping tape and/or a 20 mil Stego Wrap Vapor Barrier/ Retarder with Stego

Tap and Stego Mastic were placed laterally beneath the elevator, ejector/sump pits and building slab and a Bituthene System 4000 membrane/vapor barrier was affixed to the walls of elevator and ejector/sump pits as well as outside foundation walls.

17. Performed all activities required for the Remedial Action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
18. Implemented storm-water pollution prevention measures in compliance with applicable laws and regulations.
19. Imported approximately 511 tons of clean sand to be used for backfill and cover in compliance with the Remedial Action Work Plan and in accordance with applicable laws and regulations. Imported approximately 1,380 tons of crushed stone and gravel utilized for truck ramps for traction control as well as beneath the building slab.
20. Submitted daily, monthly and weekly reports during remediation and construction oversight activities. Weekly reports to OER were submitted for the week of July 30, 2018 through October 26, 2018. Daily reports to OER were submitted from October 1, 2018 to March 22, 2019. VHB was on-site observing remedial activities. Monthly Reports were submitted from April 2018 to March 2020.
21. Submitted a Sustainability Report.
22. Submitted an RAR that describes the Remedial Action; certifies that the remedial requirements defined in the RAWP have been achieved; defines the Site boundaries; and lists any changes from the RAWP.

3.0 COMPLIANCE WITH REMEDIAL ACTION WORK PLAN

3.1 CONSTRUCTION HEALTH & SAFETY PLAN

The remedial construction activities performed under this program were in compliance with the Construction Health and Safety Plan and applicable laws and regulations. The Site Safety Coordinator was Bryan S. Murty, QEP.

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 intermittently beginning July 30, 2018 to November 29, 2018 in compliance with the Community Air Monitoring Plan in the approved RAWP and OER's requirements. The results of Community Air Monitoring are shown in Appendix L. No CAMP time-weighted average exceedances were noted during the course of the remedial action or construction activities that required mitigation. The CAMP was initially implemented during specific activities associated with remedial action implemented as part of the RAWP. Upon consent, OER agreed to suspend CAMP activities based on a review of data indicating "no impact" to onsite occupants and downwind/off-site receptors. The on-site activities warranting CAMP and dates associated with same are provided in the table below:

ACTIVITY	CAMP Commenced	CAMP Suspended
Fines processing	July 30, 2018	August 8, 2018 ¹
Tank removal	August 21, 2018	August 24, 2018
Drilling methods	September 5, 2018	September 6, 2018
Test-pitting	October 18, 2018	October 18, 2018
Tank removals	October 23, 2018	October 23, 2018
Lagging installation	October 25, 2018	October 26, 2018
Ramp construction	October 29, 2018	October 29, 2018
Ash discovery	November 6, 2018	November 6, 2018
Soil removal	November 8, 2018	November 29, 2018

CAMP data is provided in Appendix N of this RAR.

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.

¹ In addition, monitoring in accordance with the CAMP was proactively conducted on September 24 and 27, 2018 and October 1, 2018 as a precaution despite earlier OER approval of reduction in CAMP.

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 deviations occurred:

- The preferred remedial alternative outlined in the RAWP involved the selection of Track 1 SCOs for the Site. However, same were not achieved based on exceedances in sample TP-1 (20'bg) collected from a test pit advanced beneath the former location of a No. 6 fuel oil UST on western portions of the site in proximity to an adjacent building. The results of the sampling revealed three VOCs (1,2,4-trimethylbenzene, benzene and total xylenes) were detected above Track 1 Unrestricted Use SCOs, but well below their respective NYSDEC Track 2 Restricted Residential SCOs. No SVOCs were detected above NYSDEC Track 1 Unrestricted Use SCOs. The laboratory report was provided to OER and NYSDEC representatives on November 1, 2018. Based upon the results of TP-1 and after consultation with the NYSDEC spill case manager and OER representatives, it was concluded that excavation beyond the previously disturbed material below the former 10,000-gallon No. 6 fuel oil UST was not feasible due to geotechnical reasons and potential risks of undermining of the adjacent residential building to the west. Therefore, under the condition that previously disturbed material would be removed from the site, NYSDEC and OER representatives indicated no further action would be required in association with the removed 10,000-gallon No. 6 fuel oil UST, and that sample TP-1 could be utilized as an endpoint sample to demonstrate the achievement of Track 2 Restricted

