REMEDIAL INVESTIGATION WORK PLAN

for

375 Lafayette Street
New York, New York

Prepared for:

375 Lafayette Ground Lessee LLC
28 Liberty Street
New York, New York 10005

Prepared by:

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CERTIFICATION

I, Brian Gochenaur, certify that I am currently a Qualified Environmental Professional as defined in Title 6 of the New York Codes, Rules, and Regulations (NYCRR) Part 375 and that this Remedial Investigation Work Plan (RIWP) was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10) and DER Green Remediation (DER-31).

DRAFT

Brian Gochenaur, QEP

1.0 INTRODUCTION

This Remedial Investigation Work Plan (RIWP) was prepared on behalf of 375 Lafayette Ground Lessee LLC (the Volunteer) for the property located at 375 Lafayette Street in New York, New York (the site). This RIWP is being submitted in conjunction with the Requestor's application for the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP).

The objective of the scope of work defined in this RIWP is to investigate and characterize the nature and extent of environmental impacts at the site and to provide sufficient information to evaluate remedial alternatives and inform the Qualitative Human Health Exposure Assessment (QHHEA). This RIWP was developed in accordance with the process and requirements identified in the NYSDEC Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10) (May 2010), the New York State Department of Health (NYSDOH) "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (October 2006, with updates May 2017 and February 2024), and the NYSDEC "Guidelines for Sampling and Analysis of Per- and Polyfluoroalkyl Substances (PFAS)" (April 2023).

2.0 SITE BACKGROUND

2.1 Site Description

The about 19,800-square-foot (±0.45-acre) site is located at 375 Lafayette Street in New York, New York and is identified on the Manhattan Borough Tax Map as Block 531, Lots 17, 52, and 56. A site location map is provided as Figure 1.

The site is currently improved with an outdoor asphalt- and concrete-paved parking lot operated by Edison ParkFast. A parking attendant booth is located in the south-central part of the site on Lot 17 and a storage shed is located in the northeastern corner of the site on Lot 52. The north-central and eastern parts of the site (Lot 17 and 52) also contain 37 four-level hydraulic vehicle stacker lifts. A site plan is provided as Figure 2.

The site (Lots 17, 52, and 56) was assigned an E-Designation (E-675) for hazardous materials and noise by the New York City (NYC) Department of City Planning (DCP) as part of the SoHo/NoHo Neighborhood Plan (City Environmental Quality Review [CEQR] No. 21DCP059M). Sites with E-Designations are subject to environmental review by the New York City Mayor's Office of Environmental Remediation (NYCOER). According to the New York City Planning Commission Zoning Map 12c, the site is located within the M1-5/R9X (light industrial uses and residential) district and the SoHo-NoHo Mixed Use District (SNX). The SNX district was established in 2021 to foster housing growth, including the development of affordable housing units, while preserving the mixed-use character, arts, and culture of the SoHo and NoHo neighborhoods.

2.2 Surrounding Property Land Use

The site is located in an urban setting that is primarily characterized by residential, institutional and commercial buildings. The following table summarizes surrounding property usage:

Direction	Adjoining Properties	Surrounding Area
North	Two multi-story commercial and office buildings (381 and 383 Lafayette Street), a multi-story residential building with ground floor commercial space (28 East 4th Street), and a multi-story residential building (32 East 4th Street)	Commercial, office, institutional, and residential buildings, vacant land, a park, and parking facilities
East	Multi-story residential building with ground floor commercial space (40 Great Jones Street)	Commercial, office, institutional (fire department), and residential buildings
South	Great Jones Street followed by multi-story residential, commercial, and office buildings (363 Lafayette Street and 25 through 39 Great Jones Street)	Commercial, office, and residential buildings
West	Lafayette Street followed by a multi-story commercial and office building (380 Lafayette Street)	Commercial, office, and residential buildings

Public infrastructure (storm drains, sewers, and underground utility lines) exists within the streets surrounding the site. A land use map showing the adjacent and surrounding properties is provided as Figure 3.

Land use within a half-mile radius is urban and includes residential, commercial, and industrial uses, institutional/public services, and parks. The nearest ecological receptors are the East River (located about 1.1 miles east of the site) and Hudson River (located about 1 mile west of the site). Sensitive receptors, as defined in DER-10, located within a half-mile of the site include those listed below:

Name (Approximate distance from site)	**Address**
Bright Horizons at NoHo (approximately 0.1 miles north of the site)	704 Broadway New York, NY 10003
New York University (approximately 0.1 miles northeast of the site)	50 West 4th Street New York, NY 10012
The Cooper Union (approximately 0.1 miles northeast of the site)	30 Cooper Square New York, NY 10003
Grace Church School – High School Campus (approximately 0.1 miles northeast of the site)	46 Cooper Square New York, NY 10003
M586 Harvey Milk High School (approximately 0.2 miles north of the site)	2 Astor Place, 3rd Floor New York, NY 10003
Learning and Fun Daycare at St. George Academy (about 0.2 miles to the northeast of the site)	215 East 6th Street New York, NY 10003
St. John's University – Manhattan Campus (approximately 0.2 miles east of the site)	101 Astor Place New York, NY 10003
University Settlement's Creative Steps Early Childhood Center (approximately 0.2 miles east of the site)	4 Washington Square Village #1D New York, NY 10012
Grace Church School (approximately 0.3 miles to the north of the site)	86 4th Avenue New York, NY 10003
Manhattan School for Career Development (approximately 0.3 miles east of the site)	113 East 4th Street New York, NY 10003
LaSalle Academy High School (approximately 0.3 miles southeast of the site)	44 East 2nd Street New York, NY 10003
NY Preschool - Greenwich Village (approximately 0.4 miles north of the site)	11 5th Avenue New York, NY 10003
Third Street Preschool (approximately 0.4 miles northeast of the site)	235 East 11th Street New York, NY 10003
George Jackson Academy (approximately 0.4 miles east of the site)	104 St Marks Place New York, NY 10009
P.S. 63 The STAR Academy (approximately 0.4 miles east of the site)	121 East 3rd Street New York, NY 10009
M363 The Neighborhood School (approximately 0.4 miles to the southeast of the site)	121 East 3rd Street New York, NY 10009
Forsyth Satellite Academy (approximately 0.4 miles southeast of the site)	198 Forsyth Street New York, NY 10003
University Settlement Village View NORC Older Adults Center (approximately 0.4 miles southeast of the site)	94 East 1st Street New York, NY 10009

