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REMEDIAL INVESTIGATION WORK PLAN

2250 East 69th Street Site
2250 East 69th Street
Brooklyn, Kings County, New York
Block 8437, Lot 54
NYSDEC Site No. C224404

PREPARED FOR:
2300 69 Property LLC
4 Bryant Park, Suite 200
New York, New York 10018

PREPARED BY:
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LKB PROJECT NO: 10321.LK

March 31, 2025

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LIST OF ACRONYMS

ACRONYM	DEFINITION
AWQS	Ambient Water Quality Standards
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
BGS	Below Ground Surface
CAMP	Community Air Monitoring Plan
Class GA	Groundwater Effluent Limitation (Class GA)
CP Plan	Citizen Participation Plan
DER	Division of Environmental Remediation
DNAPL	Dense Non-Aqueous Phase Liquid
DOT	Department of Transportation
DUSR	Data Usability Summary Report
EDD	Electronic Data Deliverable
ELAP	Environmental Laboratory Accreditation Program
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FWRIA	Fish and Wildlife Resources Impact Analysis
GPR	Ground-Penetrating Radar
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
IDW	Investigation Derived Waste
LNAPL	Light Non-Aqueous Phase Liquid
mg/kg	Milligrams per Kilogram
MTBE	Methyl Tertiary Butyl Ether
NYCDEP	New York City Department of Environmental Protection
NYCDOB	New York City Department of Buildings
NYCRR	New York Code, Rules, and Regulations
NYCOER	New York City Office of Environmental Remediation
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
ORP	Oxidation-Reduction Potential
OSHA	Occupational Safety and Health Administration
PBS	Petroleum Bulk Storage

ACRONYM	DEFINITION
PCB	Polychlorinated Biphenyls
PFAS	Per-and Polyfluoroalkyl Substances
PID	Photoionization Detector
PPE	Personal Protective Equipment
PPM	Parts Per Million
PVC	Polyvinyl Chloride
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance / Quality Control
RAWP	Remedial Action Work Plan
RI	Remedial Investigation
RIR	Remedial Investigation Report
RIWP	Remedial Investigation Work Plan
SCO	Soil Cleanup Objective
SIM	Select Ion Monitoring
SPEED	Searchable Property Environmental Electronic Database
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TCL	Target Compound List
TOGS	Technical and Operational Guidance Series
TPH	Total Petroleum Hydrocarbons
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
UUSCO	Unrestricted Use Soil Cleanup Objective
VI	Vapor Intrusion
VOC	Volatile Organic Compound

CERTIFICATION

I, Richard J. Tobia, P.E., certify that I am currently a New York State registered professional engineer and that this Remedial Investigation Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Richard J. Tobia, P.E.

Seal

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License Number

March 31, 2025
Date

REMEDIAL INVESTIGATION WORK PLAN
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Brooklyn, New York
Block 8437, Lot 54
NYSDEC Site No. C224404

1.0 INTRODUCTION

This Remedial Investigation Work Plan (RIWP) has been prepared by Lockwood, Kessler & Bartlett, Inc. (LKB) on behalf of 2300 69 Property LLC (the Volunteer) for the property located at 2250 East 69th Street in Brooklyn, New York (the Site). The Volunteer is participating in the New York State Brownfield Cleanup Program (BCP) pursuant to a Brownfield Cleanup Agreement (BCA) executed on May 10, 2024. The Site is identified as New York State Department of Environmental Conservation (NYSDEC) Site No. C224404. The Site will be investigated and remediated in accordance with the BCP for its intended future use.

Currently, the approximately 1.38-acre Site consists of a gravel storage yard for materials and equipment for Falco Construction Corp., a former fuel canopy structure and concrete pad used for storage, two shipping containers used as open-air workshops, limited landscaped areas, and a bulkhead on the southwestern side of the Site. The Site will be vacant beginning March 10, 2025. From the 1940s to early 1980s, the Site was a petroleum bulk storage terminal. Based on available information collected to date, the primary contaminants of concern for the Site are petroleum, semi-volatile organic compounds (SVOCs), and metals. During investigations conducted to date, approximately 2.0 feet of light non-aqueous phase liquid (LNAPL) was identified in a temporary monitoring well.

This RIWP has been prepared in general accordance with NYSDEC Division of Environmental Remediation (DER)-10 / Technical Guidance for Site Investigation and Remediation (May 3, 2010). The RIWP describes the procedures to be used to define the nature and extent of contamination at the Site. The data compiled from the Remedial Investigation (RI), as described in this RIWP,

will be used to prepare a Remedial Investigation Report (RIR). All work will be completed in accordance with this RIWP.

1.1 Site Description

The Site is in Brooklyn, Kings County, New York and is identified as Block 8437, Lot 54 on the New York City Tax Map. **Figure 1** shows the Site location. The Site encompasses one lot and a total of 1.38 acres. The Site boundary is depicted in **Figure 2**. According to the New York City Department of Buildings (NYCDOB), the Site is identified with the following addresses: 2250 to 2260 East 69th Street. The Site is in an urban area with a mix of commercial and residential buildings. The Site is bounded by East 69th Street to the northeast, East Mill Basin waterway to the southwest, a construction storage yard to the northwest, and Avenue W to the southeast.

Exterior areas on the Site include a gravel storage yard for materials and equipment for Falco Construction Corp., a former fuel canopy structure and concrete pad used for storage, two shipping containers used as open-air workshops, limited landscaped areas, and a bulkhead on the southwestern side of the property (along the East Mill Basin).

The Site is currently active, and the proposed redevelopment of the Site includes the change of use from the current storage yard (steel beams, wood piles, and construction equipment [i.e., cranes]) to an asphalt-paved parking lot with a dispatch office to support logistics related uses. Based on a review of the New York City Department of City Planning and Land Use Mapping program, the Site is zoned M1-1 (manufacturing district). The M1 districts are often buffers between M2 and M3 districts and adjacent residential or commercial districts. M1 districts typically include light industrial uses, such as woodworking shops, repair shops, and wholesale service and storage facilities. Nearly all industrial uses are allowed in M1 districts if they meet the stringent M1 performance standards. Offices, hotels, and most retail are also permitted in M1 districts. The neighboring properties are currently used for a combination of commercial and

residential uses. A zoning change is not required as part of the proposed redevelopment, as a parking lot supporting logistics use is a permitted use for the M1 district.

The Site is generally flat with a slight slope to the south. Stormwater at the Site is expected to infiltrate the unpaved areas of the Site and flow via surface flow towards the East Mill Basin.

1.2 Surrounding Land Use

The Site is in a highly developed urban area in Brooklyn, New York. The surrounding properties are identified as the following:

Northwest: Construction storage yard operated by Falco Construction Corp. (2240 East 69th Street).

Northeast: East 69th Street, followed by Pizzirusso Bros landscapers (2235-2269 East 69th Street), a dwelling (6917 Avenue W), and a vacant commercial building (6902 Avenue W).

Southwest: East Mill Basin (waterway).

Southeast: Avenue W, followed by an office, warehouse, and equipment/vehicle maintenance building operated by Falco Construction Corp. (2300 East 69th Street).

Based on visual observations made during a Site reconnaissance and a review of the New York City Office of Environmental Remediation (NYCOER) Searchable Property Environmental E-Database (SPEED) and the New York City Oasis mapping programs, no parks, healthcare facilities, or schools were identified in the vicinity (500 feet) of the Site. However, a total of 110 residences were located within 500 feet of the Site. A list of the identified residences is provided in **Table 1**. A map depicting the sensitive receptors in the vicinity of the Site is provided as **Figure 3**.

1.3 Historic Use of the Site

Based on a review of reasonably ascertainable historical information, it appears that the Site consisted of wetlands and a creek prior to filling activities in the 1920s/1930s. From the 1940s to early 1980s, the Site was a petroleum bulk storage terminal operated by Argus Gas & Oil Sales Co. Inc., Jay Tee Fuel Oil Corp., Tidewater Oil Co., Ross Oil Corp., Premium Coal & Oil Co. Inc., and Mobil Oil Corp. The former fuel canopy structure (currently used for material storage) was constructed on the Site in 1963. The bulk petroleum storage terminal was razed in the early 1980s, and Falco Construction Corp. has utilized the Site for the storage of construction materials and equipment since that time.

1.4 Site Geology and Hydrogeology

According to the United States Department of Agriculture (USDA) Web Soil Survey, soil at the Site consist primarily of urban land. Urban land soils are those that have been so altered by human activities that the soil has lost its original characteristics and is thus unidentifiable.

Based upon findings of the subsurface investigations completed, soils encountered below the footprint of the Site consist of fill material (sand and silty clay with concrete, brick, and gravel) from ground surface to approximately 8.5 feet below ground surface (bgs), followed by silt clay and medium to fine sand to boring termination depth at 15.0 feet bgs. Bedrock was not encountered during the investigations.

Review of the Surficial Geologic Map of New York, Lower Hudson Sheet (New York State Geologic Survey, 1989) indicated that the Site is located in an Artificial Fill and Outwash Sand and Gravel area. The Outwash Sand and Gravel formation is noted as coarse to fine gravel with sand, proglacial fluvial deposition, well rounded, and stratified. Review of the Geologic Map of New

York, Lower Hudson Sheet (New York State Museum and Science Service, 1970) indicated that the Site is located in a coastal plain deposits area (Monmouth Group, Matawan Group, and Magothy Formation) characterized by silty clay, glauconitic clay, sand, and gravel.

Groundwater was encountered at depths ranging from approximately 3.97 to 10.60 feet bgs in temporary monitoring wells installed at the Site and on adjoining parcels to the northwest and southeast. Based on surface topography and the location of the nearest waterbody, groundwater flow direction is estimated to be to the southwest.

In accordance with New York Codes, Rules, and Regulations Title 6 (6 NYCRR) Part 701: Classifications -Surface Waters and Groundwater, groundwater at the site is identified as Class GA (fresh groundwater). There are no known groundwater supply wells on the Site, and currently there are no known deed restrictions on the use of groundwater at the Site. Groundwater in the vicinity of the Site is not utilized for industrial, agriculture, or public supply purposes.

1.5 Wetlands and Floodplain

According to a letter entitled *RE: DEC Wetlands Jurisdictional Determination No. 2-6105-00161-00019*, prepared by the NYSDEC and dated May 14, 2007, none of the Site is located within NYSDEC freshwater wetlands jurisdiction. The letter also noted the Site is not located within NYSDEC tidal wetlands jurisdiction, except for an approximately 1,024 square foot area landward of the bulkhead. A NYSDEC tidal wetlands permit would be required to alter or develop land in this 1,024-square foot area. This jurisdictional area is fenced off to prevent access and use. A copy of the NYSDEC letter and associated survey is included as **Appendix A**. A wetlands map is included as **Figure 4**.

No naturally occurring surface water bodies were observed on the Site. The East Mill Basin waterway adjoins the Site to the southwest.

Review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) identified that portions of the Site are in the Special Flood Hazard Area Subject to Inundation by the 1% Annual Chance Flood (Zone AE). Additional areas on the site are noted in Zone X (Other Flood Areas) described as areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood. A floodplain map is included as **Figure 5**.

2.0 PREVIOUS VAPOR INTRUSION, SOIL, AND GROUNDWATER CHARACTERIZATION

The following provides a summary of the Site characterization activities completed to date at the Site. These activities included soil and groundwater sampling performed in April 2023 by G.C. Environmental, Inc. (GCE) and soil and groundwater sampling by The Vertex Companies, LLC (VERTEX) in September 2023. These investigation activities were documented in the Limited Subsurface Investigation Report (GCE, May 2023) and Phase I Environmental Site Assessment/Phase II Limited Site Investigation (VERTEX, November 2023), which were included in the BCP application submitted to the NYSDEC in November 2023.

2.1 Phase II Limited Site Investigation (April 2023)

The scope of work completed by GCE in April 2023 included the installation of five soil borings (SB-3 through SB-7). Two of the borings (SB-4 and SB-6) were converted to temporary monitoring wells to evaluate groundwater. The April 2023 soil boring/temporary monitoring well locations are depicted on **Figure 6**.

The soils were screened with a photoionization detector (PID) and detections ranged from 0.0 to 3.0 parts per million (ppm). The report stated, "visual and petroleum type of odors were discovered in all soil samples." Soil samples were reportedly collected at the interval exhibiting the greatest impact (highest PID, staining, and/or odors), and the following soil samples were collected: SB-4 (4-8 feet bgs) and SB-6 (4-8 feet bgs). The soil samples were analyzed for volatile organic compounds (VOCs) and SVOCs (NYSDEC CP-51 List). Review of the soil analytical results identified that VOCs and SVOCs were either non-detect or at concentrations below the NYSDEC CP-51 soil cleanup objectives (SCOs).

One groundwater sample [GW-3 (SB-6)] was collected and analyzed for VOCs and SVOCs (NYSDEC CP-51 List). All VOCs were either non-detect or at concentrations below the NYSDEC Ambient

Water Quality Standard (AWQS). Several SVOCs [benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene] were detected at concentrations exceeding the AWQS.

The April 2023 soil analytical results are presented as **Table 2** and are depicted on **Figure 6** (exceedances only). The April 2023 groundwater analytical results are presented as **Table 3** and are depicted in **Figure 7** (VOC and SVOC) and **Figure 8** (metals).

2.2 Phase II Limited Site Investigation (September 2023)

The scope of work completed by VERTEX in September 2023 included the installation of two soil borings (B-4 and B-5) to a depth of 15 feet bgs. Both soil borings were converted into temporary monitoring wells.

A total of two soil samples were analyzed for VOCs and SVOCs. Review of the soil analytical results for the samples collected on the Site identified no VOCs, except acetone, exceeding the SCOs. Acetone is a typical laboratory contaminant, and the low-level detections are expected to be a result of laboratory contamination and not evidence of a release. Review of the on-Site SVOC soil analytical results identified no compounds exceeding the SCOs. The September 2023 soil analytical results are presented as **Table 4** and are depicted on **Figure 7** (exceedances only).

Approximately two feet of LNAPL was identified in the on-Site temporary monitoring well installed at B-4, installed in an inferred down-gradient location of the former petroleum bulk storage tanks. Due to the identification of LNAPL at B-4, a groundwater sample was not collected. Groundwater analytical testing at on-Site temporary monitoring well B-5 identified VOC (1,2,4,5-tetramethylbenzene) and SVOCs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene) exceeding the AWQS and/or

NYSDEC Groundwater Effluent Limitation (Class GA). The September 2023 groundwater analytical results are presented as **Table 5** and are depicted in **Figure 7** and **Figure 8**.

2.3 Areas of Concern (AOCs)

Based on the Site's history and previous reports prepared for the Site, the AOCs applicable to the RI include the following:

- **Former Petroleum Bulk Storage Tanks** – From the 1940s to early 1980s, the Site was operated as a petroleum bulk storage terminal with petroleum storage including the following: a 30,000-gallon fuel oil tank "in earthen mound;" two fuel oil tanks (total capacity of 912,000 gallons) "covered by earthen mound;" and one 250,000-gallon fuel oil tank "in earthen mound." The former petroleum bulk storage tanks were evaluated as part of a September 2023 investigation, and LNAPL was identified in a temporary monitoring well. The former tank farm encompassed an approximately 16,375-square foot area. The contaminants of concern include petroleum-related compounds including VOCs and SVOCs. Potential receptors include residences to the northeast and the East Mill Basin waterbody to the southwest.

- **Former Fueling Canopy** – During the petroleum bulk storage terminal operations discussed above, a former fueling canopy was operated in an area separate from the former tank farm. The former fueling canopy together with the piping from the former tank farm to the canopy is an AOC consisting of approximately 2,835 square feet in area. The contaminants of concern included petroleum-related compounds including VOCs and SVOCs. Potential receptors include residences to the northeast and the East Mill Basin waterbody to the southwest.

It should be noted that it was reported that all former petroleum bulk storage tanks and appurtenances (i.e., piping and fill ports) within the former terminal were removed from the Site in the early 1980s.

The AOCs are depicted on **Figure 9** along with the LNAPL detection location.

3.0 QUALITY ASSURANCE PROJECT PLAN

A Quality Assurance Project Plan (QAPP) was prepared to guide the implementation of the proposed RI activities. A copy of the QAPP is included in **Appendix B**. Quality assurance/quality control (QA/QC) procedures will be used to provide performance information with regard to accuracy, precision, sensitivity, representation, completeness, and comparability associated with the sampling and analysis for the RI at the Site.

3.1 Project Technical Personnel and Contractors

The table below summarizes the planned principal personnel to participate in the RI activities. Resumes for the LKB and The Vertex Companies, LLC personnel planned to participate in the RI activities are included in **Appendix E**.

Project Technical Personnel and Contractors			
Name	**Company**	**Responsibility**	**Contact Information**
Timothy Biercz	The Vertex Companies, LLC	Project Manager	(908) 333-4317
Richard J. Tobia, P.E.	Lockwood, Kessler & Bartlett, Inc.	New York-licensed Professional Engineer	(908) 448-2627
Michael Baldwin	PAL Environmental Safety Corp.	Drilling Services	(718) 349-0900
Matt Fekelman	Ground Penetrating Radar Systems Inc.	Geophysical Contractor	(484) 889-5874
Nichole Hunt	Pace Analytical Services LLC	Laboratory Contact	(508) 439-5137
Crystal Piccirillo	DPK Land Surveying, LLC	Licensed Surveyor	(732) 764-0100

3.2 Sampling Methodology

All sampling will be conducted in accordance with NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 3, 2010, NYSDEC Sampling Guidelines and Protocols, dated March 1991, NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), dated April 2023, and the NYSDOH document Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006.

Soil samples will be collected by VERTEX from discrete, six-inch intervals, from unique borings advanced at the Site via a track-mounted direct-push and hollow-stem auger drill rig (e.g., Geoprobe®). The drill rig will advance a five-foot long stainless-steel macro-core sampler. Per each advancement, a dedicated, disposable polybutyl acetate liner will be used in which the soil samples are held for field assessment. Continuous soil cores will be screened with a PID and visually and olfactory inspected. Disposable nitrile gloves will be worn during the soil screening process and sampling collection. The soil samples will be collected in dedicated laboratory-provided Encore samplers and laboratory-provided containers.

For the collection of groundwater samples from permanent monitoring wells, the wells will be purged with disposable polyethylene tubing and a submersible pump. Three well volumes will be purged using the volume averaged sampling method. Following purging, a grab groundwater sample will be collected using a polyethylene disposable bailer.

Soil vapor samples will be collected using a 6-liter stainless-steel Summa canister over an 8-hour sample duration. The direct-push drill rig will be utilized to core to 5.0 feet below grade. A 6- or 12-inch Geoprobe® stainless-steel soil vapor implant will be inserted at the bottom of the borehole above suspected groundwater. Polyethylene tubing will extend from the insert to the surface. Sand will be placed to cover the impact and the remaining approximately 4.0 feet of open hole will be sealed with bentonite grout to ground surface. A leak check will be performed

on the entire sample train using a tracer compound (e.g., helium) to confirm sampling methodology at the proposed location. The leak check will be performed to ensure that there is less than 10% helium in the purged air. Prior to sample collection from the vapor probe/core hole, three purge volumes will be evacuated from the sample train at a flow rate not to exceed 200 milliliters per minute. The sampling procedures will be conducted in general accordance with NYSDOH guidance.

An ambient air sample will be collected using a 6-liter stainless-steel Summa canister over an 8-hour sample duration that will encompass the soil vapor sampling event. The canister will be placed in an upgradient location to the soil gas samples to collect breathing height air (three to five feet above ground surface). The sampling procedures will be conducted in general accordance with NYSDOH guidance.

Equipment will be operated in accordance with the manufacturer's specifications, including calibration of all field instruments, which will be performed prior to the initiation of field work and on a schedule indicated by the manufacturer.

Following the sample collection, the sample containers will be secured, labeled, and placed in a storage/transportation cooler and cooled to acceptable temperatures (e.g., four degrees Celsius) with ice. Samples will then be transported by a field courier to the laboratory following proper chain of custody procedures. The courier will relinquish custody to the log-in sample custodian upon arrival at the laboratory.

3.3 Report Logs

Field logs and borings logs will be completed during the course of RI activities. A field log will be completed on a daily basis, which will describe all field activities including: project number and site address; date and time; weather conditions; on-Site personnel and associated affiliations;

description of field activities; pertinent sample collection information (sample identification, description of sample, sample location, sample collection time, sampling methodology, name of collector, field screening results, and analysis to be conducted). A boring log will be completed for each soil boring/monitoring well, which will include the following: project number and site address; date and time; drilling company name and drilling method; boring/monitoring well identification, total boring depth and water table depth; and pertinent sample collection information (sample identification, sample depth, interval, recovery amount, color, composition, percent moisture, PID readings, and visual/olfactory observations).

3.4 Laboratory Summary

All samples collected during the RI activities will be submitted under proper chain-of-custody protocols to Pace Analytical Services LLC (formerly Alpha Analytical, Inc.) in Westborough, Massachusetts (New York Environmental Laboratory Accreditation Program [ELAP] No. 11627). A copy of the NYSDOH *Certificate of Approval for Laboratory Service* is included in the QAPP included in **Appendix B**.

3.5 Analytical Method/Quality Assurance

As part of the RI activities, soil, groundwater, free product, ambient air, and soil vapor samples will be collected. The sampling, including matrix, frequency of collection, analytical parameter, analytical method, sample preservation, sample container volume and type, and holding time are provided in the summary tables below.

Analysis of all soil and groundwater samples will be conducted for the complete target compound list (TCL)/TAL suite of analyses, which includes VOCs via United States Environmental Protection Agency (USEPA) Method 8260, SVOCs via USEPA Method 8270, pesticides/PCBs via USEPA

Methods 8081/8082, TAL metals (including hexavalent chromium) via USEPA Methods 6010/7471, and cyanide via USEPA Method 9012.

To address NYSDEC's concern with emerging contaminants, all soil and groundwater samples will also be analyzed for 1,4-dioxane via USEPA Method 8270 selective ion monitoring (SIM) and per- and polyfluoroalkyl substances (PFAS) via USEPA Method 1633. Refer to **Table 6** for a summary of proposed samples and analysis.

Soil Sampling Summary					
Matrix Type	**Analytical Parameter**	**Analytical Method**	**Sample Preservation**	**Sample Container**	**Sample Holding Time**
Soil	VOC	8260	Cool, 4°C	Encore	48 Hours
Soil	SVOC	8270	Cool, 4°C	8 oz Glass	14 Days
Soil	Pesticides/ PCB	8081/8082	Cool, 4°C	8 oz Glass	14 Days
Soil	TAL Metals	6010/7471	None	8 oz Glass	6 Months
Soil	Cyanide	9012	Cool, 4°C	8 oz Glass	14 Days
Soil	1,4-dioxane	8270	Cool, 4°C	8 oz Glass	14 Days
Soil	PFAS	1633	Cool, 4°C	8 oz Plastic	90 Days

Groundwater Sampling Summary					
Matrix Type	**Analytical Parameter**	**Analytical Method**	**Sample Preservation**	**Sample Container**	**Sample Holding Time**
Aqueous	VOC	8260	HCl, Cool, 4°C	40 ml Vials	14 days

Groundwater Sampling Summary					
Matrix Type	**Analytical Parameter**	**Analytical Method**	**Sample Preservation**	**Sample Container**	**Sample Holding Time**
Aqueous	SVOC	8270	Cool, 4°C	500 mL Amber Glass	7/40 days
Aqueous	Pesticides/ PCB	8081/8082	Cool, 4°C	500 mL Amber Glass	7/40 days
Aqueous	TAL Metals	6010/7471	HNO_3, Cool, 4˚C	500 mL Plastic	6 months
Aqueous	Cyanide	9012	NaOH, Cool, 4˚C	500 mL plastic	14 days
Aqueous	1,4-Dioxane	8270	Cool, 4˚C	500 mL Amber Glass	7/40 days
Aqueous	PFAS	1633	Cool, 4°C	500 mL Plastic	28 Days

If either LNAPL and/or dense non-aqueous phase liquid (DNAPL) are detected, appropriate samples will be collected for characterization and total petroleum hydrocarbon (TPH) "fingerprint analysis" via USEPA Method 8015. In addition, petroleum free-phase product samples will be analyzed for specific gravity and kinematic viscosity.

Analysis of soil vapor samples will be conducted for VOCs via USEPA Method TO-15.

Soil Vapor Sampling Summary					
Matrix Type	**Analytical Parameter**	**Analytical Method**	**Sample Preservation**	**Sample Container**	**Sample Holding Time**
Soil Vapor	VOC	TO-15	None	6-L Summa Canister	30 days

Analysis of ambient air samples will be conducted for VOCs via USEPA Method TO-15.

Ambient Air Sampling Summary					
Matrix Type	**Analytical Parameter**	**Analytical Method**	**Sample Preservation**	**Sample Container**	**Sample Holding Time**
Air	VOC	TO-15	None	6-L Summa Canister	30 days

A thorough evaluation of the laboratory data will be completed, and a Data Usability Summary Report (DUSR) will be prepared. The primary objective for the evaluation of analytical data will be to determine whether or not the data, as presented, meets the site-specific criteria for data quality and use. The preparation of the DUSR will be prepared by a qualified, independent data validation expert. The DUSR will be prepared in accordance with Appendix 2B, Guidance for Data Deliverables and the Development of Data Usability Summary Reports included in NYSDEC DER-10: Technical Guidance for Site Investigation and Remediation.

3.6 Quality Assurance Samples

Field blanks and trip blanks will be submitted to the laboratory to evaluate the quality and performance of the analytical laboratory's analysis and reporting of the soil and groundwater sample results. Field (equipment) blanks will be analyzed to assess any contamination contributed from sampling location conditions, and the transport, handling, and storage of the samples. The trip blank will be analyzed to determine if sample containers may have been contaminated during transportation and storage. In accordance with DER-10 Section 2.3(c)2, field duplicates, matrix/matrix-spike duplicates, and field blanks will be collected at a frequency of 1 per 20 samples and will be analyzed for VOCs, SVOCs, TAL Metals (including hexavalent chromium), pesticides, PCBs, cyanide, 1,4-dioxane, and PFAS (soil and groundwater) and VOCs via USEPA Method TO-15 (soil vapor). Aqueous trip blanks will be collected at the same frequency (1 per 20 samples) for samples that are analyzed for VOCs.

4.0 HEALTH AND SAFETY PLAN

A Health and Safety Plan (HASP) was prepared to guide the conduct of the RI work in the event that petroleum hydrocarbons and/or hazardous substances are encountered during the performance of the field activities. A copy of the HASP is included as **Appendix C**. The purpose of the HASP is to minimize the likelihood of exposure of VERTEX employees to hazardous concentrations of chemicals encountered during field activities, minimize impacts to the environment, and provide safety guidelines for subcontractors.

Investigative work performed under this RIWP will be in full compliance with applicable health and safety laws and regulations, including site and Occupational Safety & Health Administration (OSHA) worker safety requirements and Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements. Confined space entry, if any, will comply with OSHA requirements and industry standards, and will address potential risks. The parties performing the investigation work will ensure that performance of work is in compliance with the HASP and applicable laws and regulations. Field activities will be completed with OSHA level D personal protective equipment (PPE) consisting of hard hats, safety glasses, protective gloves and steel toed boots.

An emergency contact sheet with names and phone numbers for all pertinent project personnel as well as regulatory hotline information is included in the HASP. That document will define the specific project contacts for use in case of emergency.

Health and safety activities will be monitored throughout the RI activities, and the HASP will be subject to change, as necessary, based on new conditions that may be encountered during the field investigation.

5.0 REMEDIAL INVESTIGATION WORK PLAN

The objective of the remedial investigation (RI) is to define the nature and extent of all contamination, identify contaminant source areas, and produce data of sufficient quantity and quality to support the development of an acceptable Remedial Action Work Plan (RAWP). The scope of work to further characterize soil, soil vapor, and groundwater conditions includes the following: installation of temporary monitoring wells to visually delineate LNAPL and collection of a product sample for characterization; the collection of soil samples to evaluate soil characteristics and evaluate potential future remedial alternatives; the installation of permanent monitoring wells and a recovery well and the collection of groundwater samples and water elevations to confirm groundwater flow direction and delineate groundwater impacts, the installation of temporary soil vapor points and the collection of soil vapor samples, and the collection of an ambient air sample. The proposed soil borings, temporary monitoring wells, permanent monitoring/recovery wells, and soil vapor points are depicted on **Figure 10**.

5.1 Citizen Participation

In accordance with BCP requirements, a Citizens Participation Plan (CP Plan) is being prepared and will be submitted to the NYSDEC under separate cover. The CP Plan provides a summary of the BCP and citizen participation activities, Site information, project contacts, and the RI process.

5.2 Permitting

No permits will be required for completion of the RI activities.

5.3 Utility Clearance and Geophysical Evaluation

As part of the RI activities, LKB's drilling subcontractor will contact the New York one call system prior to initiating the drilling activities. VERTEX will also retain the services of a geophysics subcontractor to conduct a below grade geophysical survey using ground-penetrating radar (GPR) and electromagnetic evaluation to mark-out subsurface utilities and "clear" any proposed drilling locations prior to drilling. In addition, the geophysical evaluation will be conducted to evaluate potential remnants of the former bulk storage tank farm and potential below-grade piping associated with the former fueling canopy.

The drilling contractor will also utilize hand equipment and/or "soft" excavation techniques to physically clear the drilling locations of subsurface utilities or obstacles down to a depth of 4-5 feet bgs.

5.4 Temporary Groundwater Monitoring Well Point Installation

To evaluate the presence of LNAPL in the area of the former bulk petroleum storage tank farm (B-4 sample location in VERTEX's September 2023 Phase II), this task will involve advancing nine temporary monitoring wells (TW-1 through TW-9). The location of the temporary monitoring wells is depicted in **Figure 10**. The temporary monitoring wells will be installed via direct-push (i.e., Geoprobe®) drilling methodologies to an anticipated maximum depth of 15 feet bgs. Details of the temporary monitoring well completion depth, groundwater depth, presence of LNAPL, and construction information will be recorded by LKB in the field. The temporary monitoring wells will be constructed of 1-inch diameter Schedule 40 slotted (0.020 inch) polyvinyl chloride (PVC) screen and 1-inch diameter PVC riser to grade. The screened interval for the temporary monitoring wells (10 feet) will be installed to intersect the shallow groundwater table and will extend to the completion depth of the well. The rationale for the proposed temporary well point locations is summarized in the following table.

PROPOSED TEMPORARY WELL POINT LOCATION RATIONALE		
Well ID	**On-Site Location**	**Rationale**
TW-1	Southwest of B-4	Horizontal delineation of LNAPL identified as B-4 temporary well. Soil sample proposed at this location to delineate impacts to the southwest.
TW-2	Southeast of B-4	Horizontal delineation of LNAPL identified as B-4 temporary well.
TW-3	Southeast of B-4	Horizontal delineation of LNAPL identified as B-4 temporary well. Soil sample proposed at this location to delineate impacts to the southeast.
TW-4	Northeast of B-4	Horizontal delineation of LNAPL identified as B-4 temporary well.
TW-5	Northeast of B-4	Horizontal delineation of LNAPL identified as B-4 temporary well. Soil sample proposed at this location to delineate impacts to the northeast.
TW-6	Northeast of B-4	Horizontal delineation of LNAPL identified as B-4 temporary well.
TW-7	Northwest of B-4	Horizontal delineation of LNAPL identified as B-4 temporary well.
TW-8	Northwest of B-4	Horizontal delineation of LNAPL identified as B-4 temporary well. Soil sample proposed at this location to delineate impacts to the northwest.
TW-9	Northwest of B-4	Horizontal delineation of LNAPL identified as B-4 temporary well.

5.4.1 Free Product and Soil Sampling

No groundwater sampling is proposed at the temporary monitoring wells. The wells will be gauged with a product/water interface probe to verify the presence/absence of LNAPL, thickness of LNAPL (if identified), and depth to groundwater. A free product sample will be collected for TPH "fingerprint analysis" to identify the petroleum product (or combination of petroleum products), specific gravity, and kinematic viscosity.

Soil samples will be collected continuously and screened in the field for the presence of total volatile organic vapors using a PID calibrated to 100 parts per million (ppm) by volume of isobutylene. The PID readings, soil lithology, and field observations will be documented in the field by LKB. Samples will be biased to the interval with the strongest evidence of suspected impacts based on PID readings, odors, staining, and other indicators. In the event no field

evidence of hazardous constituents is observed, soil samples will be collected from the first six-inch interval of soil present above the soil/groundwater interface or drilling refusal, as warranted by field observations and conditions.

Four soil samples (TW-1, TW-3, TW-5, and TW-8) will be collected from the area where LNAPL is identified and analyzed for the complete TCL/TAL suite of analyses. In addition, sample V-1 will be analyzed for 1,4-dioxane and PFAS. Furthermore, two soil samples (locations will be field determined based on findings) will be collected from the same area for analysis of grain size, permeability, and bulk density. The samples will be collected from the depth of LNAPL saturation (but not in LNAPL saturated soil) and from a differing soil lithology (if encountered). These analyses will be used to evaluate potential remedial alternatives to address LNAPL at the Site. These soil samples will be grab samples; no composite samples are proposed. Additional soil sampling from monitoring wells and soil borings is described in Sections 5.5.1 and 5.7.1, respectively.

Following soil and free product sample collection, the PVC will be removed from the temporary monitoring wells and each borehole will be backfilled with soil cuttings with an upper bentonite plug.

5.5 Monitoring Well/Recovery Well Installation

LKB will coordinate with a licensed driller for the installation of five permanent monitoring wells (MW-1, MW-2, MW-3, MW-4, and MW-5) and one permanent recovery well (RW-1) via hollow-stem auger drilling methodologies to 15.0 feet bgs. MW-1 will be located cross-gradient to the former bulk petroleum storage area. MW-2 will be located up-gradient to the former bulk petroleum storage area. MW-3 will be located down-gradient to the former fueling canopy. MW-4 will be located down-gradient to cross-gradient to the former fueling canopy. MW-5 will be located down-gradient of the former petroleum bulk storage area. RW-1 will be located

down-gradient of the former petroleum bulk storage area at a temporary well location where LNAPL was detected. The proposed monitoring/recovery well locations are depicted in **Figure 10**.

Details of the monitoring well completion depths and construction information will be recorded by LKB in the field. The monitoring wells will be constructed of 2-inch diameter Schedule 40 slotted (0.010 inch) PVC screen and 2-inch diameter PVC riser to grade. The well screen annulus will be filled with sand pack from the base of the screen to 1 to 2 feet above the top of the screen. A bentonite/grout slurry will be installed from the top of the sand pack to the ground surface. LKB assumes that the monitoring wells will be installed to a depth no greater than 15 feet bgs. The screened interval for the monitoring wells (10 feet) will be installed to intersect the shallow groundwater table and will extend to the completion depth of the well. Surface finishing will consist of a flush-mount traffic-rated manhole with a bolt-on lid set into a concrete pad. Additionally, an expandable locking cap will be fitted to the top of the PVC riser in the well.

Details of the recovery well completion depth and construction information will be recorded by LKB in the field. The recovery well will be constructed of 4-inch diameter Schedule 40 slotted Vee-Wire® high-flow PVC well screen and 4-inch PVC riser to grade. The well screen annulus will be filled with sand pack from the base of the screen to 1 to 2 feet above the top of the screen. A bentonite/grout slurry will be installed from the top of the sand pack to the ground surface. LKB assumes that the monitoring well will be installed to a depth no greater than 15 feet bgs. The screened interval for the recovery well (10 feet) will be installed to intersect the shallow groundwater table and will extend to the completion depth of the well. Surface finishing will consist of a flush-mount traffic-rated manhole with a bolt-on lid set into a concrete pad. Additionally, an expandable locking cap will be fitted to the top of the PVC riser in the well.

The monitoring/recovery wells will be developed following installation to improve the hydraulic efficiency, by the removal of the fine-grained material generated during the drilling process.

Groundwater will be purged from the wells using disposable polyethylene tubing and a submersible pump, until turbid-free water is observed. Based on the documented groundwater impacts at the Site, purge development water will be containerized in 55-gallon drums for off-Site disposal.

The monitoring/recovery wells are positioned so that groundwater flow direction can be triangulated from the elevation information obtained following the gauging and surveying of the wells. LKB will coordinate with a licensed surveyor to obtain the elevation of each monitoring well casing.

PROPOSED MONITORING/RECOVERY WELL LOCATION RATIONALE		
Well ID	**On-Site Location**	**Rationale**
RW-1	Down-gradient of former bulk storage tanks	Re-installed in the location of LNAPL identified during the Phase II LSI (B-4). Constructed as a four-inch recovery well for future remedial activities (i.e., LNAPL recovery).
MW-1	Cross-gradient of former bulk storage tanks	Delineation of groundwater quality along the northwestern Site boundary (cross-gradient in relation to the former bulk storage tanks).
MW-2	Up-gradient of former bulk storage tanks	Installed outside the area, and up-gradient, in relation to the former bulk storage tanks. Delineation of groundwater quality and evaluate potential impacts migrating onto the Site. Soil sample proposed to evaluate soil conditions outside of the former bulk storage tank area, in the northeastern portion of the subject property.
MW-3	Down-gradient of former fueling canopy	Delineation of groundwater quality down-gradient of the former fueling canopy and evaluate groundwater conditions in the southeastern portion of the Site. Soil sample proposed to evaluate soil conditions in the immediate vicinity of the former fueling canopy.
MW-4	Down-gradient to cross-gradient of former fueling canopy	Delineation of groundwater quality in the southeastern portion of the subject property and evaluate potential impacts migrating onto the Site from the southeastern adjoining property. Soil sample proposed to evaluate soil conditions in the southeastern portion of the subject property, outside the area of the former bulk storage tanks and fueling canopy.
MW-5	Down-gradient of former bulk storage tanks	Delineation of groundwater quality down-gradient of the former petroleum bulk storage tanks and evaluate the potential for off-site migration of contamination. Soil sample proposed to evaluate soil conditions down-gradient of the former bulk storage tanks.

5.5.1 Soil Sampling

Soil samples will be collected continuously and screened in the field using a PID. The PID readings, soil lithology, and field observations will be documented in the field by LKB. Up to four soil samples (one soil sample per interval) will be collected from the following intervals:

- Surficial soil in the uppermost two inches.
- Interval with the strongest evidence of suspected impacts based on PID readings, odors, staining, and other indicators.
- Water table interface
- From the six-inch interval below the vertical extent of impacts (if encountered) or the six-inch interval above the boring termination depth.

Soil samples will be collected at four locations (MW-1, MW-2, MW-3, and MW-4) and will be analyzed for the complete TCL/TAL suite of analyses. Up to four soil samples (one soil sample per interval noted above) will be collected at each location, but there will be a minimum one sample from each of the first three intervals. In addition, the soil samples from MW-3 will be analyzed for 1,4-dioxane and PFAS. These soil samples will be grab samples; no composite samples are proposed.

5.5.2 Groundwater Sampling

The newly installed monitoring/recovery wells will be allowed to stabilize and will be sampled a minimum of one week following installation and development. The sampling event will include the new monitoring wells (MW-1 to MW-4) and recovery well (RW-1). The groundwater sampling event will begin with groundwater level measurements from each well using a product/water interface probe. Groundwater measurements will be collected in all wells at relatively the same time to minimize potential tidal effects in the data. Low and high tidal times will be noted at the

time of sample collection. In order to determine if the groundwater elevation may be affected by tides, elevation measurements will be collected approximately six hours after the first measurements. To further evaluate potential tidal influence on groundwater at the Site, three monitoring wells will be improved with a transducer (i.e., AquaTROLL® 200 Data Logger) to measure and record water level, pressure, conductivity, and temperature over a one-week timeframe.

If measurable LNAPL is encountered in the recovery well, a groundwater sample will not be collected, and a baildown test will be conducted to determine the volume of LNAPL that could potentially be recovered and recovery time for the LNAPL elevation to equilibrate in the well. The bail down test will be conducted in accordance with the American Petroleum Institute (API) User Guide for API LNAPL Transmissivity Workbook: A Tool for Baildown Test Analysis (API, April 2016). The baildown test will be conducted approximately one week following recovery well installation to ensure equilibrium, contact, and communication between formation and well. The test will begin with the removal of the well manhole cover and cap to allow for equilibrium of the groundwater and LNAPL with atmospheric pressure. Static water and LNAPL levels will be recorded. Based on the determined viscosity of the LNAPL, either a peristaltic pump or bailer (3-inch x 26-inch) will be used to recover LNAPL. The LNAPL will be emptied into a 5-gallon bucket so the quantity of LNAPL and water can be measured and recorded. Upon completion of LNAPL removal, groundwater and LNAPL level measurements will be collected initially every couple of minutes and then approximately once per hour (API recommends 20 to 30 measurements collected over the testing period) over the approximately 4- to 6-hour testing period. The API LNAPL Transmissivity Workbook spreadsheet will be used to calculate transmissivity of the LNAPL.

Purging of the wells prior to sampling will be conducted using low flow purging methodologies with disposable polyethylene tubing and a submersible pump. Field parameters to be measured before and during the sampling will consist of pH, specific conductance, oxidation-reduction

potential (ORP), temperature, dissolved oxygen, and turbidity. The groundwater will be inspected for the presence of any odor, surface sheen and/or LNAPL. Sample collection will be conducted following a three well volume purge.

Groundwater samples from MW-1 through MW-5 will initially be analyzed for TCL/TAL and the emerging contaminants PFAS and 1,4-dioxane.

5.6 Soil Vapor Point Installation

The direct-push drill rig will be utilized to core to 5.0 feet below grade at nine locations on the Site (SV-1 through SV-9). A 6- or 12-inch Geoprobe® stainless-steel soil vapor implant will be inserted above suspected water near the bottom of the borehole. Polyethylene tubing will extend from the insert to the surface. Sand will be placed to cover the impact and the remaining approximately 4.0 feet of open hole will be sealed with bentonite grout to ground surface. A leak check will be performed on the entire sample train using a tracer compound (e.g., helium) to confirm sampling methodology at the proposed location. The leak check will be performed to ensure that there is less than 10% helium in the purged air.

PROPOSED SOIL VAPOR POINT LOCATION RATIONALE		
Point ID	**On-Site Location**	**Rationale**
SV-1	Former bulk storage tank area	Installed to evaluate a potential worst case in the area of the former bulk storage tanks.
SV-2	Former fueling canopy area	Installed to evaluate a potential worst case in the area of the former fueling canopy.
SV-3	Southeast perimeter of the Site	Installed to evaluate if there is a potential for soil vapor to migrate off-Site.
SV-4	Southeast perimeter of the Site	Installed to evaluate if there is a potential for soil vapor to migrate off-Site.
SV-5	Southeast perimeter of the Site	Installed to evaluate if there is a potential for soil vapor to migrate off-Site.
SV-6	Northeast perimeter of the Site	Installed to evaluate if there is a potential for soil vapor to migrate off-Site.

PROPOSED SOIL VAPOR POINT LOCATION RATIONALE		
Point ID	**On-Site Location**	**Rationale**
SV-7	North perimeter of the Site	Installed to evaluate if there is a potential for soil vapor to migrate off-Site.
SV-8	Northwest perimeter of the Site	Installed to evaluate if there is a potential for soil vapor to migrate off-Site.
SV-9	Northwest perimeter of the Site	Installed to evaluate if there is a potential for soil vapor to migrate off-Site.

5.6.1 Soil Vapor Sampling

Prior to sample collection from the vapor probe/core hole, three purge volumes will be evacuated from the sample train at a flow rate not to exceed 200 milliliters per minute. The soil vapor samples will be collected using a 6-liter stainless-steel Summa canister over an 8-hour sample duration.

The soil vapor samples will be analyzed for VOCs via USEPA Method TO-15.

5.6.2 Ambient Air Sampling

To evaluate the potential influence from outdoor sources, one ambient air sample (AA-1) will be collected in conjunction with the soil vapor samples. The ambient air sample will be collected using a 6-liter stainless-steel Summa canister over an 8-hour sample duration that will encompass the soil vapor sampling event.

The ambient air sample will be analyzed for VOCs via USEPA Method TO-15.

5.7 Soil Boring Installation

This task will involve advancing seven soil borings (V-10 through V-16). The location of the soil borings is depicted in **Figure 10**. The soil borings will be installed via direct-push (i.e., Geoprobe®)

drilling methodologies to an anticipated maximum depth of 15 feet bgs. Details of the soil boring completion depth, groundwater depth, and presence of LNAPL will be recorded by LKB in the field. The rationale for the proposed soil boring locations is summarized in the following table.

PROPOSED SOIL BORING LOCATION RATIONALE		
Well ID	**On-Site Location**	**Rationale**
V-10	Along East 69th Street Property Line	Delineation of potential soil impacts on the up-gradient side of the Site and to evaluate potential for impacts to migrate off-site.
V-11	Along East 69th Street Property Line	Delineation of potential soil impacts on the up-gradient side of the Site and to evaluate potential for impacts to migrate off-site.
V-12	Along East 69th Street Property Line	Delineation of potential soil impacts on the up-gradient side of the Site and to evaluate potential for impacts to migrate off-site.
V-13	Along Mill Basin Property Line	Delineation of potential soil impacts on the down-gradient side of the Site and to evaluate potential for impacts to migrate off-site.
V-14	Along Mill Basin Property Line	Delineation of potential soil impacts on the down-gradient side of the Site and to evaluate potential for impacts to migrate off-site.
V-15	Center of the Site	Delineation of potential soil impacts in the central portion of the Site.
V-16	Center of the Site	Delineation of potential soil impacts in the central portion of the Site.

5.7.1 Soil Sampling

Soil samples will be collected continuously and screened in the field using a PID. The PID readings, soil lithology, and field observations will be documented in the field by LKB. Up to four soil samples (one soil sample per interval) will be collected from the following intervals:

- Surficial soil in the uppermost two inches.
- Interval with the strongest evidence of suspected impacts based on PID readings, odors, staining, and other indicators.
- Water table interface
- From the six-inch interval below the vertical extent of impacts (if encountered) or the six-inch interval above the boring termination depth.

Soil samples will be collected at five locations (V-10 through V-14) and will be analyzed for the complete TCL/TAL suite of analyses. Up to four soil samples (one soil sample per interval noted above) will be collected at each location, but there will be a minimum one sample from each of the first three intervals. In addition, the soil samples from V-11 will be analyzed for 1,4-dioxane and PFAS. These soil samples will be grab samples; no composite samples are proposed.

5.8 Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) was developed to provide specific procedures for monitoring, documenting, and responding to potential airborne contaminants during ground-intrusive remedial activities at the Site. The purpose of the CAMP is to protect downwind community (i.e., off-Site receptors including residences, businesses, and on-Site workers not directly involved in the intrusive work) from potential releases associated with remedial work conducted at the Site. A copy of the CAMP is included in **Appendix D**.

CAMP readings will be reported to the NYSDEC/NYSDOH on a weekly basis, and exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH project managers on the same day or the next business day, if after hours. Reporting of the CAMP exceedance will include the nature of the exceedance, the reason for the exceedance, corrective actions taken, and a summary of the effectiveness of the corrective actions taken.

5.9 Investigation-Derived Waste Management

Investigation-derived waste (IDW) generated during the RI activities would include soil cuttings generated during the soil boring and monitoring/recovery well installations, purge development water generated during monitoring/recovery well development and sampling, and potential LNAPL.

Soil cuttings generated during the installation of the permanent monitoring/recovery wells will be placed in sealed and labeled U.S. Department of Transportation (DOT)-approved 55-gallon drums pending off-Site disposal at a permitted facility.

Based on the documented groundwater impacts at the Site, purge development water will be containerized in DOT-approved 55-gallon drums for off-Site disposal at a permitted facility. Any LNAPL that is encountered will also be placed in DOT-approved 55-gallon drums for off-Site disposal at a permitted facility.

During the installation of soil borings, the soil will be disposed at the Site, within the borehole that generated them, unless free product or grossly contaminated soil are present in the cuttings. Contaminated soil cuttings, if encountered, will be placed in sealed and labeled DOT-approved 55-gallon drums pending off-Site disposal at a permitted facility. All boreholes which require drill cuttings disposal would ultimately be filled with bentonite chips and hydrated.

Disposable sampling equipment including spoons, gloves, bags, paper towels, etc. that encountered environmental media will be double bagged and disposed as municipal trash in a facility trash dumpster as general refuse.

5.10 EQuIS® Deliverables

All data generated during the completion of the RI activities will be submitted to the NYSDEC in the standard EQuIS® electronic data deliverable (EDD) format. Confirmation of a successful upload of the EDD will be provided to the NYSDEC.

5.11 Qualitative Human Health Exposure Assessment

A qualitative human health exposure assessment will be completed to evaluate and document the potential human exposure to Site-related contamination both on-and off-Site, and to identify the potentially exposed populations, including those currently exposed and those with the for future exposure to Site-related contaminants e. The assessment will be conducted in accordance with Appendix 3B – New York State Department of Health Qualitative Human Health Exposure Assessment of NYSDEC DER-10: Technical Guidance for Site Investigation and Remediation.

5.12 Fish and Wildlife Resources Impact Analysis

As discussed in Section 1.5, an approximately 1,024-square foot area on the Site, landward of the bulkhead, is located within NYSDEC tidal wetlands jurisdiction. In addition, the East Mill Basin waterbody adjoins the Site to the southwest. The NYSDEC Environmental Resource Mapper was used to identify natural resources and environmental features (i.e., wetlands, surface water bodies, endangered or threatened animals and plants, and significant natural communities, such as rare or high-quality forests or other habitat types) that are state or federally protected, or of conservation concern. Review of the mapping program identified that a portion of the Site was located within a Significant Natural Communities area, identified as low salt marsh and marine back-barrier lagoon for Jamaica Bay.

Based on a review of Appendix 3C – Fish and Wildlife Resources Impact Analysis Decision Key of NYSDEC DER-10: Technical Guidance for Site Investigation and Remediation, a Fish and Wildlife Resources Impact Analysis (FWRIA) will be completed in accordance with Section 3.10.1 of NYSDEC DER-10: Technical Guidance for Site Investigation and Remediation. The purpose of the FWRIA is to identify actual or potential impacts to fish and wildlife resources from Site contaminants of ecological concern (i.e., resource characterization).

If the results of the resource characterization indicate that further assessment is needed, an ecological impact assessment will be conducted to further define and evaluate the adverse impacts to fish and wildlife resources.