Residential Use SCOs. Therefore, the NYSDEC spill case manager indicated Spill No. 18-05898 would be closed to standards upon submission and review of the RAR. Excavation of any additional material at this location would be cost-prohibitive given the site constraints that include the proximity to the adjacent building foundation, as well as the proposed building slab being at a higher topographic elevation than the impaired soils. VHB also collected groundwater from the existing monitoring well previously installed proximate to the tank location. Groundwater analytical results are non-detect for VOCs and SVOCs, with the exception of a very low concentration of pyrene that does not exceed NYSDEC TOGS 1.1.1 AWQSGs. Furthermore, although the residual soil/fill was visibly darker in appearance and was observed with a petroleum hydrocarbon odor along with PID detections, the laboratory results of the material indicates petroleum-impacts have degraded through natural attenuation. After careful review of all data and information, all parties above agreed it would be protective of public health and the environment to manage remaining material in place that was in exceedance of Track 1 SCOs, but well below Track 2 SCOs. NYSDEC indicated concurrence on November 27, 2018. The majority of impaired soil/fill was removed during the remedial action and all remaining impaired material would be present under a composite cover, eliminating the potential for public health exposure. Furthermore, it was concluded that soils above Track 1 SCOs (within Track 2 SCOs) were not affecting groundwater quality and therefore, do not pose a threat to the environment.

- 20 mil Stego® Wrap Vapor Barrier was originally proposed in the RAWP. Based upon consultation with OER and the general contractor, the proposed waterproofing consisted of a 5-mil Grace Construction Products (GCP) Preprufe® 300R Plus membrane below the two elevator pits and two additional pits beneath cellar slab elevation, a GCP Bituthene® System 4000 membrane vertically up the sidewalls of the sub-slab pits and exterior sidewalls of the basement. In order to provide even more protection, the

project owner upgraded sub-slab protection to a 20 mil Yellow Guard® barrier below the building slab beneath the Detention Tank and Fire Suction Tank rooms, and a 20 mil Stego® Wrap Vapor Barrier placed laterally below the remaining portions of the basement slab, to encapsulate the subsurface portions of the proposed building. Although preliminary data identified during the RI indicated the unlikely presence of a VEC, the voluntary installation of the vapor barrier beneath the building slab provides mitigation of a potential future VEC. The utilization of both YellowGuard® and an equivalent Stego® product for beneath the cellar slab was installed in each respective section by the contractor in accordance with the manufacturer's specifications. Manufacture specifications for vapor barrier materials installed are included in Appendix I.

- Although the RAWP indicated that construction and maintenance of an engineered composite cover consisting of 5-inch thick bottom concrete slab on top of a 6-inch granular fill would be implemented to prevent human exposure to residual soil/fill remaining under the Site, the project architects proposed a revised design consisting of 6-inch thick bottom concrete slab on top of a 6-inch granular fill layer under the entire footprint of the proposed building. Brick or stone surface pavers are proposed for use at the location of an outdoor courtyard with limited tree planter areas in the courtyard and within the northern sidewalk. A minimum of two feet of clean fill material was placed beneath limited tree planter areas such that the landscaping design was protective with respect to human exposure.

- Previous results of the RI revealed that soils at the basement slab elevations were within Track 2 Restricted Residential Use SCOs. As such, two endpoint samples were originally proposed to be collected within a location where chromium was determined to be elevated above Track 1 Unrestricted Use SCOs. However, due to field conditions, endpoint samples were collected at alternative locations, as agreed upon by OER and described throughout this RAR.

4.0 REMEDIAL PROGRAM

4.1 PROJECT ORGANIZATION

The following describes the project organization:

Developer: *TSTY Owner LLC* – Jerry Salama, Principal, Scott Metzner, Principal

Environmental Consultant: *VHB Engineering, Surveying, Landscape Architecture and Geology, P.C.* – Chris Longo, P.E., Bryan S. Murty – QEP and Project Manager, Christopher Rooney, Environmental Scientist and Field Site Manager

General Contractor: *Lendlease Corporation* – Chris Dardis, Project Executive, John Oderwald, Site Supervisor

Excavation/Foundation Contractor: *Darcon Construction Corporation:* Joe Danaher, Site Manager.

4.2 SITE CONTROLS

Site Preparation

Former on-site buildings were previously demolished in 2013. Approximately 97.75 tons of demolition debris were transported to AJ Recycling, Inc. in 2013. An additional 18.05 tons were transported to AJ Recycling, Inc. in 2014. Further, 11.4 tons of demolition debris were transported to Cooper Tank Recycling in 2014. The site was leveled and remaining C&D debris remained in-place until June 2018, when site clearing activities commenced.