Name (Approximate distance from site)	Address
LAC Early Childhood Center (approximately 0.4 miles northwest of the site)	2 5th Avenue New York, NY 10011
La Petite École (approximately 0.5 miles north of the site)	7 West 10th Street New York, NY 10011
P.S. 019 East Village Community School (approximately 0.5 miles northeast of the site)	185 1st Avenue New York, NY 10003
Manhattan School (approximately 0.5 miles northwest of the site)	12 West 12th Street New York, NY 10011
Starchild (approximately 0.5 miles east of the site)	435 East 6th Street New York, NY 10009
Mott Street OAC (approximately 0.5 miles south of the site)	180 Mott Street New York, NY 10012
University Settlement Early Head Start (approximately 0.5 miles southeast of the site)	184 Eldridge Street New York, NY 10002
BRC Senior Services Center (approximately 0.5 miles southeast of the site)	30 Delancey Street New York, NY 10002
LREI Lower and Middle School (approximately 0.5 miles west of the site)	272 6th Avenue New York, NY 10014

2.3 Site Physical Conditions

2.3.1 Topography

The 2019 United States Geological Service (USGS) 7.5-minute quadrangle topographic map for Brooklyn, New York depicts the site at an elevation of about 42 feet above mean sea level (amsl), which represents a local plateau. The regional topography slopes downward toward the north, to the east towards the East River (approximately 1.1 mile east of the site) and to the west toward the Hudson River (approximately 1 mile west of the site).

2.3.2 Geology

According to the October 10, 2018 Phase II Environmental Investigation (EI) Report prepared by Langan, the site is underlain by soil, predominantly consisting of variable color, fine- to coarse-grained sand with varying amounts of silt and fine gravel, brick and concrete that extends below the surface cover to between 10 to 15 feet below grade surface (bgs) across most of the site. Brown, medium- to coarse-grained sand was observed beneath the shallow soil layer to a maximum investigation depth of 47 feet bgs.

Based on a review of the "Bedrock and Engineering Geologic Maps of New York County and Parts of Kings and Queens Counties, New York, and Parts of Bergen and Hudson Counties, New Jersey" by Charles A. Baskerville, et al., the bedrock underlying the site is of the Manhattan Schist formation, which consists of interbedded mica schist, gneiss, quartz, and amphibolite. Geological surface features (e.g., rock outcroppings) were not observed at the site. According to an October 17, 2018, Geotechnical Investigation

Report prepared for the site by Langan, competent gray mica schist rock was identified at depths ranging from 63 to 72 feet bgs.

2.3.3 Hydrogeology

Groundwater flow is typically topographically influenced, as shallow groundwater tends to originate in areas of topographic highs and flows toward areas of topographic lows, such as rivers, stream valleys, ponds, and wetlands. A broader, interconnected hydrogeologic network often governs groundwater flow at depth or in the bedrock aquifer. Groundwater depth and flow direction are also subject to hydrogeologic and anthropogenic variables such as precipitation, evaporation, extent of vegetation cover, coverage by impervious surfaces, and subsurface structures. Other factors influencing groundwater include depth to bedrock, the presence of anthropogenic fill, and variability in local geology and groundwater sources or sinks.

Infiltration of precipitation to the water table is likely minimal due to the current presence of impervious surface (i.e., asphalt and concrete) across the site. The majority of runoff drains to municipal sewers and then to one of the several wastewater treatment plants that serve New York City. Groundwater in New York City is not used as a potable water source pursuant to a local prohibition. Potable water provided to the City of New York is derived from surface impoundments in the Croton, Catskill, and Delaware watersheds.

Groundwater was encountered between about 43.1 and 44.9 feet bgs during the previous Phase II EI and geotechnical investigation performed by Langan. Based on the local topography and proximity to nearby surface water features, the inferred groundwater flow direction in the vicinity of the site is to the east or southeast toward the East River. Groundwater elevations and flow direction will be evaluated during the Remedial Investigation (RI).

2.3.4 Wetlands

Wetlands were evaluated by reviewing the National Wetlands Inventory and NYSDEC-regulated wetlands map. There are no wetlands located on the site. The closest wetland is the Hudson River, located about 1 mile west of the site.

2.4 Summary of Previous Site Use

A review of historical records indicates that the site has been located in a densely developed urban area characterized by commercial, residential, and industrial uses since at least the 1890s.