5.13 Reporting

5.13.1 Monthly Progress Reports

In accordance with the BCA, monthly progress reports will be provided to the NYSDEC and NYSDOH. The progress reports will include at a minimum: all actions relative to the Site during the previous reporting period and those anticipated during the next reporting period; all approved activity modifications (changes of work scope and/or schedule); all results of sampling and tests and all other data received or generated in connection with the Site in the previous reporting period; information regarding percentage of completion; unresolved delays encountered or anticipated that may affect the future schedule, and efforts to mitigate such delays; and information regarding activities undertaken in support of the CP Plan during the previous reporting period and those anticipated for the next reporting period.

5.13.2 Remedial Investigation Report

Upon completion of all field work and receipt of laboratory analytical results, LKB will prepare a Remedial Investigation Report (RIR) in accordance with NYSDEC DER-10: Technical Guidance for Site Investigation and Remediation. The RIR will include the following: a summary of the Site history and previous investigations; description of on- and off-Site land use; sampling methodology and field observations for the RI activities; an evaluation of RI analytical results and findings; and conclusions and recommendations for further assessment (if warranted). The RIR will summarize the nature and extent of contamination at each area of concern and identify unacceptable exposure pathways (as determined via the Qualitative Human Health Exposure

Assessment). In addition, the RIR will include the FWRIA to identify actual or potential impacts to fish and wildlife resources from Site contaminants of ecological concern.

Soil analytical results will be compared to the NYSDEC Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives and appropriate Part 375-6.8(b) Restricted Use and Commercial Use Soil Cleanup Objectives. Groundwater analytical results will be compared to the NYSDEC Part 703 Groundwater Quality Standards (Class GA) and Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 AWQS.

A thorough evaluation of the laboratory data will be completed and a DUSR will be prepared by a qualified, independent data validation expert. The DUSR will be prepared in accordance with Appendix 2B, Guidance for Data Deliverables and the Development of Data Usability Summary Reports included in NYSDEC DER-10: Technical Guidance for Site Investigation and Remediation.

The report will include Site location and sample location figures, color photographic documentation, summary of methods, laboratory reports and data summaries, and other pertinent support documentation as required by applicable NYSDEC regulations.

5.14 Implementation Schedule

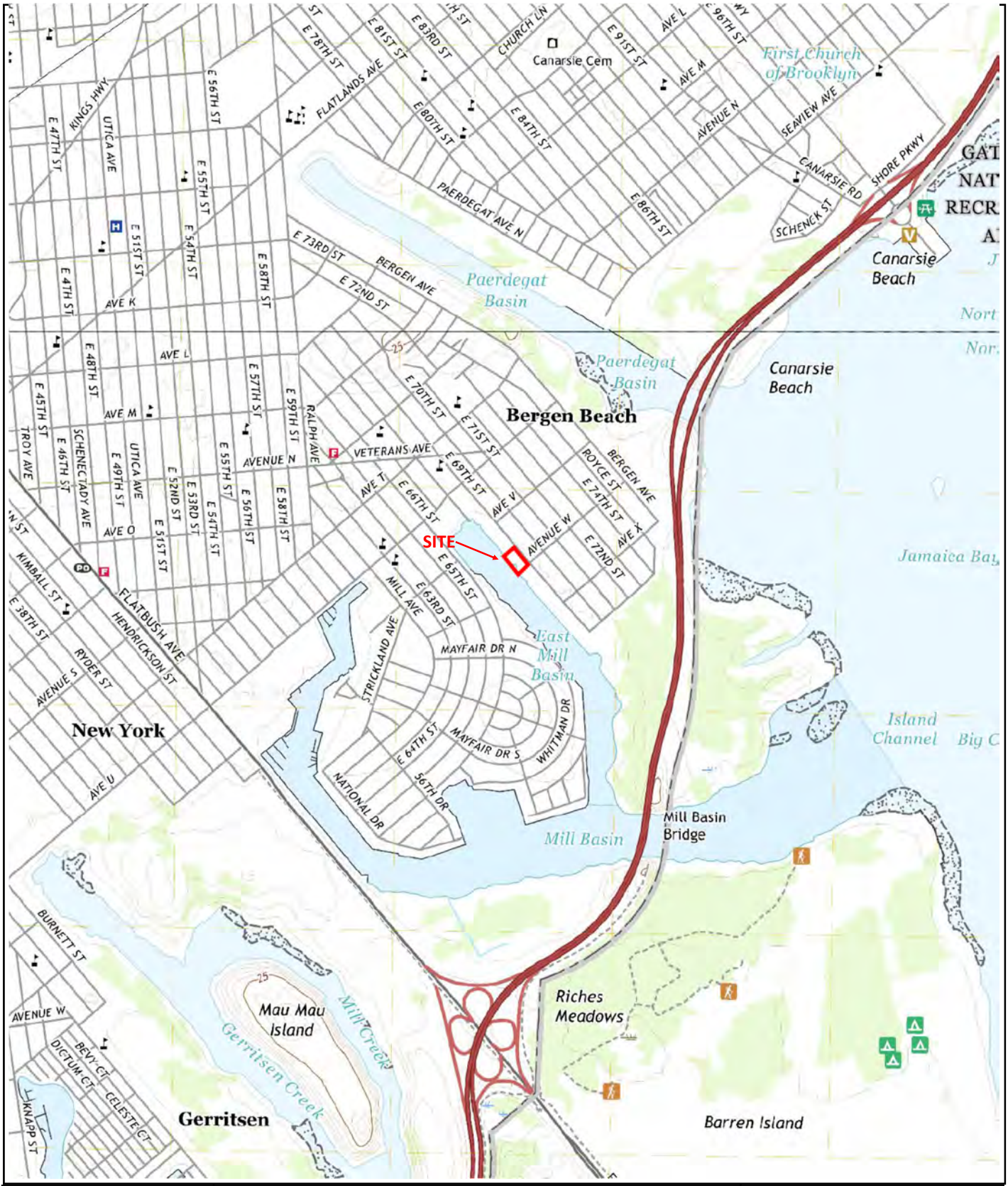
The following is the estimated schedule to implement the RI activities.

ESTIMATED PROJECT SCHEDULE	
ACTIVITIES	**COMPLETION DATE**
Remedial Investigation Work Plan (RIWP)	
Public Comment Period End (30 Days)	03/28/2025
Submit Revised RIWP to NYSDEC	03/31/2025

ESTIMATED PROJECT SCHEDULE	
ACTIVITIES	**COMPLETION DATE**
NYSDEC Approval of RIWP	04/07/2025
Remedial Investigation (RI)	
Implement RI Activities (Well Installation; Soil, Groundwater & LNAPL Sampling)	04/21/2025
Submit Draft RIR to NYSDEC	05/19/2025
NYSDEC Review of RIR	06/16/2025
Address NYSDEC Comments to RIR	06/23/2025
NYSDEC Approval of RIR	06/30/2025
Remedial Action Work Plan (RAWP)	
Submit Draft RAWP to NYSDEC	05/19/2025
NYSDEC Review of RAWP	06/05/2025
Address NYSDEC Comments to RAWP	06/12/2025
Public Comment Period Ends (45 Days)	07/24/2025
NYSDEC Approval of RAWP	07/31/2025
Remedial Action	
Submit Draft Environmental Easement	08/21/2025
NYSDEC Approval of Environmental Easement	09/18/2025
Implement Remedial Action	10/23/2025
Final Engineering Report (FER) / Site Management Plan (SMP)	
Submit Draft FER/SMP to NYSDEC	01/23/2026

ESTIMATED PROJECT SCHEDULE	
ACTIVITIES	**COMPLETION DATE**
NYSDEC Review of FER/SMP	02/23/2026
Address NYSDEC Comments to FER/SMP	03/09/2026
Certificate of Completion (COC)	
NYSDEC Issues COC	05/18/2026

FIGURES



LKB Project No. 10321.LK

N

SITE LOCATION MAP

2250 East 69th Street Site
2250 East 69th Street
Brooklyn, New York

USGS Topographic Map, Coney Island, NJ (2019); Scale 1:24,000

Lockwood, Kessler & Bartlett, Inc.
One Aerial Way · Syosset, NY 11791
516.938.0600 www.lkbinc.com

FIGURE NO. 1

35 LOT

453 BLOCK

SITE BOUNDARY MAP

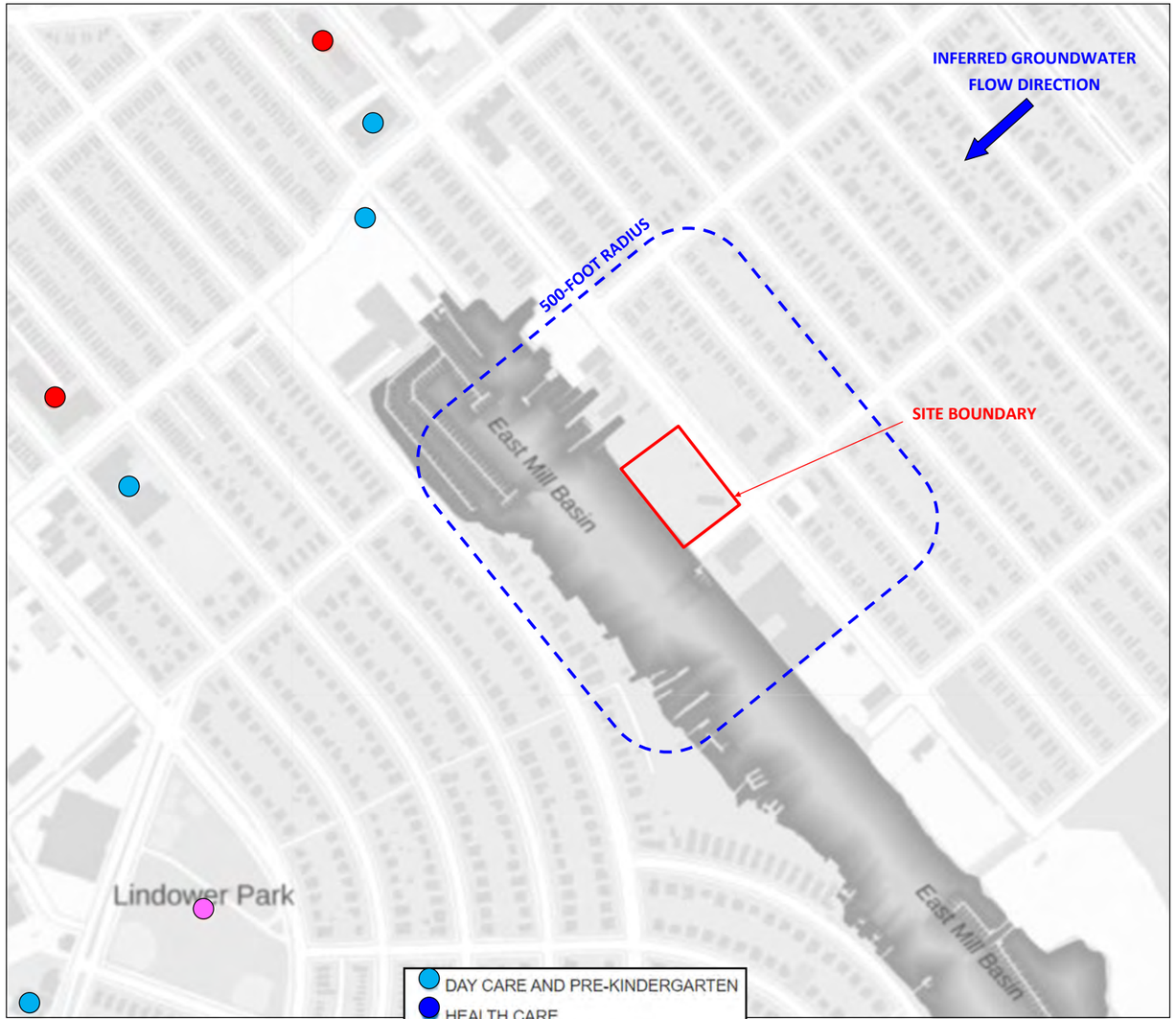
2250 East 69th Street, Brooklyn, New York

LKB Project No. 10321.LK

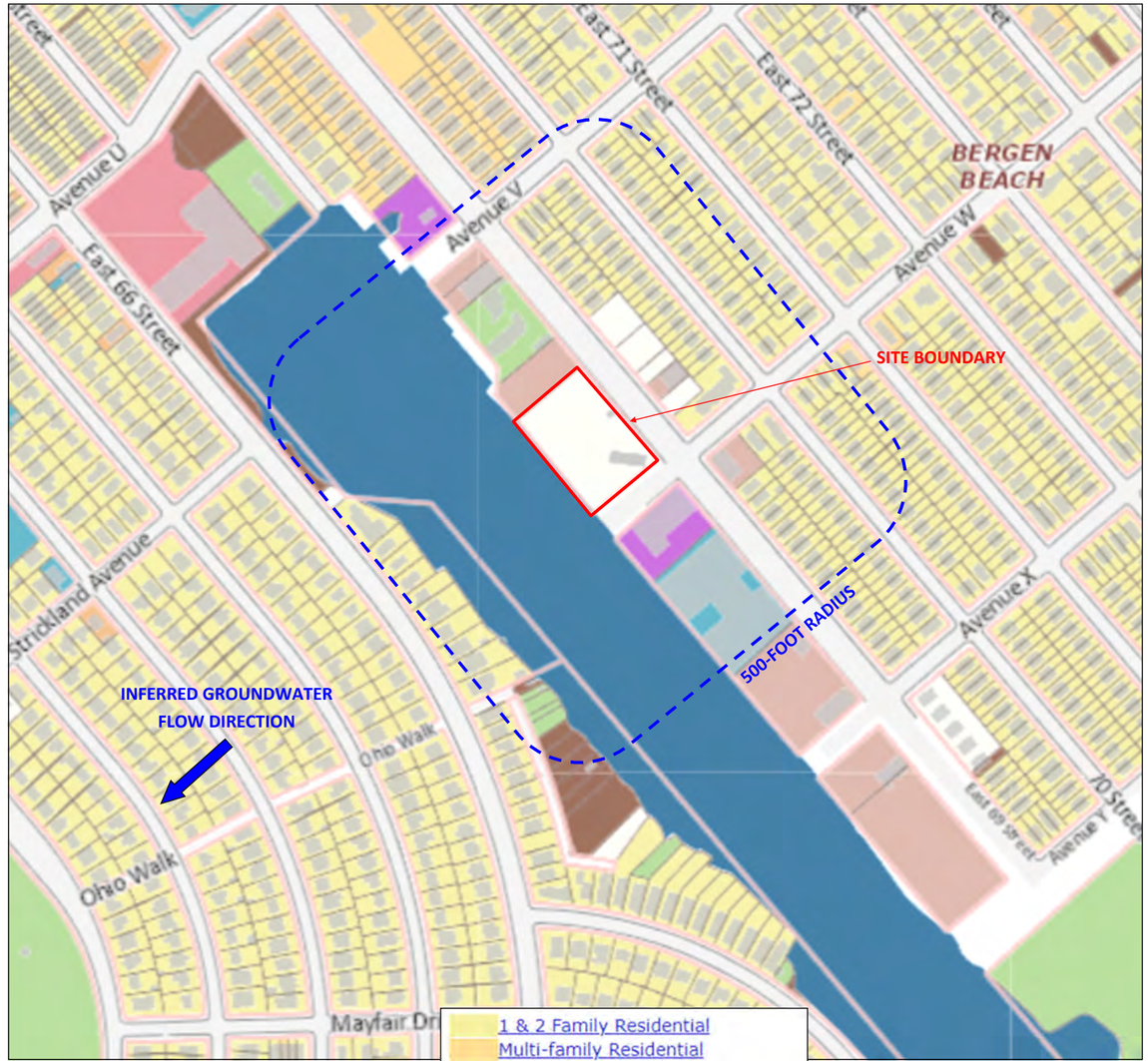
LKB CONSULTING ENGINEERS
ENGINEERING EXCELLENCE SINCE 1889
Lockwood, Kessler & Bartlett, Inc.
One Aerial Way · Syosset, NY 11791
516.938.0600 www.lkbinc.com

FIGURE NO. 2

MAP SOURCE: NYCOER SPEED MAPPING PROGRAM



MAP SOURCE: OASIS MAPPING PROGRAM



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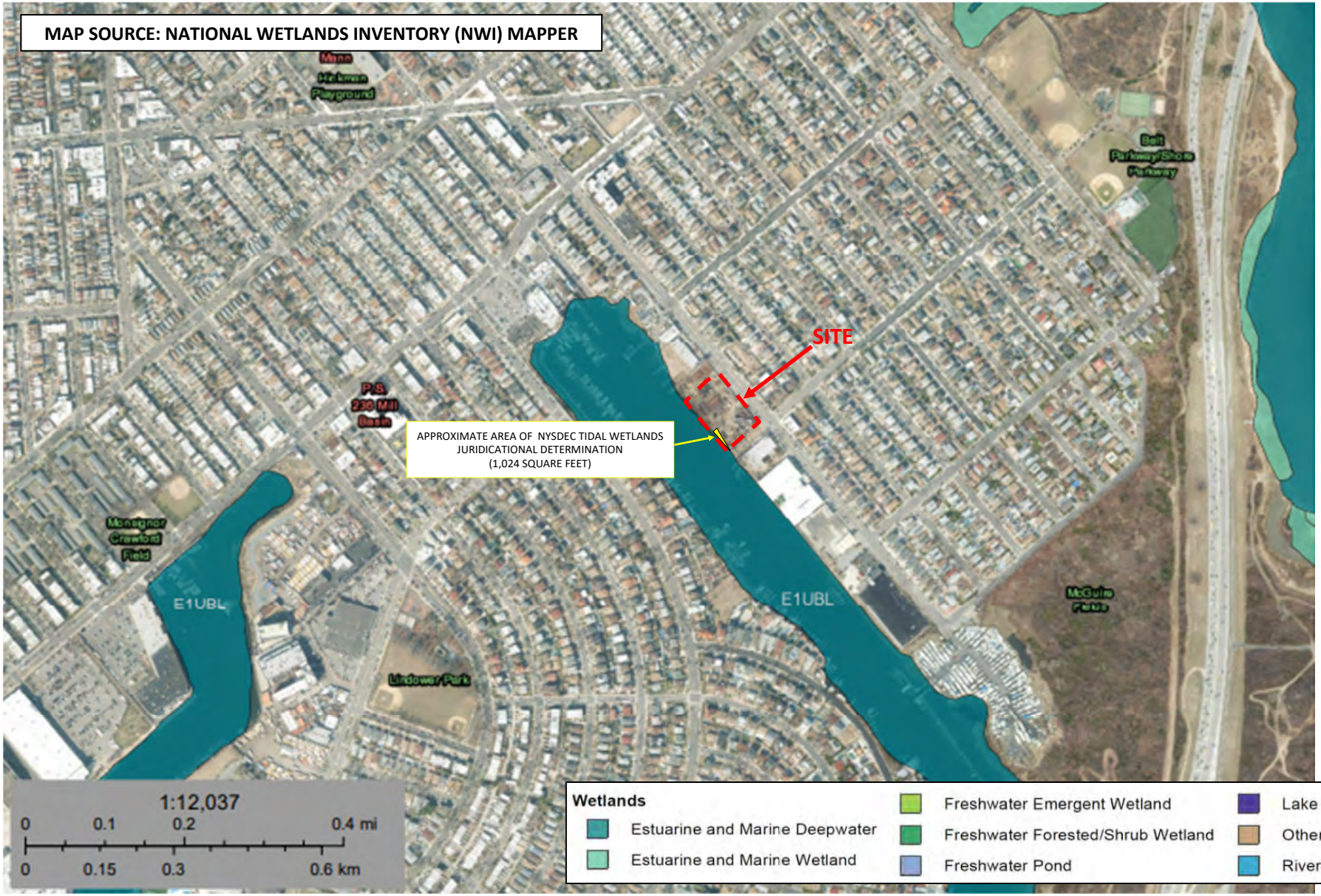
SENSITIVE RECEPTORS MAPS

2350 EAST 69TH STREET
BROOKLYN, NEW YORK

FIGURE NO. 3

LKB Project No. 10321.LK



WETLANDS MAP

2250 East 69th Street, Brooklyn, New York

LKB Project No. 10321.LK

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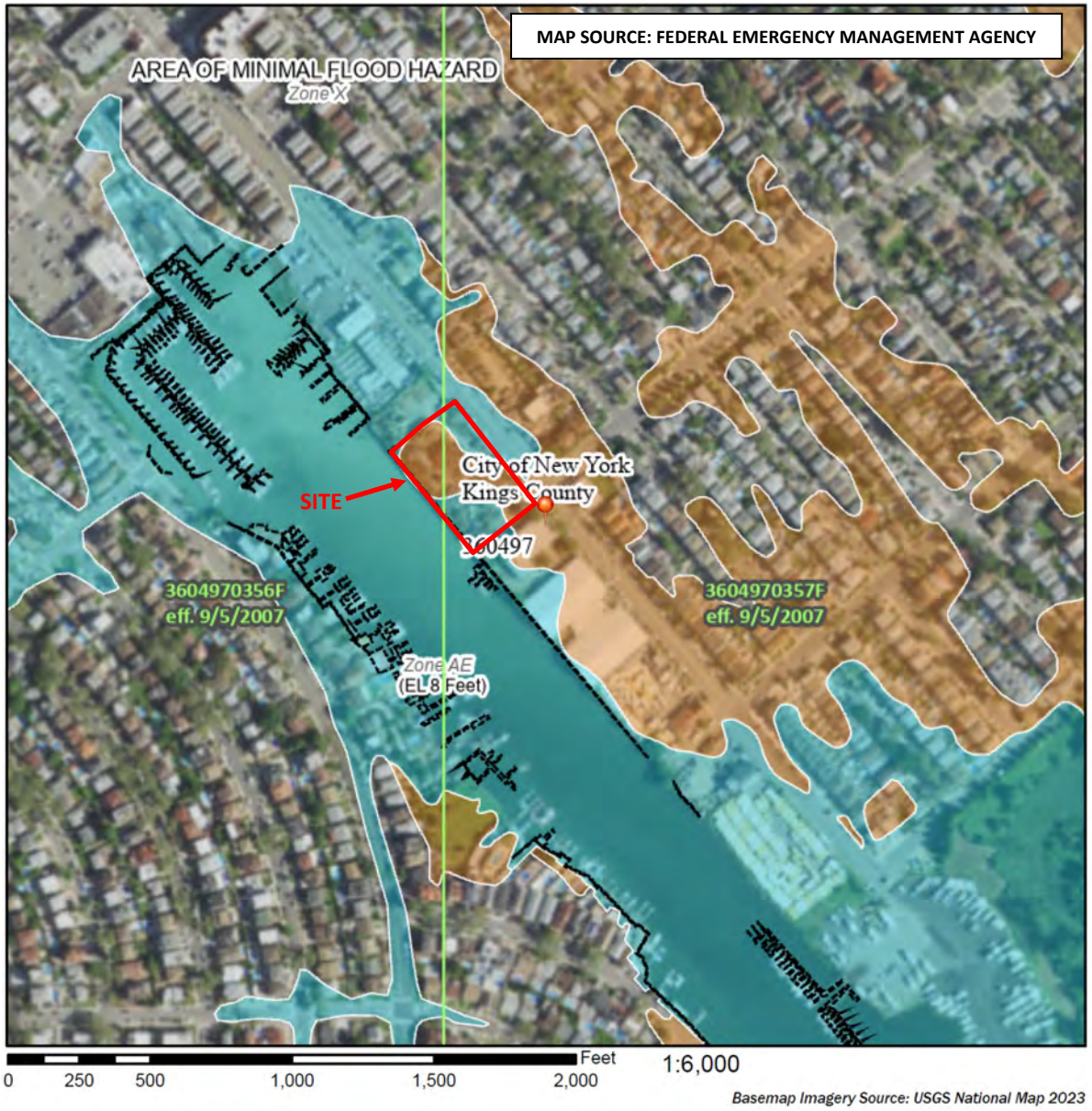
FIGURE NO. 4



SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

FLOODPLAIN MAP

2250 East 69th Street, Brooklyn, New York

LKB Project No. 10321.LK

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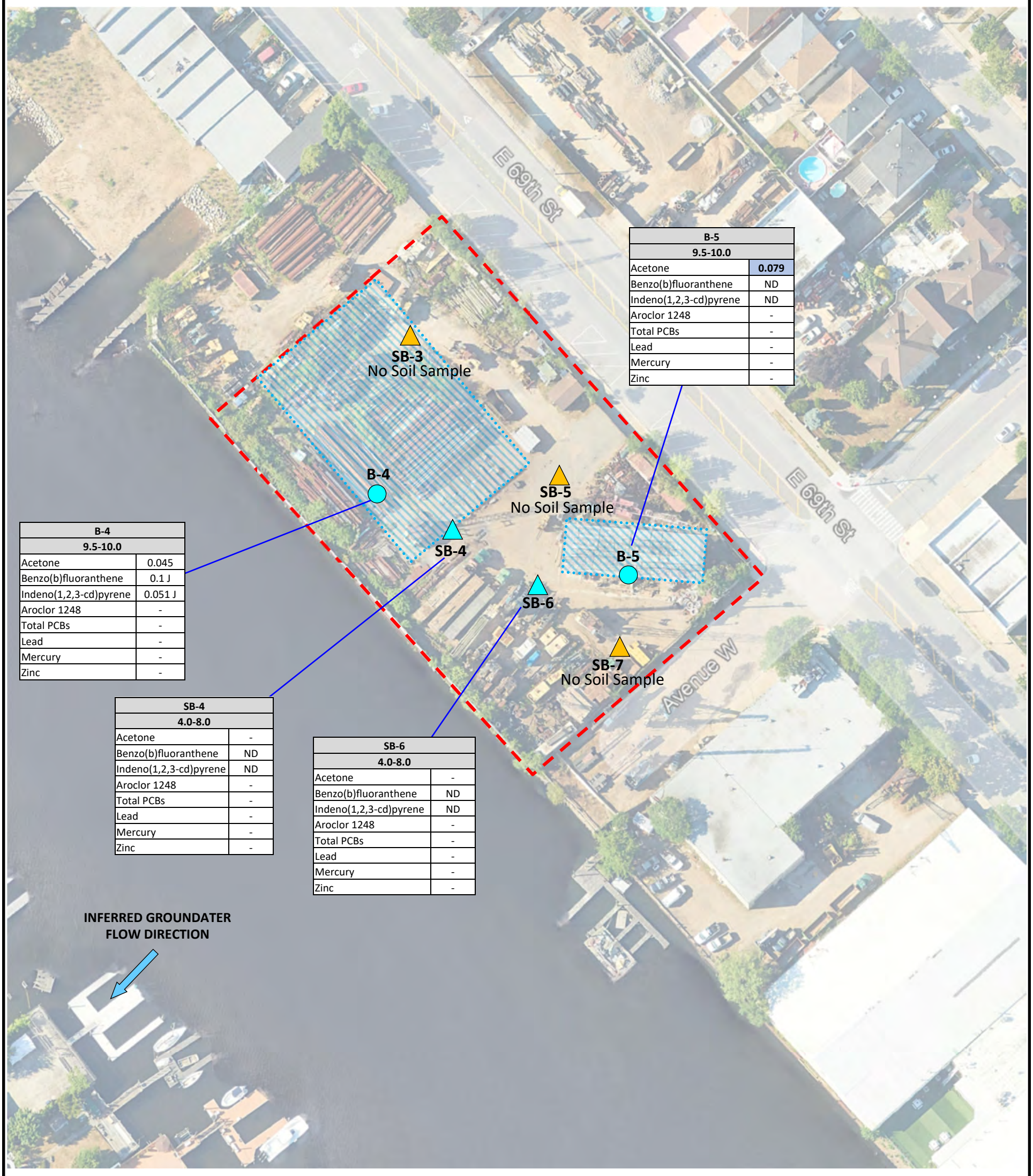
FIGURE NO. 5



B-5	
9.5-10.0	
Acetone	0.079
Benzo(b)fluoranthene	ND
Indeno(1,2,3-cd)pyrene	ND
Aroclor 1248	-
Total PCBs	-
Lead	-
Mercury	-
Zinc	-

B-4	
9.5-10.0	
Acetone	0.045
Benzo(b)fluoranthene	0.1 J
Indeno(1,2,3-cd)pyrene	0.051 J
Aroclor 1248	-
Total PCBs	-
Lead	-
Mercury	-
Zinc	-

SB-4	
4.0-8.0	
Acetone	-
Benzo(b)fluoranthene	ND
Indeno(1,2,3-cd)pyrene	ND
Aroclor 1248	-
Total PCBs	-
Lead	-
Mercury	-
Zinc	-

SB-6	
4.0-8.0	
Acetone	-
Benzo(b)fluoranthene	ND
Indeno(1,2,3-cd)pyrene	ND
Aroclor 1248	-
Total PCBs	-
Lead	-
Mercury	-
Zinc	-

	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO
Acetone	1000	500	100	100	0.05	0.05
Benzo(b)fluorenthene	11	5.6	1	1	1.7	1
Indeno(1,2,3-cd)pyrene	11	5.6	0.5	0.5	8.2	0.5
Aroclor 1248	25	1	1	1	3.2	0.1
Total PCBs	25	1	1	1	3.2	0.1
Lead	3900	1000	400	400	450	63
Mercury	5.7	2.8	0.81	0.81	0.73	0.18
Zinc	10000	10000	2200	10000	2480	109

NOTE: ALL CONCENTRATIONS IN MILLIGRAMS PER KILOGRAM (MG/KG)

FORMER PETROLEUM BULK STORAGE

SITE BOUNDARY

GCE SOIL & GROUNDWATER SAMPLE (APRIL 2023)

GCE SOIL SAMPLE ONLY (APRIL 2023)

VERTEX SOIL & GROUNDWATER SAMPLE (SEPTEMBER 2023)

VERTEX SOIL SAMPLE ONLY (SEPTEMBER 2023)

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SOIL RESULTS MAP (EXCEEDANCES ONLY)

2250 East 69th Street Site
2250 East 69th Street
Brooklyn, New York

MAP SOURCE: GOOGLE EARTH, AERIAL DATE 2022

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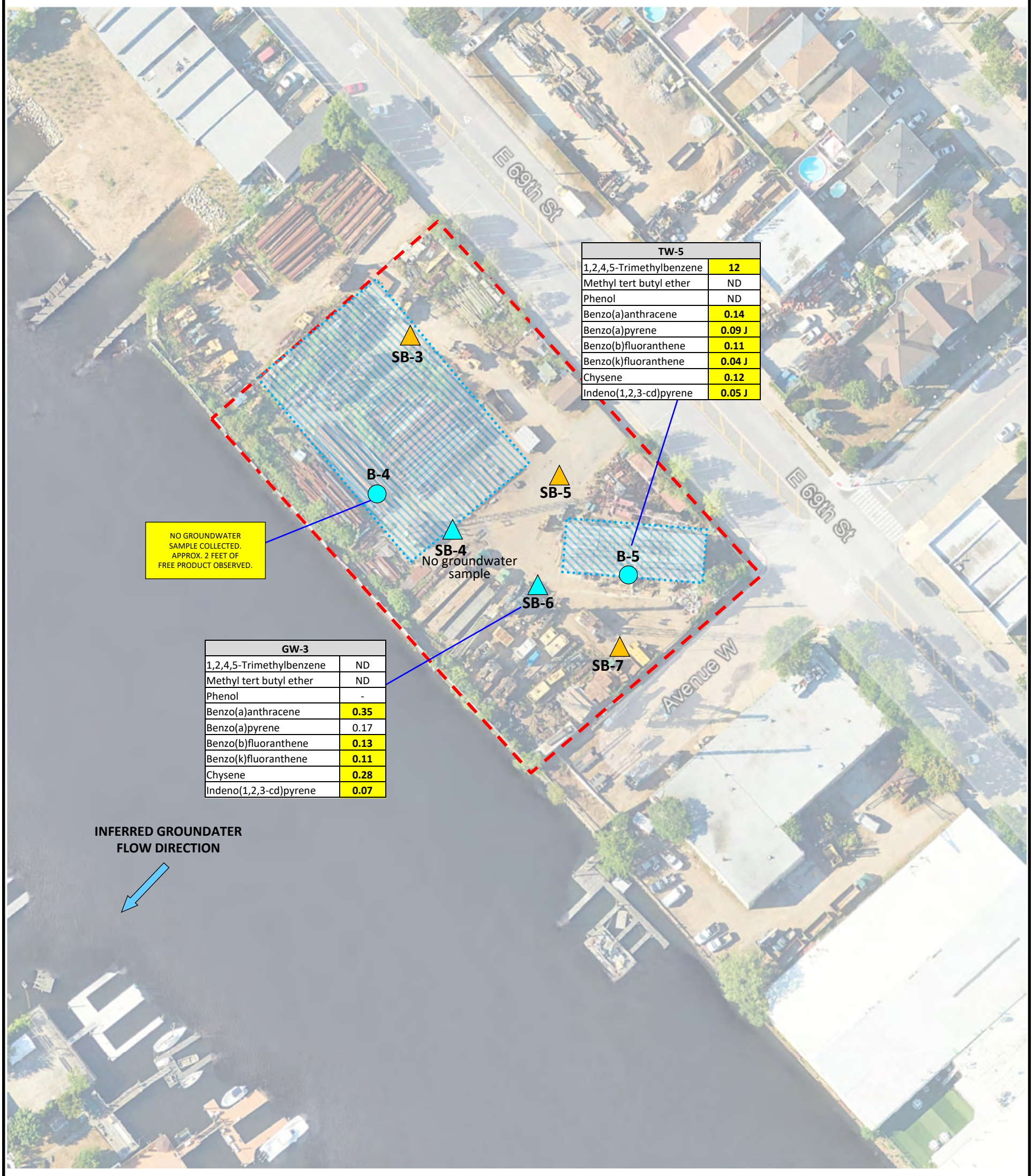
FIGURE NO. 6



TW-5	
1,2,4,5-Trimethylbenzene	**12**
Methyl tert butyl ether	ND
Phenol	ND
Benzo(a)anthracene	**0.14**
Benzo(a)pyrene	**0.09 J**
Benzo(b)fluoranthene	**0.11**
Benzo(k)fluoranthene	**0.04 J**
Chysene	**0.12**
Indeno(1,2,3-cd)pyrene	**0.05 J**

GW-3	
1,2,4,5-Trimethylbenzene	ND
Methyl tert butyl ether	ND
Phenol	-
Benzo(a)anthracene	**0.35**
Benzo(a)pyrene	0.17
Benzo(b)fluoranthene	**0.13**
Benzo(k)fluoranthene	**0.11**
Chysene	**0.28**
Indeno(1,2,3-cd)pyrene	**0.07**

NOTE: ALL CONCENTRATIONS IN MICROGRAMS PER LITER (ug/L)

	AWQS	Class GA
1,2,4,5-Trimethylbenzene	**5**	**5**
Methyl tert butyl ether	**10**	**10**
Phenol	**1**	**2**
Benzo(a)anthracene	**0.002**	**0.002**
Benzo(a)pyrene	**0**	**0**
Benzo(b)fluoranthene	**0.002**	**0.002**
Benzo(k)fluoranthene	**0.002**	**0.002**
Chysene	**0.002**	**0.002**
Indeno(1,2,3-cd)pyrene	**0.002**	**0.002**

FORMER PETROLEUM BULK STORAGE

SITE BOUNDARY

GCE SOIL & GROUNDWATER SAMPLE (APRIL 2023)

GCE SOIL SAMPLE ONLY (APRIL 2023)

VERTEX SOIL & GROUNDWATER SAMPLE (SEPTEMBER 2023)

VERTEX SOIL SAMPLE ONLY (SEPTEMBER 2023)

LKB Project No. 10321.LK

GROUNDWATER RESULTS MAP (VOC & SVOC)

2250 East 69th Street Site
2250 East 69th Street
Brooklyn, New York

MAP SOURCE: GOOGLE EARTH, AERIAL DATE 2022

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FIGURE NO. 7

NOTE: ALL CONCENTRATIONS IN MICROGRAMS PER LITER (ug/L)

- FORMER PETROLEUM BULK STORAGE
- SITE BOUNDARY
- GCE SOIL & GROUNDWATER SAMPLE (APRIL 2023)
- GCE SOIL SAMPLE ONLY (APRIL 2023)
- VERTEX SOIL & GROUNDWATER SAMPLE (SEPTEMBER 2023)
- VERTEX SOIL SAMPLE ONLY (SEPTEMBER 2023)

LKB Project No. 10321.LK

GROUNDWATER RESULTS MAP (METALS)

2250 East 69th Street Site
2250 East 69th Street
Brooklyn, New York

MAP SOURCE: GOOGLE EARTH, AERIAL DATE 2022

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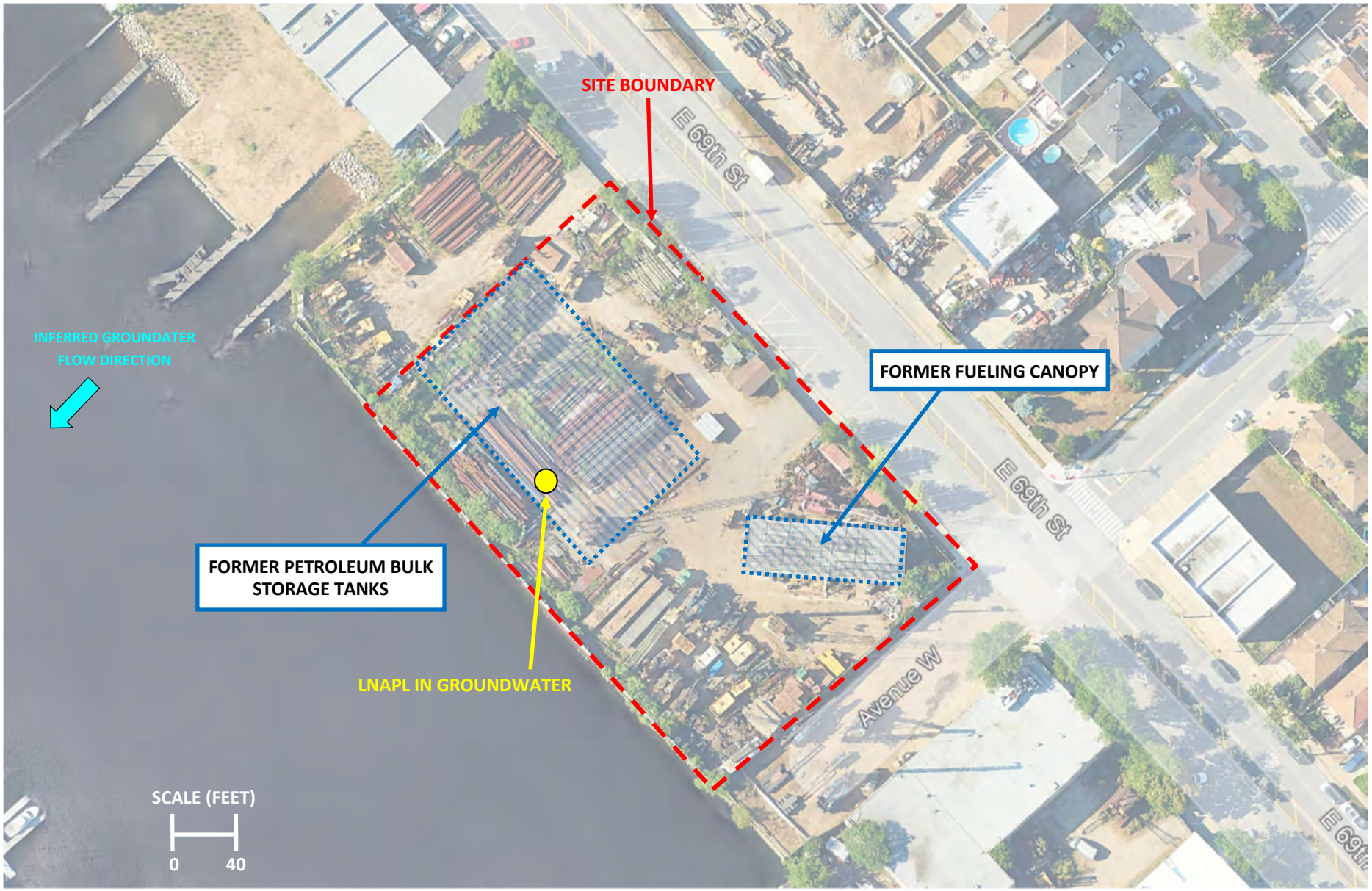
FIGURE NO. 8



AREA OF CONCERN (AOC) MAP

2250 East 69th Street, Brooklyn, New York

LKB Project No. 10321.LK

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FIGURE NO. 9

SITE BOUNDARY

FORMER PETROLEUM BULK STORAGE

GCE SOIL & GROUNDWATER SAMPLE LOCATION (APRIL 2023)

GCE BORING LOCATION (APRIL 2023) - NO SOIL/GROUNWATER SAMPLE COLLECTED

VERTEX SOIL & GROUNDWATER SAMPLE LOCATION (SEPTEMBER 2023)

VERTEX SOIL SAMPLE ONLY (SEPTEMBER 2023)

PROPOSED PERMANENT MONITORING WELL

PROPOSED PERMANENT MONITORING/RECOVERY WELL

PROPOSED TEMPORARY MONITORING WELL

PROPOSED SOIL BORING

PROPOSED SOIL VAPOR POINT

PROPOSED AMBIENT AIR SAMPLE

LKB Project No. 10321.LK

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PROPOSED SAMPLE LOCATION MAP

2250 East 69th Street Site
2250 East 69th Street
Brooklyn, New York

MAP SOURCE: GOOGLE EARTH, AERIAL DATE 2022

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FIGURE NO. 10

TABLES

TABLE 1

SENSITIVE HUMAN RECEPTORS (500-FOOT RADIUS)

2250 East 69th Street Site - Site No. C224404

Off-Site Property Use	Street Number	Street Name	Category	Distance (feet)	Direction from the Site	Gradient in Relation to the Site
Dwelling	6917	Avenue W	Residential	90	Northeast	Up-gradient
Dwelling	2233	East 69 Street	Residential	135	North	Cross-gradient
Dwelling	2231	East 69 Street	Residential	165	North	Cross-gradient
Dwelling	2227	East 69 Street	Residential	195	North-northwest	Cross-gradient
Dwelling	2268	East 70 Street	Residential	200	Northeast	Up-gradient
Dwelling	2266	East 70 Street	Residential	200	Northeast	Up-gradient
Dwelling	2264	East 70 Street	Residential	200	Northeast	Up-gradient
Dwelling	2260	East 70 Street	Residential	200	Northeast	Up-gradient
Dwelling	2258	East 70 Street	Residential	200	Northeast	Up-gradient
Dwelling	2256	East 70 Street	Residential	200	Northeast	Up-gradient
Dwelling	2254	East 70 Street	Residential	200	Northeast	Up-gradient
Dwelling	2250	East 70 Street	Residential	200	Northeast	Up-gradient
Dwelling	2248	East 70 Street	Residential	200	Northeast	Up-gradient
Dwelling	2246	East 70 Street	Residential	200	North	Cross-gradient
Dwelling	2313	East 69 Street	Residential	200	Southeast	Cross-gradient
Dwelling	6914	Avenue W	Residential	220	East	Cross-gradient
Dwelling	2225	East 69 Street	Residential	215	North-northwest	Cross-gradient
Dwelling	2244	East 70 Street	Residential	215	North	Cross-gradient
Dwelling	2240	East 70 Street	Residential	225	North	Cross-gradient
Dwelling	2315	East 69 Street	Residential	235	Southeast	Cross-gradient
Dwelling	2234	East 70 Street	Residential	240	North	Cross-gradient
Dwelling	2221	East 69 Street	Residential	245	Northwest	Cross-gradient
Dwelling	2232	East 70 Street	Residential	245	North	Cross-gradient
Dwelling	2228	East 70 Street	Residential	260	North	Cross-gradient
Dwelling	2306	East 70 Street	Residential	265	Northeast	Up-gradient
Dwelling	2316	East 70 Street	Residential	265	East	Cross-gradient
Dwelling	2219	East 69 Street	Residential	270	Northwest	Cross-gradient
Dwelling	2321	East 69 Street	Residential	270	Southeast	Cross-gradient
Dwelling	2226	East 70 Street	Residential	275	North	Cross-gradient
Dwelling	2318	East 70 Street	Residential	290	East	Cross-gradient
Dwelling	2222	East 70 Street	Residential	295	North	Cross-gradient
Dwelling	2323	East 69 Street	Residential	295	Southeast	Cross-gradient
Dwelling	2215	East 69 Street	Residential	300	Northwest	Cross-gradient
Dwelling	2322	East 70 Street	Residential	300	East	Cross-gradient
Dwelling	2325	East 69 Street	Residential	315	Southeast	Cross-gradient
Dwelling	2213	East 69 Street	Residential	320	Northwest	Cross-gradient
Dwelling	2218	East 70 Street	Residential	320	North	Cross-gradient
Dwelling	2324	East 70 Street	Residential		East	Cross-gradient
Dwelling	2329	East 69 Street	Residential	335	Southeast	Cross-gradient
Dwelling	2328	East 70 Street	Residential	340	East	Cross-gradient
Dwelling	6902	Avenue V	Residential	350	Northwest	Cross-gradient
Dwelling	6904	Avenue V	Residential	350	Northwest	Cross-gradient
Dwelling	2214	East 70 Street	Residential	350	North-northwest	Cross-gradient
Dwelling	2241	East 70 Street	Residential	350	Northeast	Up-gradient
Dwelling	2245	East 70 Street	Residential	350	Northeast	Up-gradient
Dwelling	2249	East 70 Street	Residential	350	Northeast	Up-gradient
Dwelling	2253	East 70 Street	Residential	350	Northeast	Up-gradient
Dwelling	2255	East 70 Street	Residential	350	Northeast	Up-gradient
Dwelling	2261	East 70 Street	Residential	350	Northeast	Up-gradient
Dwelling	2263	East 70 Street	Residential	350	Northeast	Up-gradient
Dwelling	2267	East 70 Street	Residential	350	Northeast	Up-gradient
Dwelling	2269	East 70 Street	Residential	350	Northeast	Up-gradient
Dwelling	7003	Avenue W	Residential	350	Northeast	Up-gradient
Dwelling	6906	Avenue V	Residential	360	North-northwest	Cross-gradient
Dwelling	6908	Avenue V	Residential	360	North-northwest	Cross-gradient
Dwelling	2239	East 70 Street	Residential	360	North	Cross-gradient
Dwelling	2330	East 70 Street	Residential	360	East-Southeast	Cross-gradient
Dwelling	2233	East 70 Street	Residential	365	North	Cross-gradient
Dwelling	7004	Avenue W	Residential	365	Northeast	Up-gradient
Dwelling	2331	East 69 Street	Residential	370	Southeast	Cross-gradient
Dwelling	2210	East 70 Street	Residential	375	Northwest	Cross-gradient
Dwelling	2334	East 70 Street	Residential	380	East-Southeast	Cross-gradient
Dwelling	2333	East 69 Street	Residential	385	Southeast	Cross-gradient
Dwelling	7005	Avenue W	Residential	390	Northeast	Up-gradient
Dwelling	2229	East 70 Street	Residential	390	North	Cross-gradient
Dwelling	2208	East 70 Street	Residential	395	Northwest	Cross-gradient
Dwelling	2227	East 70 Street	Residential	400	North	Cross-gradient
Dwelling	7006	Avenue W	Residential	400	Northeast	Up-gradient
Dwelling	2336	East 70 Street	Residential	405	East-Southeast	Cross-gradient

TABLE 1

SENSITIVE HUMAN RECEPTORS (500-FOOT RADIUS)

2250 East 69th Street Site - Site No. C224404

Off-Site Property Use	Street Number	Street Name	Category	Distance (feet)	Direction from the Site	Gradient in Relation to the Site
Dwelling	2204	East 70 Street	Residential	415	Northwest	Cross-gradient
Dwelling	2223	East 70 Street	Residential	415	North	Cross-gradient
Dwelling	2335	East 69 Street	Residential	420	Southeast	Cross-gradient
Dwelling	2340	East 70 Street	Residential	425	Southeast	Cross-gradient
Dwelling	7010	Avenue W	Residential	430	Northeast	Up-gradient
Dwelling	2235	East 66 Street	Residential	435	Southwest	Down-gradient
Dwelling	2241	East 66 Street	Residential	435	Southwest	Down-gradient
Dwelling	2247	East 66 Street	Residential	435	Southwest	Down-gradient
Dwelling	2253	East 66 Street	Residential	435	Southwest	Down-gradient
Dwelling	2259	East 66 Street	Residential	435	Southwest	Down-gradient
Dwelling	2265	East 66 Street	Residential	435	Southwest	Down-gradient
Dwelling	2271	East 66 Street	Residential	435	Southwest	Down-gradient
Dwelling	2277	East 66 Street	Residential	435	Southwest	Down-gradient
Dwelling	2281	East 66 Street	Residential	435	Southwest	Down-gradient
Dwelling	2285	East 66 Street	Residential	435	Southwest	Down-gradient
Dwelling	2303	East 66 Street	Residential	435	Southwest	Down-gradient
Dwelling	2307	East 66 Street	Residential	435	Southwest	Down-gradient
Dwelling	2221	East 70 Street	Residential	430	North	Cross-gradient
Dwelling	2202	East 70 Street	Residential	440	Northwest	Cross-gradient
Dwelling	2282	East 71 Street	Residential	440	Northeast	Up-gradient
Dwelling	2280	East 71 Street	Residential	440	Northeast	Up-gradient
Dwelling	2217	East 70 Street	Residential	440	North	Cross-gradient
Dwelling	2341	East 69 Street	Residential	445	Southeast	Cross-gradient
Dwelling	2215	East 70 Street	Residential	450	North	Cross-gradient
Dwelling	2342	East 70 Street	Residential	450	Southeast	Cross-gradient
Dwelling	2209	East 70 Street	Residential	460	North	Cross-gradient
Dwelling	7012	Avenue W	Residential	465	Northeast	Up-gradient
Dwelling	2207	East 70 Street	Residential	470	North	Cross-gradient
Dwelling	2343	East 69 Street	Residential	470	Southeast	Cross-gradient
Dwelling	2346	East 70 Street	Residential	470	Southeast	Cross-gradient
Dwelling	2203	East 70 Street	Residential	490	North	Cross-gradient
Dwelling	2316	East 71 Street	Residential	490	Northeast	Up-gradient
Dwelling	2345	East 69 Street	Residential	495	Southeast	Cross-gradient
Dwelling	2348	East 70 Street	Residential	495	Southeast	Cross-gradient
Dwelling	7018	Avenue W	Residential	495	Northeast	Up-gradient
Dwelling	2201	East 70 Street	Residential	500	North	Cross-gradient
Dwelling	2177	East 69 Street	Residential	500	Northwest	Cross-gradient
Dwelling	2180	East 70 Street	Residential	500	Northwest	Cross-gradient
Dwelling	2352	East 70 Street	Residential	500	Southeast	Cross-gradient
Dwelling	2318	East 71 Street	Residential	500	Northeast	Up-gradient