In preparation for site development, a utility marker layout (#181150687) began in the last week of June 2018. Contractor mobilization, including staging of construction vehicles and heavy equipment commenced on July 2, 2018. Grubbing, fencing and a truck wash station was constructed immediately after mobilization on July 3, 2018. Construction and perimeter fencing installation began on July 6, 2018, which involved replacing the old boundary fence that was previously installed during site demolition activities. The truck wash station began operation on July 16, 2018 followed by removal

of C&D debris shortly thereafter. Existing C&D debris from previous buildings were removed under the excavation permit NYCDOB Excavation Permit #123969.

Erosion control measures were implemented during remedial action and construction in accordance with the Soil Erosion and Control Plan, prepared by Philip Habib and Associates, dated June 20, 2018 (Appendix L).

C&D debris from previously demolished buildings was comingled with fine materials and were separated utilizing on-site screening equipment. C&D screened materials including brick, concrete, metal were transported and disposed at appropriate facilities capable of accepting demolition debris.

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

Soil Screening

During excavation of fill material/native soils, soils were screened for visual evidence of staining and contamination. Any suspect areas that were visually observed were then screened via olfactory observation techniques and screened utilizing a photoionization detector (PID).

Darker soils (suspect coal ash) were exposed on the south-central portions of the Site during excavation activities. The Environmental Consultant screened these soils utilizing a PID and no detections were recorded. However, visual and olfactory observations prompted additional investigations and hot spot remediation activities as described herein.

Darker soils were also exposed within the tank grave of the former 10,000-gallon No. 6 fuel oil UST. Petroleum hydrocarbon-like odors were observed and PID detections (max 120 ppm) were also identified in the darker soils beneath the tank grave. These conditions prompted additional remedial activities under NYSDEC Spill No. 18-05898, which is described in detail herein.

Soils were screened beneath the one (1) 1,000-gallon and one (1) 550-gallon USTs encountered on July 20, 2018. No visual or olfactory evidence of stains or petroleum release was identified beneath these soils. Furthermore, no PID detections (above 0.1 ppm) were identified in these soils. However, post tank-removal endpoint sampling was conducted in this area and is further summarized in Section 4.3.

Soils were screened beneath the four (4) 550-gallon USTs encountered on September 11, 2018. Petroleum hydrocarbon-like odors were identified within the areas of these USTs. However, no staining was observed. PID detections ranged from zero to 350 ppm. Initial endpoint sample results and PID detections prompted the NYSDEC to incorporate the remedial action associated with these tanks into NYSDEC Spill No. 18-05898.

Stockpile Management

Stockpiles were only utilized during staging of C&D debris and fine materials during the removal of these materials. Limited stockpiling of soils associated with a hot spot (suspect coal ash) and impacted soils beneath USTs unearthed during excavation was conducted on-site, as needed. Stockpiles containing these materials were inspected daily by the Site Supervisor and covered with polyethylene sheeting at the end of each work day until removal from the site. Stockpile areas containing impacted materials were subsequently over excavated upon loadout to ensure removal of any remaining impacted material. The majority of the remaining fill material/soils were live-loaded during the course of the remedial action.

Truck Inspection

Trucks were visually inspected daily as they entered and departed the site. A blue stone driveway was also installed for traction within the ingress of the site along the northwestern portions, which also reduced soil tracking from truck wheels. No soil/fill materials were tracked from the site into the surrounding community or onto neighboring roadways.

Site Security

The Site was enclosed with construction safety fencing, in accordance with applicable regulations and NYCDOB requirements. The Site was secured and locked at the end of daily activities. The site was further monitored by a 24-hour guard on duty in the booth located on the northwestern portions of the Site, adjacent to the designated ingress from 126th Street. All occupants were required to present ID and sign-in upon arrival. All site visitors were subject to a mandatory site safety training program implemented by the GC.

Nuisance Controls

The remedial action was subject to a CAMP, which was implemented during certain actions at the site. The CAMP was implemented for an appropriate amount of time until

CAMP suspension was approved by the regulatory agency (OER). During the time of CAMP monitoring, no exceedances were recorded and no mitigation was required. Furthermore, there were no noise or nuisance complaints reported to regulatory agencies during the course of remedial action and construction activities.

Reporting

Reports were prepared in accordance with OER's requirements and consent. All daily, weekly and monthly reports are included in Appendix C. Digital photographs of the Remedial Action are included in Appendix D.

4.3 MATERIALS EXCAVATION AND REMOVAL ACTION

Soil/Fill Excavation and Removal

A map showing the approximate locations where excavations were performed and approximate thickness of excavated material is shown in Figure 5A total of 23,994 tons of soil/fill (including screened C&D fines) were excavated and removed from the property during the Removal Action. Materials removed from the property under this Removal Action is generally classified, as follows: non-hazardous soil/fill, 10,258 tons; and petroleum contaminated soil/fill, 12,910 tons. The quantity of native soil removed from the property is 826 tons.