Between at least 1895 and 1921, the site was occupied by a church and five 4-story mixed-use buildings identified as 32 through 38 Great Jones Street. By 1921, the church was shown on the Sanborn Map to be vacant and one of the buildings at the southeastern part of the site contained a printing facility. By the 1940s, the former church was demolished, and the western half of the site had been redeveloped with a filling station and L-shaped service building by 1950. The former printing operation was no longer noted in the building in the southeastern part of the site. By 1969, the four easternmost buildings (32 to 38 Great Jones Street) were demolished and redeveloped with an open-air parking lot. Between the 1920s and 1970s, relevant site uses included hat manufacturing (1920-1963), clothing manufacturing (1934), sheet

metal works (1934-1958), bottle capping machine works (1934-1958), metal polishing (1947-1958), printing (1920-1973), and plating (1947). By 1975, the filling station and service building were demolished and redeveloped with an open-air parking lot. The remaining building at the central part of the site (30 Great Jones Street) reportedly contained the "Concord Electronics Corp" facility, which performed electroplating and electronics manufacturing from at least 1980 until 2006. The building at 30 Great Jones Street remained until it was demolished between 2006 and 2008. By 2010, the site was developed into its present-day configuration as a parking lot and has remained generally unchanged.

2.5 Previous Environmental Reports

Previous environmental reports were reviewed as part of this RIWP. These reports are summarized below and are included in Appendix A.

- *June 20, 2018 Phase I Environmental Site Assessment (ESA) for 375 Lafayette Street, prepared by Langan*
- *October 10, 2018 Phase II EI Report for 375 Lafayette Street, prepared by Langan*
- *May 9, 2025 Phase I ESA for 375 Lafayette Street, prepared by Langan*

June 20, 2018 Phase I ESA for 375 Lafayette Street, New York, New York, prepared by Langan

Langan prepared a Phase I ESA in June 2018 for Kaufman New Ventures. The Phase I ESA identified historical and current uses of the site for printing (1921), electronics/electroplating operations (1984-2007), a gasoline filling station (1950-1972), and a parking lot as a Recognized Environmental Conditions (REC). The Phase I ESA stated that, due to the potential use of chemicals associated with these operations, the duration of these activities, and the potential presence for gasoline underground storage tanks (UST), the subsurface may have been adversely impacted from the historical and current site uses. The report also identified potential impacts from current and historical off-site uses (including six filling stations and/or automotive repair facilities between 1921 and 2005), potential presence of impacted soil at the site, and potential presence of undocumented UST at the site as business environmental risks (BER).

October 10, 2018 Phase II EI Report for 375 Lafayette Street, New York, New York, prepared by Langan

Langan conducted a Phase II EI for the 375 Lafayette Street site between August 17 and 23, 2018. The Phase II EI included a geophysical survey of all accessible areas, advancement of ten soil borings to a maximum depth of 45 feet bgs, installation of three temporary groundwater monitoring wells, and the collection and laboratory analysis of soil and groundwater samples.

Soil and groundwater samples were analyzed for NYSDEC Title 6 of the New York Codes, Rules, and Regulations (NYCRR) Part 375 volatile organic compound (VOC), semivolatile organic compounds (SVOC), and target analyte list (TAL) metals including hexavalent chromium. Soil analytical results were compared to the NYCRR Part 375 Unrestricted Use (UU), Residential Use (RU), Restricted Use Restricted-Residential (RURR), Commercial Use (CU), and Industrial Use (IU) Soil Cleanup Objectives (SCO). Groundwater analytical results were compared to the NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values for Drinking Water (Class GA) (collectively referred to as "SGVs").

Field observations and laboratory analytical results are summarized below:

- Site Geology and Hydrogeology: The site is underlain by soil, predominantly consisting of variable color, fine- to coarse-grained sand with varying amounts of silt and fine gravel, brick and concrete that extends below the surface cover to between 10 to 15 feet below grade surface (bgs) across most of the site. Brown, medium- to coarse-grained sand was observed beneath the shallow soil layer to a maximum investigation depth of 47 feet bgs. According to an October 17, 2018, Geotechnical Investigation Report prepared by Langan, competent gray mica schist rock was identified at depths ranging from 63 to 72 feet bgs at the site. Groundwater was encountered between about 43.1 and 44.9 feet bgs during the Phase II EI and geotechnical investigation. Based on the local topography and proximity to nearby surface water features, the inferred groundwater flow direction in the vicinity of the site is to the east or southeast toward the East River.
- Soil: Photoionization detector (PID) readings above background were observed in four soil borings within the shallow soil layer, with a maximum PID reading of 3.8 parts per million (ppm) at about 7 feet bgs in LSB-1. Odors and staining were not observed in the soil borings. SVOCs, particularly polycyclic aromatic hydrocarbons (PAH), were detected within the shallow soil layer above the UU, RU, RURR, CU, and/or IU SCOs in seven soil borings located throughout the site. Metals, including lead, nickel, zinc, copper, hexavalent chromium, barium, and mercury, were detected within the shallow soil layer above the UU, RURR, and/or CU SCOs in all nine soil borings.
- Groundwater: One VOC, chloroform, was detected above the SGV in two groundwater samples. Metals including iron, manganese, sodium, and selenium were also detected above the SGVs.

A summary of the historical soil and groundwater sample results are provided on Figures 4 and 5, respectively.