TABLE 2
SOIL ANALYTICAL RESULTS (APRIL 2023)
2250 East 69th Street - Brooklyn, NY

SAMPLE ID:	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	SB-4			SB-6		
LAB ID:							CN89759			CN89760		
COLLECTION DATE:							4/21/2023			4/21/2023		
SAMPLE DEPTH (FEET BGS):							4.0-8.0			4.0-8.0		
SOIL BORING:							SB-4			SB-6		
ANALYTE	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	Conc	Q	RL
VOLATILE ORGANIC COMPOUNDS (VOCs) - mg/kg												
1,2,4-Trimethylbenzene	380	190	47	52	3.6	3.6	ND		0.0010	ND		0.065
1,3,5-Trimethylbenzene	380	190	47	52	8.4	8.4	ND		0.0010	ND		0.065
Benzene	89	44	2.9	4.8	0.06	0.06	ND		0.0021	ND		0.060
Ethylbenzene	780	390	30	41	1	1	ND		0.0021	ND		0.130
Isopropylbenzene	NS	NS	NS	NS	NS	NS	ND		0.0010	0.81		0.065
Methyl tert butyl ethe	1000	500	62	100	0.93	0.93	ND		0.0011	ND		0.065
n-Butylbenzene	1000	500	100	100	12	12	ND		0.0011	2.8		0.065
n-Propylbenzene	1000	500	100	100	3.9	3.9	ND		0.0011	1.5		0.065
Naphthalene	1000	500	100	100	12	12	ND		0.0011	ND		0.065
o-Xylene	NS	NS	NS	NS	NS	NS	ND		0.022	ND		0.130
p-Isopropyltoluene	NS	NS	NS	NS	NS	NS	ND		0.011	ND		0.065
p/m-Xylene	NS	NS	NS	NS	NS	NS	ND		0.0022	ND		0.130
sec-Butylbenzene	1000	500	100	100	11	11	0.003		0.0011	3		0.065
tert-Butylbenzene	1000	500	100	100	5.9	5.9	ND		0.0011	0.24		0.065
Toluene	1000	500	100	100	0.7	0.7	ND		0.0022	ND		0.130
Xylenes, Tota	1000	500	100	100	1.6	0.26	ND		0.0022	ND		0.130
SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) - mg/kg												
Acenaphthene	1000	500	100	100	98	20	ND		0.260	5.3		2.7
Acenaphthylene	1000	500	100	100	107	100	ND		0.260	ND		2.7
Anthracene	1000	500	100	100	1000	100	ND		0.260	ND		2.7
Benzo(a)anthracene	11	5.6	1	1	1	1	ND		0.260	ND		1
Benzo(a)pyrene	1.1	1	1	1	22	1	ND		0.260	ND		1
Benzo(b)fluoranthene	11	5.6	1	1	1.7	1	ND		0.260	ND		1
Benzo(ghi)perylene	1000	500	100	100	1000	100	ND		0.260	ND		2.7
Benzo(k)fluoranthene	110	56	1	3.9	1.7	0.8	ND		0.260	ND		0.8
Chrysene	110	56	1	3.9	1	1	ND		0.260	ND		1
Dibenzo(a,h)anthracene	1.1	0.56	0.33	0.33	1000	0.33	ND		0.260	ND		0.33
Fluoranthene	1000	500	100	100	1000	100	ND		0.260	ND		2.7
Fluorene	1000	500	100	100	386	30	ND		0.260	5.4		2.7
Indeno(1,2,3-cd)pyrene	11	5.6	0.5	0.5	8.2	0.5	ND		0.260	ND		0.5
Naphthalene	1000	500	100	100	12	12	ND		0.260	ND		2.7
Phenanthrene	1000	500	100	100	1000	100	ND		0.260	12		2.7
Pyrene	1000	500	100	100	1000	100	ND		0.260	ND		2.7
GENERAL CHEMISTRY												
Percent Solid	NS	NS	NS	NS	NS	NS	88		--	85		--

Notes:
ND - Not detected
J - Estimated concentration (detected below laboratory method detection lim
NS - No NYSDEC Soil Criteria established for this compound
mg/kg - Milligrams per kilogram
Conc - Concentration in mg/kg
Q - Qualifier
RL - Reporting limit
Feet bgs - Feet below ground surface
RUSCO-I - NYSDEC Restricted Use Soil Cleanup Objective - Industrial
RUSCO-C - NYSDEC Restricted Use Soil Cleanup Objective - Commercial
RUSCO-RR - NYSDEC Restricted Use Soil Cleanup Objective - Restricted Residential
RUSCO-R - NYSDEC Restricted Use Soil Cleanup Objective - Residential
RUSCO-GW - NYSDEC Restricted Use Soil Cleanup Objective - Protection of Groundwate
UUSCO - Unrestricted Use Soil Cleanup Objective
Bold & Highlighted = Concentration exceeds NYSDEC SC

TABLE 3
GROUNDWATER ANALYTICAL RESULTS (APRIL 2023)
2250 East 69th Street - Brooklyn, NY

SAMPLE ID:	AWQS / CLASS GA	GW-3		
LAB ID:		CN89762		
COLLECTION DATE:		4/21/2023		
BORING ID:		SB-6		
LOCATION:		On-Site		
ANALYTE	**ug/L**	**Conc**	**Q**	**RL**
VOLATILE ORGANIC COMPOUNDS (VOCs) - ug/L				
1,2,4-Trimethylbenzene	**5**	ND		1
1,3,5-Trimethylbenzene	**5**	ND		1
Benzene	**1**	ND		0.7
Ethylbenzene	**5**	ND		1
Isopropylbenzene	**5**	ND		1
Methyl tert butyl ether	**10**	ND		1
n-Butylbenzene	**5**	1		1
n-Propylbenzene	**5**	ND		1
Naphthalene	**10**	ND		1
o-Xylene	**5**	ND		2
p-Isopropyltoluene	**5**	ND		1
p/m-Xylene	**5**	ND		2
sec-Butylbenzene	**5**	2.2		1
tert-Butylbenzene	**5**	ND		1
Toluene	**5**	ND		1
Xylenes, Total	**NS**	ND		2
SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) - ug/L				
2-Methylnaphthalene	**NS**	0.76		0.47
Acenaphthene	**20**	6.8		0.47
Acenaphthylene	**NS**	1.6		0.47
Anthracene	**50**	1.9		0.47
Benzo(a)anthracene	**0.002**	**0.35**		0.02
Benzo(a)pyrene	**0**	**0.17**		0.02
Benzo(b)fluoranthene	**0.002**	**0.13**		0.02
Benzo(ghi)perylene	**NS**	ND		0.47
Benzo(k)fluoranthene	**0.002**	**0.11**		0.02
Chrysene	**0.002**	**0.28**		0.02
Dibenzo(a,h)anthracene	**NS**	ND		0.47
Fluoranthene	**50**	1.8		0.47
Fluorene	**50**	7.5		0.47
Indeno(1,2,3-cd)pyrene	**0.002**	**0.07**		0.02
Naphthalene	**10**	ND		0.47
Phenanthrene	**50**	3.3		0.47
Pyrene	**50**	1.3		0.47

Notes:
AWQS - NYSDEC Ambient Water Quality Standards
Class GA - NYSDEC Groundwater Effluent Limitations (Class GA
ug/L - Micrograms per liter
RL - Reporting limit
ND - Not detected
NS - No standard
J - Estimated concentration
Bold & Highlighted - Concentrations exceeds NYSDEC standard

TABLE 4
SOIL ANALYTICAL RESULTS (SEPTEMBER 2023)
2250 East 69th Street - Brooklyn, NY

SAMPLE ID:	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	VTX-B4(9.5-10.0)				VTX-B5(9.5-10.0)			
LAB ID:							L2354093-03				L2354093-04			
COLLECTION DATE:							9/14/2023				9/14/2023			
SAMPLE DEPTH (FEET BGS):							9.5-10.0				9.5-10.0			
SOIL BORING:							B-4				B-5			
ANALYTE	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANIC COMPOUNDS (VOCs) - mg/kg														
1,1,1,2-Tetrachloroethane	NS	NS	NS	NS	NS	NS	ND		0.00053	0.00014	ND		0.0006	0.00016
1,1,1-Trichloroethane	1000	500	100	100	0.68	0.68	ND		0.00053	0.00018	ND		0.0006	0.0002
1,1,2,2-Tetrachloroethane	NS	NS	NS	NS	NS	NS	ND		0.00053	0.00018	ND		0.0006	0.0002
1,1,2-Trichloroethane	NS	NS	NS	NS	NS	NS	ND		0.0011	0.00028	ND		0.0012	0.00032
1,1-Dichloroethane	480	240	19	26	0.27	0.27	ND		0.0011	0.00015	ND		0.0012	0.00017
1,1-Dichloroethene	1000	500	100	100	0.33	0.33	ND		0.0011	0.00025	ND		0.0012	0.00028
1,1-Dichloropropene	NS	NS	NS	NS	NS	NS	ND		0.00053	0.00017	ND		0.0006	0.00019
1,2,3-Trichlorobenzene	NS	NS	NS	NS	NS	NS	ND		0.0021	0.00034	ND		0.0024	0.00038
1,2,3-Trichloropropane	NS	NS	NS	NS	NS	NS	ND		0.0021	0.00014	ND		0.0024	0.00015
1,2,4,5-Tetramethylbenzen	NS	NS	NS	NS	NS	NS	0.018		0.0021	0.0002	0.03		0.0024	0.00023
1,2,4-Trichlorobenzene	NS	NS	NS	NS	NS	NS	ND		0.0021	0.00029	ND		0.0024	0.00032
1,2,4-Trimethylbenzene	380	190	47	52	3.6	3.6	ND		0.0021	0.00036	0.00081	J	0.0024	0.0004
1,2-Dibromo-3-chloropropane	NS	NS	NS	NS	NS	NS	ND		0.0032	0.0011	ND		0.0036	0.0012
1,2-Dibromoethane	NS	NS	NS	NS	NS	NS	ND		0.0011	0.0003	ND		0.0012	0.00033
1,2-Dichlorobenzene	1000	500	100	100	1.1	1.1	ND		0.0021	0.00015	ND		0.0024	0.00017
1,2-Dichloroethane	60	30	2.3	3.1	0.02	0.02	ND		0.0011	0.00027	ND		0.0012	0.00031
1,2-Dichloroethene, Tota	NS	NS	NS	NS	NS	NS	ND		0.0011	0.00014	ND		0.0012	0.00016
1,2-Dichloropropane	NS	NS	NS	NS	NS	NS	ND		0.0011	0.00013	ND		0.0012	0.00015
1,3,5-Trimethylbenzene	380	190	47	52	8.4	8.4	ND		0.0021	0.0002	ND		0.0024	0.00023
1,3-Dichlorobenzene	560	280	17	49	2.4	2.4	ND		0.0021	0.00016	ND		0.0024	0.00018
1,3-Dichloropropane	NS	NS	NS	NS	NS	NS	ND		0.0021	0.00018	ND		0.0024	0.0002
1,3-Dichloropropene, Tota	NS	NS	NS	NS	NS	NS	ND		0.00053	0.00017	ND		0.0006	0.00019
1,4-Dichlorobenzene	250	130	9.8	13	1.8	1.8	ND		0.0021	0.00018	ND		0.0024	0.0002
1,4-Dioxane	250	130	9.8	13	0.1	0.1	ND		0.085	0.037	ND		0.096	0.042
2,2-Dichloropropane	NS	NS	NS	NS	NS	NS	ND		0.0021	0.00022	ND		0.0024	0.00024
2-Butanone	1000	500	100	100	0.12	0.12	0.0094	J	0.011	0.0024	0.014		0.012	0.0026
2-Hexanone	NS	NS	NS	NS	NS	NS	ND		0.011	0.0012	ND		0.012	0.0014
4-Methyl-2-pentanone	NS	NS	NS	NS	NS	NS	ND		0.011	0.0014	ND		0.012	0.0015
Acetone	1000	500	100	100	0.05	0.05	0.045		0.011	0.0051	**0.079**		0.012	0.0058
Acrylonitrile	NS	NS	NS	NS	NS	NS	ND		0.0043	0.0012	ND		0.0048	0.0014
Benzene	89	44	2.9	4.8	0.06	0.06	ND		0.00053	0.00018	ND		0.0006	0.0002
Bromobenzene	NS	NS	NS	NS	NS	NS	ND		0.0021	0.00015	ND		0.0024	0.00017
Bromochloromethane	NS	NS	NS	NS	NS	NS	ND		0.0021	0.00022	ND		0.0024	0.00024
Bromodichloromethane	NS	NS	NS	NS	NS	NS	ND		0.00053	0.00012	ND		0.0006	0.00013
Bromoform	NS	NS	NS	NS	NS	NS	ND		0.0043	0.00026	ND		0.0048	0.00029
Bromomethane	NS	NS	NS	NS	NS	NS	ND		0.0021	0.00062	ND		0.0024	0.0007
Carbon disulfide	NS	NS	NS	NS	NS	NS	ND		0.011	0.0048	0.0058	J	0.012	0.0054
Carbon tetrachloride	44	22	1.4	2.4	0.76	0.76	ND		0.0011	0.00024	ND		0.0012	0.00028
Chlorobenzene	1000	500	100	100	1.1	1.1	ND		0.00053	0.00014	ND		0.0006	0.00015
Chloroethane	NS	NS	NS	NS	NS	NS	ND		0.0021	0.00048	ND		0.0024	0.00054
Chloroform	700	350	10	49	0.37	0.37	ND		0.0016	0.00015	ND		0.0018	0.00017
Chloromethane	NS	NS	NS	NS	NS	NS	ND		0.0043	0.00099	ND		0.0048	0.0011
cis-1,2-Dichloroethene	1000	500	59	100	0.25	0.25	ND		0.0011	0.00019	ND		0.0012	0.00021
cis-1,3-Dichloropropene	NS	NS	NS	NS	NS	NS	ND		0.00053	0.00017	ND		0.0006	0.00019
Dibromochloromethane	NS	NS	NS	NS	NS	NS	ND		0.0011	0.00015	ND		0.0012	0.00017
Dibromomethane	NS	NS	NS	NS	NS	NS	ND		0.0021	0.00025	ND		0.0024	0.00028
Dichlorodifluoromethane	NS	NS	NS	NS	NS	NS	ND		0.011	0.00097	ND		0.012	0.0011
Ethyl ether	NS	NS	NS	NS	NS	NS	ND		0.0021	0.00036	ND		0.0024	0.00041
Ethylbenzene	780	390	30	41	1	1	ND		0.0011	0.00015	ND		0.0012	0.00017
Hexachlorobutadiene	NS	NS	NS	NS	NS	NS	ND		0.0043	0.00018	ND		0.0048	0.0002
Isopropylbenzene	NS	NS	NS	NS	NS	NS	0.0016		0.0011	0.00012	0.00023	J	0.0012	0.00013
Methyl tert butyl ethe	1000	500	62	100	0.93	0.93	ND		0.0021	0.00021	ND		0.0024	0.00024
Methylene chloride	1000	500	51	100	0.05	0.05	ND		0.0053	0.0024	ND		0.006	0.0027
n-Butylbenzene	1000	500	100	100	12	12	0.0052		0.0011	0.00018	0.00044	J	0.0012	0.0002
n-Propylbenzene	1000	500	100	100	3.9	3.9	0.0025		0.0011	0.00018	ND		0.0012	0.0002

TABLE 4
SOIL ANALYTICAL RESULTS (SEPTEMBER 2023)
2250 East 69th Street - Brooklyn, NY

SAMPLE ID:	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	VTX-B4(9.5-10.0)				VTX-B5(9.5-10.0)			
LAB ID:							L2354093-03				L2354093-04			
COLLECTION DATE:							9/14/2023				9/14/2023			
SAMPLE DEPTH (FEET BGS):							9.5-10.0				9.5-10.0			
SOIL BORING:							B-4				B-5			
ANALYTE	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
Naphthalene	1000	500	100	100	12	12	0.0028	J	0.0043	0.00069	0.0047	J	0.0048	0.00078
o-Chlorotoluene	NS	NS	NS	NS	NS	NS	ND		0.0021	0.0002	ND		0.0024	0.00023
o-Xylene	NS	NS	NS	NS	NS	NS	ND		0.0011	0.00031	ND		0.0012	0.00035
p-Chlorotoluene	NS	NS	NS	NS	NS	NS	ND		0.0021	0.00012	ND		0.0024	0.00013
p-Diethylbenzene	NS	NS	NS	NS	NS	NS	0.0031		0.0021	0.00019	0.004		0.0024	0.00021
p-Ethyltoluene	NS	NS	NS	NS	NS	NS	ND		0.0021	0.00041	0.00052	J	0.0024	0.00046
p-Isopropyltoluene	NS	NS	NS	NS	NS	NS	0.00014	J	0.0011	0.00012	ND		0.0012	0.00013
p/m-Xylene	NS	NS	NS	NS	NS	NS	ND		0.0021	0.0006	ND		0.0024	0.00067
sec-Butylbenzene	1000	500	100	100	11	11	0.005		0.0011	0.00016	0.00074	J	0.0012	0.00017
Styrene	NS	NS	NS	NS	NS	NS	ND		0.0011	0.00021	ND		0.0012	0.00023
tert-Butylbenzene	1000	500	100	100	5.9	5.9	0.00064	J	0.0021	0.00012	0.00059	J	0.0024	0.00014
Tetrachloroethene	300	150	5.5	19	1.3	1.3	ND		0.00053	0.00021	ND		0.0006	0.00023
Toluene	1000	500	100	100	0.7	0.7	ND		0.0011	0.00058	0.00091	J	0.0012	0.00065
trans-1,2-Dichloroethene	1000	500	100	100	0.19	0.19	ND		0.0016	0.00014	ND		0.0018	0.00016
trans-1,3-Dichloropropene	NS	NS	NS	NS	NS	NS	ND		0.0011	0.00029	ND		0.0012	0.00033
trans-1,4-Dichloro-2-butene	NS	NS	NS	NS	NS	NS	ND		0.0053	0.0015	ND		0.006	0.0017
Trichloroethene	400	200	10	21	0.47	0.47	ND		0.00053	0.00014	ND		0.0006	0.00016
Trichlorofluoromethane	NS	NS	NS	NS	NS	NS	ND		0.0043	0.00074	ND		0.0048	0.00083
Vinyl acetate	NS	NS	NS	NS	NS	NS	ND		0.011	0.0023	ND		0.012	0.0026
Vinyl chloride	27	13	0.21	0.9	0.02	0.02	ND		0.0011	0.00036	ND		0.0012	0.0004
Xylenes, Tota	1000	500	100	100	1.6	0.26	ND		0.0011	0.00031	ND		0.0012	0.00035
SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) - mg/kg														
1,2,4,5-Tetrachlorobenzene	NS	NS	NS	NS	NS	NS	ND		0.19	0.02	ND		0.2	0.021
1,2,4-Trichlorobenzene	NS	NS	NS	NS	NS	NS	ND		0.19	0.022	ND		0.2	0.023
1,2-Dichlorobenzene	1000	500	100	100	1.1	1.1	ND		0.19	0.034	ND		0.2	0.036
1,3-Dichlorobenzene	560	280	17	49	2.4	2.4	ND		0.19	0.033	ND		0.2	0.034
1,4-Dichlorobenzene	250	130	9.8	13	1.8	1.8	ND		0.19	0.034	ND		0.2	0.035
1,4-Dioxane	250	130	9.8	13	0.1	0.1	ND		0.029	0.0088	ND		0.03	0.0091
2,4,5-Trichloropheno	NS	NS	NS	NS	NS	NS	ND		0.19	0.037	ND		0.2	0.038
2,4,6-Trichloropheno	NS	NS	NS	NS	NS	NS	ND		0.12	0.036	ND		0.12	0.038
2,4-Dichloropheno	NS	NS	NS	NS	NS	NS	ND		0.17	0.031	ND		0.18	0.032
2,4-Dimethylpheno	NS	NS	NS	NS	NS	NS	ND		0.19	0.063	ND		0.2	0.066
2,4-Dinitropheno	NS	NS	NS	NS	NS	NS	ND		0.92	0.089	ND		0.95	0.092
2,4-Dinitrotoluene	NS	NS	NS	NS	NS	NS	ND		0.19	0.038	ND		0.2	0.04
2,6-Dinitrotoluene	NS	NS	NS	NS	NS	NS	ND		0.19	0.033	ND		0.2	0.034
2-Chloronaphthalene	NS	NS	NS	NS	NS	NS	ND		0.19	0.019	ND		0.2	0.02
2-Chloropheno	NS	NS	NS	NS	NS	NS	ND		0.19	0.023	ND		0.2	0.023
2-Methylnaphthalene	NS	NS	NS	NS	NS	NS	0.023	J	0.23	0.023	ND		0.24	0.024
2-Methylpheno	1000	500	100	100	0.33	0.33	ND		0.19	0.03	ND		0.2	0.031
2-Nitroaniline	NS	NS	NS	NS	NS	NS	ND		0.19	0.037	ND		0.2	0.038
2-Nitropheno	NS	NS	NS	NS	NS	NS	ND		0.41	0.072	ND		0.43	0.075
3,3'-Dichlorobenzidine	NS	NS	NS	NS	NS	NS	ND		0.19	0.051	ND		0.2	0.053
3-Methylphenol/4-Methylphenc	1000	500	34	100	0.33	0.33	ND		0.28	0.03	ND		0.28	0.031
3-Nitroaniline	NS	NS	NS	NS	NS	NS	ND		0.19	0.036	ND		0.2	0.037
4,6-Dinitro-o-creso	NS	NS	NS	NS	NS	NS	ND		0.5	0.092	ND		0.52	0.095
4-Bromophenyl phenyl ethe	NS	NS	NS	NS	NS	NS	ND		0.19	0.029	ND		0.2	0.03
4-Chloroaniline	NS	NS	NS	NS	NS	NS	ND		0.19	0.035	ND		0.2	0.036
4-Chlorophenyl phenyl ethe	NS	NS	NS	NS	NS	NS	ND		0.19	0.02	ND		0.2	0.021
4-Nitroaniline	NS	NS	NS	NS	NS	NS	ND		0.19	0.079	ND		0.2	0.082
4-Nitropheno	NS	NS	NS	NS	NS	NS	ND		0.27	0.078	ND		0.28	0.081
Acenaphthene	1000	500	100	100	98	20	0.39		0.15	0.02	ND		0.16	0.02
Acenaphthylene	1000	500	100	100	107	100	0.053	J	0.15	0.03	ND		0.16	0.031
Acetophenone	NS	NS	NS	NS	NS	NS	ND		0.19	0.024	ND		0.2	0.024
Anthracene	1000	500	100	100	1000	100	0.14		0.12	0.037	ND		0.12	0.039
Benzo(a)anthracene	11	5.6	1	1	1	1	0.098	J	0.12	0.022	ND		0.12	0.022
Benzo(a)pyrene	1.1	1	1	1	22	1	0.091	J	0.15	0.047	ND		0.16	0.048

TABLE 4
SOIL ANALYTICAL RESULTS (SEPTEMBER 2023)
2250 East 69th Street - Brooklyn, NY

SAMPLE ID:	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	VTX-B4(9.5-10.0)				VTX-B5(9.5-10.0)			
LAB ID:							L2354093-03				L2354093-04			
COLLECTION DATE:							9/14/2023				9/14/2023			
SAMPLE DEPTH (FEET BGS):							9.5-10.0				9.5-10.0			
SOIL BORING:							B-4				B-5			
ANALYTE	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
Benzo(b)fluoranthene	**11**	**5.6**	**1**	**1**	**1.7**	**1**	0.1	J	0.12	0.032	ND		0.12	0.033
Benzo(ghi)perylene	**1000**	**500**	**100**	**100**	**1000**	**100**	0.05	J	0.15	0.022	ND		0.16	0.023
Benzo(k)fluoranthene	**110**	**56**	**1**	**3.9**	**1.7**	**0.8**	0.04	J	0.12	0.031	ND		0.12	0.032
Benzoic Acid	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.62	0.19	ND		0.64	0.2
Benzyl Alcoho	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.19	0.059	ND		0.2	0.061
Biphenyl	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.44	0.025	ND		0.45	0.026
Bis(2-chloroethoxy)methane	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.21	0.019	ND		0.21	0.02
Bis(2-chloroethyl)ethe	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.17	0.026	ND		0.18	0.027
Bis(2-chloroisopropyl)ethe	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.23	0.033	ND		0.24	0.034
Bis(2-ethylhexyl)phthalate	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.19	0.066	ND		0.2	0.069
Butyl benzyl phthalate	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.19	0.048	ND		0.2	0.05
Carbazole	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.19	0.019	ND		0.2	0.019
Chrysene	**110**	**56**	**1**	**3.9**	**1**	**1**	0.11	J	0.12	0.02	ND		0.12	0.021
Di-n-butylphthalate	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.19	0.036	ND		0.2	0.038
Di-n-octylphthalate	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.19	0.065	ND		0.2	0.068
Dibenzo(a,h)anthracene	**1.1**	**0.56**	**0.33**	**0.33**	**1000**	**0.33**	ND		0.12	0.022	ND		0.12	0.023
Dibenzofuran	**1000**	**350**	**14**	**59**	**210**	**7**	0.26		0.19	0.018	ND		0.2	0.019
Diethyl phthalate	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.19	0.018	ND		0.2	0.018
Dimethyl phthalate	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.19	0.04	ND		0.2	0.042
Fluoranthene	**1000**	**500**	**100**	**100**	**1000**	**100**	0.32		0.12	0.022	ND		0.12	0.023
Fluorene	**1000**	**500**	**100**	**100**	**386**	**30**	0.43		0.19	0.019	ND		0.2	0.019
Hexachlorobenzene	**12**	**6**	**0.33**	**1.2**	**3.2**	**0.33**	ND		0.12	0.022	ND		0.12	0.022
Hexachlorobutadiene	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.19	0.028	ND		0.2	0.029
Hexachlorocyclopentadiene	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.55	0.17	ND		0.57	0.18
Hexachloroethane	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.15	0.031	ND		0.16	0.032
Indeno(1,2,3-cd)pyrene	**11**	**5.6**	**0.5**	**0.5**	**8.2**	**0.5**	0.051	J	0.15	0.027	ND		0.16	0.028
Isophorone	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.17	0.025	ND		0.18	0.026
n-Nitrosodi-n-propylamine	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.19	0.03	ND		0.2	0.031
Naphthalene	**1000**	**500**	**100**	**100**	**12**	**12**	0.059	J	0.19	0.023	ND		0.2	0.024
NDPA/DPA	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.15	0.022	ND		0.16	0.022
Nitrobenzene	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.17	0.028	ND		0.18	0.029
p-Chloro-m-creso	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	ND		0.19	0.029	ND		0.2	0.03
Pentachlorophenol	**55**	**6.7**	**2.4**	**6.7**	**0.8**	**0.8**	ND		0.15	0.042	ND		0.16	0.044
Phenanthrene	**1000**	**500**	**100**	**100**	**1000**	**100**	0.83		0.12	0.023	ND		0.12	0.024
Phenol	**1000**	**500**	**100**	**100**	**0.33**	**0.33**	ND		0.19	0.029	ND		0.2	0.03
Pyrene	**1000**	**500**	**100**	**100**	**1000**	**100**	0.29		0.12	0.019	ND		0.12	0.02
GENERAL CHEMISTRY														
Solids, Total	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	85.5		0.1	NA	81.3		0.1	NA

Notes:
ND - Not detected
J - Estimated concentration (detected below laboratory method detection lim
NS - No NYSDEC Soil Criteria established for this compound
mg/kg - Milligrams per kilogram
Conc - Concentration in mg/kg
Q - Qualifier
RL - Reporting limit
MDL - Method detection limi
Feet bgs - Feet below ground surfac
RUSCO-I - NYSDEC Restricted Use Soil Cleanup Objective - Industria
RUSCO-C - NYSDEC Restricted Use Soil Cleanup Objective - Commercia
RUSCO-RR - NYSDEC Restricted Use Soil Cleanup Objective - Restricted Residenti
RUSCO-R - NYSDEC Restricted Use Soil Cleanup Objective - Residentia
RUSCO-GW - NYSDEC Restricted Use Soil Cleanup Objective - Protection of Groundwate
UUSCO - Unrestricted Use Soil Cleanup Objectiv
Bold & Highlighted = Concentration exceeds NYSDEC SC

TABLE 5
GROUNDWATER ANALYTICAL RESULTS (SEPTEMBER 2023)
2250 East 69th Street - Brooklyn, NY

SAMPLE ID:	AWQS	Class GA	VTX-TW-5			
LAB ID:			L2354092-03			
COLLECTION DATE:			9/14/2023			
BORING ID:			B-5			
LOCATION:			On-Site			
ANALYTE	**ug/L**	**ug/L**	**Conc**	**Q**	**RL**	**MDL**
VOLATILE ORGANIC COMPOUNDS (VOCs) - ug/L						
1,1,1,2-Tetrachloroethane	**5**	**5**	ND		2.5	0.7
1,1,1-Trichloroethane	**5**	**5**	ND		2.5	0.7
1,1,2,2-Tetrachloroethane	**5**	**5**	ND		0.5	0.17
1,1,2-Trichloroethane	**1**	**1**	ND		1.5	0.5
1,1-Dichloroethane	**5**	**5**	ND		2.5	0.7
1,1-Dichloroethene	**5**	**5**	ND		0.5	0.17
1,1-Dichloropropene	**5**	**5**	ND		2.5	0.7
1,2,3-Trichlorobenzene	**5**	**5**	ND		2.5	0.7
1,2,3-Trichloropropane	**0.04**	**0.04**	ND		2.5	0.7
1,2,4,5-Tetramethylbenzene	**5**	**5**	**12**		2	0.54
1,2,4-Trichlorobenzene	**5**	**5**	ND		2.5	0.7
1,2,4-Trimethylbenzene	**5**	**5**	ND		2.5	0.7
1,2-Dibromo-3-chloropropane	**0.04**	**0.04**	ND		2.5	0.7
1,2-Dibromoethane	**0.0006**	**0.0006**	ND		2	0.65
1,2-Dichlorobenzene	**3**	**3**	ND		2.5	0.7
1,2-Dichloroethane	**0.6**	**0.6**	ND		0.5	0.13
1,2-Dichloroethene, Tota	**NS**	**NS**	ND		2.5	0.7
1,2-Dichloropropane	**1**	**1**	ND		1	0.14
1,3,5-Trimethylbenzene	**5**	**5**	ND		2.5	0.7
1,3-Dichlorobenzene	**3**	**3**	ND		2.5	0.7
1,3-Dichloropropane	**5**	**5**	ND		2.5	0.7
1,3-Dichloropropene, Tota	**NS**	**NS**	ND		0.5	0.14
1,4-Dichlorobenzene	**3**	**3**	ND		2.5	0.7
1,4-Dioxane	**NS**	**NS**	ND		250	61
2,2-Dichloropropane	**5**	**5**	ND		2.5	0.7
2-Butanone	**50**	**50**	ND		5	1.9
2-Hexanone	**50**	**50**	ND		5	1
4-Methyl-2-pentanone	**NS**	**NS**	ND		5	1
Acetone	**50**	**50**	3.2	J	5	1.5
Acrylonitrile	**5**	**5**	ND		5	1.5
Benzene	**1**	**1**	0.46	J	0.5	0.16
Bromobenzene	**5**	**5**	ND		2.5	0.7
Bromochloromethane	**5**	**5**	ND		2.5	0.7
Bromodichloromethane	**50**	**50**	ND		0.5	0.19
Bromoform	**50**	**50**	ND		2	0.65
Bromomethane	**5**	**5**	ND		2.5	0.7
Carbon disulfide	**60**	**60**	ND		5	1
Carbon tetrachloride	**5**	**5**	ND		0.5	0.13
Chlorobenzene	**5**	**5**	ND		2.5	0.7
Chloroethane	**5**	**5**	ND		2.5	0.7
Chloroform	**7**	**7**	ND		2.5	0.7
Chloromethane	**NS**	**NS**	ND		2.5	0.7
cis-1,2-Dichloroethene	**5**	**5**	ND		2.5	0.7
cis-1,3-Dichloropropene	**0.4**	**0.4**	ND		0.5	0.14
Dibromochloromethane	**50**	**50**	ND		0.5	0.15
Dibromomethane	**5**	**5**	ND		5	1
Dichlorodifluoromethane	**5**	**5**	ND		5	1
Ethyl ether	**NS**	**NS**	ND		2.5	0.7
Ethylbenzene	**5**	**5**	ND		2.5	0.7
Hexachlorobutadiene	**0.5**	**0.5**	ND		2.5	0.7
Isopropylbenzene	**5**	**5**	1.7	J	2.5	0.7
Methyl tert butyl ether	**10**	**10**	ND		2.5	0.7
Methylene chloride	**5**	**5**	ND		2.5	0.7
n-Butylbenzene	**5**	**5**	1.9	J	2.5	0.7
n-Propylbenzene	**5**	**5**	2.9		2.5	0.7
Naphthalene	**10**	**10**	3.2		2.5	0.7
o-Chlorotoluene	**5**	**5**	ND		2.5	0.7
o-Xylene	**5**	**5**	ND		2.5	0.7
p-Chlorotoluene	**5**	**5**	ND		2.5	0.7
p-Diethylbenzene	**NS**	**NS**	1.6	J	2	0.7
p-Ethyltoluene	**NS**	**NS**	ND		2	0.7
p-Isopropyltoluene	**5**	**5**	ND		2.5	0.7
p/m-Xylene	**5**	**5**	ND		2.5	0.7
sec-Butylbenzene	**5**	**5**	1.8	J	2.5	0.7
Styrene	**5**	**930**	ND		2.5	0.7
tert-Butylbenzene	**5**	**5**	ND		2.5	0.7
Tetrachloroethene	**5**	**5**	ND		0.5	0.18
Toluene	**5**	**5**	ND		2.5	0.7
trans-1,2-Dichloroethene	**5**	**5**	ND		2.5	0.7
trans-1,3-Dichloropropene	**0.4**	**0.4**	ND		0.5	0.16
trans-1,4-Dichloro-2-butene	**5**	**5**	ND		2.5	0.7
Trichloroethene	**5**	**5**	ND		0.5	0.18
Trichlorofluoromethane	**5**	**5**	ND		2.5	0.7
Vinyl acetate	**NS**	**NS**	ND		5	1
Vinyl chloride	**2**	**2**	ND		1	0.07
Xylenes, Tota	**NS**	**NS**	ND		2.5	0.7
SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) - ug/L						
1,2,4,5-Tetrachlorobenzene	**5**	**5**	ND		10	0.44
1,2,4-Trichlorobenzene	**5**	**5**	ND		5	0.5
1,2-Dichlorobenzene	**3**	**3**	ND		2	0.45
1,3-Dichlorobenzene	**3**	**3**	ND		2	0.4
1,4-Dichlorobenzene	**3**	**3**	ND		2	0.43
2,4,5-Trichloropheno	**NS**	**NS**	ND		5	0.77
2,4,6-Trichloropheno	**NS**	**NS**	ND		5	0.61
2,4-Dichloropheno	**1**	**2**	ND		5	0.41
2,4-Dimethylpheno	**50**	**2**	ND		5	1.8
2,4-Dinitropheno	**10**	**2**	ND		20	6.6
2,4-Dinitrotoluene	**5**	**5**	ND		5	1.2
2,6-Dinitrotoluene	**5**	**5**	ND		5	0.93
2-Chloropheno	**NS**	**NS**	ND		2	0.48
2-Methylpheno	**NS**	**NS**	ND		5	0.49
2-Nitroaniline	**5**	**5**	ND		5	0.5
2-Nitropheno	**NS**	**NS**	ND		10	0.85
3,3'-Dichlorobenzidine	**5**	**5**	ND		5	1.6
3-Methylphenol/4-Methylphenc	**NS**	**NS**	ND		5	0.48
3-Nitroaniline	**5**	**5**	ND		5	0.81
4,6-Dinitro-o-creso	**NS**	**NS**	ND		10	1.8
4-Bromophenyl phenyl ethe	**NS**	**NS**	ND		2	0.38
4-Chloroaniline	**5**	**5**	ND		5	1.1
4-Chlorophenyl phenyl ethe	**NS**	**NS**	ND		2	0.49

TABLE 5
GROUNDWATER ANALYTICAL RESULTS (SEPTEMBER 2023)
2250 East 69th Street - Brooklyn, NY

SAMPLE ID:	AWQS	Class GA	VTX-TW-5			
LAB ID:			L2354092-03			
COLLECTION DATE:			9/14/2023			
BORING ID:			B-5			
LOCATION:			On-Site			
ANALYTE	**ug/L**	**ug/L**	**Conc**	**Q**	**RL**	**MDL**
4-Nitroaniline	**5**	**5**	ND		5	0.8
4-Nitropheno	**NS**	**NS**	ND		10	0.67
Acetophenone	**NS**	**NS**	ND		5	0.53
Benzoic Acid	**NS**	**NS**	ND		50	2.6
Benzyl Alcoho	**NS**	**NS**	ND		2	0.59
Biphenyl	**NS**	**NS**	ND		2	0.46
Bis(2-chloroethoxy)methan	**5**	**5**	ND		5	0.5
Bis(2-chloroethyl)ethe	**1**	**1**	ND		2	0.5
Bis(2-chloroisopropyl)ethe	**5**	**5**	ND		2	0.53
Bis(2-ethylhexyl)phthalat	**5**	**5**	ND		3	1.5
Butyl benzyl phthalate	**50**	**50**	ND		5	1.2
Carbazole	**NS**	**NS**	0.8	J	2	0.49
Di-n-butylphthalate	**50**	**50**	ND		5	0.39
Di-n-octylphthalate	**50**	**50**	ND		5	1.3
Dibenzofuran	**NS**	**NS**	3.4		2	0.5
Diethyl phthalate	**50**	**50**	ND		5	0.38
Dimethyl phthalate	**50**	**50**	ND		5	1.8
Hexachlorocyclopentadien	**5**	**5**	ND		20	0.69
Isophorone	**50**	**50**	ND		5	1.2
n-Nitrosodi-n-propylamine	**NS**	**NS**	ND		5	0.64
NDPA/DPA	**50**	**50**	ND		2	0.42
Nitrobenzene	**0.4**	**0.4**	ND		2	0.77
p-Chloro-m-creso	**NS**	**NS**	ND		2	0.35
Phenol	**1**	**2**	ND		5	0.57
2-Chloronaphthalene	**10**	**10**	ND		0.2	0.02
2-Methylnaphthalene	**NS**	**NS**	43		0.1	0.02
Acenaphthene	**20**	**20**	5.6		0.1	0.01
Acenaphthylene	**NS**	**NS**	0.61		0.1	0.01
Anthracene	**50**	**50**	0.7		0.1	0.01
Benzo(a)anthracene	**0.002**	**0.002**	**0.14**		0.1	0.02
Benzo(a)pyrene	**0**	**0**	**0.09**	J	0.1	0.02
Benzo(b)fluoranthene	**0.002**	**0.002**	**0.11**		0.1	0.01
Benzo(ghi)perylene	**NS**	**NS**	0.05	J	0.1	0.01
Benzo(k)fluoranthene	**0.002**	**0.002**	**0.04**	J	0.1	0.01
Chrysene	**0.002**	**0.002**	**0.12**		0.1	0.01
Dibenzo(a,h)anthracene	**NS**	**NS**	0.02	J	0.1	0.01
Fluoranthene	**50**	**50**	0.88		0.1	0.02
Fluorene	**50**	**50**	5.5		0.1	0.01
Hexachlorobenzene	**0.04**	**0.04**	ND		0.8	0.01
Hexachlorobutadiene	**0.5**	**0.5**	ND		0.5	0.05
Hexachloroethane	**5**	**5**	ND		0.8	0.06
Indeno(1,2,3-cd)pyrene	**0.002**	**0.002**	**0.05**	J	0.1	0.01
Naphthalene	**10**	**10**	0.54		0.1	0.05
Pentachloropheno	**1**	**2**	0.14	J	0.8	0.01
Phenanthrene	**50**	**50**	5.9		0.1	0.02
Pyrene	**50**	**50**	0.69		0.1	0.02

Notes:
AWQS - NYSDEC Ambient Water Quality Standards
Class GA - NYSDEC Groundwater Effluent Limitations (Class GA
ug/L - Micrograms per lite
ND - Not detected
NS - No standard
J - Estimated concentration
- - Not analyzed
Bold & Highlighted - Concentrations exceeds NYSDEC standar

TABLE 6

PROPOSED SAMPLE SUMMARY

2250 East 69th Street Site - Site No. C224404

Sample Location	Sample ID	Sample Depth	Analyses
SOIL SAMPLES			
TW-1	V-1 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	V-1 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	V-1 (Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	V-1 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
TW-2	No Soil Sample Proposed		
TW-3	V-3 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	V-3 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	V-3 (Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	V-3 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
TW-4	No Soil Sample Proposed		
TW-5	V-5 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	V-5 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	V-5 (Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	V-5 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
TW-6	No Soil Sample Proposed		
TW-7	No Soil Sample Proposed		
TW-8	V-8 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	V-8 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	V-8 (Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	V-8 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
TW-9	No Soil Sample Proposed		
V-10	V-10 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	V-10 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	V-10 (Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	V-10 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
V-11	V-11 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	V-11 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	V-11 (Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	V-11 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
V-12	V-12 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	V-12 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	V-12 (Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	V-12 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
V-13	V-13 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	V-13 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	V-13 (Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	V-13 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
V-14	V-14 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	V-14 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	V-14 (Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	V-14 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
V-15	V-15 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	V-15 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	V-15 (Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	V-15 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
V-16	V-16 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	V-16 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	V-16 (Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	V-16 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
MW-1	MW-1 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	MW-1 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	MW-1 (Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	MW-1 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
MW-2	MW-2 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	MW-2 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	MW-2 (Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	MW-2 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
MW-3	MW-3 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	MW-3 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	MW-3 (Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	MW-3 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
MW-4	MW-4 (0-1)	Surficial Soil (Uppermost 2 Inches)	TCL/TAL, 1,4-dioxane, PFAS
	MW-4 (Depth)	Strongent Evidence of Impacts	TCL/TAL, 1,4-dioxane, PFAS
	MW-4(Depth)	Soil/Groundwater Interface	TCL/TAL, 1,4-dioxane, PFAS
	MW-4 (Depth)	Six-Inch Interval Below Impacts or Above Boring Termination	TCL/TAL, 1,4-dioxane, PFAS
MW-5	No Soil Sample Proposed		
RW-1	No Soil Sample Proposed		
GROUNDWATER SAMPLES			
MW-1	MW-1	Screened Interval to Intersect Shallow Groundwater Table	TCL/TAL, 1,4-dioxane, PFAS
MW-2	MW-2	Screened Interval to Intersect Shallow Groundwater Table	TCL/TAL, 1,4-dioxane, PFAS
MW-3	MW-3	Screened Interval to Intersect Shallow Groundwater Table	TCL/TAL, 1,4-dioxane, PFAS
MW-4	MW-4	Screened Interval to Intersect Shallow Groundwater Table	TCL/TAL, 1,4-dioxane, PFAS
MW-5	MW-5	Screened Interval to Intersect Shallow Groundwater Table	TCL/TAL, 1,4-dioxane, PFAS
RW-1	RW-1	Screened Interval to Intersect Shallow Groundwater Table	TPH Fingerprint, Specific Gravity, Kinematic Viscosity

TABLE 6

PROPOSED SAMPLE SUMMARY

2250 East 69th Street Site - Site No. C224404

SOIL VAPOR & AMBIENT AIR SAMPLES			
SV-1	SV-1	5 Feet Below Grade	VOC
SV-2	SV-2	5 Feet Below Grade	VOC
SV-3	SV-3	5 Feet Below Grade	VOC
SV-4	SV-4	5 Feet Below Grade	VOC
SV-5	SV-5	5 Feet Below Grade	VOC
SV-6	SV-6	5 Feet Below Grade	VOC
SV-7	SV-7	5 Feet Below Grade	VOC
SV-8	SV-8	5 Feet Below Grade	VOC
SV-9	SV-9	5 Feet Below Grade	VOC
AA-1	AA-1	Outdoors	VOC

NOTES:

TCL/TAL	Target Compound List/Target Analyte List suite of analyses includes VOC, SVOC, pesticides, PCBs, TAL metals, and cyanide
VOC	Volatile organic compounds via USEPA Method 8260 (soil & groundwater) and TO-15 (soil vapor & ambient air)
SVOC	Semi-volatile organic compounds via USEPA Method 8270 (soil) and 8270 Select Ion Monitoring (groundwater)
Pesticides	Pesticides via USEPA Method 8081
PCB	Polychlorinated biphenyls via USEPA Method 8082
TAL Metals	Target analyte metals (including hexavalent chromium) via USEPA Methods 6010/7471
Cyanide	Cyanide via USEPA Method 9012
TPH	Total petroleum hydrocarbons via USEPA Method 8015
PFAS	Per-and polyfluoroalkyl substances via USEPA Method 1366
SV	Soil vapor
AA	Ambient Air

* Field duplicates, aqueous trip blanks, and field blanks will be collected at a frequency of 1 per 20 samples, and will be analyzed for the complete TCL/TAL suite of analyses, 1,4-dioxane, and PFAS (soil and groundwater) and VOC (soil vapor).

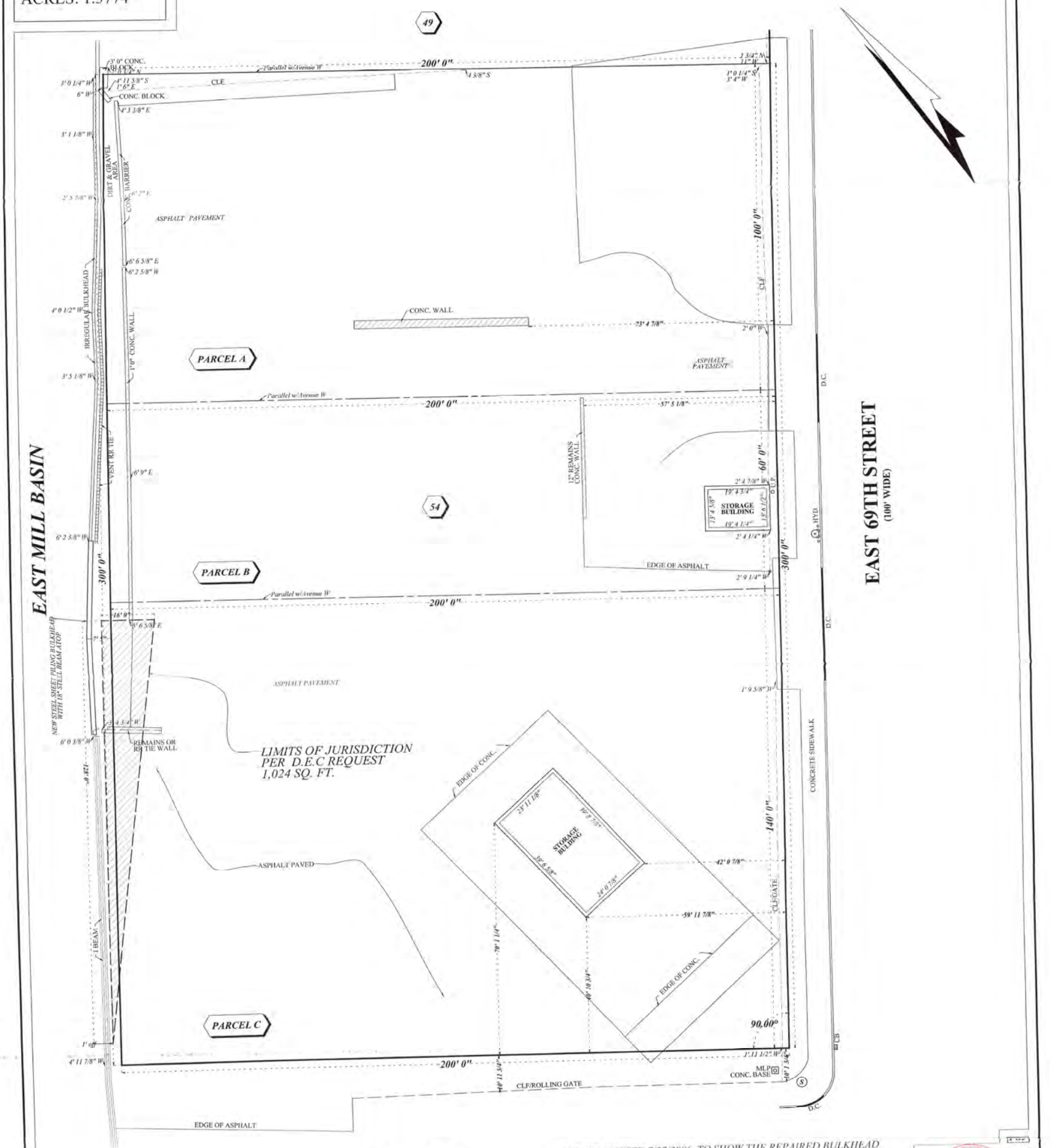
Appendix A:
Wetlands Jurisdictional Documents

BLOCK: 8437
LOT: 54

TOTAL LOT AREA:
SQ. FT.: 60,000.00
ACRES: 1.3774

TITLE SURVEY

TITLE NO.