A map showing the approximate locations where excavations were performed and maximum depth of excavation is shown in Figure 5. The Removal Action was performed under the oversight of Bryan Murty, QEP for the project.

Onsite Reuse

No soils or fill materials were identified for reuse or relocation during the excavation/construction process.

UST Removal

Due to unsafe building conditions, interior access to the former on-site buildings was restricted during the Phase I ESA site reconnaissance. Furthermore, the RI was conducted after emergency demolition of the on-site buildings took place. No representation could be made with respect to much of the basement areas prior to demolition. As such, during the removal of C&D debris, six (6) USTs were discovered during site clearing activities

throughout the course of excavation. These tanks were observed to be concentrated on the central/eastern central portions of the Site and were buried in C&D debris, vaulted or beneath former building slabs. The tanks appeared to have maintained their integrity during demolition of the former buildings. The original contents of the tanks were not known at the time of discovery, but was assumed to be petroleum-related (i.e., gasoline or fuel oil). The tanks discovered during excavation were inventoried as follows:

- One (1) 550-gallon (assumed) petroleum UST discovered on July 20, 2018.
- One (1) 1,000-gallon (assumed) petroleum UST discovered on July 20, 2018.
- Four (4) 550-gallon (assumed) petroleum USTs discovered on September 11, 2018.

There was no visual evidence of staining or release associated with the above-listed USTs. There were no PID detections (i.e., greater than one ppm) in the sidewalls or soils/debris beneath the USTs discovered on July 20, 2018. The USTs discovered on July 20, 2018 were removed on July 20 and 23, 2018, and endpoint sampling was conducted in the tank graves in accordance with NYSDEC DER-10 protocols, where it was determined that the USTs did not adversely affect subsurface conditions. Olfactory evidence of releases were observed after the USTs discovered on September 11, 2018 were removed on October 23, 2018. OER and NYSDEC were informed of findings and the eastern tank cluster matter was incorporated into the active spill case NYSDEC Spill No. 18-05898.

In addition to the above, appropriate notification of the tank removals to FDNY and modifications to the NYSDEC PBS registry were conducted accordingly.

In addition to the six (6) tanks listed above, an abandoned-in-place 10,000-gallon No. 6 fuel oil UST was removed during remedial action. The UST was subject to a previous investigation and spill incident (NYSDEC Spill No. 18-05898) which occurred prior to commencement of the Remedial Investigation (RI). The 10,000-gallon UST was exposed during excavation and debris alongside the UST was observed to be stained and exhibited olfactory evidence of petroleum release. As such, a new spill incident was assigned to this AOC (NYSDEC Spill No. 18-05898, which was linked to the previous spill number [NYSDEC Spill No. 11-12132]). Groundwater was sampled from an

adjacent/downgradient monitoring well installed from previous investigations. Groundwater was determined to be unimpacted by the UST and former releases. Therefore, it was determined that contaminants associated with the former UST were isolated to the soils surrounding and immediately beneath the UST.

The UST was removed on August 7, 2018. Contaminants associated with the former UST were observed to be badly degraded and largely isolated to the areas immediately surrounding the UST. Groundwater was sampled from an existing monitoring well previously installed adjacent to the UST from previous investigations. The groundwater sample revealed that the UST was not impacting groundwater conditions, which was similarly observed during investigation under NYSDEC Spill No. 11-12132.

It should be noted that in addition to the above, the removal of liquids within several of the USTs was conducted prior to removals. As indicated above, seven (7) total USTs were removed throughout the course of excavation. These tanks were observed to each contain limited quantities of petroleum mixed with water, including three (3) USTs partially filled with concrete in which limited void spaces were observed. The tanks appeared to have maintained their integrity during demolition of the former buildings. The original contents of the tanks were not generally known at the time of discovery, but were assumed to be petroleum-related (i.e., gasoline or fuel oil). In preparation of tank removals, 275 gallons of oil and water were pumped from the 550-gallon and 1,000-gallon USTs discovered on central portions of the Site on July 20, 2018, 350 gallons of oil and water were pumped from the 10,000-gallon No. 6 fuel oil UST and 1,640 gallons of oily water were pumped from the four (4) 550-gallon USTs discovered on September 11, 2018 on the eastern portions. In total, 2,265 gallons of regulated non-hazardous liquids were removed from the Site utilizing a vacuum truck. Additionally, tank sludges/debris associated with the one (1) 550-gallon tank discovered on July 20, 2018 were disposed in two (2) 55-gallon steel drums.

The approximate location of USTs are shown in Figure 7.