May 9, 2025 Phase I ESA for 375 Lafayette Street, New York, New York, prepared by Langan

Langan prepared a Phase I ESA in May 2025 for Edward J. Minskoff Equities, Inc. The Phase I ESA identified the following RECs:

- Historical and current uses of the site including a filling station (1940s-1975), hat manufacturing (1920-1963), clothing manufacturing (1934), sheet metal works (1934-1958), bottle capping machine works (1934-1956), metal polishing (1938-1958), printing (1942-1947), plating (1947), parking (1975 to present day), and electroplating (1980-2006). Several of these historical uses are also associated with regulatory database listings for petroleum bulk storage and hazardous waste generation. Additionally, the October 2018 Phase II EI Report noted the presence of SVOCs and metals in soil and chloroform and metals in groundwater above applicable regulatory criteria. Some areas of the site could not be investigated due to the presence of vehicle stacker lifts. Additionally, potential impacts to site soil vapor or from per- and polyfluoroalkyl substances (PFAS) (historically used in electroplating) were not previously investigated.
- Historical uses of the southern-adjoining properties include automotive repair and service, and a filling station between the 1940s and 1996. Documented contamination and/or inadvertent

releases of petroleum products and/or hazardous substances at these adjoining properties likely impacted soil vapor at the site.

In addition to the RECs, the report also identified the release of 10 gallons of No. 2 fuel oil on December 13, 2002 at the site, which was closed on January 13, 2004 following cleanup, as a historical recognized environmental condition (HREC); the presence of impacted soil as a BER; and the presence of surficial oily staining observed on the concrete and asphalt paving throughout the site and in the vicinity of hydraulic equipment as a de minimis condition.

2.6 Areas of Concern

The following area of concern (AOC) was identified based on a review of previous environmental reports and site observations and will be further investigated during the RI. The AOC is shown on Figure 6.

AOC 1: Historical Site Operations and Associated SVOCs and Metals in Soil

The site has historically been used for commercial and industrial purposes. Between the 1920s and 1970s, relevant site uses included hat manufacturing (1920-1963), clothing manufacturing (1934), sheet metal works (1938-1958), bottle capping machine works (1934-1958), metal polishing (1947-1958), printing (1920-1973), plating (1947), and a gasoline filling station and service (1943-1972). Between 1980 and 2006, the site uses included electroplating/electronics manufacturing and parking. Undocumented spills or releases of solvents, petroleum, chemicals, and/or other hazardous substances associated with these historical operations may have adversely affected soil, groundwater, and/or soil vapor beneath the site. SVOCs and metals present in soil across the site above the UU, RU, RURR, CU, and/or IU SCOs are likely attributed to releases from these historical uses, and current parking operations at the site.

It is unclear from historical aerial photographs and/or Sanborn Maps where each of the industrial uses occurred spatially across the site and therefore further investigation is warranted across the entire site. A Phase II EI was completed by Langan in August 2018; however, the full extent of the site could not be fully investigated due to the presence of vehicle stacker lifts used in parking operations, soil and groundwater samples were not analyzed for the full Part 375 list of compounds, and soil vapor samples were not collected.

3.0 SCOPE OF INVESTIGATION

The objective of the scope of the RI is to further investigate and characterize the nature and extent of the environmental impacts at the site, and to provide sufficient information to evaluate remedial alternatives and inform the QHHEA. The rationale for each sampling location in relation to the AOCs and analytical parameters for each proposed sample are provided in Table 1. The field tasks are discussed in more detail in the following sections:

Geophysical Survey

- Perform a supplemental geophysical survey to clear sample locations of underground utilities and scan the site for anomalies consistent with USTs. Proposed RI sample locations may be relocated as necessary based on the findings of the geophysical survey.

Soil Borings and Sampling

- Advance 18 soil borings to about 25 feet bgs or approximately 5 feet into native soil, whichever is deeper. If impacts are identified during advancement, borings will be extended to a depth at which impacts are no longer observed. Soil borings to be converted to groundwater monitoring wells will be advanced to at least 5 feet below the observed groundwater interface (approximately 50 feet bgs).
- Collect up to three soil samples from each boring location (plus quality assurance/quality control [QA/QC] samples) for laboratory analysis.

Monitoring Well Installation and Sampling

- Convert nine soil borings into permanent groundwater monitoring wells.
- Collect one groundwater sample from each newly installed monitoring well (plus QA/QC samples) for laboratory analysis.
- Survey and gauge newly installed monitoring wells to establish groundwater elevation and evaluate flow direction.
- Develop a groundwater contour map.

Soil Vapor and Ambient Air Sampling

- Install 10 soil vapor sampling points to 5 feet bgs.
- Collect one soil vapor sample from each soil vapor point and one ambient air sample for laboratory analysis.

Modifications to this scope of work may be required: 1) due to site operations, equipment, or other access restrictions; 2) if unexpected contamination is detected and additional analytical data is needed; and 3) to adequately characterize and delineate subsurface impacts in compliance with the Brownfield Law, regulations, and applicable investigation guidance documents (e.g., DER-10). NYSDEC and NYSDOH will be contacted to obtain approval for these modifications and all modifications will be reflected in the Remedial Investigation Report (RIR).

The field investigation will be completed in accordance with the procedures specified in Langan's Health and Safety Plan (HASP) and Quality Assurance Project Plan (QAPP) provided in Appendices B and C, respectively. A Community Air Monitoring Plan (CAMP) will be implemented during this investigation (see Section 3.7.2 and Appendix D).