SURVEY REVISED 7/27/2006, TO SHOW THE REPAIRED BULKHEAD
D.E.C. JURISDICTIONAL LIMITS ADDED 2/26/2007

8.00' 16.00' 24.00' 48.00'
0 8 24 48 96

MAP OF BERGEN BEACH - MAP NO. 1018

SCALE: 1" = 16'

SURVEYED: NOVEMBER 30, 2005

THIS SURVEY IS CERTIFIED TO:

1. MADELINE FALCO
2.
3.

SURVEY OF PROPERTY SITUATED IN:
EAST 69TH STREET
BOROUGH OF BROOKLYN
COUNTY OF KINGS
CITY OF NEW YORK
STATE OF NEW YORK

FEHRINGER SURVEYING ,P.C.
ROBERT FEHRINGER
LICENSED LAND SURVEYOR
148 NORTH PARK AVENUE
ROCKVILLE CENTRE , N.Y. 11570
(516) 763 - 5515 FAX NO. (516) 763 - 5525

STATE OF NEW YORK
ROBERT J. FEHRINGER
LICENSE NO 050078
LICENSED LAND SURVEYOR

2246

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 2
47-40 21st Street, Long Island City, NY 11101-5407
Phone: (718) 482-4997 • **FAX:** (718) 482-4975
Website: www.dec.state.ny.us

May 14, 2007

John H. Crow, Ph. D.
C&H Environmental, Inc.
216 Stiger Street
Hackettstown, NJ 07840

FALCO
RECEIVED
MAY 17 2007
110262
JC

Re: DEC Wetlands Jurisdictional Determination No. 2-6105-00161-00019
East 69th Street
Block 8437 Lot 49
Block 8446 Lots 19, 25, 31
Block 8437 Lot 54
Brooklyn, New York

Dear Dr. Crow,

In response to your request, please be advised of the following;

Block 8437 Lot 49 and Block 8446 Lots 19, 25, 31, areas landward of the existing bulkhead are not within NYSDEC tidal wetlands jurisdiction pursuant to Article 25 of the New York State Environmental Conservation Law. Therefore, a NYSDEC tidal wetlands permit is not required to alter or develop this property landward of the bulkhead. Please note, that any work on or seaward of the bulkhead will require a NYSDEC tidal wetlands permit.

Block 8437 Lot 54: areas landward of the existing bulkhead are not within NYSDEC tidal wetlands jurisdiction pursuant to Article 25 of the New York State Environmental Conservation Law except for the area of approximately 1,024 square feet located landward of the bulkhead within Parcel C, as depicted on drawing titled "Title Survey" for Block 8437 Lot 54, dated November 30, 2005, last revised February 26, 2007, which was received by NYSDEC on March 5, 2007. Therefore, a NYSDEC tidal wetlands permit is not required to alter or develop this property landward of the bulkhead except for the 1,024 square feet area located in Parcel C as described above. Please note, that any work on or seaward of the bulkhead will require a NYSDEC tidal wetlands permit as will any work located in the 1,024 square feet Parcel C.

Also, please be advised that the above referenced properties are not within NYSDEC freshwater wetlands jurisdiction pursuant to Article 24 of the New York State Environmental Conservation Law. Therefore, a NYSDEC freshwater wetlands permit is not required to alter or develop these properties.

If you have any questions regarding this matter please contact this office at the above telephone number.

Very truly yours,

John F. Cryan
Regional Permit Administrator

cc: Madeline Falco
NYSDEC Marine Resources

Appendix B:
Quality Assurance Project Plan

ENGINEERING EXCELLENCE SINCE 1889

Lockwood, Kessler & Bartlett, Inc.
One Aerial Way · Syosset, NY 11791
516.938.0600 www.lkbinc.com

QUALITY ASSURANCE PROJECT PLAN

2250 East 69th Street Site
2250 East 69th Street
Brooklyn, Kings County, New York
Block 8437, Lot 54
NYSDEC Site No. C224404

PREPARED FOR:
2300 69 Property LLC
4 Bryant Park, Suite 200
New York, New York 10018

PREPARED BY:
Lockwood, Kessler & Bartlett, Inc.
One Aerial Way
Syosset, New York 11791

LKB PROJECT NO: 10321.LK

FEBRUARY 2025

Table of Contents

FIGURES

APPENDICES

Quality Assurance Project Plan (QAPP)
2250 East 69th Street Site
2250 East 69th Street
Brooklyn, New York
Block 8437, Lot 54
NYSDEC Site No. C224404

1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) was prepared to guide the implementation of remedial activities at 2250 East 69th Street in Brooklyn, Kings County, New York (Site). The Site is participating in the New York State Brownfield Cleanup Program (BCP) pursuant to a Brownfield Cleanup Agreement (BCA) executed on May 10, 2024. The Site is identified as New York State Department of Environmental Conservation (NYSDEC) Site No. C224404. Additional Site information is provided in the Remedial Investigation Work Plan (RIWP).

The QAPP was prepared in accordance with the NYSDEC Technical Guidance for Site Investigation and Remediation (DER-10).

Quality assurance/quality control (QA/QC) procedures will be used to provide performance information with regard to accuracy, precision, sensitivity, representation, completeness, and comparability associated with the sampling and analysis for remedial activities at the Site.

1.1 Project Objectives

The objective of the remedial investigation is to define the nature and extent of all contamination, identify contaminant source areas, and produce data of sufficient quantity and quality to support the development of an acceptable Remedial Action Work Plan (RAWP).

1.2 Scope of Work

The scope of work to further characterize soil, soil vapor, and groundwater conditions at the Site includes the following: installation of temporary monitoring wells to visually delineate light non-aqueous phase liquid (LNAPL) and collection of a product sample for characterization; the collection of soil samples to evaluate soil characteristics and evaluate potential future remedial alternatives; the installation of permanent monitoring wells and the collection of groundwater samples and water elevations to confirm groundwater flow direction and delineate groundwater impacts, and a LNAPL recovery well to evaluate potential future remedial alternatives; the installation of temporary soil vapor points and the collection of soil vapor samples; and the collection of an ambient air sample.

During implementation of ground-intrusive remedial activities at the Site, monitoring, documenting, and responding to potential airborne contaminants (i.e., volatile organic compounds (VOCs), dust, and odors) will be conducted.

2.0 PROJECT TECHNICAL PERSONNEL

The table below summarizes the principal personnel to participate in the remedial activities. Resumes for the LKB and The Vertex Companies, LLC personnel planned to participate in the RI activities are included in **Appendix A**.

Project Technical Personnel and Contractors			
Name	**Company**	**Responsibility**	**Contact Information**
Timothy Biercz	The Vertex Companies, LLC	Project Manager	(908) 333-4317
Richard J. Tobia, P.E.	Lockwood, Kessler & Bartlett, Inc.	New York-licensed Professional Engineer	(908) 458-9604
Michael Baldwin	PAL Environmental Safety Corp.	Drilling Services	(718) 349-0900
Matt Fekelman	Ground Penetrating Radar Systems Inc.	Geophysical Contractor	(484) 889-5874
Nichole Hunt	Alpha Analytical Inc.	Laboratory Contact	(508) 439-5137
Crystal Piccirillo	DPK Land Surveying, LLC	Licensed Surveyor	(732) 764-0100

3.0 SAMPLING METHODOLOGY

All sampling will be conducted in accordance with NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 3, 2010, and NYSDEC Sampling Guidelines and Protocols, dated March 1991, NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), dated April 2023, and the NYSDOH document Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006.

Equipment will be operated in accordance with the manufacturer's specifications, including calibration of all field instruments, which will be performed prior to the initiation of field work and on a schedule indicated by the manufacturer.

3.1 Soil Sampling

Soil samples will be collected by VERTEX from discrete, six-inch intervals, from unique borings advanced at the Site via a track-mounted direct-push and hollow-stem auger drill rig (e.g., Geoprobe®). The drill rig will advance a five-foot long stainless-steel macro-core sampler. Per each advancement, a dedicated, disposable polybutyl acetate liner will be used in which the soil samples are held for field assessment. Continuous soil cores will be screened with a photoionization detector (PID) and visually and olfactory inspected. Disposable nitrile gloves will be worn during the soil screening process and sampling collection.

The soil samples will be collected in dedicated laboratory-provided Encore samplers and laboratory-provided containers, secured, labeled, and placed in a storage/transportation cooler and cooled to acceptable temperatures (e.g., four degrees Celsius) with ice. Samples will then be transported by a field courier to the laboratory following proper chain of custody procedures. The courier will relinquish custody to the log-in sample custodian upon arrival at the laboratory.

3.2 Groundwater Sampling

Prior to sample collection, static water levels will be measured from all monitoring wells. If appropriate, each monitoring well will be gauged for the presence of either Light Non-Aqueous Phase Liquid (LNAPL) and/or Dense Non-Aqueous Phase Liquid (DNAPL).

For the collection of groundwater samples from permanent monitoring wells, the wells will be purged with disposable polyethylene tubing and a stainless-steel submersible pump. Three well volumes will be purged using the volume averaged sampling method. Field measurements for pH, temperature, dissolved oxygen, turbidity, specific conductance, and oxidation-reduction potential will be collected during purging and prior to sample collection. Following purging, a grab groundwater sample will be collected using a polyethylene disposable bailer.

Following the groundwater sample collection, the sample containers will be secured, labeled, and placed in a storage/transportation cooler and cooled to acceptable temperatures (e.g., four degrees Celsius) with ice. Samples will then be transported by a field courier to the laboratory following proper chain of custody procedures. The courier will relinquish custody to the log-in sample custodian upon arrival at the laboratory.

3.3 Soil Vapor and Ambient Air

Soil vapor samples will be collected using a 6-liter stainless-steel Summa canister over a 8-hour sample duration. The direct-push drill rig will be utilized to core to 5.0 feet below grade. A 6- or 12-inch Geoprobe® stainless-steel soil vapor implant will be inserted at the bottom of the borehole above suspected groundwater. Polyethylene tubing will extend from the insert to the surface. Sand will be placed to cover the impact and the remaining approximately 4.0 feet of open hole will be sealed with bentonite grout to ground surface. A leak check will be performed on the entire sample train using a tracer compound (e.g., helium) to confirm sampling methodology at the proposed location. The leak check will be performed to ensure that there is less than 10% helium in the purged air. Prior to sample collection from the vapor probe/core

hole, three purge volumes will be evacuated from the sample train at a flow rate not to exceed 200 milliliters per minute. The sampling procedures will be conducted in general accordance with NYSDOH guidance.

Ambient air samples will be collected using a 6-liter stainless-steel Summa canister over an 8-hour sample duration. The canisters will be placed in a location to collect breathing height air (three to five feet above ground surface). The sampling procedures will be conducted in general accordance with NYSDOH guidance.

Collection data will be recorded that includes but is not limited to pre- and post-canister vacuum, sample ID, and canister ID number. Indoor air and soil vapor samples will be secured in a shipping box. Samples will then be transported by a field courier to the laboratory following proper chain of custody procedures. The courier will relinquish custody to the log-in sample custodian upon arrival at the laboratory.

3.4 Decontamination

After each sample is collected, all non-disposable sampling equipment will be decontaminated. Decontamination of non-dedicated sampling equipment will consist of the following: gently tap or scrape to remove adhered soil; rinse with tap water; wash with Alconox® detergent solution and scrub; rinse with tap water; and rinse with distilled or deionized water. Decontamination water will be collected and disposed as investigation-derived waste (IDW). Dedicated sampling equipment (polyethylene tubing) will be properly discarded after completion of obtaining the sample. Disposable gloves will be worn during sampling collection and be discarded following collection of each sample.

3.5 Report Logs

Field logs and borings logs will be completed during the course of remedial activities. A field log will be completed on a daily basis, which will describe all field activities including project number

and site address; date and time; weather conditions; on-site personnel and associated affiliations; description of field activities; pertinent sample collection information (sample identification, description of sample, sample location, sample collection time, sampling methodology, name of collector, field screening results, and analysis to be conducted). A boring log will be completed for each soil boring/monitoring well, which will include the following: project number and site address; date and time; drilling company name and drilling method; boring/monitoring well identification, total boring depth and water table depth; and pertinent sample collection information (sample identification, sample depth, interval, recovery amount, color, composition, percent moisture, PID readings, and visual/olfactory observations).

4.0 LABORATORY SUMMARY

All samples collected during the remedial activities will be submitted under proper chain-of-custody protocols to Pace Analytical Services LLC (formerly Alpha Analytical, Inc. in Westborough, Massachusetts (New York Environmental Laboratory Accreditation Program [ELAP] No. 11627). A copy of the NYSDOH *Certificate of Approval for Laboratory Service* is included in **Appendix B**.

The laboratory will follow all calibration procedures and schedules as specified in United States Environmental Protection Agency (USEPA) SW-846 and subsequent updates that apply to instruments used for the analytical methods.

Summary tables evaluating the laboratory reference limits of individual analytes for all analytical methods to all applicable standards, criteria, and guidelines (SCGs) are included in **Appendix C**.

4.1 Analytical Method/Quality Assurance

As part of the remedial activities, soil, groundwater, ambient air, and soil vapor samples will be collected. The sampling, including matrix, frequency of collection, analytical parameter, analytical method, sample preservation, sample container volume and type, and holding time are provided in the summary tables below. Sample holding times will be in accordance with USEPA SW-846 and NYSDEC ASP requirements.

Analysis of all soil samples will be conducted for the complete target compound list (TCL)/target analyte list (TAL) suite of analyses, which includes volatile organic compounds (VOCs) via United States Environmental Protection Agency (USEPA) Method 8260, semi-volatile organic compounds (SVOCs) via USEPA Method 8270, pesticides/polychlorinated biphenyls (PCBs) via USEPA Methods 8081/8082, TAL metals (including hexavalent chromium) via USEPA Methods 6010/7471, cyanide via USEPA Method 9012, 1,4-dioxane via USEPA Method 8270, and per-and polyfluoroalkyl substances (PFAS) via USEPA Method 1633.

Soil Sampling Summary						
Matrix Type	**Analytical Parameter**	**Analytical Method**	**Sample Preservation**	**Sample Container**	**Sample Holding Time**	**Estimated Number of Samples Collected**
Soil	VOC	8260	Cool, 4°C	Encore	48 Hours	52
Soil	SVOC	8270	Cool, 4°C	8 oz Glass	14 Days	52
Soil	Pesticides	8081	Cool, 4°C	8 oz Glass	14 Days	52
Soil	PCB	8082	Cool, 4°C	8 oz Glass	14 Days	52
Soil	TAL Metals	6010/7471	None	8 oz Glass	6 Months	52
Soil	Cyanide	9012	Cool, 4°C	8 oz Glass	14 Days	52
Soil	1,4-dioxane	8270	Cool, 4°C	8 oz Glass	14 Days	3
Soil	PFAS	1633	Cool, 4°C	8 oz Plastic	90 Days	3

Analysis of all groundwater samples will be conducted for the complete TCL/TAL suite of analyses, which includes VOCs via USEPA Method 8260, SVOCs and 1,4-dioxane via USEPA Method 8270 select ion monitoring (SIM), pesticides/PCBs via USEPA Methods 8081/8082, TAL metals (including hexavalent chromium) via USEPA Methods 6010/7471, cyanide via USEPA Method 9012, and PFAS via USEPA Method 1633.

Groundwater Sampling Summary						
Matrix Type	**Analytical Parameter**	**Analytical Method**	**Sample Preservation**	**Sample Container**	**Sample Holding Time**	**Estimated Number of Samples Collected**
Aqueous	VOC	8260	HCl, Cool, 4°C	40 ml Vials	14 days	5

Groundwater Sampling Summary						
Matrix Type	**Analytical Parameter**	**Analytical Method**	**Sample Preservation**	**Sample Container**	**Sample Holding Time**	**Estimated Number of Samples Collected**
Aqueous	SVOC	8270	Cool, 4°C	500 mL Amber Glass	7/40 days	5
Aqueous	Pesticides	8081	Cool, 4°C	500 mL Amber Glass	7/40 days	5
Aqueous	PCB	8082	Cool, 4°C	500 mL Amber Glass	7/40 days	5
Aqueous	TAL Metals	6010/7471	HNO_3, Cool, 4˚C	500 mL Plastic	6 months	5
Aqueous	Cyanide	9012	NaOH, Cool, 4˚C	500 mL plastic	14 days	5
Aqueous	1,4-Dioxane	8270	Cool, 4˚C	500 mL Amber Glass	7/40 days	5
Aqueous	PFAS	1633	Cool, 4°C	500 mL Plastic	28 Days	5

All soil vapor and ambient air samples will be submitted to the certified laboratory for analysis of VOCs via USEPA Method TO-15.

INDOOR AIR, AMBIENT AIR, AND SOIL VAPOR SAMPLING SUMMARY						
Matrix Type	**Analytical Parameter**	**Analytical Method**	**Sample Preservation**	**Sample Container**	**Sample Holding Time**	**Estimated Number of Samples Collected**
Air	VOC	TO-15	None	6-L Summa Canister	30 days	1
Soil Vapor	VOC	TO-15	None	6-L Summa Canister	30 days	3

If either LNAPL and/or DNAPL are detected, appropriate samples will be collected for characterization and “fingerprint analysis” and required regulatory reporting (i.e., spills hotline) will be performed.

4.2 Quality Assurance Samples

Field blanks and trip blanks will be submitted to the laboratory to evaluate the quality and performance of the analytical laboratory's analysis and reporting of the soil and groundwater sample results. Field (equipment) blanks will be analyzed to assess any contamination contributed from sampling location conditions, and the transport, handling, and storage of the samples. The trip blank will be analyzed to determine if sample containers may have been contaminated during transportation and storage. In accordance with DER-10, field duplicates, aqueous trip blanks, field blanks, and matrix spike and matrix spike duplicate (MS/MSD) will be collected at a frequency of 1 per 20 samples and will be analyzed for the complete TCL/TAL suite of analyses, 1,4-dioxane, and PFAS (soil and groundwater) and VOCs via USEPA Method TO-15 (soil vapor). Aqueous trip blanks will be collected at the same frequency (1 per 20 samples) for samples that are analyzed for VOCs.

The following table provides a summary of the estimated QA/QC sampling frequency.

QA/QC SAMPLE SUMMARY						
Matrix	**Analytical Parameter**	**Estimated Number of Samples Collected**	**Field Duplicate**	**Field Blank**	**Trip Blank**	**MS/MSD Samples**
Soil	VOC	52	1 per 20 samples (minimum 1)	1 per 20 samples (minimum 1)	N/A	1 per 20 samples (minimum 1)
	SVOC	52				
	Pesticides	52				
	PCB	52				
	TAL Metals	52				
	Cyanide	52				
	1,4-Dioxane	3				
	PFAS	3				
Groundwater	VOC	5	1 per 20 samples (minimum 1)	1 per 20 samples (minimum 1)	1 per shipment of VOC samples	1 per 20 samples (minimum 1)
	SVOC	5				
	Pesticides	5				
	PCB	5				
	TAL Metals	5				
	Cyanide	5				
	1,4-Dioxane	5				
	PFAS	5				

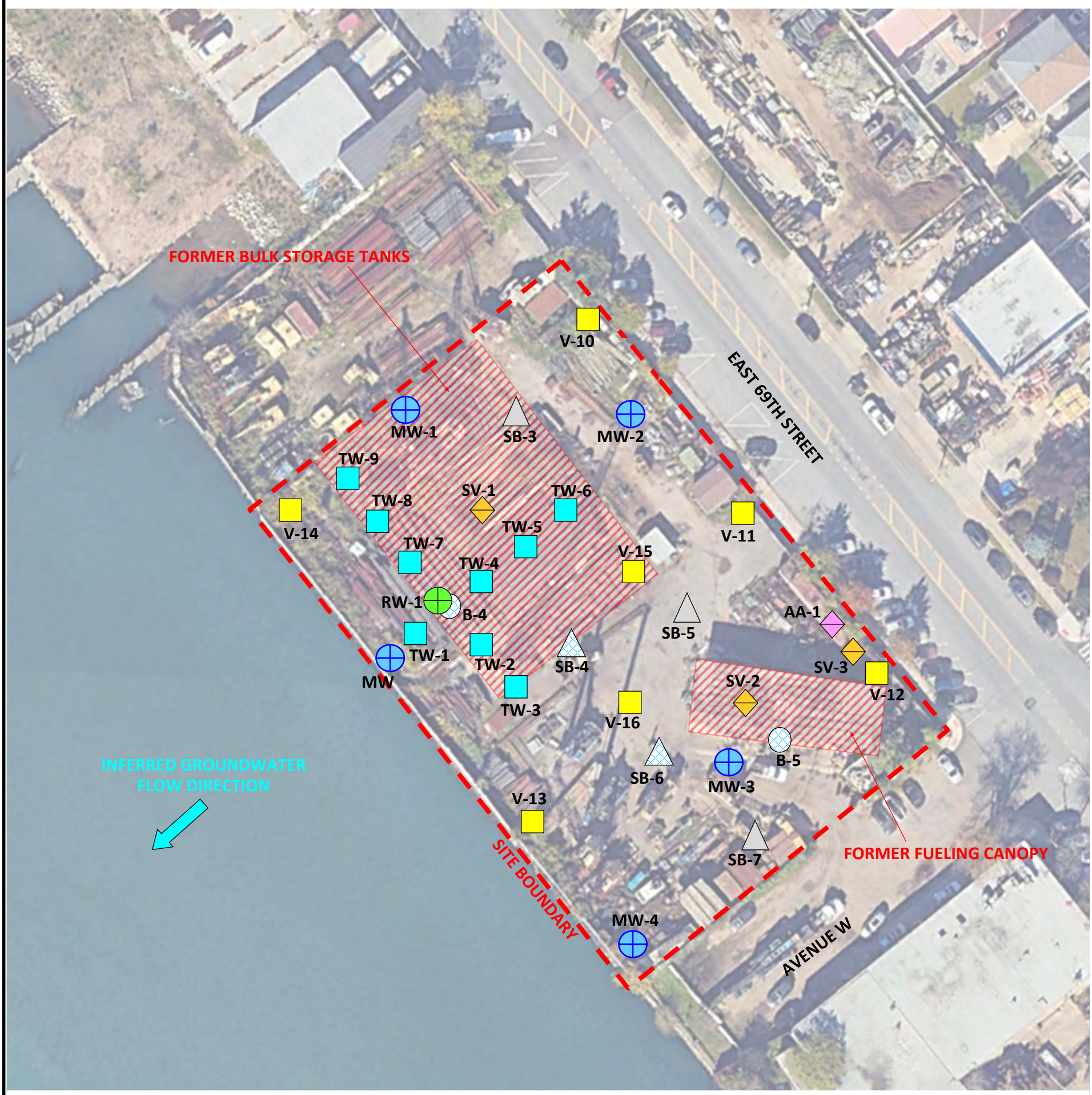
QA/QC SAMPLE SUMMARY						
Matrix	**Analytical Parameter**	**Estimated Number of Samples Collected**	**Field Duplicate**	**Field Blank**	**Trip Blank**	**MS/MSD Samples**
Soil Vapor	VOC	3	1 per 20 samples (minimum 1)	N/A	N/A	N/A
Ambient Air	VOC	1	N/A	N/A	N/A	N/A

5.0 DATA REVIEW AND REPORTING

Analytical reports will include Analytical Services Protocol (ASP) Category B laboratory data deliverables. All results will be provided in accordance with the NYSDEC Environmental Information Management System (EIMS) electronic data deliverable (EDD) format.

A thorough evaluation of the laboratory data will be completed, and a Data Usability Summary Report (DUSR) will be prepared. The primary objective for the evaluation of analytical data will be to determine whether or not the data, as presented, meets the site-specific criteria for data quality and use. The preparation of the DUSR will be prepared by a qualified, independent data validation expert. The DUSR will be prepared in accordance with *Appendix 2B, Guidance for Data Deliverables and the Development of Data Usability Summary Reports* included in NYSDEC *DER-10: Technical Guidance for Site Investigation and Remediation*.

FIGURES



SITE BOUNDARY

FORMER PETROLEUM BULK STORAGE

GCE SOIL & GROUNDWATER SAMPLE LOCATION (APRIL 2023)

GCE BORING LOCATION (APRIL 2023) - NO SOIL/GROUNWATER SAMPLE COLLECTED

VERTEX SOIL & GROUNDWATER SAMPLE LOCATION (SEPTEMBER 2023)

VERTEX SOIL SAMPLE ONLY (SEPTEMBER 2023)

PROPOSED PERMANENT MONITORING WELL

PROPOSED PERMANENT MONITORING/RECOVERY WELL

PROPOSED TEMPORARY MONITORING WELL

PROPOSED SOIL BORING

PROPOSED SOIL VAPOR POINT

PROPOSED AMBIENT AIR SAMPLE

LKB Project No. 10321.LK

N

PROPOSED SAMPLE LOCATION MAP

2250 East 69th Street Site
2250 East 69th Street
Brooklyn, New York

MAP SOURCE: GOOGLE EARTH, AERIAL DATE 2022

Lockwood, Kessler & Bartlett, Inc.
One Aerial Way · Syosset, NY 11791
516.938.0600 www.lkbinc.com

FIGURE NO. 1

APPENDIX A

QUALIFICATIONS

Richard Tobia, PE
Technical Director - NY/NJ Region

E rtobia@vertexeng.com |
P 908.448.2627

BIOGRAPHY

Mr. Tobia serves as Technical Director for Strategic Environmental Services. Mr. Tobia has over 35 years of environmental engineering experience in the specification, design, troubleshooting and installation of various soil and groundwater environmental remediation and industrial wastewater pretreatment systems. For most of those years, he has also worked as a project manager/engineer with technical focus in environmental engineering for industrial clients and the Federal government. His consulting experience spans privately and publicly held industrial clients from diverse industries, including real estate, chemical, pharmaceutical, consumer goods, food, retail, manufacturing, and law firms.

Mr. Tobia has been involved in soil and groundwater investigation and remediation, vapor intrusion investigation and mitigation design, underground storage tank (UST) and aboveground (AST) closures and installations, characterization and disposal of contaminated soil, wastewater and stormwater compliance, and industrial wastewater pretreatment system design and installation. Mr. Tobia has more than 8 years of Superfund experience in the execution of bench-, pilot- and full-scale remediation systems and multi-media site characterization.

As Technical Director and a Professional Engineer in multiple states, Mr. Tobia is responsible for the development of remediation strategies, preparation of remediation system design documents, and technical document development and review.

EDUCATION/TRAINING

B.S., Chemical Engineering, Rutgers College of Engineering 1987

LICENSES/CERTIFICATIONS

UST Subsurface Evaluator - Closure, State of NJ
Professional Engineer (PE) – Chemical/Environmental, State of CT, NJ, NY, WA
Professional Engineer (PE) – Environmental, State of NC, TX
OSHA 40 Hour HAZWOPER Training
OSHA 10 Hour Construction Training
OSHA 8 Hour Site Supervisor Training
HAZWOPER 8-hour Refresher

ASSOCIATIONS

American Chemical Society (ACS)

Highlights

- Vapor Intrusion
- Remediation System Engineering
- Industrial Wastewater Pretreatment
- Expert Testimony
- Environmental Permitting

Expertise

- Groundwater & Soil Characterization
- Remedial Design & Feasibility Studies
- Vapor Intrusion Investigations & Remediation
- Environmental Health & Safety
- Litigation Support & Expert Testimony (Environmental)
- Environmental Permitting
- Hazardous Materials/Waste
- Site Characterization
- Environmental Engineering
- UST Removal
- Chemical Engineering

PUBLICATIONS/PRESENTATIONS

"Washing Studies for PCP and Creosote-Contaminated Soil," Journal of Hazardous Materials, Vol. 38 (1994) pp. 145-161.

"In-Situ Soil Remediation of Hexavalent Chromium - Obstacles to a Successful Remediation," EBC 2nd Innovative Environmental Technology Conference, Newark, NJ, October 2007

"Mercury Removal from Thimerosal-Containing Wastewater to Achieve Discharge Standards," LFR Engineering Conference, Scottsdale, AZ, October 2004

"Evaluation of Impact of Oxygen Addition to LNAPL and Dissolved Phase Hydrocarbon Equilibrium in Groundwater," 17th International Conference on Contaminated Soils, Sediments and Water, Amherst, MA, October 2001

"Hydraulic Oil Disappearing Act," LFR Annual Technical Conference, Lake Tahoe, CA, September 2000

"An Overview: Total Maximum Daily Loads," Nabisco Environmental Leadership Conference, East Hanover, NJ, May 2000

"Pilot Scale Use of Trees to Address VOC Contamination in Groundwater and Explosives Contaminated Soil at Aberdeen Proving Ground," IBC's 2nd International Conference on Phytoremediation, Seattle, WA, June 1997

"Phytoremediation of Groundwater Contaminated with Volatile Organics Using Hybrid Poplar Trees," IGT 9th Symposium on Gas, Oil and Environmental Biotechnology, Colorado Springs, CO, December 1996

"Evaluation of Treatment Options for Mercury/PCB Contaminated Soil," Edison, NJ, 1995

"Remediation Case Study: Horizontal Groundwater Extraction Modeling and Remediation at a Metal Plating Site," Edison, NJ 1995

"An Evaluation of a Pentachlorophenol Immunoassay Soil Test Kit," National Immunochemistry Summit IV, Las Vegas, NV, August 1995

"PCP/Creosote Soil Washing Studies Followed by Residual Treatment," Edison, NJ, 1994

"Washing of PCP Contaminated Soils with Aqueous Surfactants," Eleventh Annual Environmental Management and Technology Conference/International, Atlantic City, NJ, June 1993

"Washing of Creosote and PCP-Contaminated Soils with Aqueous Surfactants as a precursor to Slurry Phase Bioremediation," FRPS 46th Annual Meeting, Charleston, SC June 1992

RELEVANT EXPERIENCE

Chlorinated Solvent Plume Investigation | Montvale & Garfield, NJ

Investigated sources and delineation of large chlorinated solvent plumes. Provided vapor intrusion investigation and remediation guidance for multiple receptors including daycare facilities, homes, and commercial facilities. Prepared conceptual site models.

Vapor Intrusion/Expert Witness | Dry Cleaner, Monticello, NY

Analyzed and upgraded sub-slab vapor intrusion remediation system. Provided expert testimony affidavit for litigation case for the Supreme Court of the State of New York County of Sullivan. Case involves dry cleaner indoor air pollutants and contamination of adjoining tenant spaces. Case is ongoing.

Methane Mitigation Design | Storage/Warehouse Facilities - NJ, NY, TX

Designed and installed methane mitigation systems for commercial facilities. Troubleshot and upgraded existing methane monitoring system components. Prepared design drawings and engineering reports for submission to regulatory agencies.

AST Design/Expert Testimony | Various - NJ

Prepared site plans for the installation of gasoline and diesel fuel oil aboveground storage tanks and generator projects. Provided expert testimony as the project Professional Engineer for Local Planning Board and Zoning Board variances and approvals. Specified and designed aboveground storage tank systems and appurtenances for fueling of facility vehicles and emergency generators. Industries served: transportation, automobile auction, telecommunication, and jewelry manufacturing.

Wastewater and Air Permitting | Jewelry Manufacturer, New York City

Working with architectural firm and luxury jewelry clients to prepare industrial wastewater and industrial process air permit applications for jewelry manufacturing facilities located in the Manhattan Borough. Preparing calculations and supporting documents for submission in accordance with NYC DEP Rules and Regulations and Federal Regulations.

Remediation | Shopping Plaza - Cornwall, NY

Completed installation of Sub-Slab Depressurization (SSD) system for mitigation of chlorinated VOCs impacting sub-slab and indoor air within leaseholds. Evaluated ongoing enhanced bioremediation remedial action using emulsified vegetable oil as the carbon substrate. Evaluated fate and transport of contaminants and effectiveness of enhanced bioremediation remedial action. Prepared NYSDEC Brownfields SMP and FER reports for submission to the State. Site has been issued a Certificate of Completion.

Groundwater Remediation | Former Industrial and Commercial Sites, NJ

Designed and implemented injection well layout and injection plans for remediation of PCE-contaminated groundwater utilizing sodium and potassium permanganate.

Site Assessment | Industrial Site - Carteret, NJ

Performed Phase I and Phase II activities to support sale of former industrial site under the NJ LSRP program. Prepared engineering and remediation cost estimates for closure. Designed active sub-slab depressurization system for new buildings. Prepared Request for Proposal and evaluated bids for excavation of contaminated site soils. Excavated VOC, metal and PCB contaminated soils.

In-Situ Stabilization/Solidification | Residential Tower - Newark, NJ

Performed bench-scale treatability studies and prepared Remedial Action Workplan for novel in-situ solidification/stabilization (ISS) project for a No. 4 fuel oil UHOT site with LNAPL. Received NJDEP approval of the RAWP for this first-of-its-kind project in NJ. ISS was implemented over an area of 25,000 square feet to a depth of 25 feet. Designed LNAPL recovery system for No. 4 fuel oil.

Phytoremediation | Superfund - MD, NJ

Investigated the use of trees to remediate and control the migration of chlorinated volatile organic compounds in groundwater. Subcontracted the planting of one-acre test plots of hybrid poplar trees. Investigated monitoring and sampling techniques to determine effectiveness of the phytoremediation systems.

Vapor Extraction/Suppression | Superfund - CA, ME

Collaborated on the design, construction, installation, and operation of pilot-scale in-situ vapor extraction systems for the removal of volatile organics from soil. Studied the use of vapor suppression technologies to reduce SO2 and H2S emissions during test excavation.

Soil Vapor Extraction/Dual Phase Extraction (SVE/DPE) | Various - NJ, NY

Designed soil vapor extraction systems for remediation of petroleum and chlorinated solvent contaminated soils. Specified piping, blowers, and vapor-phase treatment systems for a fully operational system to remediate soils to below State remediation standards. Prepared design drawings in accordance with State technical guidance documents.

Groundwater Treatment | Gas Station NY, PA

Collaborated on the design of groundwater treatment systems for BTEX, MTBE and TBA. Systems included in-situ ozonation and ex-situ pump and treat via carbon and air stripping. Provided oversight of pipeline installation, prepared and reviewed RFPs, and developed Process Flow Diagrams and P&IDs.

Herbicide Remediation | Superfund - CA

Performed field-scale ultraviolet/ozone wastewater treatment pilot testing to break down dinoseb-contaminated wash water from a soil washing process. Refine treatment parameters including recirculation of wastewater and engineer makeshift cooling pond.

Pesticide Remediation | Superfund - AZ

Performed in-situ feasibility field studies for anaerobic biodegradation of toxaphene and lindane-contaminated soils from former livestock dipping vat operations.

Industrial Wastewater Pretreatment | Various - NJ

Designed, procured, and installed several industrial wastewater pretreatment systems. Specified, procured, and installed equipment including pumps, mixers, tanks, chemical feed systems, and controls for the pretreatment of wastewater pH, oil & grease, metals, VOCs prior to discharge to the sanitary sewer system. Managed O&M, sampling, and reporting to various State, Local and Municipal agencies in accordance with discharge permits. Prepared wastewater permit applications. Industries served: food, automobile auction, jewelry manufacturing, pharmaceutical, fragrance manufacturing.

SSDS Design | Various - NJ, NY, NC

Designed sub-slab depressurization systems for several commercial, residential, and industrial buildings. Performed pilot tests and evaluated testing data for full-scale design. Specified piping, blowers and sub-grade materials to impart a negative pressure on the sub-slab environment to prevent vapor-phase contaminants from entering the occupied space. Prepared design drawings in accordance with State technical guidance documents and Local regulations. Industries served: pharmaceutical, dry cleaning, airport, chemical.

SPCC/DPCC | Various - National/NJ

Prepared and signed as Professional Engineer on numerous Spill Prevention Control and Countermeasure (SPCC) plans developed in accordance with Federal regulations and Discharge Prevention, Containment and Countermeasure (DPCC) developed in accordance with NJDEP regulations. Industries served: banking, transportation, chemical industry, consumer products, pharmaceutical, telecommunications.

Engineered System Troubleshooting | Various - National

Perform engineering evaluations and third-party of numerous soil and groundwater environmental remediation systems. Reviewed historical operational and contaminant data and provided an analysis of current system and unit operation performance. Recommend engineered upgrades to various unit operations and systems. Prepared evaluation and recommendation reports including cost benefit analysis.

Thermal Treatment | Superfund - CA, FL, MO

Oversaw and evaluated the pilot-scale testing of the feasibility of thermal distillation process to dechlorinate and remove dioxin, PCP, and creosote contaminants from soil and sludge. Performed dioxin QA/QC sampling of the Times Beach incineration process.

Multimedia Site Investigations | Superfund - Multiple States

Performed numerous multimedia investigations at various sites throughout the country. Sites included wood-preserving facilities (cerosote, PCP, metals, dioxin), metal plating facilities (metals, hexavalent chromium), pesticide/herbicide facilities (dinoseb, toxaphene), military arsenals (metals, VOCs).

Hexavalent Chromium Remediation - Soil & Groundwater | Metal Plating Site - PA

Evaluated the use of calcium polysulfide (CaSx) for the remediation of hexavalent chromium contaminated soils and groundwater at northeastern PA site. Subcontracted innovative high pressure lance injections of CaSx for shallow soil remediation. Scheduled shipments of CaSx by rail and tank truck. Oversaw upgrades and operation and maintenance of groundwater and surface water treatment systems utilizing ion exchange resins for treatment of hexavalent and trivalent chromium.

Stormwater Permitting | Various - NJ, PA

Prepared numerous NPDES Storm Water Permits for compliance with State regulations and monitoring program for industrial clients. Managed storm water sampling and reporting for various clients.

Potable Water Treatment and O&M | Various - NJ, NY

Designed potable water treatment systems for small industrial users. Managed O&M, sampling and reporting in accordance with County DOH and State regulations. Prepared O&M manuals for system operation.

Soil Washing | Superfund - NH, FL, GA

Designed, performed, and evaluated several bench-scale and pilot-scale soil washing studies for PCP, creosote, PCB, metals, and mercury contaminated soils. Investigated the use of chemical additives and temperature effects on the removal of the contaminants. Studied various wastewater and residual treatment technologies.

Bioremediation | Superfund - AL, AZ, MD

Performed preliminary biodegradation studies on pesticide and PAH contaminated soils. Assisted in the construction and operation of pilot-scale composting and landfarming projects. Installed computer-controlled data acquisition system to remotely monitor and control composting activities.

Groundwater Treatment | Superfund - FL

Provided engineering support in the design of a groundwater extraction and treatment system for hexavalent chromium using novel horizontal extraction wells and conventional reduction and flocculation.

Stabilization/Solidification | Superfund - AL, CA, GA, IA, ME, MD, NH

Performed bench-scale and pilot-scale solidification studies on metal and semi-volatile contaminated sludges and soils. Utilized chemical and physical methods to determine the integrity of solidified waste. Provided technical assistance and recommendations for full-scale stabilization projects.

Multi-media Site Investigations | Superfund - CA, GA, IL, MS, NH

Performed, managed, and provided engineering support for multi-media site investigations. Sampling involved groundwater, surface water, sediment, waste pile, soil, soil gas and air.

Timothy Biercz
Regional Service Area Lead

E tbiercz@vertexeng.com |
P 908.448.2627

BIOGRAPHY

Mr. Biercz has 20 years of experience performing environmental site assessment, site investigation, and remediation projects at industrial, commercial, and residential properties throughout the United States. As a Regional Service Area Lead, Mr. Biercz provides technical and organizational support for VERTEX projects. These activities include client and regulatory agency interaction; preparation of proposals and remedial cost opinions; budget management; field sampling and data management; staff training and scheduling, preparation and review of technical reports; and project management.

His due diligence experiences include site reconnaissance, interviews, research of historical information, interpretation of environmental databases, review of documentation, and technical report preparation. Mr. Biercz also has experience preparing cost estimates and interpreting results for the sampling of asbestos-containing materials (ACM), lead-based paint (LBP), and radon.

Mr. Biercz has experience in the design, budgeting, management, and implementation of soil, groundwater, and vapor intrusion (soil vapor and indoor air) investigations and remediation. Remedial experiences include soil excavation and soil management oversight; remedial injections (in-situ bioremediation); groundwater pump & treat; enhanced fluid recovery (EFR); dual-phase extraction; and vapor intrusion mitigation including vapor barrier and sub-slab depressurization system (SSDS).

Mr. Biercz is a certified New Jersey Department of Environmental Protection (NJDEP) Subsurface Evaluator and certified NJDEP Underground Storage Tank Closure individual, who has experience assisting in the closure of numerous underground storage tanks (USTs) in the State of New Jersey. In addition, Mr. Biercz is a New York City Office of Environmental Remediation Gold Certified Professional with experience working to obtain regulatory closure through the New York City E-Designation Program. Furthermore, Mr. Biercz has worked closely with the New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) to obtain regulatory closure of spill cases and obtain a Certificate of Completion through the Brownfield Cleanup Program (BCP).

EDUCATION/TRAINING

B.S., Natural Resource Management & Applied Ecology, Rutgers University 2002

LICENSES/CERTIFICATIONS

Certified NJDEP Underground Storage Tank Closure, State of NJ
Certified NJDEP Subsurface Evaluator, State of NJ
New York City Office of Environmental Remediation Gold Certified Professional
Hazwoper
Hazwoper 8-hour Refresher
OSHA 10-hour Construction

Highlights

Subsurface Investigation Expertise
Nationwide Due Diligence Experience
Environmental Site Assessment and Remediation

Expertise

Analysis
Database Review
Environmental Permitting
Environmental Portfolio Reviews
Phase I ESAs
Phase II LSI
Environmental Health & Safety
Environmental Permitting
Groundwater & Soil Characterization
Hazardous Materials/Waste
Land Development
Remedial Design & Feasibility Studies
Remediation & Construction Management
Site Characterization
UST Removal
Vapor Intrusion Investigations & Remediation
Soil Disposal

SPECIAL TRAINING

Vegetation Identification for Wetland Delineation
Site Remediation Reform Act and LSRP Program
Site Remediation Basics
Regulatory Training in Underground Storage Tanks
NJDEP SRRA Implementation: The Final Rule Package
Environmental Funding

RELEVANT EXPERIENCE

Due Diligence Investigations | Various Locations

Mr. Biercz has completed Phase I Environmental Site Assessments, Preliminary Assessments, and Phase II Limited Subsurface Investigations for various clients in numerous states of the continental United States and Puerto Rico. The clients include lending institutions, corporations, developers, and private individuals.

Site Characterization / Remediation / Redevelopment | New York

Mr. Biercz was the Project Manager throughout the pre-purchase due diligence activities and complete redevelopment of a former commercial/industrial property in New York. Due diligence activities included the completion of a Phase I ESA, Phase II subsurface investigation, Property Condition Assessment, and Pre-Demolition Asbestos and Lead-Based Paint Survey. Following the acquisition of the property, Mr. Biercz coordinated asbestos abatement activities; additional soil, groundwater, and soil vapor sampling; removal of nine underground storage tanks and updating NYSDEC Petroleum Bulk Storage records; waste characterization and off-site disposal of historic fill materials; vapor intrusion sampling and mitigation via the installation of a vapor barrier; and closure of two NYSDEC Spill listings associated with the property.

Brownfield Cleanup Program | New York

In support of the acquisition of the property in New York, Mr. Biercz assisted the client in the characterization of current conditions via soil, groundwater, soil vapor, and indoor air sampling and analytical data analysis. Mr. Biercz prepared a remedial cost opinion to evaluate potential costs associated with enrollment of the property in the Brownfield Cleanup Program (BCP) and remediation/mitigation of the identified environmental concerns. Mr. Biercz prepared the BCP application and secured a Brownfield Cleanup Agreement between the property owner and the NYSDEC. Following the acceptance into the BCP, Mr. Biercz was the Project Manager overseeing regulatory submittals and execution of the remedial investigation and remedial actions (soil excavation and vapor mitigation). Regulatory closure was achieved via a Certificate of Completion, and Mr. Biercz continues to assist the client with post-closure inspections, monitoring, and reporting.

Industrial Site Recovery Act | New Jersey

Mr. Biercz was the Project Manager during the investigation and remediation of a former dye manufacturing facility in New Jersey. The remediation is being completed under the NJ Industrial Site Recovery Act (ISRA) program, under the oversight of a Licensed Site Remedial Professional (LSRP). Remedial activities included the development of site-specific remedial standards; excavation and off-site disposal of approximately 4,300 tons of soil; evaluation of post-excavation soil samples via compliance averaging (75%/10X procedure); remediation of PCB-impacted soil under a United States Environmental Protection Agency (USEPA) Self-Implementing Plan; installation of multiple sub-slab depressurization systems in newly constructed buildings; establishment of a Classification Exception Area (CEA) for monitored natural attenuation of groundwater; and regulatory submittals.

Litigation Support | New York

Mr. Biercz provided litigation support services for legal counsel, with the focus on evaluating potentially impacted fill material and historic agricultural activities at a property in Long Island, NY. The scope of services included a desktop review of available Phase I ESA, Phase II, and Phase III reports; evaluation of historic analytical data to current regulatory standards; and completion of a site investigation to characterize current conditions.

Preliminary Assessment / Site Characterization | New Jersey

Mr. Biercz completed a Preliminary Assessment of an 11-acre former commercial and residential property in New Jersey. Following the identification of several areas of concern, Mr. Biercz coordinated the completion of a limited subsurface investigation which included groundwater sampling via temporary monitoring wells and soil gas screening via a mobile laboratory. The results of the groundwater and soil gas screening were used to generate a remedial cost opinion for the client.

Underground Storage Tank Closure | New Jersey

As a NJDEP-licensed Subsurface Evaluator, Mr. Biercz assisted in the closure of a 500-gallon unregulated heating oil underground storage tank in New Jersey. Mr. Biercz provided oversight during the cleaning and removal of the tank; collection of post-excavation soil samples; off-site disposal of petroleum-impacted soils; and preparation of regulatory submittal documentation to the NJDEP. Following review of the documentation, the NJDEP issued a No Further Action determination and closed the case number associated with the property.

E-Designation Services | New York

Mr. Biercz was the Project Manager throughout pre-purchase due diligence activities, including the completion of a Phase I, asbestos survey, property condition assessment, and Phase II. Following property acquisition, Mr. Biercz assisted the client to satisfy the requirements of an E-Designation for Hazardous Materials by working closely with the New York City Office of Environmental Remediation (OER). Redevelopment activities were conducted in accordance with an OER-approved Soil/Materials Management Plan, and Mr. Biercz directed waste characterization, soil management oversight, and underground storage tank (UST) removal. Following preparation of a Remedial Closure Report, a Notice of Satisfaction was issued by OER.

Act 2 Consulting | Philadelphia, PA

Mr. Biercz assisted with the oversight and management of a redevelopment project to obtain liability protection through the participation in Act 2 by demonstrating attainment of Non-Residential, Used Aquifer Site Specific Standards. The scope of work included the review of previous investigation findings, soil and groundwater sampling, soil excavation, and technical report preparation (Remedial Investigation Report/Cleanup Plan). Mr. Biercz also worked with Pennsylvania Department of Environmental Protection (PADEP) regulators to generate a Cleanup Plan Addendum, outlining revisions to the proposed capping plan.