NYSDEC Petroleum Spills

As previously indicated, a 10,000-gallon No. 6 fuel oil UST was previously located in the garden level basement beneath the slab of the former building located at 458 West 126th Street. Soil borings installed as part of a previous investigation indicated the presence of degraded petroleum-impacted soils surrounding the UST and NYSDEC Spill No. 11-12132 was opened. Previous investigations involved the installation of a groundwater monitoring well adjacent to, and hydraulically downgradient with respect to groundwater flow to determine if a petroleum release impacted groundwater quality. Based on analytical results, it was determined that the UST was not impacting groundwater conditions, and that the UST was closed in-place and filled with concrete slurry. Given the elimination of the point-source of contamination and analytical results, the NYSDEC administratively closed Spill No. 11-12132 on August 7, 2012 with the tank remaining in-place due to site constraints (the presence of the former building and slab overtop). During demolition and remedial action, the UST was removed in accordance with applicable protocols. However, given the presence of degraded petroleum-impacted soils observed, OER and NYSDEC opened NYSDEC Spill No. 18-05898 and referenced previous Spill No. 11-12132. The removal of four (4) additional 550-gallon USTs encountered during excavation activities was also incorporated into NYSDEC Spill No. 18-05898 due to the presence of exceedances in the initial endpoint samples beneath two of the removed USTs. Under NYSDEC directives, additional excavation beneath the former 550-gallon suspect petroleum USTs was conducted and two (2) subsequent endpoint soil samples met Track 1 Unrestricted Use SCOs. As such, the NYSDEC considered the former tank graves remediated in association with the four (4) 550-gallon USTs acceptable. With respect to the former 10,000-gallon No. 6 fuel oil UST, sampling of the darker soils under NYSDEC 18-05898 indicated degraded petroleum impacts. However, these sample results met Track 2 Restricted Residential Use SCOs. Based on the location on-site, excavation of the soils beneath the former No. 6 fuel oil UST was deemed impractical due to the depth of the tank invert (below the future basement slab elevations of the new building), and due to potential undermining and structural stability of the western adjacent multi-family residential building. As such, the NYSDEC provided concurrence to this approach, and as a conditional measure, the NYSDEC

advised that one groundwater sample from the pre-existing well would be required in order to obtain spill closure in order to ensure groundwater remained unimpacted from the UST. As such, the pre-existing groundwater monitor well previously installed as part of NYSDEC Spill No. 11-12132 was determined to still be viable and was sampled as required by the NYSDEC. The results of the groundwater sample continued to prove that any former releases from the UST did not impact groundwater quality adjacent to and immediately downgradient of the UST. Therefore, under the condition that the previously disturbed dark material would be removed from the Site in accordance with applicable regulations, darker soils were allowed to remain in-place, as these soils exhibited degraded petroleum that already met Track 2 Restricted Residential Use SCOs and were not affecting groundwater quality. The NYSDEC spill case manager indicated Spill No. 18-05898 would be closed to standards upon completion of remedial action at the Site and the issuance of an RAR to the satisfaction of OER under a Track 2 Restricted Residential Cleanup scenario. Subsequent to the NYSDEC's verbal closure of the spill incident, the monitoring well was decommissioned on November 26, 2018 in accordance with NYSDEC's Commissioner's Policy 43 (CP-43): *Groundwater Monitoring Decommissioning Policy*.

Dewatering

As groundwater was not encountered during excavation and construction activities, no dewatering was conducted as part of the remedial action/construction requirements.

Hotspots

A map showing the approximate location of hotspots removed in this Removal Action is shown in Figure 7.

Soil Cleanup Objectives

The SCOs for this Remedial Action are Track 1 Unrestricted Use SCOs.

End Point Sample Results

The SCOs for this project were not achieved. Track 2 Restricted Residential Use SCOs for this project were achieved.

Thirteen (13) total endpoint samples (including initial and supplemental) were collected from several locations throughout the site. Previous results of the RI revealed that soils at the basement slab elevations were within Track 2 Restricted Residential Use

SCOs. As such, two endpoint samples were originally proposed to be collected within a location where chromium was determined to be elevated above Track 1 Unrestricted Use SCOs. However, due to field conditions, endpoint samples were collected at alternative locations, as agreed upon by OER.