Names, contact information, and roles of the principal personnel who will participate in the investigation, project managers, and subcontractors are listed below. The HASP contains emergency contact information (HASP Table 5) and a map with a route to the nearest hospital (HASP Figure 2). Résumés for Langan employees involved in the project are provided in the QAPP (Appendix C).

Personnel	Investigation Role	Contact Information
Brian Gochenaur, QEP Langan	Qualified Environmental Professional	Phone – 212-479-5479 Email – bgochenaur@langan.com
Gerald Nicholls, PE Langan	Project Engineer	Phone – 212-479-5559 Email – gnicholls@langan.com
Michael Burke, PG, CHMM Langan	Quality Assurance Officer	Phone – 215-479-5413 Email – mburke@langan.com
Tony Moffa, CHMM Langan	Langan Health & Safety Officer	Phone – 215-491-6545 Email – tmoffa@langan.com
William Bohrer, PG Langan	Field Safety Officer	Phone – 212-479-5499 Email – wbohrer@langan.com
Lamees Esmail Langan	Project Manager	Phone – 212-479-5499 Email – lesmail@langan.com
Lexi Haley Langan	Field Team Leader	Phone – 212-479-5499 Email – lhaley@langan.com
Joe Conboy Langan	Data Validator/Program Quality Assurance Monitor	Phone – 609-282-8055 Email – jconboy@langan.com
Benjamin Rao Pace Analytical	Laboratory	Phone – 201-812-2633 Email –Benjamin.Rao@pacelabs.com

3.1 Geophysical Survey

A supplemental geophysical survey will be performed prior to the RI to locate potential unidentified USTs or underground structures and identify utilities. The proposed RI borings will be relocated as necessary to avoid subsurface utilities, infrastructure, or other impediments identified during the survey.

3.2 Soil Investigation

3.2.1 Drilling and Logging

An environmental drilling subcontractor will advance 18 soil borings (SB01 through SB18) as part of the RI. A plan showing the proposed boring locations is included as Figure 6. A Langan engineer, geologist or scientist will document the work, screen the soil samples for environmental impacts, and collect environmental samples for laboratory analyses under the direct supervision of a Qualified Environmental Professional (QEP).

Soil borings will generally be advanced to either 25 or 50 feet bgs using an auger rig and/or direct-push drilling technology. Soil will be screened continuously to the boring termination depth with a PID equipped with a 10.6 electron volt (eV) bulb and for visual and olfactory indications of environmental impacts (e.g.,

staining and odors). Soil descriptions will be recorded in a field log. Boring logs will be presented in the Remedial Investigation Report (RIR).

Non-disposable, down-hole drilling equipment and sampling apparatus will be decontaminated between locations with Alconox (or similar) and water.

3.2.2 Soil Sampling and Analysis

Up to three grab soil samples will be collected from each soil boring for laboratory analysis. One sample will be collected from the 0 to 2-foot bgs interval. A second sample will be collected from the interval exhibiting the greatest degree of impacts (based on the presence of staining, odor, and/or PID readings above background). A third sample will be collected from the first underlying depth interval without evidence of impacts or fill (i.e., native soil). If borings are advanced to the termination depth and no evidence of impacts is identified, samples will be collected from the bottom of the fill layer and the underlying native soil interval.

Soil samples will be collected into laboratory-supplied containers and will be sealed, labeled, and placed in a cooler containing ice (to maintain a temperature of approximately 4° Celsius) for delivery to Pace Analytical (Pace), a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory. To further investigate the AOC, soil samples will be analyzed using the latest USEPA methods as follows:

- Part 375 List and Target Compound List (TCL) VOCs via USEPA Methods 8260/5035
- Part 375 List and TCL SVOCs via USEPA Method 8270D
- Part 375 List pesticides and herbicides via USEPA Method 8081B and 8151A, respectively
- Part 375 List polychlorinated biphenyls (PCB) via USEPA Method 8082A
- Part 375 List and Target Analyte List (TAL) metals (including cyanide and hexavalent and trivalent chromium) via USEPA Methods 6010C/7471B/9010C/7196A
- Part 375 List PFAS via USEPA Method 1633
- 1,4-dioxane via USEPA Method 8270D

QA/QC procedures to be followed are described in the QAPP provided as Appendix C.

3.3 Groundwater Investigation

3.3.1 Monitoring Well Installation

Nine soil borings will be further advanced to about five feet below the groundwater table (bottom of screen depth estimated to be between about 48 and 50 feet bgs) and converted to groundwater monitoring wells as part of the RI. Proposed monitoring well locations are shown on Figure 6. During well installation, soil conditions will be screened, logged, and sampled as described in Section 3.2. The monitoring wells will be constructed to straddle the observed water table.

Monitoring wells will be constructed with 2-inch-diameter, threaded, flush-joint, polyvinyl chloride (PVC) casing and 0.01-inch slotted pre-packed well screens (about 10 feet in length). Clean sand (e.g., Morie No.

2) will be used to backfill the annulus around the riser to a minimum of 2 feet above the top of the pre-packed well screen. A 2-foot-thick bentonite seal will be installed above the sand, and the remaining borehole annulus will be backfilled with drill cuttings exhibiting no evidence of petroleum impacts (i.e., staining, odors, or PID readings above background) to within 12 inches of the surface and/or grouted to the surface. The wells will be finished with locking well caps and flush-mounted steel manhole covers. Following installation, the wells will be developed using a surge block across the well screen to agitate and remove fine particles. The surge block will be surged across the submerged well screen in 2- to 3-foot increments for approximately 2 minutes per increment. After surging, the well will be purged via pumping until the water becomes clear. Monitoring wells will then be allowed to sit for a minimum of one week before sampling.