APPENDIX B

LABORATORY CERTIFICATION

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2025
Issued October 09, 2024
Revised February 07, 2025

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ANDY REZENDES
PACE ANALYTICAL SERVICES, LLC - MANSFIELD, MA (120 FORBES)
120 FORBES BLVD
MANSFIELD, MA 02048

NY Lab Id No: 12191

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Acrylates	
Acetonitrile	EPA TO-15
Acrylonitrile	EPA TO-15
Methyl methacrylate	EPA TO-15
Chlorinated Hydrocarbons	
1,2,4-Trichlorobenzene	EPA TO-15
Hexachlorobutadiene	EPA TO-15
Polynuclear Aromatics	
Naphthalene	EPA TO-15
Purgeable Aromatics	
1,2,4-Trimethylbenzene	EPA TO-15
1,2-Dichlorobenzene	EPA TO-15
1,3,5-Trimethylbenzene	EPA TO-15
1,3-Dichlorobenzene	EPA TO-15
1,4-Dichlorobenzene	EPA TO-15
2-Chlorotoluene	EPA TO-15
Benzene	EPA TO-15
Chlorobenzene	EPA TO-15
Ethyl benzene	EPA TO-15
Isopropylbenzene	EPA TO-15
m/p-Xylenes	EPA TO-15
o-Xylene	EPA TO-15
Styrene	EPA TO-15
Toluene	EPA TO-15
Total Xylenes	EPA TO-15
Purgeable Halocarbons	
1,1,1-Trichloroethane	EPA TO-15

Serial No.: 69964

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Purgeable Halocarbons

1,1,2,2-Tetrachloroethane	EPA TO-15
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA TO-15
1,1,2-Trichloroethane	EPA TO-15
1,1-Dichloroethane	EPA TO-15
1,1-Dichloroethene	EPA TO-15
1,2-Dibromo-3-chloropropane	EPA TO-15
1,2-Dibromoethane	EPA TO-15
1,2-Dichloroethane	EPA TO-15
1,2-Dichloropropane	EPA TO-15
3-Chloropropene (Allyl chloride)	EPA TO-15
Bromodichloromethane	EPA TO-15
Bromoform	EPA TO-15
Bromomethane	EPA TO-15
Carbon tetrachloride	EPA TO-15
Chloroethane	EPA TO-15
Chloroform	EPA TO-15
Chloromethane	EPA TO-15
cis-1,2-Dichloroethene	EPA TO-15
cis-1,3-Dichloropropene	EPA TO-15
Dibromochloromethane	EPA TO-15
Dichlorodifluoromethane	EPA TO-15
Methylene chloride	EPA TO-15
Tetrachloroethene	EPA TO-15
trans-1,2-Dichloroethene	EPA TO-15
trans-1,3-Dichloropropene	EPA TO-15
Trichloroethene	EPA TO-15
Trichlorofluoromethane	EPA TO-15

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Purgeable Halocarbons

Vinyl bromide	EPA TO-15
Vinyl chloride	EPA TO-15

Volatile Organics

1,2-Dichlorotetrafluoroethane	EPA TO-15
1,3-Butadiene	EPA TO-15
1,4-Dioxane	EPA TO-15
2,2,4-Trimethylpentane	EPA TO-15
2-Butanone (Methylethyl ketone)	EPA TO-15
4-Methyl-2-Pentanone	EPA TO-15
Acetaldehyde	EPA TO-15
Acetone	EPA TO-15
Acrolein (Propenal)	EPA TO-15
Carbon Disulfide	EPA TO-15
Cyclohexane	EPA TO-15
Ethylene oxide	EPA TO-15
Hexane	EPA TO-15
Isopropanol	EPA TO-15
Methanol	EPA TO-15
Methyl tert-butyl ether	EPA TO-15
n-Heptane	EPA TO-15
tert-butyl alcohol	EPA TO-15
Vinyl acetate	EPA TO-15

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All approved analytes are listed below:

Acrylates	
Acetonitrile	EPA TO-15
Acrylonitrile	EPA TO-15
Methyl methacrylate	EPA TO-15
Chlorinated Hydrocarbons	
1,2,4-Trichlorobenzene	EPA TO-15
Hexachlorobutadiene	EPA TO-15
Polychlorinated Biphenyls	
PCBs and Aroclors	EPA TO-10A
	EPA TO-4A
Polynuclear Aromatics	
Acenaphthene	EPA TO-13A
Acenaphthylene	EPA TO-13A
Anthracene	EPA TO-13A
Benzo(a)anthracene	EPA TO-13A
Benzo(a)pyrene	EPA TO-13A
Benzo(b)fluoranthene	EPA TO-13A
Benzo(g,h,i)perylene	EPA TO-13A
Benzo(k)fluoranthene	EPA TO-13A
Chrysene	EPA TO-13A
Dibenzo(a,h)anthracene	EPA TO-13A
Fluoranthene	EPA TO-13A
Fluorene	EPA TO-13A
Indeno(1,2,3-cd)pyrene	EPA TO-13A
Naphthalene	EPA TO-13A
	EPA TO-15
Phenanthrene	EPA TO-13A

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Polynuclear Aromatics

Pyrene	EPA TO-13A

Purgeable Aromatics

1,2,4-Trimethylbenzene	EPA TO-15
1,2-Dichlorobenzene	EPA TO-15
1,3,5-Trimethylbenzene	EPA TO-15
1,3-Dichlorobenzene	EPA TO-15
1,4-Dichlorobenzene	EPA TO-15
2-Chlorotoluene	EPA TO-15
Benzene	EPA TO-15
Chlorobenzene	EPA TO-15
Ethyl benzene	EPA TO-15
Isopropylbenzene	EPA TO-15
m/p-Xylenes	EPA TO-15
o-Xylene	EPA TO-15
Styrene	EPA TO-15
Toluene	EPA TO-15
Total Xylenes	EPA TO-15

Purgeable Halocarbons

1,1,1-Trichloroethane	EPA TO-15
1,1,2,2-Tetrachloroethane	EPA TO-15
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA TO-15
1,1,2-Trichloroethane	EPA TO-15
1,1-Dichloroethane	EPA TO-15
1,1-Dichloroethene	EPA TO-15
1,2-Dibromo-3-chloropropane	EPA TO-15
1,2-Dibromoethane	EPA TO-15

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All approved analytes are listed below:

Purgeable Halocarbons

1,2-Dichloroethane	EPA TO-15
1,2-Dichloropropane	EPA TO-15
3-Chloropropene (Allyl chloride)	EPA TO-15
Bromodichloromethane	EPA TO-15
Bromoform	EPA TO-15
Bromomethane	EPA TO-15
Carbon tetrachloride	EPA TO-15
Chloroethane	EPA TO-15
Chloroform	EPA TO-15
Chloromethane	EPA TO-15
cis-1,2-Dichloroethene	EPA TO-15
cis-1,3-Dichloropropene	EPA TO-15
Dibromochloromethane	EPA TO-15
Dichlorodifluoromethane	EPA TO-15
Methylene chloride	EPA TO-15
Tetrachloroethene	EPA TO-15
trans-1,2-Dichloroethene	EPA TO-15
trans-1,3-Dichloropropene	EPA TO-15
Trichloroethene	EPA TO-15
Trichlorofluoromethane	EPA TO-15
Vinyl bromide	EPA TO-15
Vinyl chloride	EPA TO-15

Volatile Chlorinated Organics

Benzyl chloride	EPA TO-15

Volatile Organics

1,2-Dichlorotetrafluoroethane	EPA TO-15

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All approved analytes are listed below:

Volatile Organics

1,3-Butadiene	EPA TO-15
1,4-Dioxane	EPA TO-15
2,2,4-Trimethylpentane	EPA TO-15
2-Butanone (Methylethyl ketone)	EPA TO-15
4-Methyl-2-Pentanone	EPA TO-15
Acetaldehyde	EPA TO-15
Acetone	EPA TO-15
Acrolein (Propenal)	EPA TO-15
Carbon Disulfide	EPA TO-15
Cyclohexane	EPA TO-15
Hexane	EPA TO-15
Isopropanol	EPA TO-15
Methanol	EPA TO-15
Methyl tert-butyl ether	EPA TO-15
n-Heptane	EPA TO-15
tert-butyl alcohol	EPA TO-15
Vinyl acetate	EPA TO-15

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All approved analytes are listed below:

Metals I

Arsenic, Total	EPA 200.8 Rev. 5.4
Barium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Chromium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Copper, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4
Lead, Total	EPA 200.8 Rev. 5.4
Manganese, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Mercury, Total	EPA 245.1 Rev. 3.0
Selenium, Total	EPA 200.8 Rev. 5.4
Silver, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Zinc, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4

Metals II

Aluminum, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Antimony, Total	EPA 200.8 Rev. 5.4
Beryllium, Total	EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.8 Rev. 5.4

Serial No.: 69960

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2025
Issued April 01, 2024
Revised February 07, 2025

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. JOHN TRIMBLE
PACE ANALYTICAL SERVICES, LLC - MANSFIELD, MA (320 FORBES)
320 FORBES BOULEVARD
MANSFIELD, MA 02048

NY Lab Id No: 11627

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Metals II

Vanadium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4

Metals III

Boron, Total	EPA 200.7 Rev. 4.4
Calcium, Total	EPA 200.7 Rev. 4.4
Magnesium, Total	EPA 200.7 Rev. 4.4
Potassium, Total	EPA 200.7 Rev. 4.4
Sodium, Total	EPA 200.7 Rev. 4.4

Miscellaneous

1,4-Dioxane	EPA 522

Non-Metals

Calcium Hardness	EPA 200.7 Rev. 4.4

Perfluorinated Alkyl Acids

11Cl-PF3OUdS	EPA 533
	EPA 537.1, Version 2
4:2FTS	EPA 533
6:2FTS	EPA 533
8:2FTS	EPA 533
9Cl-PF3ONS	EPA 533
	EPA 537.1, Version 2
ADONA	EPA 533
	EPA 537.1, Version 2
HFPO-DA (GenX)	EPA 533
	EPA 537.1, Version 2
NEtFOSAA	EPA 537.1, Version 2
NMeFOSAA	EPA 537.1, Version 2

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Perfluorinated Alkyl Acids

Nonafluoro-3,6-Dioxaheptanoic Acid	EPA 533
Perflourotridecanoic Acid (PFTrDA)	EPA 537.1, Version 2
Perfluordecanoic Acid (PFDA)	EPA 533
	EPA 537.1, Version 2
Perfluoro-3-Methoxypropanoic Acid	EPA 533
Perfluoro-4-Methoxybutanoic Acid	EPA 533
Perfluorobutanesulfonic Acid (PFBS)	EPA 533
	EPA 537.1, Version 2
Perfluorobutanoic Acid (PFBA)	EPA 533
Perfluorododecanoic Acid (PFDoA)	EPA 533
	EPA 537.1, Version 2
Perfluoroheptanesulfonic Acid (PFHpS	EPA 533
Perfluoroheptanoic Acid (PFHpA)	EPA 533
	EPA 537.1, Version 2
Perfluorohexanesulfonic Acid (PFHxS	EPA 533
	EPA 537.1, Version 2
Perfluorohexanoic Acid (PFHxA)	EPA 533
	EPA 537.1, Version 2
Perfluorononanoic Acid (PFNA)	EPA 533
	EPA 537.1, Version 2
Perfluorooctanesulfonic Acid (PFOS)	EPA 533
	EPA 537.1, Version 2
Perfluorooctanoic Acid (PFOA)	EPA 533
	EPA 537.1, Version 2
Perfluoropentanesulfonic Acid (PFPeS	EPA 533
Perfluoropentanoic Acid (PFPeA)	EPA 533
Perfluorotetradecanoic Acid (PFTA)	EPA 537.1, Version 2

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Perfluorinated Alkyl Acids

Perfluoroundecanoic Acid (PFUnA)	EPA 533
	EPA 537.1, Version 2
PFEESA	EPA 533

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All approved analytes are listed below:

Amines

1,2-Diphenylhydrazine	EPA 8270E
2-Nitroaniline	EPA 8270E
3-Nitroaniline	EPA 8270E
4-Chloroaniline	EPA 8270E
4-Nitroaniline	EPA 8270E
Aniline	EPA 8270E
Carbazole	EPA 8270E
Pyridine	EPA 8270E

Benzidines

3,3'-Dichlorobenzidine	EPA 8270E
Benzidine	EPA 8270E

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
4,4'-DDE	EPA 8081B
4,4'-DDT	EPA 8081B
Aldrin	EPA 8081B
alpha-BHC	EPA 8081B
alpha-Chlordane	EPA 8081B
beta-BHC	EPA 8081B
Chlordane Total	EPA 8081B
delta-BHC	EPA 8081B
Dieldrin	EPA 8081B
Endosulfan I	EPA 8081B
Endosulfan II	EPA 8081B
Endosulfan sulfate	EPA 8081B
Endrin	EPA 8081B

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Chlorinated Hydrocarbon Pesticides

Endrin aldehyde	EPA 8081B
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
Heptachlor epoxide	EPA 8081B
Isodrin	EPA 8081B
Lindane	EPA 8081B
Methoxychlor	EPA 8081B
Mirex	EPA 8081B
PCNB	EPA 8270E
Toxaphene	EPA 8081B

Chlorinated Hydrocarbons

1,2,4,5-Tetrachlorobenzene	EPA 8270E
1,2,4-Trichlorobenzene	EPA 8270E
2-Chloronaphthalene	EPA 8270E
Hexachlorobenzene	EPA 8081B
	EPA 8270E
Hexachlorobutadiene	EPA 8270E
Hexachlorocyclopentadiene	EPA 8270E
Hexachloroethane	EPA 8270E

Fuel Oxygenates

Ethanol	EPA 8015D
tert-amyl alcohol	EPA 8015D
tert-butyl alcohol	EPA 8015D

Haloethers

2,2'-Oxybis(1-chloropropane)	EPA 8270E

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Haloethers

4-Bromophenylphenyl ether	EPA 8270E
4-Chlorophenylphenyl ether	EPA 8270E
Bis(2-chloroethoxy)methane	EPA 8270E
Bis(2-chloroethyl)ether	EPA 8270E

Low Level Polynuclear Aromatics

Acenaphthene Low Level	EPA 8270E SIM
Acenaphthylene Low Level	EPA 8270E SIM
Anthracene Low Level	EPA 8270E SIM
Benzo(a)anthracene Low Level	EPA 8270E SIM
Benzo(a)pyrene Low Level	EPA 8270E SIM
Benzo(b)fluoranthene Low Level	EPA 8270E SIM
Benzo(g,h,i)perylene Low Level	EPA 8270E SIM
Benzo(k)fluoranthene Low Level	EPA 8270E SIM
Chrysene Low Level	EPA 8270E SIM
Dibenzo(a,h)anthracene Low Level	EPA 8270E SIM
Fluoranthene Low Level	EPA 8270E SIM
Fluorene Low Level	EPA 8270E SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270E SIM
Naphthalene Low Level	EPA 8270E SIM
Phenanthrene Low Level	EPA 8270E SIM
Pyrene Low Level	EPA 8270E SIM

Metals I

Barium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)

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Metals I

Cadmium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Calcium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Chromium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Copper, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Iron, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Lead, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Magnesium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B

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Metals I

Magnesium, Total	EPA 200.8, Rev. 5.4 (1994)
Manganese, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Nickel, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Potassium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Silver, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Sodium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Strontium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B

Metals II

Aluminum, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D

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Metals II

Aluminum, Total	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Antimony, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Arsenic, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Beryllium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Mercury, Low Level	EPA 245.7, Rev. 2.0 (2005)
	EPA 1631E
Mercury, Total	EPA 245.1, Rev. 3.0 (1994)
	EPA 7470A
Selenium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Vanadium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Zinc, Total	EPA 200.7, Rev. 4.4 (1994)

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Metals II

Zinc, Total	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)

Metals III

Cobalt, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Molybdenum, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Thallium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Tin, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D
	EPA 6020B
Titanium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D

Mineral

Hardness, Total	SM 2340B-2011

Miscellaneous

Boron, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D

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Miscellaneous

Boron, Total	EPA 6020B
Silica, Dissolved	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D

Nitroaromatics and Isophorone

2,4-Dinitrotoluene	EPA 8270E
2,6-Dinitrotoluene	EPA 8270E
Isophorone	EPA 8270E
Nitrobenzene	EPA 8270E

Nitrosoamines

N-Nitrosodimethylamine	EPA 8270E
N-Nitrosodi-n-propylamine	EPA 8270E
N-Nitrosodiphenylamine	EPA 8270E

Organophosphate Pesticides

Atrazine	EPA 8270E

Perfluorinated Alkyl Acids

11Cl-PF3OUdS	EPA 1633 (Draft)
4:2FTS	EPA 1633 (Draft)
6:2FTS	EPA 1633 (Draft)
8:2FTS	EPA 1633 (Draft)
9Cl-PF3ONS	EPA 1633 (Draft)
ADONA	EPA 1633 (Draft)
HFPO-DA (GenX)	EPA 1633 (Draft)
NEtFOSAA	EPA 1633 (Draft)
NMeFOSAA	EPA 1633 (Draft)
Nonafluoro-3,6-Dioxaheptanoic Acid	EPA 1633 (Draft)
Perflourotridecanoic Acid (PFTrDA)	EPA 1633 (Draft)

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Perfluorinated Alkyl Acids

Perfluordecanoic Acid (PFDA)	EPA 1633 (Draft)
Perfluoro-3-Methoxypropanoic Acid	EPA 1633 (Draft)
Perfluoro-4-Methoxybutanoic Acid	EPA 1633 (Draft)
Perfluorobutanesulfonic Acid (PFBS)	EPA 1633 (Draft)
Perfluorobutanoic Acid (PFBA)	EPA 1633 (Draft)
Perfluorododecanoic Acid (PFDoA)	EPA 1633 (Draft)
Perfluoroheptanesulfonic Acid (PFHpS	EPA 1633 (Draft)
Perfluoroheptanoic Acid (PFHpA)	EPA 1633 (Draft)
Perfluorohexanesulfonic Acid (PFHxS	EPA 1633 (Draft)
Perfluorohexanoic Acid (PFHxA)	EPA 1633 (Draft)
Perfluorononanoic Acid (PFNA)	EPA 1633 (Draft)
Perfluorooctanesulfonic Acid (PFOS)	EPA 1633 (Draft)
Perfluorooctanoic Acid (PFOA)	EPA 1633 (Draft)
Perfluoropentanesulfonic Acid (PFPeS	EPA 1633 (Draft)
Perfluoropentanoic Acid (PFPeA)	EPA 1633 (Draft)
Perfluorotetradecanoic Acid (PFTA)	EPA 1633 (Draft)
Perfluoroundecanoic Acid (PFUnA)	EPA 1633 (Draft)
PFEESA	EPA 1633 (Draft)

Petroleum Hydrocarbons

Diesel Range Organics	EPA 8015D

Phthalate Esters

Benzyl butyl phthalate	EPA 8270E
Bis(2-ethylhexyl) phthalate	EPA 8270E
Diethyl phthalate	EPA 8270E
Dimethyl phthalate	EPA 8270E
Di-n-butyl phthalate	EPA 8270E

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Phthalate Esters

Di-n-octyl phthalate	EPA 8270E

Polychlorinated Biphenyls

Aroclor 1016 (PCB-1016)	EPA 8082A
Aroclor 1221 (PCB-1221)	EPA 8082A
Aroclor 1232 (PCB-1232)	EPA 8082A
Aroclor 1242 (PCB-1242)	EPA 8082A
Aroclor 1248 (PCB-1248)	EPA 8082A
Aroclor 1254 (PCB-1254)	EPA 8082A
Aroclor 1260 (PCB-1260)	EPA 8082A
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A

Polynuclear Aromatics

Acenaphthene	EPA 8270E
Acenaphthylene	EPA 8270E
Anthracene	EPA 8270E
Benzo(a)anthracene	EPA 8270E
Benzo(a)pyrene	EPA 8270E
Benzo(b)fluoranthene	EPA 8270E
Benzo(g,h,i)perylene	EPA 8270E
Benzo(k)fluoranthene	EPA 8270E
Chrysene	EPA 8270E
Dibenzo(a,h)anthracene	EPA 8270E
Fluoranthene	EPA 8270E
Fluorene	EPA 8270E
Indeno(1,2,3-cd)pyrene	EPA 8270E
Naphthalene	EPA 8270E

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All approved analytes are listed below:

Polynuclear Aromatics

Phenanthrene	EPA 8270E
Pyrene	EPA 8270E

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270E
2,4,5-Trichlorophenol	EPA 8270E
2,4,6-Trichlorophenol	EPA 8270E
2,4-Dichlorophenol	EPA 8270E
2,4-Dimethylphenol	EPA 8270E
2,4-Dinitrophenol	EPA 8270E
2-Chlorophenol	EPA 8270E
2-Methyl-4,6-dinitrophenol	EPA 8270E
2-Methylphenol	EPA 8270E
2-Nitrophenol	EPA 8270E
3-Methylphenol	EPA 8270E
4-Chloro-3-methylphenol	EPA 8270E
4-Methylphenol	EPA 8270E
4-Nitrophenol	EPA 8270E
Pentachlorophenol	EPA 8270E
Phenol	EPA 8270E

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270E
1,2-Dichlorobenzene, Semi-volatile	EPA 8270E
1,3-Dichlorobenzene, Semi-volatile	EPA 8270E
1,4-Dichlorobenzene, Semi-volatile	EPA 8270E
2-Methylnaphthalene	EPA 8270E
Acetophenone	EPA 8270E

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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. JOHN TRIMBLE
PACE ANALYTICAL SERVICES, LLC - MANSFIELD, MA (320 FORBES)
320 FORBES BOULEVARD
MANSFIELD, MA 02048

NY Lab Id No: 11627

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Semi-Volatile Organics

Benzaldehyde	EPA 8270E
Benzoic Acid	EPA 8270E
Benzyl alcohol	EPA 8270E
Caprolactam	EPA 8270E
Dibenzofuran	EPA 8270E

Volatiles Organics

1,4-Dioxane	EPA 8270E SIM
Ethylene Glycol	EPA 8015D
Isobutyl alcohol	EPA 8015D
Methanol	EPA 8015D
Propylene Glycol	EPA 8015D

Sample Preparation Methods

	EPA 3015A
	EPA 3005A
	EPA 3510C

Serial No.: 69961

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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All approved analytes are listed below:

Amines

1,2-Diphenylhydrazine	EPA 8270E
2-Nitroaniline	EPA 8270E
3-Nitroaniline	EPA 8270E
4-Chloroaniline	EPA 8270E
4-Nitroaniline	EPA 8270E
Aniline	EPA 8270E
Carbazole	EPA 8270E

Benzidines

3,3'-Dichlorobenzidine	EPA 8270E
Benzidine	EPA 8270E

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
4,4'-DDE	EPA 8081B
4,4'-DDT	EPA 8081B
Aldrin	EPA 8081B
alpha-BHC	EPA 8081B
alpha-Chlordane	EPA 8081B
beta-BHC	EPA 8081B
Chlordane Total	EPA 8081B
delta-BHC	EPA 8081B
Dieldrin	EPA 8081B
Endosulfan I	EPA 8081B
Endosulfan II	EPA 8081B
Endosulfan sulfate	EPA 8081B
Endrin	EPA 8081B
Endrin aldehyde	EPA 8081B

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Chlorinated Hydrocarbon Pesticides

Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
Heptachlor epoxide	EPA 8081B
Lindane	EPA 8081B
Methoxychlor	EPA 8081B
Mirex	EPA 8081B
Pentachloronitrobenzene	EPA 8270E
Toxaphene	EPA 8081B

Chlorinated Hydrocarbons

1,2,4,5-Tetrachlorobenzene	EPA 8270E
1,2,4-Trichlorobenzene	EPA 8270E
2-Chloronaphthalene	EPA 8270E
Hexachlorobenzene	EPA 8270E
Hexachlorobutadiene	EPA 8270E
Hexachlorocyclopentadiene	EPA 8270E
Hexachloroethane	EPA 8270E

Haloethers

2,2'-Oxybis(1-chloropropane)	EPA 8270E
4-Bromophenylphenyl ether	EPA 8270E
4-Chlorophenylphenyl ether	EPA 8270E
Bis(2-chloroethoxy)methane	EPA 8270E
Bis(2-chloroethyl)ether	EPA 8270E

Low Level Polynuclear Aromatic Hydrocarbons

Acenaphthene Low Level	EPA 8270E SIM
Acenaphthylene Low Level	EPA 8270E SIM

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Low Level Polynuclear Aromatic Hydrocarbons

Anthracene Low Level	EPA 8270E SIM
Benzo(a)anthracene Low Level	EPA 8270E SIM
Benzo(a)pyrene Low Level	EPA 8270E SIM
Benzo(b)fluoranthene Low Level	EPA 8270E SIM
Benzo(g,h,i)perylene Low Level	EPA 8270E SIM
Benzo(k)fluoranthene Low Level	EPA 8270E SIM
Chrysene Low Level	EPA 8270E SIM
Dibenzo(a,h)anthracene Low Level	EPA 8270E SIM
Fluoranthene Low Level	EPA 8270E SIM
Fluorene Low Level	EPA 8270E SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270E SIM
Naphthalene Low Level	EPA 8270E SIM
Phenanthrene Low Level	EPA 8270E SIM
Pyrene Low Level	EPA 8270E SIM

Metals I

Barium, Total	EPA 6010D
	EPA 6020B
Cadmium, Total	EPA 6010D
	EPA 6020B
Calcium, Total	EPA 6010D
	EPA 6020B
Chromium, Total	EPA 6010D
	EPA 6020B
Copper, Total	EPA 6010D
	EPA 6020B
Iron, Total	EPA 6010D
	EPA 6020B

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All approved analytes are listed below:

Metals I

Lead, Total	EPA 6010D
	EPA 6020B
Magnesium, Total	EPA 6010D
	EPA 6020B
Manganese, Total	EPA 6010D
	EPA 6020B
Nickel, Total	EPA 6010D
	EPA 6020B
Potassium, Total	EPA 6010D
	EPA 6020B
Silver, Total	EPA 6010D
	EPA 6020B
Sodium, Total	EPA 6010D
	EPA 6020B
Strontium, Total	EPA 6010D
	EPA 6020B

Metals II

Aluminum, Total	EPA 6010D
	EPA 6020B
Antimony, Total	EPA 6010D
	EPA 6020B
Arsenic, Total	EPA 6010D
	EPA 6020B
Beryllium, Total	EPA 6010D
	EPA 6020B
Lithium, Total	EPA 6010D
Mercury, Total	EPA 7471B

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Metals II

Mercury, Total	EPA 7474
Selenium, Total	EPA 6010D
	EPA 6020B
Vanadium, Total	EPA 6010D
	EPA 6020B
Zinc, Total	EPA 6010D
	EPA 6020B

Metals III

Cobalt, Total	EPA 6010D
	EPA 6020B
Molybdenum, Total	EPA 6010D
	EPA 6020B
Thallium, Total	EPA 6010D
	EPA 6020B
Tin, Total	EPA 6010D
	EPA 6020B
Titanium, Total	EPA 6010D

Miscellaneous

Boron, Total	EPA 6010D
Organic Carbon, Total	Lloyd Kahn Method
	EPA 9060A

Nitroaromatics and Isophorone

2,4-Dinitrotoluene	EPA 8270E
2,6-Dinitrotoluene	EPA 8270E
Isophorone	EPA 8270E
Nitrobenzene	EPA 8270E

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Nitroaromatics and Isophorone

Pyridine	EPA 8270E

Nitrosoamines

N-Nitrosodimethylamine	EPA 8270E
N-Nitrosodi-n-propylamine	EPA 8270E
N-Nitrosodiphenylamine	EPA 8270E

Perfluorinated Alkyl Acids

8:2FTS	EPA 1633 (Draft)
NEtFOSAA	EPA 1633 (Draft)
NMeFOSAA	EPA 1633 (Draft)
Perflourotridecanoic Acid (PFTrDA)	EPA 1633 (Draft)
Perfluordecanoic Acid (PFDA)	EPA 1633 (Draft)
Perfluorobutanoic Acid (PFBA)	EPA 1633 (Draft)
Perfluorododecanoic Acid (PFDoA)	EPA 1633 (Draft)
Perfluoroheptanoic Acid (PFHpA)	EPA 1633 (Draft)
Perfluorohexanoic Acid (PFHxA)	EPA 1633 (Draft)
Perfluorononanoic Acid (PFNA)	EPA 1633 (Draft)
Perfluorooctanesulfonic Acid (PFOS)	EPA 1633 (Draft)
Perfluorooctanoic Acid (PFOA)	EPA 1633 (Draft)
Perfluoropentanoic Acid (PFPeA)	EPA 1633 (Draft)
Perfluorotetradecanoic Acid (PFTA)	EPA 1633 (Draft)
Perfluoroundecanoic Acid (PFUnA)	EPA 1633 (Draft)

Petroleum Hydrocarbons

Diesel Range Organics	EPA 8015D

Phthalate Esters

Benzyl butyl phthalate	EPA 8270E
Bis(2-ethylhexyl) phthalate	EPA 8270E

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Phthalate Esters

Diethyl phthalate	EPA 8270E
Dimethyl phthalate	EPA 8270E
Di-n-butyl phthalate	EPA 8270E
Di-n-octyl phthalate	EPA 8270E

Polychlorinated Biphenyls

Aroclor 1016 (PCB-1016)	EPA 8082A
Aroclor 1221 (PCB-1221)	EPA 8082A
Aroclor 1232 (PCB-1232)	EPA 8082A
Aroclor 1242 (PCB-1242)	EPA 8082A
Aroclor 1248 (PCB-1248)	EPA 8082A
Aroclor 1254 (PCB-1254)	EPA 8082A
Aroclor 1260 (PCB-1260)	EPA 8082A
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A

Polynuclear Aromatic Hydrocarbons

Acenaphthene	EPA 8270E
Acenaphthylene	EPA 8270E
Anthracene	EPA 8270E
Benzo(a)anthracene	EPA 8270E
Benzo(a)pyrene	EPA 8270E
Benzo(b)fluoranthene	EPA 8270E
Benzo(g,h,i)perylene	EPA 8270E
Benzo(k)fluoranthene	EPA 8270E
Chrysene	EPA 8270E
Dibenzo(a,h)anthracene	EPA 8270E
Fluoranthene	EPA 8270E

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Polynuclear Aromatic Hydrocarbons

Fluorene	EPA 8270E
Indeno(1,2,3-cd)pyrene	EPA 8270E
Naphthalene	EPA 8270E
Phenanthrene	EPA 8270E
Pyrene	EPA 8270E

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270E
2,4,5-Trichlorophenol	EPA 8270E
2,4,6-Trichlorophenol	EPA 8270E
2,4-Dichlorophenol	EPA 8270E
2,4-Dimethylphenol	EPA 8270E
2,4-Dinitrophenol	EPA 8270E
2-Chlorophenol	EPA 8270E
2-Methyl-4,6-dinitrophenol	EPA 8270E
2-Methylphenol	EPA 8270E
2-Nitrophenol	EPA 8270E
3-Methylphenol	EPA 8270E
4-Chloro-3-methylphenol	EPA 8270E
4-Methylphenol	EPA 8270E
4-Nitrophenol	EPA 8270E
Pentachlorophenol	EPA 8270E
Phenol	EPA 8270E

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270E
1,2-Dichlorobenzene, Semi-volatile	EPA 8270E
1,3-Dichlorobenzene, Semi-volatile	EPA 8270E

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All approved analytes are listed below:

Semi-Volatile Organics

1,4-Dichlorobenzene, Semi-volatile	EPA 8270E
2-Methylnaphthalene	EPA 8270E
Acetophenone	EPA 8270E
Benzaldehyde	EPA 8270E
Benzoic Acid	EPA 8270E
Benzyl alcohol	EPA 8270E
Caprolactam	EPA 8270E
Dibenzofuran	EPA 8270E

Volatile Organics

1,4-Dioxane	EPA 8270E SIM
Ethylene Glycol	EPA 8015D
Isobutyl alcohol	EPA 8015D
tert-butyl alcohol	EPA 8015D

Sample Preparation Methods

	EPA 3570
	EPA 3580A
	EPA 3050B
	EPA 3051A

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MR. MARCO SOARES
PACE ANALYTICAL SERVICES, LLC - WESTBOROUGH, MA
8 WALKUP DR
WESTBOROUGH, MA 01581-1019

NY Lab Id No: 11148

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Bacteriology

Coliform, Total / E. coli (Qualitative)	SM 20, 21-23 9223B (-04) (Colilert)
E. coli (Enumeration)	SM 20, 21-23 9223B (-04) (Colilert)
Heterotrophic Plate Count	SM 20, 21-23 9215B (-04)

Fuel Additives

Methyl tert-butyl ether	EPA 524.2
Naphthalene	EPA 524.2

Microextractables

1,2,3-Trichloropropane, Low Level	EPA 504.1
1,2-Dibromo-3-chloropropane, Low Le	EPA 504.1
1,2-Dibromoethane, Low Level	EPA 504.1

Miscellaneous

Odor	SM 21-23 2150 B (-97)
Organic Carbon, Dissolved	SM 21-23 5310C (-00)
Organic Carbon, Total	SM 21-23 5310C (-00)
Turbidity	SM 21-23 2130 B (-01)
	EPA 180.1 Rev. 2.0

Non-Metals

Alkalinity	SM 21-23 2320B (-97)
Chloride	EPA 300.0 Rev. 2.1
Color	SM 21-23 2120B (-01)
Cyanide	SM 20, 21-23 4500-CN E
Fluoride, Total	EPA 300.0 Rev. 2.1
	SM 21-23 4500-F C (-97)
Nitrate (as N)	EPA 353.2 Rev. 2.0
	EPA 300.0 Rev. 2.1
	SM 21-23 4500-NO3 F (-00)

Serial No.: 69957

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All approved analytes are listed below:

Non-Metals

Nitrite (as N)	EPA 353.2 Rev. 2.0
	SM 21-23 4500-NO3 F (-00)
	SM 21-23 4500-NO2 B (-00)
Orthophosphate (as P)	SM 19, 21-23 4500-P E (-99)
Solids, Total Dissolved	SM 21-23 2540C (-97)
Specific Conductance	SM 21-23 2510B (-97)
Sulfate (as SO4)	EPA 300.0 Rev. 2.1

Trihalomethanes

Bromodichloromethane	EPA 524.2
Bromoform	EPA 524.2
Chloroform	EPA 524.2
Dibromochloromethane	EPA 524.2
Total Trihalomethanes	EPA 524.2

Volatile Aromatics

1,2,3-Trichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,2-Dichlorobenzene	EPA 524.2
1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2
1,4-Dichlorobenzene	EPA 524.2
2-Chlorotoluene	EPA 524.2
4-Chlorotoluene	EPA 524.2
Benzene	EPA 524.2
Bromobenzene	EPA 524.2
Chlorobenzene	EPA 524.2

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All approved analytes are listed below:

Volatile Aromatics

Ethyl benzene	EPA 524.2
Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 524.2
sec-Butylbenzene	EPA 524.2
Styrene	EPA 524.2
tert-Butylbenzene	EPA 524.2
Toluene	EPA 524.2
Total Xylenes	EPA 524.2

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethane	EPA 524.2
1,1-Dichloroethene	EPA 524.2
1,1-Dichloropropene	EPA 524.2
1,2,3-Trichloropropane	EPA 524.2
1,2-Dichloroethane	EPA 524.2
1,2-Dichloropropane	EPA 524.2
1,3-Dichloropropane	EPA 524.2
2,2-Dichloropropane	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Carbon tetrachloride	EPA 524.2

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All approved analytes are listed below:

Volatile Halocarbons

Chloroethane	EPA 524.2
Chloromethane	EPA 524.2
cis-1,2-Dichloroethene	EPA 524.2
cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2
Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2
Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

Sample Preparation Methods

SM 20, 21-23 4500-CN C (-99)

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All approved analytes are listed below:

Acrylates

Acrolein (Propenal)	EPA 8260D
	EPA 624.1
Acrylonitrile	EPA 8260D
	EPA 624.1
Ethyl methacrylate	EPA 8260D
Methyl methacrylate	EPA 8260D

Amines

1,2-Diphenylhydrazine	EPA 625.1
	EPA 8270E
2-Naphthylamine	EPA 8270E
2-Nitroaniline	EPA 8270E
3-Nitroaniline	EPA 8270E
4-Chloroaniline	EPA 8270E
4-Nitroaniline	EPA 8270E
Aniline	EPA 625.1
	EPA 8270E
Carbazole	EPA 625.1
	EPA 8270E
Diphenylamine	EPA 8270E
Pyridine	EPA 625.1
	EPA 8270E

Bacteriology

Coliform, Fecal	Colilert-18
E. coli (Enumeration)	SM 9223B-2016
Heterotrophic Plate Count	SM 18-21 9215B

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MR. MARCO SOARES
PACE ANALYTICAL SERVICES, LLC - WESTBOROUGH, MA
8 WALKUP DR
WESTBOROUGH, MA 01581-1019

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All approved analytes are listed below:

Benzidines

3,3'-Dichlorobenzidine	EPA 625.1
	EPA 8270E
Benzidine	EPA 625.1
	EPA 8270E

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
	EPA 608.3
4,4'-DDE	EPA 8081B
	EPA 608.3
4,4'-DDT	EPA 8081B
	EPA 608.3
Aldrin	EPA 8081B
	EPA 608.3
alpha-BHC	EPA 8081B
	EPA 608.3
alpha-Chlordane	EPA 8081B
	EPA 608.3
beta-BHC	EPA 8081B
	EPA 608.3
Chlordane Total	EPA 8081B
	EPA 608.3
delta-BHC	EPA 8081B
	EPA 608.3
Dieldrin	EPA 8081B
	EPA 608.3
Endosulfan I	EPA 8081B
	EPA 608.3

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Chlorinated Hydrocarbon Pesticides

Endosulfan II	EPA 8081B
	EPA 608.3
Endosulfan sulfate	EPA 8081B
	EPA 608.3
Endrin	EPA 8081B
	EPA 608.3
Endrin aldehyde	EPA 8081B
	EPA 608.3
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
	EPA 608.3
Heptachlor	EPA 8081B
	EPA 608.3
Heptachlor epoxide	EPA 8081B
	EPA 608.3
Lindane	EPA 8081B
	EPA 608.3
Methoxychlor	EPA 8081B
	EPA 608.3
Mirex	EPA 608.3
PCNB	EPA 8270E
Toxaphene	EPA 8081B
	EPA 608.3

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260D
1,2,4,5-Tetrachlorobenzene	EPA 8270E
1,2,4-Trichlorobenzene	EPA 625.1

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Chlorinated Hydrocarbons

1,2,4-Trichlorobenzene	EPA 8270E
2-Chloronaphthalene	EPA 625.1
	EPA 8270E
Hexachlorobenzene	EPA 625.1
	EPA 8270E
Hexachlorobutadiene	EPA 625.1
	EPA 8270E
Hexachlorocyclopentadiene	EPA 625.1
	EPA 8270E
Hexachloroethane	EPA 625.1
	EPA 8270E

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
2,4-DB	EPA 8151A
Dalapon	EPA 8151A
Dicamba	EPA 8151A
Dichloroprop	EPA 8151A
Dinoseb	EPA 8151A

Demand

Biochemical Oxygen Demand	SM 5210B-2016
Carbonaceous BOD	SM 5210B-2016
Chemical Oxygen Demand	EPA 410.4, Rev. 2.0 (1993)
	SM 5220D-2011

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Fuel Oxygenates

Di-isopropyl ether	EPA 8260D
Ethanol	EPA 8260D
	EPA 624.1
Methyl tert-butyl ether	EPA 8260D
	EPA 624.1
tert-amyl methyl ether (TAME)	EPA 8260D
tert-butyl alcohol	EPA 8260D
	EPA 624.1
tert-butyl ethyl ether (ETBE)	EPA 8260D

Haloethers

2,2'-Oxybis(1-chloropropane)	EPA 625.1
	EPA 8270E
4-Bromophenylphenyl ether	EPA 625.1
	EPA 8270E
4-Chlorophenylphenyl ether	EPA 625.1
	EPA 8270E
Bis(2-chloroethoxy)methane	EPA 625.1
	EPA 8270E
Bis(2-chloroethyl)ether	EPA 625.1
	EPA 8270E

Low Level Halocarbons

1,2,3-Trichloropropane, Low Level	EPA 8011
1,2-Dibromo-3-chloropropane, Low Le	EPA 8011
1,2-Dibromoethane, Low Level	EPA 8011

Low Level Polynuclear Aromatics

Acenaphthene Low Level	EPA 8270E SIM

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Low Level Polynuclear Aromatics

Acenaphthylene Low Level	EPA 8270E SIM
Anthracene Low Level	EPA 8270E SIM
Benzo(a)anthracene Low Level	EPA 8270E SIM
Benzo(a)pyrene Low Level	EPA 8270E SIM
Benzo(b)fluoranthene Low Level	EPA 8270E SIM
Benzo(g,h,i)perylene Low Level	EPA 8270E SIM
Benzo(k)fluoranthene Low Level	EPA 8270E SIM
Chrysene Low Level	EPA 8270E SIM
Dibenzo(a,h)anthracene Low Level	EPA 8270E SIM
Fluoranthene Low Level	EPA 8270E SIM
Fluorene Low Level	EPA 8270E SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270E SIM
Naphthalene Low Level	EPA 8270E SIM
Phenanthrene Low Level	EPA 8270E SIM
Pyrene Low Level	EPA 8270E SIM

Metals I

Iron, Total	SM 3500-Fe B-2011

Metals II

Chromium VI	EPA 7196A
	SM 3500-Cr B-2011

Mineral

Acidity	SM 2310B-2011
Alkalinity	SM 2320B-2011
Chloride	EPA 300.0, Rev. 2.1 (1993)
	SM 4500-Cl- E-2011
	EPA 9056A

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Mineral

Fluoride, Total	EPA 300.0, Rev. 2.1 (1993)
	SM 4500-F- C-2011
	EPA 9056A
Sulfate (as SO4)	EPA 300.0, Rev. 2.1 (1993)
	SM 4500-SO4- E-2011
	EPA 9056A

Miscellaneous

Bromide	EPA 300.0, Rev. 2.1 (1993)
Color	SM 2120B-2011
Cyanide, Total	LACHAT QuikChem 10-204-00-1-X
	EPA 9014
	SM 4500-CN E-2016
	EPA 9012B
Formaldehyde	EPA 8315A
non-Polar Extractable Material (TPH)	EPA 1664B
Oil and Grease Total Recoverable	EPA 1664B
Organic Carbon, Total	SM 5310C-2014
	EPA 9060A
Phenols	EPA 420.1 (Rev. 1978)
	EPA 9065
Specific Conductance	EPA 120.1 (Rev. 1982)
	SM 2510B-2011
	EPA 9050A
Sulfide (as S)	SM 4500-S2- D-2011
Surfactant (MBAS)	SM 5540C-2011
Turbidity	SM 2130 B-2011
	EPA 180.1, Rev. 2.0 (1993)

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Nitroaromatics and Isophorone

1,3-Dinitrobenzene	EPA 8270E
2,4-Dinitrotoluene	EPA 625.1
	EPA 8270E
2,6-Dinitrotoluene	EPA 625.1
	EPA 8270E
Isophorone	EPA 625.1
	EPA 8270E
Nitrobenzene	EPA 625.1
	EPA 8270E

Nitrosoamines

N-Nitrosodimethylamine	EPA 625.1
	EPA 8270E
N-Nitrosodi-n-propylamine	EPA 625.1
	EPA 8270E
N-Nitrosodiphenylamine	EPA 625.1
	EPA 8270E

Nutrient

Ammonia (as N)	SM 4500-NH3 H-2011
	EPA 350.1, Rev. 2.0 (1993)
Kjeldahl Nitrogen, Total	EPA 351.1 (Rev. 1978)
	SM 4500-NH3 H-2011
Nitrate (as N)	EPA 353.2, Rev. 2.0 (1993)
	EPA 300.0, Rev. 2.1 (1993)
	SM 4500-NO3 F-2016
	EPA 9056A
Nitrate-Nitrite (as N)	EPA 353.2, Rev. 2.0 (1993)

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Nutrient	
Nitrate-Nitrite (as N)	SM 4500-NO3 F-2016
Nitrite (as N)	EPA 353.2, Rev. 2.0 (1993)
	SM 4500-NO3 F-2016
	SM 4500-NO2 B-2011
Orthophosphate (as P)	SM 4500-P E-2011
Phosphorus, Total	SM 4500-P E-2011
Organophosphate Pesticides	
Atrazine	EPA 625.1
	EPA 8270E
Parathion ethyl	EPA 8270E
Thionazin	EPA 8270E
Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015D
Gasoline Range Organics	EPA 8015D
Phthalate Esters	
Benzyl butyl phthalate	EPA 625.1
	EPA 8270E
Bis(2-ethylhexyl) phthalate	EPA 625.1
	EPA 8270E
Diethyl phthalate	EPA 625.1
	EPA 8270E
Dimethyl phthalate	EPA 625.1
	EPA 8270E
Di-n-butyl phthalate	EPA 625.1
	EPA 8270E
Di-n-octyl phthalate	EPA 625.1

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Phthalate Esters	
Di-n-octyl phthalate	EPA 8270E
Polychlorinated Biphenyls	
Aroclor 1016 (PCB-1016)	EPA 8082A
	EPA 608.3
Aroclor 1221 (PCB-1221)	EPA 8082A
	EPA 608.3
Aroclor 1232 (PCB-1232)	EPA 8082A
	EPA 608.3
Aroclor 1242 (PCB-1242)	EPA 8082A
	EPA 608.3
Aroclor 1248 (PCB-1248)	EPA 8082A
	EPA 608.3
Aroclor 1254 (PCB-1254)	EPA 8082A
	EPA 608.3
Aroclor 1260 (PCB-1260)	EPA 8082A
	EPA 608.3
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A
Polynuclear Aromatics	
Acenaphthene	EPA 625.1
	EPA 8270E
Acenaphthylene	EPA 625.1
	EPA 8270E
Anthracene	EPA 625.1
	EPA 8270E
Benzo(a)anthracene	EPA 625.1

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Polynuclear Aromatics

Benzo(a)anthracene	EPA 8270E
Benzo(a)pyrene	EPA 625.1
	EPA 8270E
Benzo(b)fluoranthene	EPA 625.1
	EPA 8270E
Benzo(g,h,i)perylene	EPA 625.1
	EPA 8270E
Benzo(k)fluoranthene	EPA 625.1
	EPA 8270E
Chrysene	EPA 625.1
	EPA 8270E
Dibenzo(a,h)anthracene	EPA 625.1
	EPA 8270E
Fluoranthene	EPA 625.1
	EPA 8270E
Fluorene	EPA 625.1
	EPA 8270E
Indeno(1,2,3-cd)pyrene	EPA 625.1
	EPA 8270E
Naphthalene	EPA 625.1
	EPA 8270E
Phenanthrene	EPA 625.1
	EPA 8270E
Pyrene	EPA 625.1
	EPA 8270E

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270E

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Priority Pollutant Phenols

2,4,5-Trichlorophenol	EPA 625.1
	EPA 8270E
2,4,6-Trichlorophenol	EPA 625.1
	EPA 8270E
2,4-Dichlorophenol	EPA 625.1
	EPA 8270E
2,4-Dimethylphenol	EPA 625.1
	EPA 8270E
2,4-Dinitrophenol	EPA 625.1
	EPA 8270E
2-Chlorophenol	EPA 625.1
	EPA 8270E
2-Methyl-4,6-dinitrophenol	EPA 625.1
	EPA 8270E
2-Methylphenol	EPA 625.1
	EPA 8270E
2-Nitrophenol	EPA 625.1
	EPA 8270E
3-Methylphenol	EPA 625.1
	EPA 8270E
4-Chloro-3-methylphenol	EPA 625.1
	EPA 8270E
4-Methylphenol	EPA 625.1
	EPA 8270E
4-Nitrophenol	EPA 625.1
	EPA 8270E
Cresols, Total	EPA 8270E

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Priority Pollutant Phenols

Pentachlorophenol	EPA 625.1
	EPA 8270E
Phenol	EPA 625.1
	EPA 8270E

Residue

Settleable Solids	SM 2540 F-2015
Solids, Total	SM 2540 B-2015
Solids, Total Dissolved	SM 2540 C-2015
Solids, Total Suspended	SM 2540 D-2015
Solids, Volatile	SM 2540 E-2015

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270E
1,2-Dichlorobenzene, Semi-volatile	EPA 8270E
1,3-Dichlorobenzene, Semi-volatile	EPA 8270E
1,4-Dichlorobenzene, Semi-volatile	EPA 8270E
2-Methylnaphthalene	EPA 625.1
	EPA 8270E
Acetophenone	EPA 625.1
	EPA 8270E
Benzaldehyde	EPA 8270E
Benzoic Acid	EPA 8270E
Benzyl alcohol	EPA 8270E
Caprolactam	EPA 8270E
Dibenzofuran	EPA 8270E
n-Decane	EPA 625.1
n-Octadecane	EPA 625.1

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Volatile Aromatics

1,2,4-Trichlorobenzene, Volatile	EPA 8260D
1,2,4-Trimethylbenzene	EPA 8260D
1,2-Dichlorobenzene	EPA 8260D
	EPA 624.1
1,3,5-Trimethylbenzene	EPA 8260D
1,3-Dichlorobenzene	EPA 8260D
	EPA 624.1
1,4-Dichlorobenzene	EPA 8260D
	EPA 624.1
2-Chlorotoluene	EPA 8260D
4-Chlorotoluene	EPA 8260D
Benzene	EPA 8260D
	EPA 624.1
Bromobenzene	EPA 8260D
Chlorobenzene	EPA 8260D
	EPA 624.1
Ethyl benzene	EPA 8260D
	EPA 624.1
Isopropylbenzene	EPA 8260D
m/p-Xylenes	EPA 8260D
Naphthalene, Volatile	EPA 8260D
n-Butylbenzene	EPA 8260D
n-Propylbenzene	EPA 8260D
o-Xylene	EPA 8260D
p-Isopropyltoluene (P-Cymene)	EPA 8260D
sec-Butylbenzene	EPA 8260D
Styrene	EPA 8260D

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Volatile Aromatics

Styrene	EPA 624.1
tert-Butylbenzene	EPA 8260D
Toluene	EPA 8260D
	EPA 624.1
Total Xylenes	EPA 8260D
	EPA 624.1

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260D
1,1,1-Trichloroethane	EPA 8260D
	EPA 624.1
1,1,2,2-Tetrachloroethane	EPA 8260D
	EPA 624.1
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260D
	EPA 624.1
1,1,2-Trichloroethane	EPA 8260D
	EPA 624.1
1,1-Dichloroethane	EPA 8260D
	EPA 624.1
1,1-Dichloroethene	EPA 8260D
	EPA 624.1
1,1-Dichloropropene	EPA 8260D
1,2,3-Trichloropropane	EPA 8260D
1,2-Dibromo-3-chloropropane	EPA 8260D
1,2-Dibromoethane	EPA 8260D
1,2-Dichloroethane	EPA 8260D
	EPA 624.1
1,2-Dichloropropane	EPA 8260D

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Volatile Halocarbons

1,2-Dichloropropane	EPA 624.1
1,3-Dichloropropane	EPA 8260D
2,2-Dichloropropane	EPA 8260D
2-Chloroethylvinyl ether	EPA 8260D
	EPA 624.1
Bromochloromethane	EPA 8260D
Bromodichloromethane	EPA 8260D
	EPA 624.1
Bromoform	EPA 8260D
	EPA 624.1
Bromomethane	EPA 8260D
	EPA 624.1
Carbon tetrachloride	EPA 8260D
	EPA 624.1
Chloroethane	EPA 8260D
	EPA 624.1
Chloroform	EPA 8260D
	EPA 624.1
Chloromethane	EPA 8260D
	EPA 624.1
cis-1,2-Dichloroethene	EPA 8260D
	EPA 624.1
cis-1,3-Dichloropropene	EPA 8260D
	EPA 624.1
Dibromochloromethane	EPA 8260D
	EPA 624.1
Dibromomethane	EPA 8260D

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8 WALKUP DR
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NY Lab Id No: 11148

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All approved analytes are listed below:

Volatile Halocarbons

Dichlorodifluoromethane	EPA 8260D
	EPA 624.1
Hexachlorobutadiene, Volatile	EPA 8260D
Methyl iodide	EPA 8260D
Methylene chloride	EPA 8260D
	EPA 624.1
Tetrachloroethene	EPA 8260D
	EPA 624.1
trans-1,2-Dichloroethene	EPA 8260D
	EPA 624.1
trans-1,3-Dichloropropene	EPA 8260D
	EPA 624.1
trans-1,4-Dichloro-2-butene	EPA 8260D
Trichloroethene	EPA 8260D
	EPA 624.1
Trichlorofluoromethane	EPA 8260D
	EPA 624.1
Vinyl chloride	EPA 8260D
	EPA 624.1

Volatiles Organics

1,4-Dioxane	EPA 8260D
	EPA 8260D SIM
2-Butanone (Methylethyl ketone)	EPA 8260D
2-Hexanone	EPA 8260D
4-Methyl-2-Pentanone	EPA 8260D
	EPA 624.1
Acetone	EPA 8260D

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Volatiles Organics

Acetone	EPA 624.1
Carbon Disulfide	EPA 8260D
Cyclohexane	EPA 8260D
Di-ethyl ether	EPA 8260D
Ethyl Acetate	EPA 8260D
Hexane	EPA 8260D
Isopropanol	EPA 8260D
Methyl acetate	EPA 8260D
Methyl cyclohexane	EPA 8260D
n-Butanol	EPA 8260D
o-Toluidine	EPA 8270E
Tetrahydrofuran	EPA 8260D
Vinyl acetate	EPA 8260D
	EPA 624.1