The following endpoint samples were collected during the Remedial Action:

EP-1, EP-2, EP-3, EP-4 and EP-5 (Two-Tank Cluster)

These endpoint samples were collected from the locations of the removed 1,000-gallon and 550-gallon USTs that were encountered during excavation on July 20, 2018 and removed on July 20, and July 23, 2018. These samples were collected within the tank graves on July 23, 2018 utilizing field decontaminated stainless steel hand tools. Endpoint samples were collected by the environmental consultant, and were placed directly into laboratory-supplied glassware, stored in ice-packed coolers and transported to York Analytical Laboratories, Inc., an ELAP and NELAP-approved laboratory via courier under appropriate chain-of-custody protocols. Although the contents of the tanks were unknown at the time of removal, it was suspected that these tanks likely stored petroleum. Therefore, endpoint samples EP-1 through EP-5 were analyzed for TCL VOCs using USEPA Method 8260, TCL SVOCs using USEPA Method 8270 and total lead using USEPA Method 6010. The results of the endpoint samples revealed that there were no exceedances above Track 1 Unrestricted Use SCOs. Therefore, it was concluded that the two tanks excavated and removed from the Site did not impact subsurface conditions.

EP-1, EP-2, EP-3, EP-4 (Four-Tank Cluster)

These endpoint samples were collected from the location of four (4) removed 550-gallon USTs that were encountered during excavation of the Site and removed on October 23, 2018. PID detections below the USTs ranged from 0 through 350 ppm. One endpoint sample was collected beneath each removed tank (one sample per tank) on October 23, 2018 utilizing field decontaminated stainless steel hand tools. Endpoint samples were collected by the environmental consultant, and were placed directly into laboratory-supplied glassware, stored in ice-packed coolers and transported to York Analytical Laboratories, Inc., an ELAP and NELAP-approved laboratory via courier under appropriate chain-of-custody protocols. Based upon the configuration, it was

assumed the tanks likely stored petroleum. Therefore, the initial endpoint samples EP-1 through EP-4 were analyzed for TCL VOCs using USEPA Method 8260, TCL SVOCs using USEPA Method 8270 and total lead using USEPA Method 6010. Laboratory analytical data revealed elevated SVOCs (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenzo[a,h]anthracene and indeno[1,2,3-cd]pyrene) in sample EP-4 above Track 2 Restricted Residential SCOs. Additional SVOCs (benzo[k]fluoranthene and chrysene) and lead were detected below Track 2 Restricted Residential SCOs, but above Track 1 Unrestricted Use SCOs in EP-4. Additionally, SVOC and VOC detections were also noted in sample EP-1. Given the elevated detections and elevated PID detections in soils beneath the 550-gallon USTs, the NYSDEC assumed regulatory oversight under NYSDEC Spill No. 18-05898 for the contaminated soils beneath this tank cluster. As directed by the NYSDEC, additional excavation of contaminated soils was required within the areas of EP-1 and EP-4. Upon completion of additional excavation activities, supplemental endpoint samples EP-1B and EP-4B were collected in the former tank area on November 16, 2018 utilizing stainless steel, field-decontaminated hand tools. The samples were placed directly into laboratory-supplied glassware and into a cooler packed with ice and transported to York Analytical Laboratories, Inc., an ELAP and NELAP-approved laboratory via courier under appropriate chain-of-custody protocols. The samples were analyzed for NYSDEC CP-51 VOCs and SVOCs, as authorized by the NYSDEC spill case manager. Laboratory results indicate there were no VOC or SVOC detections above laboratory MDLs in supplemental endpoint samples. Based upon the resultant data, the NYSDEC considered remediation of this former tank cluster area complete.

TP-1 (10,000-gallon UST Area)

One (1) sample was collected from dark soils beneath the former 10,000-gallon No. 6 fuel oil UST. TP-1 was collected at approximately 18 feet bgs from an exploratory test pit to investigate potentially contaminated soils in association with the removed 10,000-gallon No. 6 fuel oil UST, and as directed by the NYSDEC under Spill No. 18-05898. The sample was placed directly into laboratory-supplied glassware and into a cooler packed with ice and transported to York Analytical Laboratories, Inc., an ELAP and NELAP-approved laboratory via courier under appropriate chain-of-custody protocols.

Based upon the contents of the former UST (No. 6 fuel oil), the sample was analyzed for NYSDEC CP-51 VOCs and SVOCs. The results of the sampling revealed three VOCs (1,2,4-trimethylbenzene, benzene and total xylenes) detected above Track 1 Unrestricted Use SCOs, but well below their respective NYSDEC Track 2 Restricted Residential SCOs. No SVOCs were detected above NYSDEC Track 1 Unrestricted Use SCOs. Based upon the results of TP-1 and consultation with the NYSDEC spill case manager and OER representatives, it was determined that excavation beyond the previously disturbed material below the former 10,000-gallon No. 6 fuel oil UST was not feasible due to geotechnical reasons and potential risks of undermining of the adjacent residential building to the west. Therefore, under the condition that previously disturbed material would be removed from the site, NYSDEC and OER representatives indicated no further action would be required in association with the removed 10,000-gallon No. 6 fuel oil UST, and that sample TP-1 could be utilized as an endpoint sample to demonstrate the achievement of Track 2 Restricted Residential Use SCOs. Therefore, the NYSDEC spill case manager indicated Spill No. 18-05898 would be closed to standards upon submission and review of the RAR.