3.3.2 Groundwater Sampling and Analysis

One groundwater sample will be collected from each newly installed monitoring well as summarized in Table 1. Prior to sampling, the monitoring wells will be purged. Purging will consist of pumping, at a minimum, the stabilized drawdown volume plus the pump's tubing volume, and waiting until the physical and chemical parameters (e.g., temperature, dissolved oxygen, oxidation-reduction potential, pH, turbidity) stabilize within the ranges specified in the USEPA Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, dated July 30, 1996 and revised September 19, 2017. If stabilization is not achieved after one hour, samples will be collected. The groundwater samples will be collected in accordance with the PFAS sampling protocols stated in the NYSDEC's April 2023 Sampling, Analysis, and Assessment of PFAS guidance document. Samples will be collected with a bladder pump, low-flow submersible pump, or equivalent, and dedicated polyethylene tubing. Development and purge water will be containerized for off-site disposal.

Groundwater samples will be collected into laboratory-supplied containers and will be sealed, labeled, and placed in a cooler containing ice (to maintain a temperature of approximately 4° Celsius) for delivery to Pace, an NYSDOH ELAP-certified analytical laboratory. Groundwater samples will be analyzed using the latest USEPA methods as follows:

- Part 375 List and TCL VOCs via USEPA Method 8260C
- Part 375 List and TCL SVOCs via USEPA Method 8270D
- Part 375 List pesticides and herbicides via USEPA Method 8081B and 8151A, respectively
- Part 375 List PCBs via USEPA Method 8082A
- Part 375 List and TAL Metals (filtered and unfiltered) by USEPA Method 6010D/6020B/7470A
- Hexavalent and trivalent chromium via USEPA Method 7196A
- Total cyanide via Method SM 4500
- NYSDEC List PFAS via UEPA Method 1633
- 1,4-dioxane via USEPA Method 8270D

Should free product be observed during monitoring well development or sampling, a sample will be collected and analyzed via fingerprint analysis. QA/QC procedures are described in the QAPP provided as Appendix C.

3.3.3 Monitoring Well Survey and Synoptic Gauging

The location and elevation of the groundwater monitoring wells (top of casing elevations) will be surveyed. This data will be used with the groundwater well gauging data to prepare a groundwater contour map depicting the elevation of the water table across the site. Vertical control will be established by surveying performed relative to the North American Vertical Datum of 1988 (NAVD88) by a New York State-licensed land surveyor. Elevations to the top of monitoring well casings and protective well casings will be surveyed to the nearest 0.01 foot. A synoptic gauging event will be performed to document static water levels. All monitoring wells will be gauged during this event.

3.4 Soil Vapor Investigation

3.4.1 Soil Vapor Point Installation

A total of ten temporary soil vapor points will be installed in accordance with the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (October 2006, updates May 2017 and February 2024), herein referred to as the NYSDOH Guidance. The proposed soil vapor sample locations are shown on Figure 6.

Soil vapor points will be installed using direct-push technology by advancing a vapor probe to about 5 feet bgs. The soil vapor points will consist of an implant threaded into dedicated inert sample tubing (i.e., polyethylene) that will extend to surface grade, and the annulus (i.e., the sampling zone) around the installed tubing will be filled with clean, coarse sand pack followed by a hydrated bentonite seal to surface grade.

3.4.2 Soil Vapor Sampling and Analysis

Samples will be collected in general accordance with the NYSDOH Guidance. The proposed vapor samples are summarized in Table 1. Before collecting soil vapor samples, a minimum of three vapor probe volumes (i.e., the volume of the sample implant and tubing) will be purged from each sample point at a flow rate of less than 0.2 liters per minute using a RAE Systems MultiRAE® meter. Purged soil vapor will be monitored for VOCs with the MultiRAE® during this process.

A helium tracer gas will be used in accordance with the NYSDOH Guidance to serve as a QA/QC technique to document the integrity of each soil vapor sampling point seal before and after sampling. Helium will be measured from the sampling tube and inside the container. If the sample tubing contains more than 10% of the tracer gas concentration that was introduced into the container, then the seal is considered compromised and should be enhanced or reconstructed to reduce outside air infiltration.

After the integrity of each seal is confirmed, soil vapor samples will be collected into laboratory-supplied batch-certified clean 2.7- or 6-liter Summa® canisters equipped with 2-hour sample interval flow controllers. Soil vapor samples will be analyzed for VOCs by USEPA Method TO-15.

A construction and sampling log for each soil vapor sample will be completed to record sample identification, date and time of sample collection, sampling depth, name of the field personnel responsible for sampling, sampling methods and equipment, vapor purge volumes, volume of vapor extracted, flow rate, and vacuum of canisters before and after sample collection.

QA/QC procedures to be followed are described in the QAPP in Appendix C.

3.4.3 Sub-Slab and Indoor Air Sampling

Sub-slab and indoor air sampling are not proposed as part of this RIWP because there are currently no permanent structures at the site.

3.4.4 Ambient Air Sampling

One ambient air sample will be collected from the breathing zone (about 3 to 5 feet above grade) to provide information regarding background air conditions and evaluate potential outdoor air interferences with the sampling apparatus. The air sample will be collected concurrently with the soil vapor samples over a 2-hour sampling period and analyzed for VOCs by USEPA TO-15.