Sample Preparation Methods

SM 4500-P B(5)-2011
EPA 5030C
SM 4500-CN B-2016 and C-2016
EPA 3511
EPA 9030B
EPA 3510C
SM 4500-NH3 B-2011
SM 4500-F B-2011
SM 4500-N Org B-2011 or C-2011
EPA 9010C

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Acrylates

Acrolein (Propenal)	EPA 8260D
Acrylonitrile	EPA 8260D
Ethyl methacrylate	EPA 8260D
Methyl methacrylate	EPA 8260D

Amines

1,2-Diphenylhydrazine	EPA 8270E
2-Nitroaniline	EPA 8270E
3-Nitroaniline	EPA 8270E
4-Chloroaniline	EPA 8270E
4-Nitroaniline	EPA 8270E
Aniline	EPA 8270E
Carbazole	EPA 8270E
Diphenylamine	EPA 8270E

Benzidines

3,3'-Dichlorobenzidine	EPA 8270E
Benzidine	EPA 8270E

Characteristic Testing

Corrosivity (pH)	EPA 9040C
	EPA 9045D
Free Liquids	EPA 9095B
Ignitability	EPA 1030
	EPA 1010A
Synthetic Precipitation Leaching Proc.	EPA 1312
TCLP	EPA 1311

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B

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Chlorinated Hydrocarbon Pesticides

4,4'-DDE	EPA 8081B
4,4'-DDT	EPA 8081B
Aldrin	EPA 8081B
alpha-BHC	EPA 8081B
alpha-Chlordane	EPA 8081B
Atrazine	EPA 8270E
beta-BHC	EPA 8081B
Chlordane Total	EPA 8081B
delta-BHC	EPA 8081B
Dieldrin	EPA 8081B
Endosulfan I	EPA 8081B
Endosulfan II	EPA 8081B
Endosulfan sulfate	EPA 8081B
Endrin	EPA 8081B
Endrin aldehyde	EPA 8081B
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
Heptachlor epoxide	EPA 8081B
Lindane	EPA 8081B
Methoxychlor	EPA 8081B
Pentachloronitrobenzene	EPA 8270E
Toxaphene	EPA 8081B

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260D
1,2,4,5-Tetrachlorobenzene	EPA 8270E
1,2,4-Trichlorobenzene	EPA 8270E

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Chlorinated Hydrocarbons

2-Chloronaphthalene	EPA 8270E
Hexachlorobenzene	EPA 8270E
Hexachlorobutadiene	EPA 8270E
Hexachlorocyclopentadiene	EPA 8270E
Hexachloroethane	EPA 8260D
	EPA 8270E

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
2,4-DB	EPA 8151A
Dalapon	EPA 8151A
Dicamba	EPA 8151A
Dichloroprop	EPA 8151A
MCPA	EPA 8151A
MCPP	EPA 8151A

Haloethers

2,2'-Oxybis(1-chloropropane)	EPA 8270E
4-Bromophenylphenyl ether	EPA 8270E
4-Chlorophenylphenyl ether	EPA 8270E
Bis(2-chloroethoxy)methane	EPA 8270E
Bis(2-chloroethyl)ether	EPA 8270E

Low Level Polynuclear Aromatic Hydrocarbons

Acenaphthene Low Level	EPA 8270E SIM
Acenaphthylene Low Level	EPA 8270E SIM
Anthracene Low Level	EPA 8270E SIM

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Low Level Polynuclear Aromatic Hydrocarbons

Benzo(a)anthracene Low Level	EPA 8270E SIM
Benzo(a)pyrene Low Level	EPA 8270E SIM
Benzo(b)fluoranthene Low Level	EPA 8270E SIM
Benzo(g,h,i)perylene Low Level	EPA 8270E SIM
Benzo(k)fluoranthene Low Level	EPA 8270E SIM
Chrysene Low Level	EPA 8270E SIM
Dibenzo(a,h)anthracene Low Level	EPA 8270E SIM
Fluoranthene Low Level	EPA 8270E SIM
Fluorene Low Level	EPA 8270E SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270E SIM
Naphthalene Low Level	EPA 8270E SIM
Phenanthrene Low Level	EPA 8270E SIM
Pyrene Low Level	EPA 8270E SIM

Metals II

Chromium VI	EPA 7196A

Minerals

Chloride	EPA 9251
Sulfate (as SO4)	EPA 9038

Miscellaneous

Cyanide, Total	EPA 9014
	EPA 9012B
Phenols	EPA 9065
Specific Conductance	EPA 9050A

Nitroaromatics and Isophorone

2,4-Dinitrotoluene	EPA 8270E
2,6-Dinitrotoluene	EPA 8270E

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Nitroaromatics and Isophorone	
Isophorone	EPA 8270E
Nitrobenzene	EPA 8260D
	EPA 8270E
Pyridine	EPA 8270E
Nitrosoamines	
N-Nitrosodimethylamine	EPA 8270E
N-Nitrosodi-n-propylamine	EPA 8270E
N-Nitrosodiphenylamine	EPA 8270E
Organophosphate Pesticides	
Parathion ethyl	EPA 8270E
Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015D
Gasoline Range Organics	EPA 8015D
Oil and Grease Total Recoverable	EPA 9071B (Solvent:Hexane)
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270E
Bis(2-ethylhexyl) phthalate	EPA 8270E
Diethyl phthalate	EPA 8270E
Dimethyl phthalate	EPA 8270E
Di-n-butyl phthalate	EPA 8270E
Di-n-octyl phthalate	EPA 8270E
Polychlorinated Biphenyls	
Aroclor 1016 (PCB-1016)	EPA 8082A
Aroclor 1016 (PCB-1016) in Oil	EPA 8082A
Aroclor 1221 (PCB-1221)	EPA 8082A

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Polychlorinated Biphenyls

Aroclor 1221 (PCB-1221) in Oil	EPA 8082A
Aroclor 1232 (PCB-1232)	EPA 8082A
Aroclor 1232 (PCB-1232) in Oil	EPA 8082A
Aroclor 1242 (PCB-1242)	EPA 8082A
Aroclor 1242 (PCB-1242) in Oil	EPA 8082A
Aroclor 1248 (PCB-1248)	EPA 8082A
Aroclor 1248 (PCB-1248) in Oil	EPA 8082A
Aroclor 1254 (PCB-1254)	EPA 8082A
Aroclor 1254 (PCB-1254) in Oil	EPA 8082A
Aroclor 1260 (PCB-1260)	EPA 8082A
Aroclor 1260 (PCB-1260) in Oil	EPA 8082A
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1262 (PCB-1262) in Oil	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A
Aroclor 1268 (PCB-1268) in Oil	EPA 8082A

Polynuclear Aromatic Hydrocarbons

Acenaphthene	EPA 8270E
Acenaphthylene	EPA 8270E
Anthracene	EPA 8270E
Benzo(a)anthracene	EPA 8270E
Benzo(a)pyrene	EPA 8270E
Benzo(b)fluoranthene	EPA 8270E
Benzo(g,h,i)perylene	EPA 8270E
Benzo(k)fluoranthene	EPA 8270E
Chrysene	EPA 8270E
Dibenzo(a,h)anthracene	EPA 8270E
Fluoranthene	EPA 8270E

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Polynuclear Aromatic Hydrocarbons

Fluorene	EPA 8270E
Indeno(1,2,3-cd)pyrene	EPA 8270E
Naphthalene	EPA 8270E
Phenanthrene	EPA 8270E
Pyrene	EPA 8270E

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270E
2,4,5-Trichlorophenol	EPA 8270E
2,4,6-Trichlorophenol	EPA 8270E
2,4-Dichlorophenol	EPA 8270E
2,4-Dimethylphenol	EPA 8270E
2,4-Dinitrophenol	EPA 8270E
2-Chlorophenol	EPA 8270E
2-Methyl-4,6-dinitrophenol	EPA 8270E
2-Methylphenol	EPA 8270E
2-Nitrophenol	EPA 8270E
3-Methylphenol	EPA 8270E
4-Chloro-3-methylphenol	EPA 8270E
4-Methylphenol	EPA 8270E
4-Nitrophenol	EPA 8270E
Pentachlorophenol	EPA 8270E
Phenol	EPA 8270E

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270E
1,2-Dichlorobenzene, Semi-volatile	EPA 8270E
1,3-Dichlorobenzene, Semi-volatile	EPA 8270E

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Semi-Volatile Organics

1,4-Dichlorobenzene, Semi-volatile	EPA 8270E
2-Methylnaphthalene	EPA 8270E
Acetophenone	EPA 8270E
Benzaldehyde	EPA 8270E
Benzoic Acid	EPA 8270E
Benzyl alcohol	EPA 8270E
Caprolactam	EPA 8270E
Dibenzofuran	EPA 8270E

Volatile Aromatics

1,2,4-Trichlorobenzene, Volatile	EPA 8260D
1,2,4-Trimethylbenzene	EPA 8260D
1,2-Dichlorobenzene	EPA 8260D
1,3,5-Trimethylbenzene	EPA 8260D
1,3-Dichlorobenzene	EPA 8260D
1,4-Dichlorobenzene	EPA 8260D
2-Chlorotoluene	EPA 8260D
4-Chlorotoluene	EPA 8260D
Benzene	EPA 8260D
Bromobenzene	EPA 8260D
Chlorobenzene	EPA 8260D
Ethyl benzene	EPA 8260D
Isopropylbenzene	EPA 8260D
m/p-Xylenes	EPA 8260D
Naphthalene, Volatile	EPA 8260D
n-Butylbenzene	EPA 8260D
n-Propylbenzene	EPA 8260D
o-Xylene	EPA 8260D

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Volatile Aromatics

p-Isopropyltoluene (P-Cymene)	EPA 8260D
sec-Butylbenzene	EPA 8260D
Styrene	EPA 8260D
tert-Butylbenzene	EPA 8260D
Toluene	EPA 8260D
Total Xylenes	EPA 8260D

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260D
1,1,1-Trichloroethane	EPA 8260D
1,1,2,2-Tetrachloroethane	EPA 8260D
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260D
1,1,2-Trichloroethane	EPA 8260D
1,1-Dichloroethane	EPA 8260D
1,1-Dichloroethene	EPA 8260D
1,1-Dichloropropene	EPA 8260D
1,2,3-Trichloropropane	EPA 8260D
1,2-Dibromo-3-chloropropane	EPA 8260D
1,2-Dibromoethane	EPA 8260D
1,2-Dichloroethane	EPA 8260D
1,2-Dichloropropane	EPA 8260D
1,3-Dichloropropane	EPA 8260D
2,2-Dichloropropane	EPA 8260D
2-Chloroethylvinyl ether	EPA 8260D
3-Chloropropene (Allyl chloride)	EPA 8260D
Bromochloromethane	EPA 8260D
Bromodichloromethane	EPA 8260D
Bromoform	EPA 8260D

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Volatile Halocarbons

Bromomethane	EPA 8260D
Carbon tetrachloride	EPA 8260D
Chloroethane	EPA 8260D
Chloroform	EPA 8260D
Chloromethane	EPA 8260D
cis-1,2-Dichloroethene	EPA 8260D
cis-1,3-Dichloropropene	EPA 8260D
Dibromochloromethane	EPA 8260D
Dibromomethane	EPA 8260D
Dichlorodifluoromethane	EPA 8260D
Hexachlorobutadiene, Volatile	EPA 8260D
Methyl iodide	EPA 8260D
Methylene chloride	EPA 8260D
Tetrachloroethene	EPA 8260D
trans-1,2-Dichloroethene	EPA 8260D
trans-1,3-Dichloropropene	EPA 8260D
trans-1,4-Dichloro-2-butene	EPA 8260D
Trichloroethene	EPA 8260D
Trichlorofluoromethane	EPA 8260D
Vinyl chloride	EPA 8260D

Volatile Organics

1,4-Dioxane	EPA 8260D
	EPA 8270E
2-Butanone (Methylethyl ketone)	EPA 8260D
2-Hexanone	EPA 8260D
2-Nitropropane	EPA 8260D
4-Methyl-2-Pentanone	EPA 8260D

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Volatile Organics

Acetone	EPA 8260D
Carbon Disulfide	EPA 8260D
Cyclohexane	EPA 8260D
Di-ethyl ether	EPA 8260D
Ethyl Acetate	EPA 8260D
Hexane	EPA 8260D
Methyl acetate	EPA 8260D
Methyl cyclohexane	EPA 8260D
Methyl tert-butyl ether	EPA 8260D
n-Butanol	EPA 8260D
tert-butyl alcohol	EPA 8260D
Tetrahydrofuran	EPA 8260D
Vinyl acetate	EPA 8260D

Sample Preparation Methods

EPA 5035A-L
EPA 5035A-H
EPA 3580A
EPA 3540C
EPA 3546
EPA 3060A
EPA 9010C

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APPENDIX C

LABORATORY REFERENCE LIMITS EVALUATION TABLES

TCL Volatiles - EPA 8260D (WATER)

Analyte	CAS #	AWQS	Class GA	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Methylene chloride	75-09-2	**5**	**5**	5	0.5393	ug/l	70-130	20	70-130	20	20	
1,1-Dichloroethane	75-34-3	**5**	**5**	0.75	0.2156	ug/l	70-130	20	70-130	20	20	
Chloroform	67-66-3	**7**	**7**	0.75	0.1978	ug/l	70-130	20	70-130	20	20	
Carbon tetrachloride	56-23-5	**5**	**5**	0.5	0.1652	ug/l	63-132	20	63-132	20	20	
1,2-Dichloropropane	78-87-5	**1**	**1**	1.75	0.2958	ug/l	70-130	20	70-130	20	20	
Dibromochloromethane	124-48-1	**50**	**50**	0.5	0.1895	ug/l	63-130	20	63-130	20	20	
1,1,2-Trichloroethane	79-00-5	**1**	**1**	0.75	0.2615	ug/l	70-130	20	70-130	20	20	
Tetrachloroethene	127-18-4	**5**	**5**	0.5	0.1813	ug/l	70-130	20	70-130	20	20	
Chlorobenzene	108-90-7	**5**	**5**	0.5	0.1925	ug/l	75-130	20	75-130	20	20	
Trichlorofluoromethane	75-69-4	**5**	**5**	2.5	0.2667	ug/l	62-150	20	62-150	20	20	
1,2-Dichloroethane	107-06-2	**0.6**	**0.6**	0.5	0.1595	ug/l	70-130	20	70-130	20	20	
1,1,1-Trichloroethane	71-55-6	**5**	**5**	0.5	0.158	ug/l	67-130	20	67-130	20	20	
Bromodichloromethane	75-27-4	**50**	**50**	0.5	0.1924	ug/l	67-130	20	67-130	20	20	
trans-1,3-Dichloropropene	10061-02-6	**0.4**	**0.4**	0.5	0.1643	ug/l	70-130	20	70-130	20	20	
cis-1,3-Dichloropropene	10061-01-5	**0.4**	**0.4**	0.5	0.1436	ug/l	70-130	20	70-130	20	20	
1,1-Dichloropropene	563-58-6	**5**	**5**	2.5	0.2559	ug/l	70-130	20	70-130	20	20	
Bromoform	75-25-2	**50**	**50**	2	0.2477	ug/l	54-136	20	54-136	20	20	
1,1,2,2-Tetrachloroethane	79-34-5	**5**	**5**	0.5	0.1915	ug/l	67-130	20	67-130	20	20	
Benzene	71-43-2	**1**	**1**	0.5	0.194	ug/l	70-130	20	70-130	20	20	
Toluene	108-88-3	**5**	**5**	0.75	0.2269	ug/l	70-130	20	70-130	20	20	
Ethylbenzene	100-41-4	**5**	**5**	0.5	0.265	ug/l	70-130	20	70-130	20	20	
Chloromethane	74-87-3	**NS**	**NS**	2.5	0.2815	ug/l	64-130	20	64-130	20	20	
Bromomethane	74-83-9	**5**	**5**	1	0.2563	ug/l	39-139	20	39-139	20	20	
Vinyl chloride	75-01-4	**2**	**2**	1	0.2241	ug/l	55-140	20	55-140	20	20	
Chloroethane	75-00-3	**5**	**5**	1	0.2335	ug/l	55-138	20	55-138	20	20	
1,1-Dichloroethene	75-35-4	**5**	**5**	0.5	0.1811	ug/l	61-145	20	61-145	20	20	
trans-1,2-Dichloroethene	156-60-5	**5**	**5**	0.75	0.2108	ug/l	70-130	20	70-130	20	20	
Trichloroethene	79-01-6	**5**	**5**	0.5	0.1746	ug/l	70-130	20	70-130	20	20	
1,2-Dichlorobenzene	95-50-1	**3**	**3**	2.5	0.1836	ug/l	70-130	20	70-130	20	20	
1,3-Dichlorobenzene	541-73-1	**3**	**3**	2.5	0.1863	ug/l	70-130	20	70-130	20	20	
1,4-Dichlorobenzene	106-46-7	**3**	**3**	2.5	0.215	ug/l	70-130	20	70-130	20	20	
Methyl tert butyl ether	1634-04-4	**10**	**10**	1	0.16	ug/l	63-130	20	63-130	20	20	
p/m-Xylene	179601-23-1	**5**	**5**	1	0.3477	ug/l	70-130	20	70-130	20	20	
o-Xylene	95-47-6	**5**	**5**	1	0.3297	ug/l	70-130	20	70-130	20	20	
cis-1,2-Dichloroethene	156-59-2	**5**	**5**	0.5	0.1866	ug/l	70-130	20	70-130	20	20	
Dibromomethane	74-95-3	**5**	**5**	5	0.3633	ug/l	70-130	20	70-130	20	20	
1,2,3-Trichloropropane	96-18-4	**0.04**	**0.04**	5	0.4275	ug/l	64-130	20	64-130	20	20	
Acrylonitrile	107-13-1	**5**	**5**	5	0.4297	ug/l	70-130	20	70-130	20	20	
Styrene	100-42-5	**5**	**930**	1	0.3591	ug/l	70-130	20	70-130	20	20	
Dichlorodifluoromethane	75-71-8	**5**	**5**	5	0.2999	ug/l	36-147	20	36-147	20	20	
Acetone	67-64-1	**50**	**50**	5	1.5606	ug/l	58-148	20	58-148	20	20	
Carbon disulfide	75-15-0	**60**	**60**	5	0.2995	ug/l	51-130	20	51-130	20	20	
2-Butanone	78-93-3	**50**	**50**	5	1.9386	ug/l	63-138	20	63-138	20	20	
Vinyl acetate	108-05-4	**NS**	**NS**	5	0.3111	ug/l	70-130	20	70-130	20	20	
4-Methyl-2-pentanone	108-10-1	**NS**	**NS**	5	0.4162	ug/l	59-130	20	59-130	20	20	
2-Hexanone	591-78-6	**50**	**50**	5	0.5783	ug/l	57-130	20	57-130	20	20	
Bromochloromethane	74-97-5	**5**	**5**	2.5	0.3295	ug/l	70-130	20	70-130	20	20	
2,2-Dichloropropane	594-20-7	**5**	**5**	2.5	0.3975	ug/l	63-133	20	63-133	20	20	
1,2-Dibromoethane	106-93-4	**0.0006**	**0.0006**	2	0.1929	ug/l	70-130	20	70-130	20	20	
1,3-Dichloropropane	142-28-9	**5**	**5**	2.5	0.2122	ug/l	70-130	20	70-130	20	20	
1,1,1,2-Tetrachloroethane	630-20-6	**5**	**5**	0.5	0.1652	ug/l	64-130	20	64-130	20	20	
Bromobenzene	108-86-1	**5**	**5**	2.5	0.1837	ug/l	70-130	20	70-130	20	20	
n-Butylbenzene	104-51-8	**5**	**5**	0.5	0.1961	ug/l	53-136	20	53-136	20	20	
sec-Butylbenzene	135-98-8	**5**	**5**	0.5	0.1806	ug/l	70-130	20	70-130	20	20	
tert-Butylbenzene	98-06-6	**5**	**5**	2.5	0.3016	ug/l	70-130	20	70-130	20	20	
o-Chlorotoluene	95-49-8	**5**	**5**	2.5	0.1823	ug/l	70-130	20	70-130	20	20	
p-Chlorotoluene	106-43-4	**5**	**5**	2.5	0.1847	ug/l	70-130	20	70-130	20	20	
1,2-Dibromo-3-chloropropane	96-12-8	**0.04**	**0.04**	2.5	0.327	ug/l	41-144	20	41-144	20	20	
Hexachlorobutadiene	87-68-3	**0.5**	**0.5**	0.6	0.2301	ug/l	63-130	20	63-130	20	20	
Isopropylbenzene	98-82-8	**5**	**5**	0.5	0.187	ug/l	70-130	20	70-130	20	20	
p-Isopropyltoluene	99-87-6	**5**	**5**	0.5	0.1885	ug/l	70-130	20	70-130	20	20	
Naphthalene	91-20-3	**10**	**10**	2.5	0.2174	ug/l	70-130	20	70-130	20	20	
n-Propylbenzene	103-65-1	**5**	**5**	0.5	0.1734	ug/l	69-130	20	69-130	20	20	
1,2,3-Trichlorobenzene	87-61-6	**5**	**5**	2.5	0.2338	ug/l	70-130	20	70-130	20	20	
1,2,4-Trichlorobenzene	120-82-1	**5**	**5**	2.5	0.2197	ug/l	70-130	20	70-130	20	20	
1,3,5-Trimethylbenzene	108-67-8	**5**	**5**	2.5	0.2105	ug/l	64-130	20	64-130	20	20	
1,2,4-Trimethylbenzene	95-63-6	**5**	**5**	2.5	0.2678	ug/l	70-130	20	70-130	20	20	
1,4-Dioxane	123-91-1	**NS**	**NS**	250	75.7059	ug/l	56-162	20	56-162	20	20	
1,4-Diethylbenzene	105-05-5	**NS**	**NS**	2	0.1084	ug/l	70-130	20	70-130	20	20	
4-Ethyltoluene	622-96-8	**NS**	**NS**	2	0.4162	ug/l	70-130	20	70-130	20	20	
1,2,4,5-Tetramethylbenzene	95-93-2	**5**	**5**	2	0.0965	ug/l	70-130	20	70-130	20	20	
Ethyl ether	60-29-7	**NS**	**NS**	2.5	0.2045	ug/l	59-134	20	59-134	20	20	
trans-1,4-Dichloro-2-butene	110-57-6	**5**	**5**	2.5	0.1733	ug/l	70-130	20	70-130	20	20	
1,2-Dichloroethane-d4	*17060-07-0*											*70-130*
Toluene-d8	*2037-26-5*											*70-130*
4-Bromofluorobenzene	*460-00-4*											*70-130*
Dibromofluoromethane	*1868-53-7*											*70-130*

NYTCL Semivolatiles - EPA 8270E (RVT) (WATER)

Analyte	CAS #	AWQS	Class GA	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Acenaphthene	83-32-9	**20**	**20**	2	0.403	ug/l	37-111	30	37-111	30	30	
1,2,4-Trichlorobenzene	120-82-1	**5**	**5**	5	0.977	ug/l	39-98	30	39-98	30	30	
Hexachlorobenzene	118-74-1	**0.04**	**0.04**	2	0.452	ug/l	40-140	30	40-140	30	30	
Bis(2-chloroethyl)ether	111-44-4	**1**	**1**	2	0.392	ug/l	40-140	30	40-140	30	30	
2-Chloronaphthalene	91-58-7	**10**	**10**	2	0.35	ug/l	40-140	30	40-140	30	30	
1,2-Dichlorobenzene	95-50-1	**3**	**3**	2	0.329	ug/l	40-140	30	40-140	30	30	
1,3-Dichlorobenzene	541-73-1	**3**	**3**	2	0.315	ug/l	40-140	30	40-140	30	30	
1,4-Dichlorobenzene	106-46-7	**3**	**3**	2	0.391	ug/l	36-97	30	36-97	30	30	
3,3'-Dichlorobenzidine	91-94-1	**5**	**5**	5	1.85	ug/l	40-140	30	40-140	30	30	
2,4-Dinitrotoluene	121-14-2	**5**	**5**	5	0.541	ug/l	48-143	30	48-143	30	30	
2,6-Dinitrotoluene	606-20-2	**5**	**5**	5	0.845	ug/l	40-140	30	40-140	30	30	
Fluoranthene	206-44-0	**50**	**50**	2	0.411	ug/l	40-140	30	40-140	30	30	
4-Chlorophenyl phenyl ether	7005-72-3			2	0.386	ug/l	40-140	30	40-140	30	30	
4-Bromophenyl phenyl ether	101-55-3			2	0.244	ug/l	40-140	30	40-140	30	30	
Bis(2-chloroisopropyl)ether	108-60-1	**1**	**1**	2	0.403	ug/l	40-140	30	40-140	30	30	
Bis(2-chloroethoxy)methane	111-91-1	**5**	**5**	5	0.842	ug/l	40-140	30	40-140	30	30	
Hexachlorobutadiene	87-68-3	**0.5**	**0.5**	2	0.355	ug/l	40-140	30	40-140	30	30	
Hexachlorocyclopentadiene	77-47-4	**5**	**5**	20	1.23	ug/l	40-140	30	40-140	30	30	
Hexachloroethane	67-72-1	**5**	**5**	2	0.203	ug/l	40-140	30	40-140	30	30	
Isophorone	78-59-1	**50**	**50**	5	0.862	ug/l	40-140	30	40-140	30	30	
Naphthalene	91-20-3	**10**	**10**	2	0.542	ug/l	40-140	30	40-140	30	30	
Nitrobenzene	98-95-3	**0.4**	**0.4**	2	0.205	ug/l	40-140	30	40-140	30	30	
NitrosoDiPhenylAmine(NDPA)/DPA	86-30-6	**50**	**50**	2	0.924	ug/l	40-140	30	40-140	30	30	
n-Nitrosodi-n-propylamine	621-64-7			5	0.906	ug/l	29-132	30	29-132	30	30	
Bis(2-Ethylhexyl)phthalate	117-81-7	**5**	**5**	3	1.42	ug/l	40-140	30	40-140	30	30	
Butyl benzyl phthalate	85-68-7	**50**	**50**	5	2.61	ug/l	40-140	30	40-140	30	30	
Di-n-butylphthalate	84-74-2	**50**	**50**	5	0.957	ug/l	40-140	30	40-140	30	30	
Di-n-octylphthalate	117-84-0	**50**	**50**	5	2.26	ug/l	40-140	30	40-140	30	30	
Diethyl phthalate	84-66-2	**50**	**50**	5	0.765	ug/l	40-140	30	40-140	30	30	
Dimethyl phthalate	131-11-3	**50**	**50**	5	0.916	ug/l	40-140	30	40-140	30	30	
Benzo(a)anthracene	56-55-3	**0.002**	**0.002**	2	0.323	ug/l	40-140	30	40-140	30	30	
Benzo(a)pyrene	50-32-8	**0**	**0**	2	0.368	ug/l	40-140	30	40-140	30	30	
Benzo(b)fluoranthene	205-99-2	**0.002**	**0.002**	2	0.533	ug/l	40-140	30	40-140	30	30	
Benzo(k)fluoranthene	207-08-9	**0.002**	**0.002**	2	0.621	ug/l	40-140	30	40-140	30	30	
Chrysene	218-01-9	**0.002**	**0.002**	2	0.222	ug/l	40-140	30	40-140	30	30	
Acenaphthylene	208-96-8			2	0.315	ug/l	45-123	30	45-123	30	30	
Anthracene	120-12-7	**50**	**50**	2	0.467	ug/l	40-140	30	40-140	30	30	
Benzo(ghi)perylene	191-24-2			2	0.369	ug/l	40-140	30	40-140	30	30	
Fluorene	86-73-7	**50**	**50**	2	0.439	ug/l	40-140	30	40-140	30	30	
Phenanthrene	85-01-8	**50**	**50**	2	0.419	ug/l	40-140	30	40-140	30	30	
Dibenzo(a,h)anthracene	53-70-3			2	0.286	ug/l	40-140	30	40-140	30	30	
Indeno(1,2,3-cd)Pyrene	193-39-5	**0.002**	**0.002**	2	0.484	ug/l	40-140	30	40-140	30	30	
Pyrene	129-00-0	**50**	**50**	2	0.407	ug/l	26-127	30	26-127	30	30	
Biphenyl	92-52-4			2	0.196	ug/l	40-140	30	40-140	30	30	
4-Chloroaniline	106-47-8	**5**	**5**	5	0.468	ug/l	40-140	30	40-140	30	30	
2-Nitroaniline	88-74-4	**5**	**5**	5	1.03	ug/l	52-143	30	52-143	30	30	
3-Nitroaniline	99-09-2	**5**	**5**	5	1.16	ug/l	25-145	30	25-145	30	30	
4-Nitroaniline	100-01-6	**5**	**5**	5	1.45	ug/l	51-143	30	51-143	30	30	
Dibenzofuran	132-64-9			2	0.401	ug/l	40-140	30	40-140	30	30	
2-Methylnaphthalene	91-57-6			2	0.372	ug/l	40-140	30	40-140	30	30	
Acetophenone	98-86-2			5	0.917	ug/l	39-129	30	39-129	30	30	
2,4,6-Trichlorophenol	88-06-2			5	2.09	ug/l	30-130	30	30-130	30	30	
P-Chloro-M-Cresol	59-50-7			2	0.606	ug/l	23-97	30	23-97	30	30	
2-Chlorophenol	95-57-8			2	0.653	ug/l	27-123	30	27-123	30	30	
2,4-Dichlorophenol	120-83-2	**1**	**2**	5	1.7	ug/l	30-130	30	30-130	30	30	
2,4-Dimethylphenol	105-67-9	**50**	**2**	5	2.04	ug/l	30-130	30	30-130	30	30	
2-Nitrophenol	88-75-5			10	1.95	ug/l	30-130	30	30-130	30	30	
4-Nitrophenol	100-02-7			10	1.42	ug/l	10-80	30	10-80	30	30	
2,4-Dinitrophenol	51-28-5	**10**	**2**	20	5.42	ug/l	20-130	30	20-130	30	30	
4,6-Dinitro-o-cresol	534-52-1			10	2.31	ug/l	20-164	30	20-164	30	30	
Pentachlorophenol	87-86-5	**1**	**2**	10	2.51	ug/l	9-103	30	9-103	30	30	
Phenol	108-95-2	**1**	**2**	5	0.35	ug/l	12-110	30	12-110	30	30	
2-Methylphenol	95-48-7			5	2.31	ug/l	30-130	30	30-130	30	30	
3-Methylphenol/4-Methylphenol	106-44-5			5	1.39	ug/l	30-130	30	30-130	30	30	
2,4,5-Trichlorophenol	95-95-4			5	2.07	ug/l	30-130	30	30-130	30	30	
Benzoic Acid	65-85-0			50	2.62	ug/l	10-164	30	10-164	30	30	
Benzyl Alcohol	100-51-6			2	0.381	ug/l	26-116	30	26-116	30	30	
Carbazole	86-74-8			2	0.309	ug/l	55-144	30	55-144	30	30	
2-Fluorophenol	*367-12-4*											*21-120*
Phenol-d6	*13127-88-3*											*10-120*
Nitrobenzene-d5	*4165-60-0*											*23-120*
2-Fluorobiphenyl	*321-60-8*											*15-120*
2,4,6-Tribromophenol	*118-79-6*											*10-120*
4-Terphenyl-d14	*1718-51-0*											*41-149*

NYTCL Semivolatiles -EPA 8270E-SIM (RVT) (WATER)

Analyte	CAS #	AWQS	Class GA	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Acenaphthene	83-32-9	**20**	**20**	0.1	0.0235	ug/l	40-140	40	40-140	40	40	
2-Chloronaphthalene	91-58-7	**10**	**10**	0.2	0.0227	ug/l	40-140	40	40-140	40	40	
Fluoranthene	206-44-0	**50**	**50**	0.1	0.0272	ug/l	40-140	40	40-140	40	40	
Hexachlorobutadiene	87-68-3	**0.5**	**0.5**	0.5	0.02	ug/l	40-140	40	40-140	40	40	
Naphthalene	91-20-3	**10**	**10**	0.1	0.0245	ug/l	40-140	40	40-140	40	40	
Benzo(a)anthracene	56-55-3	**0.002**	**0.002**	0.1	0.0295	ug/l	40-140	40	40-140	40	40	
Benzo(a)pyrene	50-32-8	**0**	**0**	0.1	0.024	ug/l	40-140	40	40-140	40	40	
Benzo(b)fluoranthene	205-99-2	**0.002**	**0.002**	0.1	0.0272	ug/l	40-140	40	40-140	40	40	
Benzo(k)fluoranthene	207-08-9	**0.002**	**0.002**	0.1	0.0338	ug/l	40-140	40	40-140	40	40	
Chrysene	218-01-9	**0.002**	**0.002**	0.1	0.031	ug/l	40-140	40	40-140	40	40	
Acenaphthylene	208-96-8			0.1	0.0205	ug/l	40-140	40	40-140	40	40	
Anthracene	120-12-7	**50**	**50**	0.1	0.0239	ug/l	40-140	40	40-140	40	40	
Benzo(ghi)perylene	191-24-2			0.1	0.0237	ug/l	40-140	40	40-140	40	40	
Fluorene	86-73-7	**50**	**50**	0.1	0.0255	ug/l	40-140	40	40-140	40	40	
Phenanthrene	85-01-8	**50**	**50**	0.1	0.0392	ug/l	40-140	40	40-140	40	40	
Dibenzo(a,h)anthracene	53-70-3			0.1	0.0235	ug/l	40-140	40	40-140	40	40	
Indeno(1,2,3-cd)Pyrene	193-39-5	**0.002**	**0.002**	0.1	0.022	ug/l	40-140	40	40-140	40	40	
Pyrene	129-00-0	**50**	**50**	0.1	0.0425	ug/l	40-140	40	40-140	40	40	
2-Methylnaphthalene	91-57-6			0.1	0.0277	ug/l	40-140	40	40-140	40	40	
Pentachlorophenol	87-86-5	**1**	**2**	0.8	0.0565	ug/l	40-140	40	40-140	40	40	
Hexachlorobenzene	118-74-1	**0.04**	**0.04**	0.8	0.0134	ug/l	40-140	40	40-140	40	40	
Hexachloroethane	67-72-1	**5**	**5**	0.8	0.0224	ug/l	40-140	40	40-140	40	40	
2-Fluorophenol	*367-12-4*											*21-120*
Phenol-d6	*13127-88-3*											*10-120*
Nitrobenzene-d5	*4165-60-0*											*23-120*
2-Fluorobiphenyl	*321-60-8*											*15-120*
2,4,6-Tribromophenol	*118-79-6*											*10-120*
4-Terphenyl-d14	*1718-51-0*											*41-149*

TCL Pesticides - EPA 8081B (RVT) (WATER)

Analyte	CAS #	AWQS	Class GA	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Delta-BHC	319-86-8	**0.04**	**0.04**	0.014	0.0059	ug/l	30-150	20	30-150	30	30	
Lindane	58-89-9	**0.05**	**0.05**	0.014	0.0049	ug/l	30-150	20	30-150	30	30	
Alpha-BHC	319-84-6	**0.01**	**0.01**	0.014	0.0048	ug/l	30-150	20	30-150	30	30	
Beta-BHC	319-85-7	**0.04**	**0.04**	0.02	0.0141	ug/l	30-150	20	30-150	30	30	
Heptachlor	76-44-8	**0.04**	**0.04**	0.014	0.0047	ug/l	30-150	20	30-150	30	30	
Aldrin	309-00-2	**0**	**0**	0.014	0.0051	ug/l	30-150	20	30-150	30	30	
Heptachlor epoxide	1024-57-3	**0.03**	**0.03**	0.014	0.0045	ug/l	30-150	20	30-150	30	30	
Endrin	72-20-8	**0**	**0**	0.029	0.0082	ug/l	30-150	20	30-150	30	30	
Endrin aldehyde	7421-93-4	**5**	**5**	0.03	0.0178	ug/l	30-150	20	30-150	30	30	
Endrin ketone	53494-70-5	**5**	**5**	0.029	0.0138	ug/l	30-150	20	30-150	30	30	
Dieldrin	60-57-1	**0.004**	**0.004**	0.029	0.0043	ug/l	30-150	20	30-150	30	30	
4,4'-DDE	72-55-9	**0.2**	**0.2**	0.029	0.01	ug/l	30-150	20	30-150	30	30	
4,4'-DDD	72-54-8	**0.3**	**0.3**	0.029	0.0101	ug/l	30-150	20	30-150	30	30	
4,4'-DDT	50-29-3	**0.2**	**0.2**	0.029	0.0134	ug/l	30-150	20	30-150	30	30	
Endosulfan I	959-98-8	**NS**	**NS**	0.014	0.0047	ug/l	30-150	20	30-150	30	30	
Endosulfan II	33213-65-9	**NS**	**NS**	0.029	0.0084	ug/l	30-150	20	30-150	30	30	
Endosulfan sulfate	1031-07-8	**NS**	**NS**	0.029	0.0065	ug/l	30-150	20	30-150	30	30	
Methoxychlor	72-43-5	**35**	**35**	0.143	0.0141	ug/l	30-150	20	30-150	30	30	
Toxaphene	8001-35-2	**0.06**	**0.06**	0.2	0.0942	ug/l	30-150	20	30-150	30	30	
cis-Chlordane	5103-71-9	**NS**	**NS**	0.02	0.0068	ug/l	30-150	20	30-150	30	30	
trans-Chlordane	5103-74-2	**NS**	**NS**	0.02	0.011	ug/l	30-150	20	30-150	30	30	
Chlordane	57-74-9	**0.05**	**0.05**	0.143	0.098	ug/l	30-150	20	30-150	30	30	
2,4,5,6-Tetrachloro-m-xylene	*877-09-8*											*30-150*
Decachlorobiphenyl	*2051-24-3*											*30-150*

TCL PCBs - EPA 8082A (RVT) (WATER)

Analyte	CAS #	AWQS	Class GA	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Aroclor 1016	12674-11-2	**0.09**	**0.09**	0.071	0.0128	ug/l	40-140	50	40-140	50	50	
Aroclor 1221	11104-28-2	**0.09**	**0.09**	0.071	0.0153	ug/l	40-140	50	40-140	50	50	
Aroclor 1232	11141-16-5	**0.09**	**0.09**	0.071	0.0153	ug/l	40-140	50	40-140	50	50	
Aroclor 1242	53469-21-9	**0.09**	**0.09**	0.071	0.0153	ug/l	40-140	50	40-140	50	50	
Aroclor 1248	12672-29-6	**0.09**	**0.09**	0.071	0.0153	ug/l	40-140	50	40-140	50	50	
Aroclor 1254	11097-69-1	**0.09**	**0.09**	0.071	0.0153	ug/l	40-140	50	40-140	50	50	
Aroclor 1260	11096-82-5	**0.09**	**0.09**	0.071	0.0153	ug/l	40-140	50	40-140	50	50	
Aroclor 1262	37324-23-5	**0.09**	**0.09**	0.071	0.0153	ug/l	40-140	50	40-140	50	50	
Aroclor 1268	11100-14-4	**0.09**	**0.09**	0.071	0.0153	ug/l	40-140	50	40-140	50	50	
PCBs, Total	1336-36-3	**0.09**	**0.09**	0.071	0.0153	ug/l				50	50	
2,4,5,6-Tetrachloro-m-xylene	*877-09-8*											*30-150*
Decachlorobiphenyl	*2051-24-3*											*30-150*

METALS by 6020B (WATER)

Analyte	CAS #	AWQS	Class GA	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Aluminum, Total	7429-90-5	**NS**	**2000**	0.01	0.00327	mg/l	80-120		75-125	20	20	
Antimony, Total	7440-36-0	**3**	**6**	0.004	0.000429	mg/l	80-120		75-125	20	20	
Arsenic, Total	7440-38-2	**25**	**50**	0.0005	0.000165	mg/l	80-120		75-125	20	20	
Barium, Total	7440-39-3	**1000**	**2000**	0.0005	0.000173	mg/l	80-120		75-125	20	20	
Beryllium, Total	7440-41-7	**3**	**3**	0.0005	0.000107	mg/l	80-120		75-125	20	20	
Cadmium, Total	7440-43-9	**5**	**10**	0.0002	0.0000599	mg/l	80-120		75-125	20	20	
Calcium, Total	7440-70-2	**NS**	**NS**	0.1	0.0394	mg/l	80-120		75-125	20	20	
Chromium, Total	7440-47-3	**50**	**100**	0.001	0.000178	mg/l	80-120		75-125	20	20	
Cobalt, Total	7440-48-4	**NS**	**NS**	0.0005	0.000163	mg/l	80-120		75-125	20	20	
Copper, Total	7440-50-8	**200**	**1000**	0.001	0.000384	mg/l	80-120		75-125	20	20	
Iron, Total	7439-89-6	**300**	**600**	0.05	0.0191	mg/l	80-120		75-125	20	20	
Lead, Total	7439-92-1	**25**	**50**	0.001	0.000343	mg/l	80-120		75-125	20	20	
Magnesium, Total	7439-95-4	**35000**	**35000**	0.07	0.0242	mg/l	80-120		75-125	20	20	
Manganese, Total	7439-96-5	**300**	**600**	0.001	0.00044	mg/l	80-120		75-125	20	20	
Nickel, Total	7440-02-0	**100**	**200**	0.002	0.000556	mg/l	80-120		75-125	20	20	
Potassium, Total	7440-09-7	**NS**	**NS**	0.1	0.0309	mg/l	80-120		75-125	20	20	
Selenium, Total	7782-49-2	**10**	**20**	0.005	0.00173	mg/l	80-120		75-125	20	20	
Silver, Total	7440-22-4	**50**	**100**	0.0004	0.000163	mg/l	80-120		75-125	20	20	
Sodium, Total	7440-23-5	**20000**	**NS**	0.5	0.0293	mg/l	80-120		75-125	20	20	
Thallium, Total	7440-28-0	**0.5**	**0.5**	0.001	0.000143	mg/l	80-120		75-125	20	20	
Vanadium, Total	7440-62-2	**NS**	**NS**	0.005	0.00157	mg/l	80-120		75-125	20	20	
Zinc, Total	7440-66-6	**2000**	**5000**	0.01	0.00341	mg/l	80-120		75-125	20	20	

METALS by 7470A (WATER)

Analyte	CAS #	AWQS	Class GA	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Mercury, Total	7439-97-6	**0.7**	**1.4**	0.0002	0.0000915	mg/l	80-120		75-125	20	20	

WETCHEM (WATER)

Analyte	CAS #	AWQS	Class GA	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method
Cyanide, Total	57-12-5	**200**	**400**	0.005	0.0018	mg/l	90-110		90-110	20	20	4500CN-CE
Chromium, Hexavalent	18540-29-9	**50**	**100**	0.01	0.003	mg/l	85-115	20	85-115	20	20	3500Cr-B

1,4 Dioxane via EPA 8270E-SIM (ug/L) (WATER)

Analyte	CAS #	AWQS	Class GA	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
1,4-Dioxane	123-91-1			0.15	0.0339	ug/l	40-140	30	40-140	30	30	
1,4-Dioxane-d8	*17647-74-4*											*15-110*
1,4-Dioxane-d8 (IS)	17647-74-4					ug/l						

PFAAs via EPA 1633 (WATER)

Analyte	CAS #	AWQS	Class GA	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Perfluorobutanoic Acid (PFBA)	375-22-4			6.4	2.136	ng/l	70-140	30	70-140	30	30	
Perfluoropentanoic Acid (PFPeA)	2706-90-3			3.2	1.064	ng/l	65-135	30	65-135	30	30	
Perfluorobutanesulfonic Acid (PFBS)	375-73-5			1.6	0.536	ng/l	60-145	30	60-145	30	30	
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4			6.4	2.136	ng/l	70-145	30	70-145	30	30	
Perfluorohexanoic Acid (PFHxA)	307-24-4			1.6	0.536	ng/l	70-145	30	70-145	30	30	
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4			1.6	0.536	ng/l	65-140	30	65-140	30	30	
Perfluoroheptanoic Acid (PFHpA)	375-85-9			1.6	0.536	ng/l	70-150	30	70-150	30	30	
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4			1.6	0.536	ng/l	65-145	30	65-145	30	30	
Perfluorooctanoic Acid (PFOA)	335-67-1	**6.7**	**6.7**	1.6	0.536	ng/l	70-150	30	70-150	30	30	
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2			6.4	4.816	ng/l	65-155	30	65-155	30	30	
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8			1.6	0.536	ng/l	70-150	30	70-150	30	30	
Perfluorononanoic Acid (PFNA)	375-95-1			1.6	0.536	ng/l	70-150	30	70-150	30	30	
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	**2.7**	**2.7**	1.6	0.536	ng/l	55-150	30	55-150	30	30	
Perfluorodecanoic Acid (PFDA)	335-76-2			1.6	0.536	ng/l	70-140	30	70-140	30	30	
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4			6.4	2.136	ng/l	60-150	30	60-150	30	30	
Perfluorononanesulfonic Acid (PFNS)	68259-12-1			1.6	0.536	ng/l	65-145	30	65-145	30	30	
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9			1.6	0.536	ng/l	50-140	30	50-140	30	30	
Perfluoroundecanoic Acid (PFUnA)	2058-94-8			1.6	0.536	ng/l	70-145	30	70-145	30	30	
Perfluorodecanesulfonic Acid (PFDS)	335-77-3			1.6	0.536	ng/l	60-145	30	60-145	30	30	
Perfluorooctanesulfonamide (FOSA)	754-91-6			1.6	0.536	ng/l	70-145	30	70-145	30	30	
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6			1.6	0.536	ng/l	70-145	30	70-145	30	30	
Perfluorododecanoic Acid (PFDoA)	307-55-1			1.6	0.536	ng/l	70-140	30	70-140	30	30	
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8			1.6	0.536	ng/l	65-140	30	65-140	30	30	
Perfluorotetradecanoic Acid (PFTA)	376-06-7			1.6	0.536	ng/l	60-140	30	60-140	30	30	
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	13252-13-6			6.4	2.136	ng/l	70-140	30	70-140	30	30	
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	919005-14-4			6.4	2.136	ng/l	65-145	30	65-145	30	30	
Perfluorododecane Sulfonic Acid (PFDoDS)	79780-39-5			1.6	0.536	ng/l	50-145	30	50-145	30	30	
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	756426-58-1			6.4	2.136	ng/l	70-155	30	70-155	30	30	
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	763051-92-9			6.4	2.136	ng/l	55-160	30	55-160	30	30	
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	31506-32-8			1.6	0.536	ng/l	60-150	30	60-150	30	30	
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	4151-50-2			1.6	0.536	ng/l	65-145	30	65-145	30	30	
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	24448-09-7			16	5.36	ng/l	70-145	30	70-145	30	30	
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	1691-99-2			16	5.36	ng/l	70-135	30	70-135	30	30	
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	377-73-1			3.2	1.064	ng/l	55-140	30	55-140	30	30	
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	863090-89-5			3.2	1.064	ng/l	60-150	30	60-150	30	30	
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	113507-82-7			3.2	1.064	ng/l	70-140	30	70-140	30	30	
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	151772-58-6			3.2	1.064	ng/l	50-150	30	50-150	30	30	
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	356-02-5			8	2.664	ng/l	65-130	30	65-130	30	30	
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	914637-49-3			40	13.36	ng/l	70-135	30	70-135	30	30	
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	812-70-4			40	13.36	ng/l	50-145	30	50-145	30	30	
Perfluoro[13C4]Butanoic Acid (MPFBA)	*NONE*											*8-130*
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	*NONE*											*35-130*
Perfluoro[13C4]Butanoic Acid (MPFBA)	*NONE*											*5-130*
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	*NONE*											*40-135*
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	*NONE*											*40-135*
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	*NONE*											*40-130*
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	*NONE*											*40-130*
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	*NONE*											*40-300*
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	*NONE*											*40-130*
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	*NONE*											*40-170*
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	*NONE*											*40-150*
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	*NONE*											*30-130*
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	*NONE*											*40-130*
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	*NONE*											*40-130*
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	*NONE*											*20-130*
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	*NONE*											*25-135*
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	*NONE*											*10-130*
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	*NONE*											*40-130*
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	*NONE*											*10-130*
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	*NONE*											*10-130*
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	*NONE*											*40-130*
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	*NONE*											*10-130*
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	*NONE*											*10-130*
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	*1265205-95-5*											*20-130*
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	*NONE*											*10-130*
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	*NONE*											*15-130*
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	*1265205-95-5*											*10-130*
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	*NONE*											*10-130*

TCL Volatiles - EPA 8260D/5035 High&Low (SOIL)