EP-1 (Hot Spot Excavation Area)

One (1) post-excavation endpoint sample (EP-1) was collected within the location of the darker hot spot (suspect coal ash) encountered during excavation. The endpoint sample was collected on November 29, 2018 utilizing stainless steel, field-decontaminated hand tools. The samples were placed directly into laboratory-supplied glassware and into a cooler packed with ice and transported to York Analytical Laboratories, Inc., an ELAP and NELAP-approved laboratory via courier under appropriate chain-of-custody protocols. The sample was submitted for laboratory analysis for TCL VOCs, TCL SVOCs and TAL metals based on the exceedances through investigatory sampling. Laboratory results of EP-1 revealed that there were no VOCs or SVOCs detected above laboratory MDLs, and no metals detected above Track 1 Unrestricted Use SCOs. Based upon the laboratory analytical data, OER indicated that no further excavation or action was required given the complete removal of the hotspot. Furthermore, post-excavation sample EP-1 was also accepted by OER as the final endpoint sample for remedial activities on the Site.

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 H.

End Point Data Usability Summary

Data Usability Summary Report (DUSR).

All laboratories utilized during waste characterization and remedial actions were ELAP and NELAP-approved laboratories. All samples were collected utilizing factory-new or field-decontaminated stainless steel hand tools and placed directly into laboratory-supplied glassware to avoid cross-contamination or other contaminants that may affect laboratory results. Given the testing frequency, no duplicate or blank samples were analyzed during the remediation in accordance with NYSDEC DER-10. Laboratory quality assurance and quality control (QA/QC) information is provided in laboratory analytical data included in Appendix H and K.

4.4 MATERIALS DISPOSAL

Several disposal and recycling facilities were utilized during the course of construction and remedial action. Facilities were identified based on the type of materials being generated from the project site including C&D waste, non-hazardous soil, fill material, clean native soils and non-hazardous petroleum liquid.

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

Disposal Location/Address	Type of Material	Quantity
Doremus Avenue Redevelopment Project 191 Doremus Avenue Newark, New Jersey 07105	Non-Hazardous Soil (a.k.a. Fill Material)	10,258 tons
Bayshore Soil Management LLC 75 Crows Mill Road, P.O. Box	Non-Hazardous Soil (including Petroleum	12,910 tons

Disposal Location/Address	Type of Material	Quantity
290 Keasbey, New Jersey, 08832	Contaminated Soil, Ash, Screened Fines)	
AB Oil Service Ltd. 1599 Ocean Avenue, Bohemia, New York 11716	Tank Carcasses	Six (6) Steel Tanks
	Tank Carcass	One (1) 10,000-gallon Tank
Liberty Stone and Aggregate Clinton Quarry 5 Route 173, Union Township, New Jersey 08809	Clean Soil	826 tons
AB Oil Service Ltd. 1599 Ocean Avenue, Bohemia, New York 11716	Tank Sludges	Two (2) 55-gallon Drums
AB Oil Service Ltd. 1599 Ocean Avenue, Bohemia, New York 11716	Non-hazardous Petroleum Contaminated Liquid (N018)	2,265 gallons

Letters to the respective 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 E. Manifests are included in Appendix F. Waste characterization test results collected prior to, and throughout the duration of the remediation are included in Appendix G. A table of individual truck transport and material disposal quantities is included in Table 4.

4.5 BACKFILL IMPORT

Approximately 1,380 tons of crushed stone and gravel (DGA Blue Stone, 1.5” Clean Blue Stone and ASTM57 – 3/4” washed stone) were imported to the site for use beneath the building slabs as base, as well as for trucking. These materials were imported from Impact Reuse & Recycling Center, New Jersey and Tilcon Mount Hope Quarry, New Jersey.

Approximately 511 tons of pipe sand and C-33 State Concrete Sand were imported to the site for use across the site from Braen Stone of Sparta, Lafayette, New Jersey. Native sands were placed beneath pipes and conduits at the site (as depicted on Figure 8). Sampling for backfilled sand was conducted by the GC at the source and laboratory analytical data was provided to OER for review and approval. Based on the analytical results (Appendix K; and tabulated in Table 6), sand material was approved for placement by OER on April 24, 2019.

All materials imported to the property consisted of virgin quarry stone, or achieved the lower of 6NYCRR Part 375-6.8 Groundwater Protection Standards and Restricted applicable use type, i.e. Residential SCOs. A table of all sources of backfill with quantities for each source is shown in Table 5. Tables summarizing chemical analytical results for backfill are included in Table 6, with corresponding laboratory reports included in Appendix K. A map showing backfill placement locations at the Site is shown in Figure 8.