QA/QC procedures to be followed are described in the QAPP in Appendix C.

3.5 Data Management and Validation

Laboratory analyses of soil, groundwater, vapor, and air samples will be conducted by a NYSDOH ELAP-approved laboratory in accordance with United States Environmental Protection Agency (USEPA) SW-846 methods and NYSDEC Analytical Services Protocol (ASP) Category B deliverable format. Environmental data will be reported electronically using the database software application EQuIS as part of NYSDEC's Environmental Information Management System (EIMS).

Table 1 summarizes the proposed samples and laboratory analyses. QA/QC procedures required by the NYSDEC ASP and SW-846 methods, including initial and continuing instrument calibrations, standard compound spikes, surrogate compound spikes, and analysis of other samples (blanks, laboratory control samples, and matrix spikes/matrix spike duplicates), will be followed. The laboratory will provide sample bottles, which will be pre-cleaned and preserved in accordance with the SW-846 methods. Where there are differences in the SW-846 and NYSDEC ASP requirements, the NYSDEC ASP shall take precedence.

Data validation will be performed for all data collected during the RIWP in accordance with the USEPA validation guidelines for organic and inorganic data review. Validation will include the following:

- Verification of QC sample results (both qualitative and quantitative).
- Verification of sample results (both positive hits and non-detects).
- Recalculation of 10 percent of all investigative sample results.
- Preparation of Data Usability Summary Reports (DUSR).

The DUSRs will be prepared and reviewed by the Program Quality Assurance Monitor (PQAM). The DUSRs will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody (COC) procedures, and a summary assessment of precision,

accuracy, representativeness, comparability, and completeness for each analytical method. A detailed assessment of each sample delivery group (SDG) will follow. Additional details on the DUSRs are provided in the QAPP in Appendix C.

3.6 Management of Investigation-Derived Waste

Soil cuttings will be returned to the borehole unless:

- Free product or grossly-contaminated soil is present in the cuttings;
- Backfilling the borehole with cuttings will create a significant path for vertical movement of contaminants. Soil additives (bentonite) may be added to the cuttings to reduce permeability; or
- The soil cannot fit into the borehole.

Boreholes requiring disposal of drill cuttings will be filled with hydrated bentonite chips or clean sand and capped with asphalt or concrete. Excess investigation-derived waste (IDW), including soil cuttings, purged groundwater, and decontamination fluids, will be containerized in United Nations/Department of Transportation (UN/DOT)-approved 55-gallon drums and temporarily staged for future disposal at an off-site facility permitted to accept the waste. The drums will be staged in an area on-site, pending receipt of laboratory data and off-site disposal to an appropriate facility. IDW will be removed from the site within one month of completing the investigation. All drums will be properly labeled, sealed, and characterized as necessary.

3.7 Air Monitoring

Air monitoring will be conducted for site personnel and the community pursuant to the CAMP provided in Appendix D. Fugitive particulate (dust) generation that could affect site personnel or the public is not expected because intrusive work is limited to boring, monitoring well, and soil vapor point installation, which does not disturb large volumes of soil.

Dust emissions will be monitored using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM10). Organic odors will be monitored with PIDs equipped with 10.6 eV bulbs. Dust and odor suppression measures (e.g., water misting, odor suppressant) will be implemented as required.

3.7.1 Personnel Air Monitoring

Langan will conduct air monitoring of the breathing zone periodically during drilling and sampling activities to evaluate health and safety protection for the field personnel. Initially, ambient air monitoring will be performed within the work area. Langan will monitor VOCs with a PID (MultiRAE 3000 or similar) in accordance with the HASP (Appendix A). If air monitoring during intrusive operations identifies the presence of VOCs, on-site personnel will follow the guidelines outlined in the HASP regarding action levels, permissible exposure, engineering controls, and personal protective equipment. If the VOC action level is exceeded, work will cease, and the work location will be evacuated. Monitoring will be continued until the levels drop to permissible limits, at which point, work will resume with continued monitoring. If high levels persist, field activities will be halted, and the work relocated to another area. If dust emissions are observed, work will stop, and dust suppression measures will be used.

3.7.2 Community Air Monitoring Plan

In addition to air monitoring in the worker breathing zone, Langan will conduct community air monitoring in compliance with the NYSDOH Generic CAMP during any intrusive work. CAMP deployment will comply with NYSDEC DER-10 Appendix 1A and Appendix 1B. The CAMP is included in Appendix C and summarized below.

Langan will conduct monitoring for VOCs during ground-intrusive work (i.e., soil boring advancement and monitoring well installation) at both upwind and downwind CAMP stations. Two units will be deployed in the upwind and downwind directions. Langan will measure upwind concentrations at the start of each workday to establish background concentrations. Langan will continuously monitor VOCs at the downwind perimeter of the work zone, which will be established at a point on the site where the general public or site employees may be present. Monitoring for VOCs will be conducted with a PID equipped with a 10.6 eV lamp. Dust emissions will be monitored using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM10) and capable of averaging a period of 15 minutes (or less) for comparison to the airborne particulate action level (e.g., DustTrak). If dust emissions are observed, work will stop, and dust suppression measures will be used. The results will be presented in the daily reports (see DER-10 for details).