Analyte	CAS #	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Methylene chloride	75-09-2	**1000000**	**500000**	**51000**	**100000**	**50**	**50**	10	0.816	ug/kg	70-130	30	70-130	30	30	
1,1-Dichloroethane	75-34-3	**480000**	**240000**	**19000**	**26000**	**270**	**270**	1.5	0.2952	ug/kg	70-130	30	70-130	30	30	
Chloroform	67-66-3	**700000**	**350000**	**10000**	**49000**	**370**	**370**	1.5	0.3246	ug/kg	70-130	30	70-130	30	30	
Carbon tetrachloride	56-23-5	**44000**	**22000**	**1400**	**2400**	**760**	**760**	1	0.2112	ug/kg	70-130	30	70-130	30	30	
1,2-Dichloropropane	78-87-5							3.5	0.255	ug/kg	70-130	30	70-130	30	30	
Dibromochloromethane	124-48-1							1	0.3078	ug/kg	70-130	30	70-130	30	30	
1,1,2-Trichloroethane	79-00-5							1.5	0.393	ug/kg	70-130	30	70-130	30	30	
Tetrachloroethene	127-18-4	**300000**	**150000**	**5500**	**19000**	**1300**	**1300**	1	0.3062	ug/kg	70-130	30	70-130	30	30	
Chlorobenzene	108-90-7	**1000000**	**500000**	**100000**	**100000**	**1100**	**1100**	1	0.1862	ug/kg	70-130	30	70-130	30	30	
Trichlorofluoromethane	75-69-4							5	0.3914	ug/kg	70-139	30	70-139	30	30	
1,2-Dichloroethane	107-06-2	**60000**	**30000**	**2300**	**3100**	**20**	**20**	1	0.2274	ug/kg	70-130	30	70-130	30	30	
1,1,1-Trichloroethane	71-55-6	**1000000**	**500000**	**100000**	**100000**	**680**	**680**	1	0.2698	ug/kg	70-130	30	70-130	30	30	
Bromodichloromethane	75-27-4							1	0.3848	ug/kg	70-130	30	70-130	30	30	
trans-1,3-Dichloropropene	10061-02-6							1	0.3006	ug/kg	70-130	30	70-130	30	30	
cis-1,3-Dichloropropene	10061-01-5							1	0.2672	ug/kg	70-130	30	70-130	30	30	
1,1-Dichloropropene	563-58-6							5	0.4556	ug/kg	70-130	30	70-130	30	30	
Bromoform	75-25-2							4	0.4954	ug/kg	70-130	30	70-130	30	30	
1,1,2,2-Tetrachloroethane	79-34-5							1	0.2402	ug/kg	70-130	30	70-130	30	30	
Benzene	71-43-2	**89000**	**44000**	**2900**	**4800**	**60**	**60**	1	0.2972	ug/kg	70-130	30	70-130	30	30	
Toluene	108-88-3	**1000000**	**500000**	**100000**	**100000**	**700**	**700**	1.5	0.2416	ug/kg	70-130	30	70-130	30	30	
Ethylbenzene	100-41-4	**780000**	**390000**	**30000**	**41000**	**1000**	**1000**	1	0.2214	ug/kg	70-130	30	70-130	30	30	
Chloromethane	74-87-3							5	0.7832	ug/kg	52-130	30	52-130	30	30	
Bromomethane	74-83-9							2	0.6478	ug/kg	57-147	30	57-147	30	30	
Vinyl chloride	75-01-4	**27000**	**13000**	**210**	**900**	**20**	**20**	2	0.7534	ug/kg	67-130	30	67-130	30	30	
Chloroethane	75-00-3							2	0.4384	ug/kg	50-151	30	50-151	30	30	
1,1-Dichloroethene	75-35-4	**1000000**	**500000**	**100000**	**100000**	**330**	**330**	1	0.2598	ug/kg	65-135	30	65-135	30	30	
trans-1,2-Dichloroethene	156-60-5	**1000000**	**500000**	**100000**	**100000**	**190**	**190**	1.5	0.3916	ug/kg	70-130	30	70-130	30	30	
Trichloroethene	79-01-6	**400000**	**200000**	**10000**	**21000**	**470**	**470**	1	0.224	ug/kg	70-130	30	70-130	30	30	
1,2-Dichlorobenzene	95-50-1	**1000000**	**500000**	**100000**	**100000**	**1100**	**1100**	5	0.3642	ug/kg	70-130	30	70-130	30	30	
1,3-Dichlorobenzene	541-73-1	**560000**	**280000**	**17000**	**49000**	**2400**	**2400**	5	0.3996	ug/kg	70-130	30	70-130	30	30	
1,4-Dichlorobenzene	106-46-7	**250000**	**130000**	**9800**	**13000**	**1800**	**1800**	5	0.4198	ug/kg	70-130	30	70-130	30	30	
Methyl tert butyl ether	1634-04-4	**1000000**	**500000**	**62000**	**100000**	**930**	**930**	2	0.487	ug/kg	66-130	30	66-130	30	30	
p/m-Xylene	179601-23-1							2	0.43	ug/kg	70-130	30	70-130	30	30	
o-Xylene	95-47-6							2	0.4174	ug/kg	70-130	30	70-130	30	30	
cis-1,2-Dichloroethene	156-59-2	**1000000**	**500000**	**59000**	**100000**	**250**	**250**	1	0.3014	ug/kg	70-130	30	70-130	30	30	
Dibromomethane	74-95-3							10	0.4348	ug/kg	70-130	30	70-130	30	30	
Styrene	100-42-5							2	0.726	ug/kg	70-130	30	70-130	30	30	
Dichlorodifluoromethane	75-71-8							10	0.3888	ug/kg	30-146	30	30-146	30	30	
Acetone	67-64-1	**1000000**	**500000**	**100000**	**100000**	**50**	**50**	10	3.235	ug/kg	54-140	30	54-140	30	30	
Carbon disulfide	75-15-0							10	0.3754	ug/kg	59-130	30	59-130	30	30	
2-Butanone	78-93-3	**1000000**	**500000**	**100000**	**100000**	**120**	**120**	10	3.8772	ug/kg	70-130	30	70-130	30	30	
Vinyl acetate	108-05-4							10	0.751	ug/kg	70-130	30	70-130	30	30	
4-Methyl-2-pentanone	108-10-1							10	0.8164	ug/kg	70-130	30	70-130	30	30	
1,2,3-Trichloropropane	96-18-4							10	0.387	ug/kg	68-130	30	68-130	30	30	
2-Hexanone	591-78-6							10	0.3964	ug/kg	70-130	30	70-130	30	30	
Bromochloromethane	74-97-5							5	0.3022	ug/kg	70-130	30	70-130	30	30	
2,2-Dichloropropane	594-20-7							5	0.795	ug/kg	70-130	30	70-130	30	30	
1,2-Dibromoethane	106-93-4							4	0.4088	ug/kg	70-130	30	70-130	30	30	
1,3-Dichloropropane	142-28-9							5	0.5656	ug/kg	69-130	30	69-130	30	30	
1,1,1,2-Tetrachloroethane	630-20-6							1	0.3284	ug/kg	70-130	30	70-130	30	30	
Bromobenzene	108-86-1							5	0.2202	ug/kg	70-130	30	70-130	30	30	
n-Butylbenzene	104-51-8	**1000000**	**500000**	**100000**	**100000**	**12000**	**12000**	1	0.3144	ug/kg	70-130	30	70-130	30	30	
sec-Butylbenzene	135-98-8	**1000000**	**500000**	**100000**	**100000**	**11000**	**11000**	1	0.2756	ug/kg	70-130	30	70-130	30	30	
tert-Butylbenzene	98-06-6	**1000000**	**500000**	**100000**	**100000**	**5900**	**5900**	5	0.6032	ug/kg	70-130	30	70-130	30	30	
o-Chlorotoluene	95-49-8							5	0.313	ug/kg	70-130	30	70-130	30	30	
p-Chlorotoluene	106-43-4							5	0.3608	ug/kg	70-130	30	70-130	30	30	
1,2-Dibromo-3-chloropropane	96-12-8							5	0.8366	ug/kg	68-130	30	68-130	30	30	
Hexachlorobutadiene	87-68-3							5	0.4582	ug/kg	67-130	30	67-130	30	30	
Isopropylbenzene	98-82-8							1	0.177	ug/kg	70-130	30	70-130	30	30	
p-Isopropyltoluene	99-87-6							1	0.2732	ug/kg	70-130	30	70-130	30	30	
Naphthalene	91-20-3	**1000000**	**500000**	**100000**	**100000**	**12000**	**12000**	5	0.7696	ug/kg	70-130	30	70-130	30	30	
Acrylonitrile	107-13-1							10	0.3756	ug/kg	70-130	30	70-130	30	30	
n-Propylbenzene	103-65-1	**1000000**	**500000**	**100000**	**100000**	**3900**	**3900**	1	0.284	ug/kg	70-130	30	70-130	30	30	
1,2,3-Trichlorobenzene	87-61-6							5	0.4034	ug/kg	70-130	30	70-130	30	30	
1,2,4-Trichlorobenzene	120-82-1							5	0.7898	ug/kg	70-130	30	70-130	30	30	
1,3,5-Trimethylbenzene	108-67-8	**380000**	**190000**	**47000**	**52000**	**8400**	**8400**	5	0.6016	ug/kg	70-130	30	70-130	30	30	
1,2,4-Trimethylbenzene	95-63-6	**380000**	**190000**	**47000**	**52000**	**3600**	**3600**	5	0.573	ug/kg	70-130	30	70-130	30	30	
1,4-Dioxane	123-91-1	**250000**	**130000**	**9800**	**13000**	**100**	**100**	100	17.4	ug/kg	65-136	30	65-136	30	30	
1,4-Diethylbenzene	105-05-5							4	0.2	ug/kg	70-130	30	70-130	30	30	
4-Ethyltoluene	622-96-8							4	0.097	ug/kg	70-130	30	70-130	30	30	

TCL Volatiles - EPA 8260D/5035 High&Low (SOIL)

Analyte	CAS #	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
1,2,4,5-Tetramethylbenzene	95-93-2							4	0.181	ug/kg	70-130	30	70-130	30	30	
Ethyl ether	60-29-7							5	0.3798	ug/kg	67-130	30	67-130	30	30	
trans-1,4-Dichloro-2-butene	110-57-6							5	1.478	ug/kg	70-130	30	70-130	30	30	
1,2-Dichloroethane-d4	*17060-07-0*															*70-130*
2-Chloroethoxyethane																
Toluene-d8	*2037-26-5*															*70-130*
4-Bromofluorobenzene	*460-00-4*															*70-130*
Dibromofluoromethane	*1868-53-7*															*70-130*

Please Note that the RL information provided in this table is calculated using a 100% Solids factor.

NYTCL Semivolatiles - EPA 8270E (SOIL)

Analyte	CAS #	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Acenaphthene	83-32-9	**1000000**	**500000**	**100000**	**100000**	**98000**	**20000**	133.6	17.3012	ug/kg	31-137	50	31-137	50	50	
1,2,4-Trichlorobenzene	120-82-1							167	19.1048	ug/kg	38-107	50	38-107	50	50	
Hexachlorobenzene	118-74-1	**12000**	**6000**	**330**	**1200**	**3200**	**330**	100.2	18.704	ug/kg	40-140	50	40-140	50	50	
Bis(2-chloroethyl)ether	111-44-4							150.3	22.6452	ug/kg	40-140	50	40-140	50	50	
2-Chloronaphthalene	91-58-7							167	16.5664	ug/kg	40-140	50	40-140	50	50	
1,2-Dichlorobenzene	95-50-1	**1000000**	**500000**	**100000**	**100000**	**1100**	**1100**	167	29.9932	ug/kg	40-140	50	40-140	50	50	
1,3-Dichlorobenzene	541-73-1	**560000**	**280000**	**17000**	**49000**	**2400**	**2400**	167	28.724	ug/kg	40-140	50	40-140	50	50	
1,4-Dichlorobenzene	106-46-7	**250000**	**130000**	**9800**	**13000**	**1800**	**1800**	167	29.1582	ug/kg	28-104	50	28-104	50	50	
3,3'-Dichlorobenzidine	91-94-1							167	44.422	ug/kg	40-140	50	40-140	50	50	
2,4-Dinitrotoluene	121-14-2							167	33.4	ug/kg	40-132	50	40-132	50	50	
2,6-Dinitrotoluene	606-20-2							167	28.6572	ug/kg	40-140	50	40-140	50	50	
Fluoranthene	206-44-0	**1000000**	**500000**	**100000**	**100000**	**1000000**	**100000**	100.2	19.1716	ug/kg	40-140	50	40-140	50	50	
4-Chlorophenyl phenyl ether	7005-72-3							167	17.869	ug/kg	40-140	50	40-140	50	50	
4-Bromophenyl phenyl ether	101-55-3							167	25.4842	ug/kg	40-140	50	40-140	50	50	
Bis(2-chloroisopropyl)ether	108-60-1							200.4	28.5236	ug/kg	40-140	50	40-140	50	50	
Bis(2-chloroethoxy)methane	111-91-1							180.36	16.7334	ug/kg	40-117	50	40-117	50	50	
Hexachlorobutadiene	87-68-3							167	24.4488	ug/kg	40-140	50	40-140	50	50	
Hexachlorocyclopentadiene	77-47-4							477.62	151.302	ug/kg	40-140	50	40-140	50	50	
Hexachloroethane	67-72-1							133.6	27.0206	ug/kg	40-140	50	40-140	50	50	
Isophorone	78-59-1							150.3	21.6766	ug/kg	40-140	50	40-140	50	50	
Naphthalene	91-20-3	**1000000**	**500000**	**100000**	**100000**	**12000**	**12000**	167	20.3406	ug/kg	40-140	50	40-140	50	50	
Nitrobenzene	98-95-3							150.3	24.716	ug/kg	40-140	50	40-140	50	50	
NitrosoDiPhenylAmine(NDPA)/DPA	86-30-6							133.6	19.0046	ug/kg	36-157	50	36-157	50	50	
n-Nitrosodi-n-propylamine	621-64-7							167	25.7848	ug/kg	32-121	50	32-121	50	50	
Bis(2-Ethylhexyl)phthalate	117-81-7							167	57.782	ug/kg	40-140	50	40-140	50	50	
Butyl benzyl phthalate	85-68-7							167	42.084	ug/kg	40-140	50	40-140	50	50	
Di-n-butylphthalate	84-74-2							167	31.6632	ug/kg	40-140	50	40-140	50	50	
Di-n-octylphthalate	117-84-0							167	56.78	ug/kg	40-140	50	40-140	50	50	
Diethyl phthalate	84-66-2							167	15.4642	ug/kg	40-140	50	40-140	50	50	
Dimethyl phthalate	131-11-3							167	35.07	ug/kg	40-140	50	40-140	50	50	
Benzo(a)anthracene	56-55-3	**11000**	**5600**	**1000**	**1000**	**1000**	**1000**	100.2	18.8042	ug/kg	40-140	50	40-140	50	50	
Benzo(a)pyrene	50-32-8	**1100**	**1000**	**1000**	**1000**	**22000**	**1000**	133.6	40.748	ug/kg	40-140	50	40-140	50	50	
Benzo(b)fluoranthene	205-99-2	**11000**	**5600**	**1000**	**1000**	**1700**	**1000**	100.2	28.1228	ug/kg	40-140	50	40-140	50	50	
Benzo(k)fluoranthene	207-08-9	**110000**	**56000**	**1000**	**3900**	**1700**	**800**	100.2	26.72	ug/kg	40-140	50	40-140	50	50	
Chrysene	218-01-9	**110000**	**56000**	**1000**	**3900**	**1000**	**1000**	100.2	17.368	ug/kg	40-140	50	40-140	50	50	
Acenaphthylene	208-96-8	**1000000**	**500000**	**100000**	**100000**	**107000**	**100000**	133.6	25.7848	ug/kg	40-140	50	40-140	50	50	
Anthracene	120-12-7	**1000000**	**500000**	**100000**	**100000**	**1000000**	**100000**	100.2	32.565	ug/kg	40-140	50	40-140	50	50	
Benzo(ghi)perylene	191-24-2	**1000000**	**500000**	**100000**	**100000**	**1000000**	**100000**	133.6	19.6392	ug/kg	40-140	50	40-140	50	50	
Fluorene	86-73-7	**1000000**	**500000**	**100000**	**100000**	**386000**	**30000**	167	16.2324	ug/kg	40-140	50	40-140	50	50	
Phenanthrene	85-01-8	**1000000**	**500000**	**100000**	**100000**	**1000000**	**100000**	100.2	20.3072	ug/kg	40-140	50	40-140	50	50	
Dibenzo(a,h)anthracene	53-70-3	**1100**	**560**	**330**	**330**	**1000000**	**330**	100.2	19.3052	ug/kg	40-140	50	40-140	50	50	
Indeno(1,2,3-cd)Pyrene	193-39-5	**11000**	**5600**	**500**	**500**	**8200**	**500**	133.6	23.2798	ug/kg	40-140	50	40-140	50	50	
Pyrene	129-00-0	**1000000**	**500000**	**100000**	**100000**	**1000000**	**100000**	100.2	16.5998	ug/kg	35-142	50	35-142	50	50	
Biphenyl	92-52-4							380.76	21.71	ug/kg	37-127	50	37-127	50	50	
4-Chloroaniline	106-47-8							167	30.394	ug/kg	40-140	50	40-140	50	50	
2-Nitroaniline	88-74-4							167	32.1976	ug/kg	47-134	50	47-134	50	50	
3-Nitroaniline	99-09-2							167	31.4962	ug/kg	26-129	50	26-129	50	50	
4-Nitroaniline	100-01-6							167	69.138	ug/kg	41-125	50	41-125	50	50	
Dibenzofuran	132-64-9	**1000000**	**350000**	**14000**	**59000**	**210000**	**7000**	167	15.7982	ug/kg	40-140	50	40-140	50	50	
2-Methylnaphthalene	91-57-6							200.4	20.1736	ug/kg	40-140	50	40-140	50	50	
Acetophenone	98-86-2							167	20.6746	ug/kg	14-144	50	14-144	50	50	
2,4,6-Trichlorophenol	88-06-2							100.2	31.6632	ug/kg	30-130	50	30-130	50	50	
P-Chloro-M-Cresol	59-50-7							167	24.883	ug/kg	26-103	50	26-103	50	50	
2-Chlorophenol	95-57-8							167	19.7394	ug/kg	25-102	50	25-102	50	50	
2,4-Dichlorophenol	120-83-2							150.3	26.8536	ug/kg	30-130	50	30-130	50	50	
2,4-Dimethylphenol	105-67-9							167	55.11	ug/kg	30-130	50	30-130	50	50	
2-Nitrophenol	88-75-5							360.72	62.792	ug/kg	30-130	50	30-130	50	50	
4-Nitrophenol	100-02-7							233.8	68.136	ug/kg	11-114	50	11-114	50	50	
2,4-Dinitrophenol	51-28-5							801.6	77.822	ug/kg	4-130	50	4-130	50	50	
4,6-Dinitro-o-cresol	534-52-1							434.2	80.16	ug/kg	10-130	50	10-130	50	50	
Pentachlorophenol	87-86-5	**55000**	**6700**	**2400**	**6700**	**800**	**800**	133.6	36.74	ug/kg	17-109	50	17-109	50	50	
Phenol	108-95-2	**1000000**	**500000**	**100000**	**100000**	**330**	**330**	167	25.217	ug/kg	26-90	50	26-90	50	50	
2-Methylphenol	95-48-7	**1000000**	**500000**	**100000**	**100000**	**330**	**330**	167	25.885	ug/kg	30-130.	50	30-130.	50	50	
3-Methylphenol/4-Methylphenol	106-44-5	**1000000**	**500000**	**34000**	**100000**	**330**	**330**	240.48	26.1522	ug/kg	30-130	50	30-130	50	50	
2,4,5-Trichlorophenol	95-95-4							167	31.9972	ug/kg	30-130	50	30-130	50	50	
Benzoic Acid	65-85-0							541.08	169.004	ug/kg	10-110	50	10-110	50	50	
Benzyl Alcohol	100-51-6							167	51.102	ug/kg	40-140	50	40-140	50	50	
Carbazole	86-74-8							167	16.2324	ug/kg	54-128	50	54-128	50	50	
1,4-Dioxane	123-91-1	**250000**	**130000**	**9800**	**13000**	**100**	**100**	25.05	7.682	ug/kg	40-140	50	40-140	50	50	
2-Fluorophenol	*367-12-4*															*25-120*

NYTCL Semivolatiles - EPA 8270E (SOIL)

Analyte	CAS #	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Phenol-d6	*13127-88-3*															*10-120*
Nitrobenzene-d5	*4165-60-0*															*23-120*
2-Fluorobiphenyl	*321-60-8*															*30-120*
2,4,6-Tribromophenol	*118-79-6*															*10-136*
4-Terphenyl-d14	*1718-51-0*															*18-120*

Please Note that the RL information provided in this table is calculated using a 100% Solids factor.

TCL Pesticides - EPA 8081B (SOIL)

Analyte	CAS #	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Delta-BHC	319-86-8	**1000000**	**500000**	**100000**	**100000**	**250**	**40**	1.6008	0.31349	ug/kg	30-150	30	30-150	50	50	
Lindane	58-89-9	**23000**	**9200**	**280**	**1300**	**100**	**100**	0.667	0.298149	ug/kg	30-150	30	30-150	50	50	
Alpha-BHC	319-84-6	**6800**	**3400**	**97**	**480**	**20**	**20**	0.667	0.189428	ug/kg	30-150	30	30-150	50	50	
Beta-BHC	319-85-7	**14000**	**3000**	**72**	**360**	**90**	**36**	1.6008	0.60697	ug/kg	30-150	30	30-150	50	50	
Heptachlor	76-44-8	**29000**	**15000**	**420**	**2100**	**380**	**42**	0.8004	0.358846	ug/kg	30-150	30	30-150	50	50	
Aldrin	309-00-2	**1400**	**680**	**19**	**97**	**190**	**5**	1.6008	0.563615	ug/kg	30-150	30	30-150	50	50	
Heptachlor epoxide	1024-57-3							3.0015	0.90045	ug/kg	30-150	30	30-150	50	50	
Endrin	72-20-8	**410000**	**89000**	**2200**	**11000**	**60**	**14**	0.667	0.27347	ug/kg	30-150	30	30-150	50	50	
Endrin aldehyde	7421-93-4							2.001	0.70035	ug/kg	30-150	30	30-150	50	50	
Endrin ketone	53494-70-5							1.6008	0.412206	ug/kg	30-150	30	30-150	50	50	
Dieldrin	60-57-1	**2800**	**1400**	**39**	**200**	**100**	**5**	1.0005	0.50025	ug/kg	30-150	30	30-150	50	50	
4,4'-DDE	72-55-9	**120000**	**62000**	**1800**	**8900**	**17000**	**3.3**	1.6008	0.370185	ug/kg	30-150	30	30-150	50	50	
4,4'-DDD	72-54-8	**180000**	**92000**	**2600**	**13000**	**14000**	**3.3**	1.6008	0.570952	ug/kg	30-150	30	30-150	50	50	
4,4'-DDT	50-29-3	**94000**	**47000**	**1700**	**7900**	**136000**	**3.3**	1.6008	1.28731	ug/kg	30-150	30	30-150	50	50	
Endosulfan I	959-98-8	**920000**	**200000**	**4800**	**24000**	**102000**	**2400**	1.6008	0.378189	ug/kg	30-150	30	30-150	50	50	
Endosulfan II	33213-65-9	**920000**	**200000**	**4800**	**24000**	**102000**	**2400**	1.6008	0.534934	ug/kg	30-150	30	30-150	50	50	
Endosulfan sulfate	1031-07-8	**920000**	**200000**	**4800**	**24000**	**1000000**	**2400**	0.667	0.317492	ug/kg	30-150	30	30-150	50	50	
Methoxychlor	72-43-5							3.0015	0.9338	ug/kg	30-150	30	30-150	50	50	
Toxaphene	8001-35-2							30.015	8.4042	ug/kg	30-150	30	30-150	50	50	
cis-Chlordane	5103-71-9	**47000**	**24000**	**910**	**4200**	**2900**	**94**	2.001	0.557612	ug/kg	30-150	30	30-150	50	50	
trans-Chlordane	5103-74-2							2.001	0.528264	ug/kg	30-150	30	30-150	50	50	
Chlordane	57-74-9							13.34	5.30265	ug/kg	30-150	30	30-150	50	50	
2,4,5,6-Tetrachloro-m-xylene	*877-09-8*															*30-150*
Decachlorobiphenyl	*2051-24-3*															*30-150*

Please Note that the RL information provided in this table is calculated using a 100% Solids factor.

TCL PCBs - EPA 8082A (SOIL)

Analyte	CAS #	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Aroclor 1016	12674-11-2	**25000**	**1000**	**1000**	**1000**	**3200**	**100**	50	4.44	ug/kg	40-140	50	40-140	50	50	
Aroclor 1221	11104-28-2	**25000**	**1000**	**1000**	**1000**	**3200**	**100**	50	5.01	ug/kg	40-140	50	40-140	50	50	
Aroclor 1232	11141-16-5	**25000**	**1000**	**1000**	**1000**	**3200**	**100**	50	10.6	ug/kg	40-140	50	40-140	50	50	
Aroclor 1242	53469-21-9	**25000**	**1000**	**1000**	**1000**	**3200**	**100**	50	6.74	ug/kg	40-140	50	40-140	50	50	
Aroclor 1248	12672-29-6	**25000**	**1000**	**1000**	**1000**	**3200**	**100**	50	7.5	ug/kg	40-140	50	40-140	50	50	
Aroclor 1254	11097-69-1	**25000**	**1000**	**1000**	**1000**	**3200**	**100**	50	5.47	ug/kg	40-140	50	40-140	50	50	
Aroclor 1260	11096-82-5	**25000**	**1000**	**1000**	**1000**	**3200**	**100**	50	9.24	ug/kg	40-140	50	40-140	50	50	
Aroclor 1262	37324-23-5	**25000**	**1000**	**1000**	**1000**	**3200**	**100**	50	6.35	ug/kg	40-140	50	40-140	50	50	
Aroclor 1268	11100-14-4	**25000**	**1000**	**1000**	**1000**	**3200**	**100**	50	5.18	ug/kg	40-140	50	40-140	50	50	
PCBs, Total	1336-36-3	**25000**	**1000**	**1000**	**1000**	**3200**	**100**	50	4.44	ug/kg				50	50	
2,4,5,6-Tetrachloro-m-xylene	*877-09-8*															*30-150*
Decachlorobiphenyl	*2051-24-3*															*30-150*

Please Note that the RL information provided in this table is calculated using a 100% Solids factor.

METALS by 6010D (SOIL)

Analyte	CAS #	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Aluminum, Total	7429-90-5							4	1.3	mg/kg	80-120		75-125	20	20	
Antimony, Total	7440-36-0							2	1.54	mg/kg	80-120		75-125	20	20	
Arsenic, Total	7440-38-2	**16**	**16**	**16**	**16**	**16**	**13**	0.4	0.1728	mg/kg	80-120		75-125	20	20	
Barium, Total	7440-39-3	**10000**	**400**	**350**	**400**	**820**	**350**	0.4	0.0424	mg/kg	80-120		75-125	20	20	
Beryllium, Total	7440-41-7	**2700**	**590**	**14**	**72**	**47**	**7.2**	0.2	0.022	mg/kg	80-120		75-125	20	20	
Cadmium, Total	7440-43-9	**60**	**9.3**	**2.5**	**4.3**	**7.5**	**2.5**	0.4	0.022	mg/kg	80-120		75-125	20	20	
Calcium, Total	7440-70-2							4	2.268	mg/kg	80-120		75-125	20	20	
Chromium, Total	7440-47-3							0.4	0.3392	mg/kg	80-120		75-125	20	20	
Cobalt, Total	7440-48-4							0.8	0.0992	mg/kg	80-120		75-125	20	20	
Copper, Total	7440-50-8	**10000**	**270**	**270**	**270**	**1720**	**50**	0.4	0.0908	mg/kg	80-120		75-125	20	20	
Iron, Total	7439-89-6							2	0.42	mg/kg	80-120		75-125	20	20	
Lead, Total	7439-92-1	**3900**	**1000**	**400**	**400**	**450**	**63**	2	0.0952	mg/kg	80-120		75-125	20	20	
Magnesium, Total	7439-95-4							4	0.652	mg/kg	80-120		75-125	20	20	
Manganese, Total	7439-96-5	**10000**	**10000**	**2000**	**2000**	**2000**	**1600**	0.4	0.2144	mg/kg	80-120		75-125	20	20	
Nickel, Total	7440-02-0	**10000**	**310**	**140**	**310**	**130**	**30**	1	0.3232	mg/kg	80-120		75-125	20	20	
Potassium, Total	7440-09-7							100	20.28	mg/kg	80-120		75-125	20	20	
Selenium, Total	7782-49-2	**6800**	**1500**	**36**	**180**	**4**	**3.9**	0.8	0.1316	mg/kg	80-120		75-125	20	20	
Silver, Total	7440-22-4	**6800**	**1500**	**36**	**180**	**8.3**	**2**	0.2	0.1192	mg/kg	80-120		75-125	20	20	
Sodium, Total	7440-23-5							80	42.4	mg/kg	80-120		75-125	20	20	
Thallium, Total	7440-28-0							0.8	0.3608	mg/kg	80-120		75-125	20	20	
Vanadium, Total	7440-62-2							0.4	0.0604	mg/kg	80-120		75-125	20	20	
Zinc, Total	7440-66-6	**10000**	**10000**	**2200**	**10000**	**2480**	**109**	2	0.2424	mg/kg	80-120		75-125	20	20	

Please Note that the RL information provided in this table is calculated using a 100% Solids factor.

METALS by 7471B (SOIL)

Analyte	CAS #	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Mercury, Total	7439-97-6	**5.7**	**2.8**	**0.81**	**0.81**	**0.73**	**0.18**	0.08	0.05216	mg/kg	80-120		80-120	20	20	

Please Note that the RL information provided in this table is calculated using a 100% Solids factor.

1,4 Dioxane via EPA 8270E-SIM (SOIL)

Analyte	CAS #	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
1,4-Dioxane	123-91-1	**250000**	**130000**	**9800**	**13000**	**100**	**100**	8	2.04	ug/kg	40-140	30	40-140	30	30	
1,4-Dioxane-d8	*17647-74-4*															*15-110*
1,4-Dioxane-d8 (IS)	17647-74-4									ug/kg						

Please Note that the RL information provided in this table is calculated using a 100% Solids factor.

WETCHEM (SOIL)

Analyte	CAS #	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Method
Chromium, Hexavalent	18540-29-9	800	400	22	110	19	1	0.8	0.16	mg/kg	80-120	20	75-125	20	20	7196A
Cyanide, Total	57-12-5	10000	27	27	27	1720	27	1	0.212	mg/kg	80-120	35	75-125	35	35	9010C/9012B

Please Note that the RL information provided in this table is calculated using a 100% Solids factor.

PFAAs via EPA 1633 (SOIL)

Analyte	CAS #	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Perfluorobutanoic Acid (PFBA)	375-22-4							0.8	0.2664	ng/g	70-140	30	70-140	30	30	
Perfluoropentanoic Acid (PFPeA)	2706-90-3							0.4	0.1336	ng/g	60-150	30	60-150	30	30	
Perfluorobutanesulfonic Acid (PFBS)	375-73-5							0.2	0.06664	ng/g	65-145	30	65-145	30	30	
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4							0.8	0.2664	ng/g	60-150	30	60-150	30	30	
Perfluorohexanoic Acid (PFHxA)	307-24-4							0.2	0.06664	ng/g	65-140	30	65-140	30	30	
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4							0.2	0.06664	ng/g	55-160	30	55-160	30	30	
Perfluoroheptanoic Acid (PFHpA)	375-85-9							0.2	0.06664	ng/g	65-145	30	65-145	30	30	
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4							0.2	0.06664	ng/g	60-150	30	60-150	30	30	
Perfluorooctanoic Acid (PFOA)	335-67-1	**600000**	**500000**	**6600**	**33000**	**800**	**660**	0.2	0.06664	ng/g	70-150	30	70-150	30	30	
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2							0.8	0.2664	ng/g	55-200	30	55-200	30	30	
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8							0.2	0.06664	ng/g	65-155	30	65-155	30	30	
Perfluorononanoic Acid (PFNA)	375-95-1							0.2	0.06664	ng/g	70-155	30	70-155	30	30	
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	**440000**	**440000**	**8800**	**44000**	**1000**	**880**	0.2	0.06664	ng/g	65-160	30	65-160	30	30	
Perfluorodecanoic Acid (PFDA)	335-76-2							0.2	0.06664	ng/g	70-155	30	70-155	30	30	
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4							0.8	0.2664	ng/g	70-150	30	70-150	30	30	
Perfluorononanesulfonic Acid (PFNS)	68259-12-1							0.2	0.06664	ng/g	55-140	30	55-140	30	30	
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9							0.2	0.0856	ng/g	65-155	30	65-155	30	30	
Perfluoroundecanoic Acid (PFUnA)	2058-94-8							0.2	0.06664	ng/g	70-155	30	70-155	30	30	
Perfluorodecanesulfonic Acid (PFDS)	335-77-3							0.2	0.06664	ng/g	40-155	30	40-155	30	30	
Perfluorooctanesulfonamide (FOSA)	754-91-6							0.2	0.06664	ng/g	70-140	30	70-140	30	30	
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6							0.2	0.06664	ng/g	65-165	30	65-165	30	30	
Perfluorododecanoic Acid (PFDoA)	307-55-1							0.2	0.06664	ng/g	70-150	30	70-150	30	30	
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8							0.2	0.06664	ng/g	65-150	30	65-150	30	30	
Perfluorotetradecanoic Acid (PFTA)	376-06-7							0.2	0.06664	ng/g	65-150	30	65-150	30	30	
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	13252-13-6							0.8	0.2664	ng/g	70-145	30	70-145	30	30	
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	919005-14-4							0.8	0.2664	ng/g	70-160	30	70-160	30	30	
Perfluorododecane Sulfonic Acid (PFDoDS)	79780-39-5							0.2	0.06664	ng/g	25-160	30	25-160	30	30	
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	756426-58-1							0.8	0.2664	ng/g	70-150	30	70-150	30	30	
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	763051-92-9							0.8	0.2664	ng/g	45-160	30	45-160	30	30	
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	31506-32-8							0.2	0.06664	ng/g	70-155	30	70-155	30	30	
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	4151-50-2							0.2	0.06664	ng/g	70-140	30	70-140	30	30	
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	24448-09-7							2	0.6664	ng/g	70-140	30	70-140	30	30	
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	1691-99-2							2	0.6664	ng/g	70-135	30	70-135	30	30	
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	377-73-1							0.4	0.1336	ng/g	30-140	30	30-140	30	30	
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	863090-89-5							0.4	0.1336	ng/g	60-150	30	60-150	30	30	
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	113507-82-7							0.4	0.1336	ng/g	70-140	30	70-140	30	30	
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	151772-58-6							0.4	0.1336	ng/g	60-155	30	60-155	30	30	
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	356-02-5							1	0.3336	ng/g	45-130	30	45-130	30	30	
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	914637-49-3							5	1.664	ng/g	60-130	30	60-130	30	30	
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	812-70-4							5	1.664	ng/g	60-150	30	60-150	30	30	
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	812-70-4							40	13.36	ng/l	50-145	30	50-145	30	30	
Perfluoro[13C4]Butanoic Acid (MPFBA)	*NONE*															*8-130*
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	*NONE*															*35-130*
Perfluoro[13C4]Butanoic Acid (MPFBA)	*NONE*															*5-130*
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	*NONE*															*40-135*
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	*NONE*															*40-165*
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	*NONE*															*40-130*
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	*NONE*															*40-135*
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	*NONE*															*40-130*
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	*NONE*															*40-130*
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	*NONE*															*40-200*
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	*NONE*															*40-130*
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	*NONE*															*40-130*
Perfluoro[13C8]Octanoic Acid (M8PFOA)	*NONE*															*40-130*
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	*NONE*															*40-130*
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	*NONE*															*40-130*
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	*NONE*															*40-215*
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	*NONE*															*40-130*
Perfluoro[13C8]Octanoic Acid (M8PFOA)	*NONE*															*40-130*
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	*NONE*															*40-200*
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	*NONE*															*40-130*
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	*NONE*															*40-130*
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	*NONE*															*40-130*
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	*NONE*															*40-275*
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	*NONE*															*40-130*
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	*NONE*															*40-135*
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	*NONE*															*40-130*
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	*NONE*															*40-130*
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	*NONE*															*40-300*
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	*NONE*															*40-130*
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	*NONE*															*40-170*
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	*NONE*															*40-150*
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	*NONE*															*30-130*

PFAAs via EPA 1633 (SOIL)

Analyte	CAS #	RUSCO-I	RUSCO-C	RUSCO-R	RUSCO-RR	RUSCO-GW	UUSCO	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	*NONE*															*40-130*
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	*NONE*															*40-130*
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	*NONE*															*20-130*
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	*NONE*															*25-135*
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	*NONE*															*10-130*
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	*NONE*															*40-130*
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	*NONE*															*10-130*
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	*NONE*															*10-130*
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	*NONE*															*40-130*
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	*NONE*															*10-130*
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	*NONE*															*10-130*
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	*1265205-95-5*															*20-130*
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	*NONE*															*10-130*
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	*NONE*															*15-130*
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	*1265205-95-5*															*10-130*
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	*NONE*															*10-130*

Please Note that the RL information provided in this table is calculated using a 100% Solids factor.

Volatile Organics in Air/Soil Vapor: TO-15 SIM

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
1,1,1-Trichloroethane	71-55-6	0.02	0.0059	ppbV	70-130	25		25	25	
1,1,2,2-Tetrachloroethane	79-34-5	0.02	0.0067	ppbV	70-130	25		25	25	
1,1,2-Trichloroethane	79-00-5	0.02	0.0097	ppbV	70-130	25		25	25	
1,1-Dichloroethane	75-34-3	0.02	0.0086	ppbV	70-130	25		25	25	
1,1-Dichloroethene	75-35-4	0.02	0.0077	ppbV	70-130	25		25	25	
1,2,4-Trimethylbenzene	95-63-6	0.02	0.0076	ppbV	70-130	25		25	25	
1,2-Dibromoethane	106-93-4	0.02	0.0091	ppbV	70-130	25		25	25	
1,2-Dichlorobenzene	95-50-1	0.02	0.0062	ppbV	70-130	25		25	25	
1,2-Dichloroethane	107-06-2	0.02	0.0083	ppbV	70-130	25		25	25	
1,2-Dichloropropane	78-87-5	0.02	0.0083	ppbV	70-130	25		25	25	
1,3,5-Trimethylbenzene	108-67-8	0.02	0.0096	ppbV	70-130	25		25	25	
1,3-Dichlorobenzene	541-73-1	0.02	0.0077	ppbV	70-130	25		25	25	
1,4-Dichlorobenzene	106-46-7	0.02	0.0075	ppbV	70-130	25		25	25	
1,4-Dioxane	123-91-1	0.1	0.0344	ppbV	70-130	25		25	25	
2,2,4-Trimethylpentane	540-84-1	0.2	0.037	ppbV	70-130	25		25	25	
Benzene	71-43-2	0.1	0.0298	ppbV	70-130	25		25	25	
Benzyl chloride	100-44-7	0.1	0.0332	ppbV	70-130	25		25	25	
Bromodichloromethane	75-27-4	0.02	0.0074	ppbV	70-130	25		25	25	
Bromoform	75-25-2	0.02	0.0111	ppbV	70-130	25		25	25	
Bromomethane	74-83-9	0.02	0.0094	ppbV	70-130	25		25	25	
Carbon tetrachloride	56-23-5	0.02	0.011	ppbV	70-130	25		25	25	
Chlorobenzene	108-90-7	0.1	0.0258	ppbV	70-130	25		25	25	
Chloroethane	75-00-3	0.1	0.0395	ppbV	70-130	25		25	25	
Chloroform	67-66-3	0.02	0.0071	ppbV	70-130	25		25	25	
Chloromethane	74-87-3	0.2	0.0756	ppbV	70-130	25		25	25	
cis-1,2-Dichloroethene	156-59-2	0.02	0.0102	ppbV	70-130	25		25	25	
trans-1,2-Dichloroethene	156-60-5	0.02	0.009	ppbV	70-130	25		25	25	
cis-1,3-Dichloropropene	10061-01-5	0.02	0.0118	ppbV	70-130	25		25	25	
Cyclohexane	110-82-7	0.2	0.0313	ppbV	70-130	25		25	25	
Dibromochloromethane	124-48-1	0.02	0.008	ppbV	70-130	25		25	25	
Dichlorodifluoromethane	75-71-8	0.2	0.0499	ppbV	70-130	25		25	25	
Ethyl Alcohol	GCDAI06	5	1.35	ppbV	40-160	25		25	25	
Ethylbenzene	100-41-4	0.02	0.0085	ppbV	70-130	25		25	25	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	0.05	0.0083	ppbV	70-130	25		25	25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	0.05	0.0064	ppbV	70-130	25		25	25	
Methylene chloride	75-09-2	0.5	0.11	ppbV	70-130	25		25	25	
Methyl tert butyl ether	1634-04-4	0.2	0.0261	ppbV	70-130	25		25	25	
Naphthalene	91-20-3	0.05	0.021	ppbV	70-130	25		25	25	
p/m-Xylene	179601-23-1	0.04	0.018	ppbV	70-130	25		25	25	
o-Xylene	95-47-6	0.02	0.0087	ppbV	70-130	25		25	25	
Heptane	142-82-5	0.2	0.0313	ppbV	70-130	25		25	25	
n-Hexane	110-54-3	0.2	0.0471	ppbV	70-130	25		25	25	
Styrene	100-42-5	0.02	0.0079	ppbV	70-130	25		25	25	
Tetrachloroethene	127-18-4	0.02	0.0074	ppbV	70-130	25		25	25	
Toluene	108-88-3	0.1	0.0166	ppbV	70-130	25		25	25	
trans-1,3-Dichloropropene	10061-02-6	0.02	0.0115	ppbV	70-130	25		25	25	
Trichloroethene	79-01-6	0.02	0.006	ppbV	70-130	25		25	25	
1,2,4-Trichlorobenzene	120-82-1	0.05	0.0146	ppbV	70-130	25		25	25	
Trichlorofluoromethane	75-69-4	0.05	0.0092	ppbV	70-130	25		25	25	
Hexachlorobutadiene	87-68-3	0.05	0.011	ppbV	70-130	25		25	25	
Vinyl chloride	75-01-4	0.02	0.0088	ppbV	70-130	25		25	25	
2-Butanone	78-93-3	0.5	0.132	ppbV	70-130	25		25	25	
4-Methyl-2-pentanone	108-10-1	0.5	0.191	ppbV	70-130	25		25	25	

Please Note that the information provided in this table is subject to change at anytime at the discretion of Pace Analytical Services.

Appendix C:
Health and Safety Plan

LKB CONSULTING ENGINEERS
ENGINEERING EXCELLENCE SINCE 1889

Lockwood, Kessler & Bartlett, Inc.
One Aerial Way · Syosset, NY 11791
516.938.0600 www.lkbinc.com

2250 East 69th Street Site
2250 East 69th Street
Brooklyn, New York 11234
Block 8437, Lot 54
NYSDEC Site No. C224404

SITE SPECIFIC HEALTH AND SAFETY PLAN (HASP)

PREPARED FOR:
2300 69 Property LLC
4 Bryant Park, Suite 200
New York, New York 10018

PREPARED BY:
Lockwood, Kessler & Bartlett, Inc.
One Aerial Way
Syosset, New York 11791

LKB PROJECT NO: 10321.LK

JUNE 2024

Prepared by: Blair Gomes **Signature:** Blair Gomes **Date:** 03/22/2024

Project Manager: Timothy Biercz **Signature:** TBB **Date:** 03/22/2024

HandS Team Member: Richard Tobia, P.E. **Signature:** **Date:** 03/22/2024

HASP Limitations and Acknowledgement

This Health and Safety Plan (HASP) addresses those activities and Site procedures to be followed by The Vertex Companies, LLC (VERTEX) and Lockwood, Kessler & Bartlett, Inc. (LKB) personnel during work performed at this Site. *This HASP is designed to comply with Occupational Safety and Health Administration (OSHA) standards, such as HAZWOPER, 29 CFR 1910.120, and VERTEX Companies Safety Polices, so compliance with this HASP is required by VERTEX/LKB personnel.* The content of this HASP may change or undergo revision based upon additional information made available to VERTEX/LKB. Changes proposed must be approved by VERTEX's HandS Team and the Project Manager.

The information in this HASP supplements the health and safety training that each VERTEX/LKB employee receives. It is not possible to discover, evaluate, and provide protection for all possible hazards, which may be encountered. This plan is written for the specific-site conditions, purposes, dates, and personnel specified, and must be amended if these conditions change.

Compliance with this HASP is required by persons who enter the Site.

This HASP will expire one year after the HandS Team's Signature Date, or if Site conditions change. A review and approval by the HandS Team is required to extend the HASP duration.

VERTEX Colleagues

Name:		Signature:		Date:	
Name:		Signature:		Date:	
Name:		Signature:		Date:	
Name:		Signature:		Date:	

Subcontractors, Owner, and Others

Subcontractors must review this HASP but must prepare their own site-specific HASP based upon their company health and safety program, and the risks and precautions of their work on the site. The subcontractor HASP will be at a minimum consistent with the provisions of this HASP.

This HASP is not intended to satisfy the requirement for the owner or designated subcontractor to prepare their own site-specific HASPs. This HASP does not relieve the owner, subcontractor, or their designated representatives of their responsibility to comply with all federal, state and local laws, regulations and ordinances governing worker health and safety.

VERTEX expressly disclaims any and all guarantees or warranties, expressed or implied that this plan will meet the specific needs or requirements of any subcontractor or its employees. VERTEX, therefore, cannot and does not assume any liability by the use or reuse of this plan by any client, subcontractor or their employees or agents. Any reliance on this plan or the information herein will be at the sole risk and liability of such party.

Employer: _____

Name:_____ Employer:_____ Signature:_____ Date:_____

Name:_____ Employer:_____ Signature:_____ Date:_____

Name:_____ Employer:_____ Signature:_____ Date:_____

Employer: _____

Name:_____ Employer:_____ Signature:_____ Date:_____

Name:_____ Employer:_____ Signature:_____ Date:_____

Name:_____ Employer:_____ Signature:_____ Date:_____

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VERTEX SITE SPECIFIC HEALTH AND SAFETY PLAN (HASP)

2250 East 69th Street
Brooklyn, New York
LKB Project No. 10321.LK

1.0 CONTACT INFORMATION

EMERGENCY PERPAREDNESS EQUIPMENT LOCATIONS

Fire extinguisher (10 lbs)	On-site
First aid kit	VERTEX/LKB
Decontamination area	On-site
H&S Plan and other related documents	On-site folder

EMERGENCY PHONE NUMBERS

Ambulance, Police, and Fire	911, in case of emergency.
Poison Control Center	1-800-222-1222
Chemtrec	1-800-424-9300
National Response Center	1-800-424-8802
Utility Clearance (National)/Local Phone #	811
One Call Ticket Number	Driller to call in prior to drilling activities
Local Fire Department	718-332-9292
Local Police Department	718-238-4411
Water/Sewer Department	718-595-7000
Electrical Company	National Grid: 1-800-892-2345
Gas Company	Con Ed: 1-800-914-9112
WorkCare Injury Intervention	1-888-449-7787

HOSPITAL INFORMATION

Mount Sinai Brooklyn	718-252-3000 3201 Kings Highway Brooklyn, New York 11234

A HOSPITAL MAP AND DIRECTIONS ARE ATTACHED

PERTINENT SITE CONTACT INFORMATION

Site Contact	Mr. Peter Derbar 718-974-4262
Project Manager	Timothy Biercz 3322 Route 22 West Branchburg, New Jersey 732-690-3083
Health and Safety (HandS) Phone Number	339-499-4995
HandS Team Member working on this HASP:	Richard Tobia, P.E. 908-500-2369

2.0 SITE DESCRIPTION AND RELEVANT INFORMATION

The Site is in Brooklyn, Kings County, New York and is identified as Block 8437, Lot 54 on the New York City Tax Map. The Site encompasses one lot and a total of 1.38 acres. According to the New York City Department of Buildings (NYCDOB), the Site is identified with the following addresses: 2250 to 2260 East 69th Street. The Site is in an urban area with a mix of commercial and residential buildings. The Site is bounded by East 69th Street to the northeast, East Mill Basin waterway to the southwest, a construction storage yard to the northwest, and Avenue W to the southeast.

Exterior areas on the Site include a gravel storage yard for materials and equipment for Falco Construction Corp., a former fuel canopy structure and concrete pad used for storage, two small sheds used as workshops, limited landscaped areas, and a bulkhead on the southwestern side of the property (along the East Mill Basin).

2.1 Relevant Information

Based on a review of reasonably ascertainable historical information, it appears that the Site consisted of wetlands and a creek prior to filling activities in the 1920s/1930s. From the 1940s to early 1980s, the Site was a petroleum bulk storage terminal operated by Argus Gas & Oil Sales Co. Inc., Jay Tee Fuel Oil Corp., Tidewater Oil Co., Ross Oil Corp., Premium Coal & Oil Co. Inc., and Mobil Oil Corp. The former fuel canopy structure (currently used for material storage) was constructed on the Site in 1963. The bulk petroleum storage terminal was razed in the early 1980s, and Falco Construction Corp. has utilized the Site for the storage of construction materials and equipment since that time.

2.2 Anticipated Chemicals

- Petroleum-related volatile organic compounds (VOCs)
- Polycyclic aromatic hydrocarbons (PAHs)
- Metals

2.3 Scope of Work and Tasks

The VERTEX scope of work for this project includes the following tasks:

- Site reconnaissance.
- Geophysical survey.
- Borehole advancement using a direct-push drill rig.
- Borehole advancement using a hollow-stem auger drill rig.
- Installation of permanent monitoring/recovery wells.
- Installation of soil vapor points.
- Collection of soil, soil vapor, groundwater, and free product samples.
- Disposal of investigation-derived waste (IDW).

2.4 Subcontractors Scope of Work

<u>Geophysical Evaluation</u>

- Investigation utilizing Electromagnetic (EM), Utility Location (UL) and/or Ground Penetrating Radar (GPR) technology to clear proposed boring locations, verify locations of current below-grade utilities, and scan for potential underground storage tanks (USTs) and associated below-grade piping.

Borehole, Vapor Point, and Monitoring Well Installation

- Installation of soil borings, vapor points, and permanent monitoring/recovery wells via direct-push and hollow-stem auger drilling methodologies.

Drum Disposal

- Disposal of IDW (soil cuttings and purge water) generated during the installation of permanent monitoring/recovery wells, development of wells, and groundwater sampling events.

3.0 JOB SAFETY ANALYSES

The following Job Safety Analyses (JSAs) will be followed during this project. The JSAs are included in the Attachments Section:

1. Site Reconnaissance and GPR Survey Oversight
2. Drilling Oversight
3. Monitoring Well Installation
4. Soil Sampling
5. Groundwater Sampling
6. Soil Vapor and Indoor Air Sampling
7. Virus Avoidance

3.1 Site Reconnaissance/Site Entrance

Access to the northern portion of the Site (north of Avenue W) is via a gated entrance on East 69th Street and gated entrance on Avenue W. Access to the southern portion of the Site (south of Avenue W) is via a gated entrance on East 69th Street. Access to the building on the southern portion of the Site is locked outside of typical working hours.

3.2 Ladders

Ladders are not anticipated to be used during LKB's investigative activities. We can minimize risk when using a ladder by:

- Using a LKB-owned ladder.
- Thoroughly inspect the ladder before each use.
- Ascending and descending the ladder with three contact points.