4.6 DEMARCACTION

Remedial Action achieved Track 2 Restricted Residential Use SCOs. Therefore, no demarcation of contamination was required.

5.0 ENGINEERING CONTROLS

A Track 2 Restricted Residential Remedial Action was achieved, and Engineering Controls are not required. However, as part of construction, several protective systems were installed. These are:

- (1) Composite Cover System;
- (2) Vapor Barrier System.

Composite Cover System

As part of development, an engineered Composite cover System has been built at the site. This Composite Cover System is comprised of six inches of clean sub-base (bluestone) material, overlain by the vapor or waterproofing barrier (see below) and five-inch, fiber mesh-reinforced concrete slab within the building footprint. Walkways along the west and southern exterior consist of brick pavers. Limited tree planters are present along the western boundary of the site. Less than 100 sf of tree planter areas are present at the site. These areas consist of two feet of clean soils. The contractor for the Composite Cover System construction was Darcon Construction Corporation.

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 D.

Vapor Barrier System

As part of redevelopment, a combination Vapor Barrier and Waterproofing System was incorporated into the building design and construction. This Vapor Barrier System consists of products by various manufactures to create a continuous seal in accordance with ASTM E1643 standard practice. While a 1.2 mil Grace PrePruf 300R HDPE liner with Tape LT was placed beneath elevator and ejector/sump pits, a 20 mil Yellow Guard Vapor Barrier with Crete Lock concrete gripping tape was placed beneath the building slab in the Detention Tank and Fire Suction Tank rooms and a 20 mil Stego Wrap Vapor Barrier/ Retarded with Stego Tap and Stego Mastic was placed laterally beneath the remain portions of the basement slab. Furthermore, a Bituthene System 4000 membrane/vapor barrier was affixed to the walls of elevator and ejector/sump pits as well as outside foundation walls using Adhesive Primer B2 LVC as surface conditioner.

Hydroduct Coil 600 drainage system was added atop the vertical aspects of the barrier as a water-proofing measure. The contractor for the installation of the Vapor Barrier System portions manufactured by Grace Construction Products was EAI, Inc. while Darcon Construction Corporation, Inc. and Lendlease Corporation installed the Yellow Guard and Stego products. A map depicting the spatial distribution of the various systems is including as Figure 9. For each of the aforementioned products, data sheets are including in Appendix I. The professional engineer for the Vapor Barrier System was VHB.

Photographs of installation of the Vapor Barrier and Waterproofing Systems are included in Appendix D. Copies of manufacturer's specifications for the Vapor Barrier Systems and waterproofing are included in Appendix I.

6.0 INSTITUTIONAL CONTROLS

A Track 2 Restricted Residential Remedial Action was achieved, and Engineering Controls and Institutional Controls are not required.

7.0 SITE MANAGEMENT PLAN

A Track 2 Restricted Residential Remedial Action was achieved, and Site Management is not required.

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.

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 substantial cost savings.

The following means were used to reduce energy consumption in this project:

- Construction vehicles and machinery were powered down to avoid idling for extended periods of time.
- Construction vehicles and machinery were stored on-site to avoid additional travel to and from the site for mob/demobilization reasons, thereby reducing overall emissions and fossil fuel consumption.
- C&D debris from former buildings were transported to facilities with the intention that concrete and metal would be recycled for future re-use.

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. No other fuel sources are routinely utilized.

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

The Site has been remediated to Track 2 Restricted Residential SCOs. The area of the Site that utilizes recontamination controls under this plan is 38,383 square feet. The Site utilizes an engineered composite cover to prevent recontamination of the subsurface soils. Furthermore, natural gas will be utilized for heating purposes.

Linkage with Green Building. Green buildings provide a multitude of benefits to the city across a broad range of areas, such as reduction of energy consumption, conservation of resources, and reduction in toxic materials use.

The site has been certified LEED Silver and was provided credits under the sustainable site category for redevelopment of a brownfield site (New York City VCP program). Additional green and sustainable elements were also incorporated into the design of the building to assist in achieving a LEED Silver certification.

Paperless Brownfield Cleanup Program. TSTY Owner LLC (formerly TSTY Create LLC) 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. TSTY Owner LLC (formerly TSTY Create LLC) 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 80 miles. In addition, the use of mass transit was maximized by on-site construction workers and consultants given the site's location in an urban setting proximate to public transportation, thereby reducing the number of vehicle trips to the site and lowering the overall greenhouse gas emissions.

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 approximately 16.