3.8 Green Remediation Standards

Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. DER-31 requires the following green remediation/sustainability concepts be considered and/or implemented, to the extent feasible, during investigations:

- Increase energy efficiency/minimize total energy use and direct and indirect CO2/greenhouse gas (GHG) emissions to the atmosphere
- Reduce emissions of air pollutants
- Minimize habitat disturbance and create or enhance habitat or usable land
- Conserve natural resources such as soil and water; promote the sequestration of carbon through reforestation or afforestation
- Minimize fresh water consumption and maximize water reuse during daily operations and treatment processes
- Prevent long-term erosion, surface runoff, and off-site water quality impacts
- Prevent unintended soil compaction
- Minimize waste or implement beneficial use of materials that would otherwise be considered a waste
- Minimize equipment and truck idling and use sustainably produced biofuels to reduce discharges of pollutants and GHGs to the atmosphere
- Utilize clean diesel (new or retrofitted) equipment to reduce emissions to the atmosphere

- Minimize truck travel for disposal to save energy, reduce emissions, reduce localized noise, vibration, and wear and tear on roads
- Minimize use of heavy equipment to save energy and reduce emissions

During implementation of this RIWP, the following elements will be implemented, to the extent feasible, to reduce greenhouse gas and other emissions:

- Use of Ultra Low Sulfur Diesel in vehicles and machinery by drilling contractor
- Use of diesel exhaust purifier scrubbers on machinery (drill rigs) by drilling contractor
- Minimization of idling of all vehicles (including construction equipment) in accordance with 6 NYCRR Part 217 Motor Vehicle Emissions, Subpart 217-3 Idling Prohibition for Heavy Duty Vehicles
- Reduction of materials consumption and off-site transport by reuse of non-impacted drilling spoils as backfill within the boring of origin and containerization of drilling spoils exhibiting visual, olfactory, and instrumental signs of contamination.

3.9 Qualitative Human Health Exposure Assessment

A QHHEA will be conducted in accordance with Appendix 3B of the NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation. The assessment will be submitted as part of the RIR.

4.0 REPORTING

4.1 Remedial Investigation Report

Following completion of the RI and receipt of analytical data, an RIR will be prepared. The report will:

- Describe site history and previous investigations
- Describe on- and off-site environmental conditions
- Describe sampling methodology and field observations
- Evaluate analytical results and describe findings
- Provide conclusions and recommendations for any further assessment (if warranted), and remedial action objectives

The report will summarize the nature and extent of contamination for the AOC and identify unacceptable exposure pathways (as determined through a QHHEA).

The report will include soil boring and well/vapor point construction logs, sampling logs, tabulated analytical results, figures, and laboratory data packages. The tabulated analytical results include sample location, media sampled, sample depth, field/laboratory identification numbers, analytical results and the applicable Standards, Criteria, and Guidance (SCG) pertaining to the site and contaminants of concern for comparison. The report will include scaled figures showing the locations of soil borings, monitoring wells, and soil vapor points, sample concentrations above SCGs for each media, groundwater elevation contours and flow direction, and if appropriate, groundwater contaminant concentration contours. DUSRs will be included in the RIR, and electronic data deliverables will be submitted to the NYSDEC EQuIS database prior to submission of the draft RIR.

4.2 Daily Reports

Daily reports will be prepared and submitted to the NYSDEC and NYSDOH project managers the following week after the reporting period and will include:

- An update of progress made during the reporting day
- Photographic documentation of the activities completed during the reporting day
- Identification of samples collected during the reporting day
- Locations and references to a site map for completed activities
- A summary of any and all complaints with relevant details, including contact information
- A summary of CAMP findings, including any exceedances
- An explanation of notable site conditions
- A list of anticipated work for the following reporting day

Daily reports are not intended to notify the NYSDEC of emergencies (e.g., accident, spill), request changes to the RIWP, or communicate other sensitive or time-critical information. However, such conditions will

also be included in the daily reports. Emergency conditions and changes to the RIWP will be communicated directly to the NYSDEC Project Manager.

The NYSDEC-assigned project number will appear on all reports.

4.3 Monthly Reports

Monthly reports will be submitted to NYSDEC and NYSDOH Project Managers by the 10th of each month and will include:

- Activities relative to the site during the previous reporting period and those anticipated for the next reporting period, including a quantitative presentation of work performed (e.g., tons of material exported and imported)
- Description of approved activity modifications, including changes of work scope and/or schedule
- Sampling results received following internal data review and validation, as applicable
- An update of the remedial schedule including the percentage of project completion, unresolved delays encountered or anticipated that may affect the future schedule, and efforts made to mitigate such delays

4.4 Other Reporting

Photographs will be taken of all remedial activities and submitted to NYSDEC in digital format. Photos will illustrate all remedial program elements and will be of acceptable quality. Representative photos will be provided of each contaminant source, source area and site structures during site investigation. Photos will be included in the daily reports as needed, and a comprehensive collection of photos will be included in the RIR.

Job-site record keeping for all remedial work will be appropriately documented. These records will be maintained on-site at all times during the project and be available for inspection by NYSDEC and NYSDOH staff.

5.0 SCHEDULE

The table below presents an anticipated schedule for the proposed RI and reporting following the approval of the RIWP. If the schedules changes, it will be updated and re-submitted to the NYSDEC.

Milestone	Weeks from NYSDEC Approval of RIWP	Established Duration
RI Mobilization	2	2
RI Field Investigation	4	3
Laboratory Analysis	7	3
RIR Preparation and Submission to the NYSDEC	10	4