- Using ladders of the appropriate height, materials, and construction for the work being performed.
- Securing the ladder, and where applicable maintaining appropriate ladder angle prior to ascension.
- Never move a ladder while occupied.
- Using a hoist to bring tools and materials to the work area.

3.3 **Special Risks**

Take precautions when handling contaminated soil/groundwater.

4.0 WORK ZONES

Work zones in an environmental remediation project typically include three specific areas:

1. The Support Zone
2. The Decontamination Zone
3. The Exclusion Zone

The following tables provide general guidelines for the establishment of work zones. The information provided should be adjusted if warranted by field observations, such as traffic, and measurements, laboratory analytical results, or at the request of the HandS Team.

ACTIVITY	GENERAL WORK ZONE RADIUS (FEET)	WORK ZONE EVALUATION
Soil/Sediment Sampling	5	The Site supervisor may modify the work zone radius based upon field conditions (examples below): Physical barriers or walls that may reduce the work zone to the barrier or wall. High traffic area may increase the work zone to allow for worker safety.
Drilling	15	The Site supervisor may modify this radius based upon the specific equipment being use. Generally, height of equipment plus 5 feet.
Overhead Power Lines	10	Assumes < 50 kV. Additional 4-inches per 50 kV.

5.0 CLEANLINESS AND HYGIENE

5.1 Housekeeping

Proper housekeeping is the foundation for a safe work environment. It prevents incidents and fires, as well as creating a businesslike work area. Materials will be stored in a stable manner so that they will not be subject to falling. Rubbish, scraps, and debris will be removed from the work area on a daily basis to job-site dumpster or truck as required. Materials and supplies will not be left in stairways, walkways, near floor openings or at the edge of the building when exterior walls are not built.

5.2 Hygiene Facilities

Hygiene facilities include washing and toilet facilities. The hygiene facilities for this project will be located inside the building on the southern adjoining property and will consist of a permanent restroom.

6.0 AIR MONITORING AND ACTION LEVELS

Air monitoring is required whenever we anticipate exposure to airborne chemicals or dust. The purpose of air monitoring is to keep track of the concentration of the contaminants of concern (COC) and minimize the exposure to VERTEX colleagues, workers and the general public. The following table presents the air monitoring methods, exposure guidelines and action levels.

Contact the HandS Team to establish the values that are appropriate for the purpose and for the COCs. If you have questions or surpass an action level in the field, contact the HandS Team for guidance.

MONITORING PROTOCOLS AND ACTION LIMITS FOR PETROLEUM VOCs		
Range	**PPE**	**Action**
Background to 5 ppmv	LEVEL D	Continue air monitoring.
Above 5 ppmv	LEVEL D	Pause work and contact the Project Manager and the HandS Team for guidance.

6.1 Exposure Guidelines

Airborne Contaminant Monitoring VERTEX Responses Based on Level D PPE				
Parameter	**Contaminant Measurements**	**VERTEX Response**	**Comments**	**Frequency of Measurement**
VOCs – normal concentration: 0 - 5 ppm Depending on the concentration you may sense an oily odor	< 5 ppm	Continue working	VOCs are a group of compounds with various PELs. Benzene and vinyl chloride have low PEL, each is 1 ppm. A PID is usually used to measure VOCs. The lamp selected, usually either 10.6 or 11.7eV must be appropriate for the contaminants of concern. If the work is intended to be completed only in Level D PPE, then work should stop at 5 ppm. A decision would be made at that point about whether to use a Draeger Tube to test for benzene, or to wear a respirator.	VOCs will be continuously logged in the datalogger.
	5 – 10 ppm	**Temporarily stop work and contact the CIH**		
	1-5 mg/m^3	**Temporarily stop work and contact the CIH**		
	> 5 mg/m^3	**Stop work, respiratory protection will be required**		

7.0 DECONTAMINATION

Our goal is always to keep contaminated material where it belongs, either on a project site or in an appropriate waste disposal process. We should avoid taking contaminated materials with us on our clothes or the bottoms of our work boots, into our vehicles, or to our homes. This practice applies to staff who may encounter hazardous materials/waste, and it is also reasonable to manage nuisance dirt from sites in a responsible manner.

LKB supports proper project planning and execution to minimize risks. This requires:

- Planning before going to the Site:
- Responsible actions at the Site:
- After you leave the Site:

It is critical that decontamination takes place prior to break periods and at the end of the day to reduce the chances of ingesting contaminants or carrying them off the Site.

Decontamination to be performed:

- Remove PPE and dispose of disposable items.
- Wash hard hats and safety glasses.
- Rinse work boots in a boot wash.

8.0 SIMULTANEOUS OPERATIONS

Simultaneous operations are activities that may be taking place at the same time as LKB's or our subcontractor's work. The following activities will be taking place nearby to our work:

- No other simultaneous operations will be taking place.

9.0 TRAINING AND MEDICAL SURVEILLANCE

9.1 Training

Colleagues and workers assigned to a LKB project must have proper training and experience to enable our project to be performed successfully. At a minimum, completion of the OSHA 10-Hour Construction Safety training session and 40-Hour HAZWOPER in accordance with OSHA standard, 29 CFR 1910.120 is required for all VERTEX colleagues.

9.2 Medical Surveillance

Field staff who are exposed to chemicals will participate in LKB's Medical Surveillance Program. Our program is administered by our Human Resources Department. The examination is responsive to many chemicals, but not all chemicals, so prior to a project, the Project Manager should check with Human Resources or the HandS Team, especially if unusual chemicals or elements are involved in the scope of work. LKB colleagues can verify the content of their exams by contacting Human Resources. The colleague must successfully pass the physical examination prior to field work on the project.

10.0 SAFETY MEETINGS

Safety meetings are vital to set the tone for safe work performance at the beginning of a project and each day. These meetings should be attended by all project participants, that is, LKB colleagues, contractors, and client staff if they are on-site. Several types of meetings may take place during a project:

- Kick-off meeting. This meeting begins a project and may take place at the field site or in an office or trailer. The scope of work should be reiterated, along with the hazards and precautions. This meeting is important to setting the tone and expectations for performance.

- Daily tailgate safety meeting. Held at the beginning of each shift, this meeting reiterates the scope of work planned during the shift, the hazards, and precautions. Ideally, a different person, including contractor workers, would lead the meeting each day of a project to engage everyone and make each meeting fresh.

- Post project meeting. Although this meeting does not always take place, it is a good idea to wrap up a project and share what went well and what should be improved the next time the project team is together or share lessons to take to the next project regardless of the team.

- Root cause analysis meeting is held following an incident or near miss to understand the root cause of what went wrong or almost went wrong (near miss) to reduce the chance of recurrence and to share lessons learned. These discussions are an essential part of any people-based safety program.

11.0 EMERGENCY RESPONSE PLAN

Incidents and near misses, no matter how minor, must be reported immediately to the Project Safety Supervisor or VERTEX HandS Team! The Safety Hotline is 339.499.4995. Other information is included in the Contact Information chart at the beginning of this HASP. Directions to the nearest hospital are attached at the end of the HASP so that they can be posted in an accessible location.

11.1 Emergency Incident

The nature of our work makes emergencies on site a continual possibility. Although emergencies are unlikely and occur infrequently, a contingency plan is required to ensure timely and appropriate response actions. The contingency plan is reviewed at the tailgate safety meetings. Discuss client Emergency Response Plans with all project participants so that everyone knows their part and expectations.

Upon Incident, Near Miss, Physical Reaction or Excessive Exposure: Leave area immediately and seek appropriate medical assistance. This may include, but not be limited to, any of the following physiological reactions:

- Dizziness
- Nausea
- Rash
- Asthmatic Reaction
- Abdominal Pain
- Distorted Vision of Hearing
- Excessive Coughing
- Edema or Localized Swelling
- Headaches

- Exposure to High/Cold Temperatures

11.2 **Upon Emergency Incident, Take the Following Actions:**

1. Size-up the situation based on the available information.
2. Follow the VERTEX Wallet Card calling directions. You must speak directly to a person: Notify:
   a. Your Supervisor/Site Supervisor, follow any client required procedures.
   b. Call the VERTEX HandS Team at 339-499-4995.
   c. Call Human Resources.
   d. Call your Project Manager/Client.
   e. Call Account Manager.
3. Only respond to an emergency if personnel are sufficiently trained and properly equipped.
4. As appropriate, evacuate site personnel and notify emergency response agencies, e.g., fire, police, etc.
5. As necessary, request assistance from outside sources and/or allocate personnel and equipment.
6. Consult the posted emergency phone list and contact key personnel.
7. Prepare an incident/near miss report. Forward incident report to Project Manager/VERTEX HandS Team within 24 hours via the HandS@vertexeng.com email.

11.3 **Upon Medical Emergency, Take the Following Actions:**

1. Assess the severity of the injury and perform first aid/CPR as necessary to stabilize the injured person. Follow universal precautions to protect against exposure to bloodborne pathogens.
2. Get medical attention for the injured person immediately. Call 911 or consult the Emergency Contacts list which must be posted at the site.

3. Follow the VERTEX Wallet Card calling directions. You must speak directly to a person: Notify:
   a. Your Supervisor/Site Supervisor, follow any client required procedures.
   b. For any injuries, call WorkCare at 888-449-7787. For international calls, use 714-456-2107. WorkCare has qualified medical practitioners tending the phone to offer a telephone triage of the situation. WorkCare will provide guidance on how to transport the injured individual.
   c. Call the VERTEX HandS Team at 339-499-4995
   d. Call Human Resources
   e. Call your Project Manager/Client
   f. Call Account Manager.
4. Prepare an incident report. The Site Safety officer is responsible for its preparation and submittal to the Health and Safety Manager within 24 hours by email at HandS@vertexeng.com.
5. You can reach Human Resources at HR@vertexeng.com.

12.0 NEAR MISS/UNSAFE CONDITION REPORTING

Reporting of near misses and unsafe conditions is a critical piece of our health & safety learning, and it comes with "no cost," because nothing was damaged, and no one was hurt. A near miss is defined as an event that "almost happened but did not." An unsafe condition is simply a potentially unsafe condition that is recognized before it even becomes a near miss. A good litmus test for reporting is, "Do you think someone who has less experience would benefit from learning about your event or unsafe condition?" If so, please go ahead and report it. The Near Miss Incident Report can be used for this purpose. The HandS Team also accepts emails or even a phone call to report to make sharing of information as easy as possible. Call the HandS Team number that is found in the Contacts information, or email at HandS@vertexeng.com.

ATTACHMENTS

JOB SAFETY ANALYSES

VERTEX The VERTEX Companies Health & Safety - A HANDS on Approach to Safety

Task to Be Performed:	**Geoprobe Drilling Oversight**	**Analyzed By:**	T. Biercz
		Date	3/22/2024
Project Name & Location:	**2250 East 69th Street, Brooklyn, New York**		

Possible Risks at a Glance	**Engineering Controls at a Glance**
Possible risks include associated with groundwater sampling include: **1. Vehicular traffic;** **2. Potential to encounter utilities;** **3. Excessive noise;** **4. Drill rig moving and heated mechanisms;** **5. Muscle strains from lifting;** **6. Eye injury from dust and debris;** **7. Inhalation of dust and debris;** **8. Lacerations;** **9. Muscle strain from heavy lifting;** **10. Slip/Trip/Fall hazards due to uneven terrain, equipment, debris, and/or slippery surfaces.** **11. Mechanical failure leading to injury or property damage; and,** **12. Pinch points.** **13. Heat stress**	**None**
	Work Practice Controls at a Glance
	*** Wear appropriate PPE.** *** Practice safe drilling and oversight techniques.** *** Implement procedures to avoid heat stress.** *** Implement procedures for working safely around heavy equipment.**
	Personal Protective Equipment at a Glance
	Level D PPE including safety glasses, steel-toe boots, chemical resistant gloves, hearing protection, work gloves, hard hat, and reflective safety vest.

Step #	**Specific Steps in the Task**	**Hazards and Risks by Step That Must Be Controlled**	**Precautions Actions to Avoid the Risks**	**Responsible Person**
1	Set up necessary traffic and public access controls	1. Personnel could be hit by vehicular traffic.	* Set up work area demarcation, including cones and caution tape, or greater if needed, to establish work area. * Position vehicle so that field crew is protected from site traffic. *Unload as close to work area as safely possible.	Field Staff
2	Utility Clearance	1. Potential to encounter underground or aboveground utilities while drilling.	Complete utility clearance using State One Call, GPR services, and hand augur or other strategy such as vacuum excavation to 5 feet bgs.	Field Staff
3	Geoprobe drill rig operation	1. Excessive noise is generated by rig operations.	When the engine is used at high RPMs or soil samples are being collected, use hearing protection.	Drilling subcontractor and field staff

Step #	Specific Steps in the Task	Hazards and Risks by Step That Must Be Controlled	Precautions Actions to Avoid the Risks	Responsible Person
3	Geoprobe drill rig operation	2. During drill rig operation, surfaces will become hot and cause burns if touched, and COCs in the soil will more readily vaporize generating airborne contaminants.	* Use caution handling equipment and wear proper work gloves - nitrile gloves are not sufficient when contacting hot surfaces; use a heavy duty glove. * Air monitoring should be performed in accordance with the HASP to monitor the potential volatilization of COCs.	Drilling subcontractor
		3. Moving parts of the drilling rig can pull you in, causing injury. Pinch points on the rig and auger connections can cause pinching or crushing of body parts.	* Stay at least 5 feet away from moving parts of the drill rig. * Know where the kill switch is, and have the drillers test it to verify that it is working. * Do not wear loose clothing and tie back long hair. * Avoid wearing jewelry when drilling. * Ensure that the work area demarcation is effective at keeping unauthorized people out of the work zone around the drill rig.	Drilling subcontractor and field staff
		4. Dust and debris can cause eye injury and soil cuttings and/or water could contain COCs.	Wear safety glasses and stay as far away from actual drilling operation as practicable. Wear appropriate gloves to protect from COCs.	Drilling subcontractor and field staff
		5. Drilling equipment laying on the ground (i.e. augurs, split spoons, decon equipment, coolers, etc.) create a tripping hazard. Water from decon buckets generate mud and cause a slipping hazard.	* Keep equipment and trash picked up and store away from the primary work area. * Wear footwear with ankle support.	Drilling subcontractor
		6. The raised derrick can strike overhead utilities, tree limbs, or other elevated items.	* Never move the rig with the derrick up. * Ensure there is proper clearance to raise the derrick. * Survey the surrounding area to ensure that you are far enough away from overhead power lines.	Drilling subcontractor

VERTEX The VERTEX Companies Health & Safety - A HANDS on Approach to Safety

Task to Be Performed:	**Groundwater Sampling**	**Analyzed By:**	T. Biercz
		Date	3/22/2024
Project Name & Location:	2250 East 69th Street, Brooklyn, New York		

Possible Risks at a Glance	**Engineering Controls at a Glance**
Possible risks include associated with groundwater sampling include: **1. Vehicular traffic;** **2. Tripping/slipping hazards;** **3. Pinch points;** **4. Lacerations;** **5. Muscle strains from lifting;** **6. Electrical shock; and** **7. Exposure to contaminated vapors and/or water.**	**None**
	Work Practice Controls at a Glance
	Wear appropriate PPE, practice safe sampling techniques.
	Personal Protective Equipment at a Glance
	Level D PPE including safety glasses, steel-toe boots, chemical resistant gloves, work gloves, hard hat, and reflective safety vest.

Step #	**Specific Steps in the Task**	**Hazards and Risks by Step That Must Be Controlled**	**Precautions Actions to Avoid the Risks**	**Responsible Person**
1	Stage at pre-determined sampling location and set up work zone and sampling equipment	1. Personnel could be hit by vehicular traffic.	Set up cones and establish work area. Position vehicle so that field crew is protected from site traffic. Unload as close to work area as safely as possible.	Field Staff
		2. Sampling equipment, tools, and monitoring well covers can cause tripping hazard.	Keep equipment picked up and monitor any changes to site condition.	Field Staff
2	Open wells to equilibrate and gauge wells	1. When squatting down, personnel can be difficult to see by vehicular traffic.	Wear Class II traffic vest if wells are located in/near vehicular traffic. Use tall cones and the buddy system if practicable.	Field Staff

Step #	Specific Steps in the Task	Hazards and Risks by Step That Must Be Controlled	Precautions Actions to Avoid the Risks	Responsible Person
2	Open wells to equilibrate and gauge wells	2. Pinch points on well vaults can pinch or lacerate fingers.	Use correct tools to open well vault/cap. Wear leather gloves when removing well vault lids, and chemical protective gloves when gauging. Wear proper PPE including safety boots, knee pads, and safety glasses.	Field Staff
		3. Lifting sampling equipment can cause muscle strain.	Unload as close to work area as safely possible; use proper lifting and reaching techniques and body positioning; don't carry more than you can handle and get help moving heavy or awkward objects.	Field Staff
		4. Pressure can build up inside well causing cap to release under pressure.	Keep head away from well cap when removing. If pressure relief valves are on well, use prior to opening.	Field Staff
		5. Vapors from open wells.	Conduct air monitoring as wells are opened. When opening wells, be positioned downwind when possible.	Field Staff
3	Begin purging well and collecting parameter measurements	1. Electrical shock can occur when connecting/disconnecting pump from battery.	Make sure equipment is turned off when connecting/disconnecting. Wear leather gloves. Use GFCIs when using power tools and pumps. Do not use in the rain or run electrical cords through wet areas.	Field Staff
		2. Purge water can spill or leak from equipment.	Stop purging activities immediately, stop leakage and block any drainage grate with absorbent pads. Call PM to notify them of any reportable spill.	Field Staff
		3. Water spilling on the ground can cause muddy/slippery conditions.	Be careful when walking around work area and wear proper safety boots.	Field Staff
		4. Lacerations can occur when cutting materials such as plastic tubing.	When cutting tubing, use tubing cutter. No open fixed blades should ever be used. When possible, wear leather safety gloves.	Field Staff

Step #	Specific Steps in the Task	Hazards and Risks by Step That Must Be Controlled	Precautions Actions to Avoid the Risks	Responsible Person
3	Begin purging well and collecting parameter measurements	5. Purge water can splash into eyes.	Pour water slowly into buckets/drums to minimize splashing. Wear safety glasses and recommended PPE.	Field Staff
4	Collect groundwater sample	1. Sample water can splash into eyes.	Minimize splashing potential by wearing safety glasses and appropriate gloves.	Field Staff
		2. Sample containers could break/leak preservative.	Discard any broken sample containers properly. Wear appropriate eye and hand protection.	Field Staff
5	Staging of purged well water	1. Muscle strains can occur when moving purge water or drums.	If using buckets, do not fill buckets up to the top. Always keep lid on buckets when travelling or moving them to another location. Only half fill buckets so bucket weight is manageable.	Field Staff
		2. Spilling or splashing of purge water.	Make sure that purge water is properly contained with a lid to avoid spilling/splashing the purge water. Wear long sleeve shirts while sampling.	Field Staff

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Task to Be Performed:	**Monitoring Well Installation**	**Analyzed By:**	T. Biercz
		Date	3/22/2024
Project Name & Location:	2250 East 69th Street, Brooklyn, New York		

Possible Risks at a Glance	**Engineering Controls at a Glance**
Possible risks include associated with groundwater sampling include: **1. Vehicular traffic;** **2. Potential to encounter utilities;** **3. Excessive noise;** **4. Drill rig moving and heated mechanisms;** **5. Muscle strains from lifting;** **6. Eye injury from dust and debris;** **7. Lacerations;** **8. Muscle strain from heavy lifting; and** **9. Slip/Trip/Fall hazards due to equipment, debris, and/or slippery surfaces.**	**None**
	Work Practice Controls at a Glance
	Wear appropriate PPE, practice safe drilling and installation techniques.
	Personal Protective Equipment at a Glance
	Level D PPE including safety glasses, steel-toe boots, chemical resistant gloves, hearing protection, work gloves, hard hat, and reflective safety vest.

Step #	Specific Steps in the Task	Hazards and Risks by Step That Must Be Controlled	Precautions Actions to Avoid the Risks	Responsible Person
1	Set up necessary traffic and public access controls	1. Personnel could be hit by vehicular traffic.	Set up cones and establish work area. Position vehicle so that field crew is protected from site traffic. Unload as close to work area as safely as possible.	VERTEX
2	Utility Clearance	1. Potential to encounter underground or aboveground utilities while drilling.	Complete utility clearance using State One Call, GPR services, and/or hand augur to 5 feet bgs.	VERTEX/Sub Contractor
3	General drill rig operation	1. Excessive noise is generated by rig operations.	When the engine is used at high RPMs or soil samples are being collected, use hearing protection.	Sub Contractor

Step #	Specific Steps in the Task	Hazards and Risks by Step That Must Be Controlled	Precautions Actions to Avoid the Risks	
3	General drill rig operation	2. During drill rig operation, surfaces will become hot and cause burns if touched, and COCs in the soil will more readily vaporize generating airborne contaminates.	Use caution handling equipment and wear proper work gloves. Air monitoring should b e performed in accordance with the HASP to monitor the potential volatilization of COCs.	Sub Contractor
		3. Moving parts of the drilling rig can pull you in, causing injury. Pinch points on the rig and auger connections can cause pinching or crushing of body parts.	Stay at least 5 feet away from moving parts of the drill rig. Know where the kill switch is, and have the drillers test it to verify that it is working. Do not wear loose clothing and tie back long hair. Avoid wearing jewelry when drilling. Cone off work area to keep general public away from the drill rig.	Sub Contractor
		4. Dust and debris can cause eye injury and soil cuttings and/or water could contain COCs.	Wear safety glasses and stay as far away from actual drilling operation as practicable. Wear appropriate gloves to protect from COCs.	Sub Contractor
		5. Drilling equipment laying on the ground (i.e. augurs, split spoons, decon equipment, coolers, etc.) create a tripping hazard. Water from decon buckets generate mud and cause a slipping hazard.	Keep equipment and trash picked up and store away from the primary work area. Wear footwear with ankle support.	Sub Contractor
		6. The raised derrick can strike overhead utilities, tree limbs, or other elevated items.	Never move the rig with the derrick up. Ensure there is proper clearance to raise the derrick. Ensure that you are far enough away from overhead power lines.	Sub Contractor
4	Monitoring well installation	1. Monitoring well construction materials can clutter the work area causing tripping hazards.	Well construction materials should be picked up during the well installation process.	Sub Contractor

Step #	Specific Steps in the Task	Hazards and Risks by Step That Must Be Controlled	Precautions Actions to Avoid the Risks	
4	Monitoring well installation	2. Heavy lifting can cause muscle strains.	Use proper lifting and reaching techniques and body positioning; don't carry more than you can handle and get help moving heavy or awkward objects.	Sub Contractor
		3. Lacerations can occur when cutting materials, such as bags or plastic tubing.	When cutting items, ensure that proper cutting tools are utilized. When possible, wear leather safety gloves.	Sub Contractor
		4. Well packed material (i.e. sand, grout, bentonite) can become airborne and get in your eyes.	Wear safety glasses for protection from airborne sand and dust.	Sub Contractor
		5. Cutting the top of the well to size can cause jagged/sharp edges on the top of the well casing.	Wear gloves when working with the top of the well casing, and file any sharp jagged edges that resulting from cutting to size.	Sub Contractor
5	Soil cutting and purge water management.	1. Moving full drums can cause back injury and/or pinching/crushing injury.	Employ proper lifting techniques and body positioning. Don't carry more than you can handle; get assistance from an associate or a lift assist device for heavy objects. Wear leather work gloves and clear all walking and work areas of debris prior to moving a drum.	VERTEX/Sub Contractor

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Task to Be Performed:	**Site Reconnaissance and GPR Survey Oversight**	**Analyzed By:**	T. Biercz
		Date	3/22/2024
Project Name & Location:	2250 East 69th Street, Brooklyn, New York		

Possible Risks at a Glance	**Engineering Controls at a Glance**
Possible risks include associated with site reconnaissance and GPR survey oversight include: **1. Vehicular collision/damage;** **2. Slip, trip, and fall hazards;** **3. Heavy equipment operations;** **4. Scratch, scrape, and impalement hazards;** **5. Muscle strains;** **6. On site traffic;** **7. Lack of communications;** **8. Changing site conditions;** **9. Personal injury from energized equipment;** **10. Exposure to automotive fuel and maintenance chemicals; and,** **11. Use of ladder to reach elevated areas.**	**None** *** Wear appropriate PPE, practice safe site reconnaissance techniques.**
	Personal Protective Equipment at a Glance
	Long pants and steel toed work boots with defined heel, and limited Level D PPE including reflective safety vest. Additional Level D PPE including steel-toe boots, chemical resistant gloves, work gloves, hard hat, and safety glasses when applicable.

Step #	Specific Steps in the Task	Hazards and Risks by Step That Must Be Controlled	Precautions Actions to Avoid the Risks	Responsible Person
1	Commuting to and from the work site.	1. Vehicular collision/damage	Wear seatbelts. Drive defensively by: (a) looking down road to determine limiting factors, (b)	Field Staff
2	Set up necessary traffic and public access controls	1. Personnel could be hit by vehicular traffic.	Set up cones and establish work area. Position vehicle so that field crew is protected from site traffic. Unload as close to work area as safely possible.	Field Staff
3	GPR oversight	1. Slips/trips/falls.	Wear footwear with proper ankle support and be vigilant for trip hazards. Be aware that floors may be slippery from lubricants, etc. Walk around these slick areas when possible, otherwise take small steps to maintain balance, especially if you are carrying anything.	Field Staff

		2. On-site traffic.	Watch for vehicular traffic on site. Obtain visible acknowledgement (e.g., hand signal) from the operator of a vehicle before moving around the vehicle. Maintaining only eye contact with vehicle operators is NOT sufficient.	Field Staff

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Task to Be Performed:	**Soil Sampling**	**Analyzed By:**	T. Biercz
		Date	3/22/2024
Project Name & Location:	2250 East 69th Street, Brooklyn, New York		

Possible Risks at a Glance	**Engineering Controls at a Glance**
Possible risks include associated with soil sampling include: **1. Vehicular traffic;** **2. Potential to encounter utilities;** **3. Excessive noise;** **4. Drill rig moving and heated mechanisms;** **5. Muscle strains from lifting;** **6. Eye injury from dust and debris;** **7. Lacerations;** **8. Hand strains and blisters; and** **9. Slip/Trip/Fall hazards due to equipment, debris, and/or slippery surfaces.**	**None**
	Work Practice Controls at a Glance
	Wear appropriate PPE, practice safe boring and sampling techniques.
	Personal Protective Equipment at a Glance
	Level D PPE including safety glasses, steel-toe boots, chemical resistant gloves, hearing protection, work gloves, hard hat, and reflective safety vest.

Step #	Specific Steps in the Task	Hazards and Risks by Step That Must Be Controlled	Precautions Actions to Avoid the Risks	Responsible Person
1	Set up necessary traffic and public access controls	1. Personnel could be hit by vehicular traffic	Set up cones and establish work area. Position vehicle so that field crew is protected from site traffic.	Field Staff
2	Utility Clearance	1. Potential to encounter underground or aboveground utilities while drilling.	Complete utility clearance using State One Call, GPR services, and/or hand augur to 5 feet bgs.	Field Staff
3	Installation of boring using drill rig.	1. Excessive noise is generated by rig operations.	When the engine is used at high RPMs or soil samples are being collected, use hearing protection.	Field Staff

Step #	Specific Steps in the Task	Hazards and Risks by Step That Must Be Controlled	Precautions Actions to Avoid the Risks	Responsible Person
3	Installation of boring using drill rig.	2. During drill rig operation, surfaces will become hot and cause burns if touched, and COCs in the soil will more readily vaporize generating airborne contaminates.	Use caution handling equipment and wear proper work gloves. Air monitoring should b e performed in accordance with the HASP to monitor the potential volatilization of COCs.	Field Staff
		3. Moving parts of the drilling rig can pull you in, causing injury. Pinch points on the rig and auger connections can cause pinching or crushing of body parts.	Stay at least 5 feet away from moving parts of the drill rig. Know where the kill switch is, and have the drillers test it to verify that it is working. Do not wear loose clothing and tie back long hair. Avoid wearing jewelry when drilling. Cone off work area to keep general public away from the drill rig.	Field Staff
		4. Dust and debris can cause eye injury and soil cuttings and/or water could contain COCs.	Wear safety glasses and stay as far away from actual drilling operation as practicable. Wear appropriate gloves to protect from COCs.	Field Staff
		5. Drilling equipment laying on the ground (i.e. augurs, split spoons, decon equipment, coolers, etc.) create a tripping hazard. Water from [illegible]	Keep equipment and trash picked up and store away from the primary work area. Wear footwear with ankle support.	Field Staff
		6. The raised derrick can strike overhead utilities, tree limbs, or other elevated items.	Never move the rig with the derrick up. Ensure there is proper clearance to raise the derrick. Ensure that you are far enough away from overhead power lines.	Field Staff
4	Installation of boring using hand auger, sample probe, and/or trowel	1. Muscle strains from pulling/pushing could occur when installing the boring and when removing the auger from the hole.	Stretch out back/arms/shoulders prior to beginning activities. Using a firm grip on the handle, slowly turn the ager and progress downward in 6" increments. Slowly pull the auger from the hole using legs and proper lifting techniques. Ask for assistance if necessary.	Field Staff

Step #	Specific Steps in the Task	Hazards and Risks by Step That Must Be Controlled	Precautions Actions to Avoid the Risks	Responsible Person
4	Installation of boring using hand auger, sample probe, and/or trowel	2. Hand strain and blisters could develop from prolonged hand augering.	Select proper gloves for the task (wear padded mechanics glove when turning auger). If hot spots develop on hands, re-adjust gloves or change to better padded gloves.	Field Staff
		3. Over-exertion could occur when trying to force an auger forward if there is refusal.	If refusal occurs, stop work. Remove auger from the hole and check hole with flashlight. Do not over-exert by using excessive force.	Field Staff
		4. Fatigue can occur due to strenuous nature of hand augering activities.	Take rest breaks as needed or switch out task with another employee.	Field Staff
5	Collection of soil sample	1. Contact with impacted soils	Wear chemical protective gloves as outlined in the HASP and wear safety glasses.	Field Staff
		2. Sharp edges and broken glassware can cause lacerations.	Discard any broken sample containers or glass properly. Do not overtighten containers. Wear cut-resistant gloves when handling sample containers.	Field Staff
		3. Containerizing and moving soil cuttings can cause muscle strains.	Dispose of leftover soil cuttings in a drum or bucket and dispose properly. Only fill buckets half full due to weight and strength of bucket. Wear leather work gloves and use good lifting techniques when handling buckets.	Field Staff
6	Decontamination of hand auger, sample probe, and/or trowel	1. Exposure to COCs during equipment decontamination.	Wear chemical protective gloves as outlined in the HASP and wear safety glasses.	Field Staff

		2. The end of the auger/probe has sharp/pointed edges; lacerations can occur.	Use a brush to scrub off soils. Wear cut-resistant gloves when handling auger. Do not reach into the	Field Staff
Step #	**Specific Steps in the Task**	**Hazards and Risks by Step That Must Be Controlled**	**Precautions Actions to Avoid the Risks**	**Responsible Person**
7	Fill in sample location	1. Open boreholes are a trip hazard.	Fill in holes with sand or bentonite. Pack down chips as best as possible, adding water as necessary.	Field Staff
		2. Muscle strain can occur from lifting bags of sand and/or bentonite.	Use proper lifting techniques and body positioning.	Field Staff

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Task to Be Performed:	**Soil Vapor and Indoor Air Sampling**	**Analyzed By:**	T. Biercz
		Date	6-Jun-24
Project Name & Location:	2250 East 69th Street, Brooklyn, NY		

Possible Risks at a Glance	**Engineering Controls at a Glance**
Possible risks include associated with indoor soil vapor and indoor air sampling include: **1. Vehicular traffic;** **2. Potential to encounter utilities;** **3. Excessive noise;** **4. Moving/vibrating and hot parts of the hammer drill and drill bit;** **5. Eye injury from dust and debris;** **6. Electrical hazards;** **7. Hand strain and blisters;** **8. Over-exertion and fatigue; and** **9. Slip/Trip/Fall hazards due to equipment, debris, and/or slippery surfaces.**	**None**
	Work Practice Controls at a Glance
	Wear appropriate PPE, practice safe drilling and sampling techniques.
	Personal Protective Equipment at a Glance
	Level D PPE including safety glasses, steel-toe work boots, chemical resistant and cut-resistant work gloves, hearing protection, hard hat, and reflective safety vest.

Step #	Specific Steps in the Task	Hazards and Risks by Step That Must Be Controlled	Precautions Actions to Avoid the Risks	Responsible Person
1	Set up necessary traffic and public access controls.	1. Personnel could be hit by vehicular traffic	Set up cones and establish work area. Position vehicle so that field crew is protected from site traffic.	Field Staff
2	Utility Clearance.	1. Potential to encounter underground utilities while drilling.	Complete utility clearance using Dig Safe notification.	Field Staff
3	Installation of soil vapor point using hammer drill with 5/8" (or appropriate drill bit) as well as hammer and mallet.	1. Excessive noise is generated by hammer drill.	When hammer drill is being utilized, use hearing protection.	Field Staff

Step #	Specific Steps in the Task	Hazards and Risks by Step That Must Be Controlled	Precautions Actions to Avoid the Risks	Responsible Person
3	Installation of soil vapor point using hammer drill with 5/8" (or appropriate drill bit) as well as hammer and mallet.	2. Immediately after drilling, the drill bit or blade/cutter may be very hot and could burn you.	Do not touch drill bit or blade/cutter immediately after the drilling. Wear cut-resistant work gloves at all times.	Field Staff
		3. Moving and vibrating parts of the hammer drill can cause you to lose control and cause injury. Pinch points on the hammer drill equipment can cause pinching of body parts.	Always keep a firm footing when using power tools, making sure you have balance and control before you start the job. Firmly grasp the tool handle and auxiliary handle (if provided) to maintain control. Always hold or brace the tool securely. Brace against stationary objects for maximum control. Do not wear loose clothing and tie back long hair. Avoid wearing jewelry when drilling. Wear steel-toe work boots when drilling. Cone off work area to keep general public away from the drilling operation.	Field Staff
		4. Dust and debris from drilling can cause eye injury and sub-slab soil could contain COCs.	Wear safety glasses at all times. Wear appropriate chemical resistant gloves to protect from COCs.	Field Staff
		5. Drilling and sampling equipment laying on the ground (i.e., Summa canisters, electrical cords, extension cords) create a tripping hazard.	Keep equipment and trash picked up and store away from the primary work area. Wear footwear with ankle support.	Field Staff

Step #	Specific Steps in the Task	Hazards and Risks by Step That Must Be Controlled	Precautions Actions to Avoid the Risks	Responsible Person
		6. Hammer drill power cord and any extension cords used could pose an electrical hazard.	Grounded tools (3-pronged cords) must be plugged into a properly grounded installed outlet. Extension cords with 3-prong grounding plugs must be plugged into 3-prong outlets when using grounded tools. Do not use power tools in wet conditions. Do not abuse the power cord, do not carry the tool by its cord, or pull the cord to unplug it. Replace damanged cords immediately.	Field Staff
		7. Hand strain and blisters could develop from prolonged use of hand drill.	Select proper cut-resistant work gloves for the task. If hot spots develop on hands, re-adjust gloves or change to better padded gloves. Take rest breaks as needed.	Field Staff
		8. Fatigue can occur due to strenuous nature of hammer drill & vapor point installation activities.	Take rest breaks as needed.	Field Staff
4	Collection of soil vapor samples and indoor air samples using Summa canisters.	1. Sample containers could be damaged during the job.	Discard any damaged sample containers properly. Wear appropriate eye and hand protection.	Field Staff

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Task to Be Performed:	**Virus Avoidance JSA** ***NOTE:*** *This JSA is meant to cover VERTEX work with an on-site component and be used in conjunction with existing VERTEX's task-specific procedures. This JSA must be modified as needed for the scope of work.* ** Guidance is appropriate for our construction sites, Phase I ESAs, Cause & Origin (C&O) investigations, insurance assessments, asbestos surveys, IAQ assessments, radon sampling, PCAs, and other site visit scopes that require being physically present on-site.* ** Special guidance is provided for multi-tenant facilities and facilities with large numbers of occupants, including apartment complexes, hospitals, schools/higher education, nursing homes, assisted living, office buildings, and hotels; airport; cruise ships.*	**Analyzed By:** **Date**	Philip Platcow and Genevieve Reynolds 17-Sep-20
Project Name & Location:	VERTEX field-activities requiring in-person presence of VERTEX team members at field sites		

Possible Risks at a Glance	Engineering Controls at a Glance
* Possible exposure to the virus that causes COVID-19 Note: This guidance must be combined with JSAs for site-work tasks have their own risks and precautions that must be addressed, such as electrical risks, falling, tripping, chemicals, etc.	* Do not go to the site if you can achieve your objectives remotely. * Good preparation before you go to a project site can avoid incidents of all types. * For construction sites, order construction trailers that are large enough to allow at least a separation between employees of 6 feet/2m. * Determine if any restrictions in the location to which you are going might limit the effectiveness of the visit and impact achieving all the goals of the visit.
	Work Practice Controls at a Glance
	* Establishing a distance of 6 feet/2m between people, when possible. * Conducting work off-hours, when fewer people are around, when possible. * Avoid any contact with confirmed positive COVID-19 or presumptive positive cases. * Obey any restrictions imposed by the various states of emergency or other community restrictions. * Implement cleaning/disinfection procedures in job trailers. * Discuss wellness *daily* to ensure that all project participants are feeling well at the beginning of every shift.
	Personal Protective Equipment at a Glance
	* Bring gloves, hand sanitizer, to the visit to use. If hand sanitizer is in short supply, use cleaning/disinfectant wipes, or simply identify places where you can wash your hands with soap and water. *Depending on the VERTEX task(s), some level of respiratory protection may be needed. Please contact Philip Platcow to discuss the task, airborne hazards and the need for protection. * You should wear a surgical or N/KN-95 when more substantial respiratory protection is <u>not</u> required. Cloth masks are not preferred when better protection is available. When you are walking around a site or traveling to and from, you should wear a mask. If there is more than one VERTEX colleague on a project site or at a meeting, an effort should be made to wear the same mask for uniformity. *Utilize other PPE as required for the specific task, such as steel-toed work boots, safety glasses, hardhats, etc.

Step #	Specific Steps in the Task	Hazards and Risks by Step That Must Be Controlled	Precautions Actions to Avoid the Risks	Responsible Person
1	Preparing for a site visit or other work task requiring that the VERTEX team member be physically present at a site.		Determine if going to the location is absolutely necessary to achieve the project goal. * Can we use a technology tool to avoid the need to be on a site? * Can we attend a meeting by remote video?	Project managers/field colleagues
			When setting up a site visit: * Ask if the facility is open and operating, and which hours may have fewer people present at the site. * Ask your site contact if any cases or voluntary isolations/quarantines have been reported among employees/tenants/etc. at the location. * Tactfully ask if there is anyone else who might be aware of cases.	Project managers/field colleagues
			For sites between 3 and 6 hours from your office, consider driving rather than taking a train or plane to your destination.	Field colleagues
			If you must take a plane: * Wear a sugical or cloth mask while traveling these areas. * Make an effort to avoid crowds, create a 6 feet/2m (or greater if possible) distance between you and others while in the waiting areas and in lines to the extent possible. * Although you may feel uncomfortable, it is fine to wear nitrile gloves. * Bring disinfectant wipes for seats, arm rests, tray tables, etc. * Wash hands frequentily and carry a small container of hand sanitizer.	Field colleagues

			* Select a good level hotel, such as, Courtyard and above, where you can count on it being clean under normal circumstances. * Call the hotel and ask if they have had any COVID-19 cases. * When checking in/out, keep a 6 foot/2m distance from the hotel employees and any other guests. * Bring your own pen to sign documents. Many people may have used those hotel pens. * Bring disinfectant wipes to go back over surfaces and high touch areas like knobs, lights, thermostat, and stay away from people as possible. * Use a wipe to disinfect the room key and the TV remote control. If you use any glasses, wash them again prior to use. * Wear a sugical or cloth mask and gloves as you go through the hotel. * Do not use the fitness center during this time at all; go for a run or walk outdoors if it's in a safe area. * Select a hotel with a refrigerator so that you do a bit of shopping (breakfast and lunch anyway) and minimize the meals you take in the presence of others. Indeed, these common areas may be closed anyway. * Follow other, typical safety procedures, such as parking under lights, choose a hotel that requires you to enter through the lobby, etc. * During this time, it is even more important to consider wellness: eat properly, get some exercise, get a good amount of sleep.	
			Make sure you have nitrile gloves and hand sanitizer, or other available and appropriate sanitization supplies and PPE, in your field kit before you set out for the project location.	Field colleagues
			For scopes that require a municipal research component, consider calling or submitting a FOIA to local offices to confirm records are available before visiting in person. Give yourself enough time for the office visit so that you can wait, if needed, to get in a cabinet/folder that someone else may be standing near. Then approach when they move. Wear a surgical or cloth mask in these offices.	Project managers/field colleagues
			Obey all local/State/Federal restrictions in place on work in the site area, such as stop-work orders for construction sites, shelter-in-place orders, etc.	Project managers/field colleagues
			For multi-tenant residential visits: Ask the site management to notify more units than you need, to complete the scope. For example, if your scope requires access to 20% of the units, request that the property notify 25% or even 30%. This will allow you to skip units during the visit if it becomes necessary. This is always a good approach because all sorts of scenarios may come up that prohibit you from getting into one unit or space or another.	Project managers/field colleagues

			For multi-tenant residential visits: request access to vacant units when the scope can be completed by visiting vacant units. Note that this may not be appropriate for all scopes.	Project managers/field colleagues
2	During your task		At the start of the on-site portion of the assessment, ask the site contacts again if any cases (confirmed or presumptive positive) or voluntary isolations have been reported at the property. This is an evolving situation, and cases may have been reported since you set up the visit.	Field colleagues
			Please bring a surgical or cloth mask, gloves, hand sanitizer, etc. to the visit to use.	Field colleagues
			As much as possible, avoid touching high-contact surfaces (railings, knobs, switches, etc.), particularly in high-occupancy areas like clubhouses. We want to avoid touching railings, but we also need to be careful walking up/down stairs as well. Use your surgical or cloth mask, and nitrile gloves for protection.	Field colleagues
Step #	**Specific Steps in the Task**	**Hazards and Risks by Step That Must Be Controlled**	**Precautions Actions to Avoid the Risks**	**Responsible Person**
			As always, wash hands frequently (esp. before eating) for about 20 second, up to the elbow, and avoid touching your face. This actually takes some practice to get used to.	Field colleagues
			* While at the property, maintain a distance of 6 feet/2m (or greater, if possible) between people, when possible. Remember that people who are not showing visible symptoms or even exhibiting an elevated temperature may still be capable of spreading COVID-19. * Wear your mask, unless the scope of work requires a higher level of respiratory protection.	Field colleagues
			For Construction Sites: * Discuss measuring temperatures of individuals coming on to the site. * Signage about proper hygiene practices should be installed on the outside of job trailers or at the gate wherever possible. * Ensure an adequate number of hand-washing stations on job sites to facilitate better hygiene. * Minimize sharing of tools and wipe down tools with disinfectant prior to another worker using a tool. * Have daily discussions about wellness with colleagues and workers at the beginning of each shift to ensure that all are feeling well. Anyone who is sick should be sent home. * Wear your mask.	Project Managers and Field colleagues

			* Site meetings should be done at a distance and outdoors whenever possible. Meetings in trailers should be avoided. If possible, people who do not need to attend a meeting in person, should attend remotely. * Wear your mask. * No hand-shaking.	Field colleagues
			At the end of your visit, wash your hands and clean your camera/phone, pen, clipboard, etc. before getting back in your vehicle.	Field colleagues
			* For multi-tenant residential visits: When knocking on unit doors, stand back and to the side when a tenant answers, to increase distance between you and the tenant. With respiratory syndromes such as COVID-19, when possible, you want to maintain a 6 feet/2m (or greater, when possible) distance from people. * Wear your mask.	Field colleagues
			* For multi-tenant residential visits: If a tenant/occupant appears visibly ill (coughing, sneezing, obvious sweating, etc.), tactfully apologize for the interruption, and skip the unit and move on. This is an example of why it is a good idea to request access to more units than the scope requires. Requesting additional units may also be important if tenants deny access to site inspectors due to COVID-19-related concerns. * Wear your mask.	Field colleagues
			Remember, you do not have to enter work areas, spaces or units if you do not feel comfortable. If you have questions, please feel free to reach out to your manager or the HandS Team.	Field colleagues

DAILY TAILGATE SAFETY MEETING FORMS

THE VERTEX® COMPANIES, INC.

DAILY SAFETY LOG

DATE: _____ SITE LOCATION: _____

WEATHER: _____ PROJECT NUMBER: _____

TOPICS DISCUSSED

- ☐ Expected Activities
- ☐ Health and Safety Emergency Numbers
- ☐ Hospital Location
- ☐ Work Areas (Posted)
- ☐ Standing Orders
- ☐ Confined Space Entry
- ☐ Slip, Trip, Fall
- ☐ Manual Lifting
- ☐ Utility Locations
- ☐ Mechanical Hazards
- ☐ Emergency Communications
- ☐ Electrical Hazards
- ☐ Other_____
- ☐ Chemical Hazards
- ☐ Bonding and Grounding
- ☐ Heavy Equipment
- ☐ Traffic hazards
- ☐ Heat/Cold Stress
- ☐ Noise Hazards
- ☐ Lock-out/Tag-out
- ☐ Excavation Hazards
- ☐ Venting/Inerting
- ☐ Biological Hazards
- ☐ Meeting Place
- ☐ Other_____

PERSONAL PROTECTIVE EQUIPMENT

- ☐ Energized Systems
- ☐ Eye Protection
- ☐ Hearing Protection
- ☐ Gloves (Specify Type)
- ☐ Respiratory Protection (Specify Type)
- ☐ Engineering Controls (Specify Type)
- ☐ Other_____
- ☐ Hard Hat
- ☐ Protective Clothing
- ☐ Retrieval System
- ☐ Backup system
- ☐ Lighting
- ☐ Other_____

Additional Comments Observations, Deficiencies / Corrective Actions Taken:

_____

_____

_____

MEETING CONDUCTED BY:_____

Meeting Attended By:

_____ _____

_____ _____

_____ _____

_____ _____

NEAR MISS/INCIDENT REPORT FORMS

VERTEX®

INCIDENT INVESTIGATION REPORT

To: _____

cc: _____
Workers Compensation Administrator (if employee injured)

Project name: _____

_____

Project number: _____

Date of the incident: _____

Prepared by: _____

Position: _____

Office: _____

Telephone number: _____

Fax number: _____

Time of the incident: _____ a.m. ☐ p.m. ☐

☐ Check if time cannot be determined

LOCATION OF THE INCIDENT

Street address: _____

City, State, Zip Code: _____ County: _____

Did the incident occur on VERTEX premises? Yes ☐ No ☐

EMPLOYEES INVOLVED

VERTEX employees involved: _____

_____

_____

Subcontractors involved: _____

_____

Other parties involved: _____

_____

INFORMATION ABOUT THE INCIDENT

What was the employee(s) doing just before the incident occurred? *Describe the activity as well as the tools, equipment, or material the employee was using. Be specific. Examples: "Climbing a ladder while carrying roofing material"; "Daily computer key-entry"; "Verifying masonry installation from scaffolding"; "Operating an aerial lift*

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

Revision Date: 1/10/2017

VERTEX®

INCIDENT INVESTIGATION REPORT (Continued)

INFORMATION ABOUT THE INCIDENT (continued)

What happened? *Clearly describe how the incident occurred. Examples: "When ladder slipped on wet floor, worker fell 20 feet"; "Worker developed soreness in wrist over time"; "Worker displaced loose brick which fell 25 feet and landed on a parked vehicle;" "Worker raised work platform while railing was beneath exterior light fixture, contacting the fixture and knocking it off the wall."*

Was the employee performing regular job duties? Yes ☐ No ☐

Was safety equipment provided? Yes ☐ No ☐ Was safety equipment used? Yes ☐ No ☐

REPORT OF INJURY

Did an injury or illness occur? Yes ☐ No ☐ *(skip to next section if "No")*

Injured Employee Information

Name: _____ Office: _____

Home address: _____ Gender: M ☐ F ☐ No. of dependents: _____

_____ Marital status: _____

Home telephone number: _____ Date of birth: _____

Occupation (regular job title): _____

Department: _____

What was the injury or illness? *Describe the part(s) of the body affected and how it was affected. Be more specific than "hurt," "pain," or "sore." Examples: "Strained back"; "Carpal tunnel syndrome, left wrist"*

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

VERTEX®

INCIDENT INVESTIGATION REPORT (Continued)

REPORT OF INJURY (continued)

Describe the object or substance that directly harmed the employee. *Examples: "Concrete floor"; "Chlorine."*

Did the employee die? Yes ☐ No ☐ Date of death: _____

NOTE: Attach any police reports or related diagrams to this report.

Medical treatment required? Yes ☐ No ☐ First Aid Only ☐

Name of physician of health care professional: _____

If treatment was provided away from the work site, provide the information below:

Facility name: _____

Street address: _____

City: _____ State: _____ Zip code: _____

Telephone number: _____

Was the employee treated in an emergency room? Yes ☐ No ☐

Was the employee hospitalized overnight as an in-patient? Yes ☐ No ☐

PROPERTY DAMAGE

Did property damage occur? Yes ☐ No ☐ *(skip to next section if "No")*

VERTEX property damaged: _____

_____

VERTEX client property damaged: _____

_____

Other property damaged: _____

_____

Trespassers, vandalism or illegal activity: _____

_____

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

VERTEX®

INCIDENT INVESTIGATION REPORT (Continued)

PROPERTY DAMAGE (continued)

Wildlife or environmental damage: _____

_____

Motor vehicle involved? Yes ☐ No ☐ - If "Yes", **attach police report** and insurance information.

WITNESS INFORMATION (attach additional sheets for other witnesses)

Were there witnesses to the incident? Yes ☐ No ☐

Name: _____ Company: _____

Street Address: _____

City: _____ State: _____ Zip code: _____

Telephone number: _____

CORRECTIVE ACTION(S)

Corrective action(s) taken by unit reporting the incident:

Corrective action still to be taken (by whom and when) with suggestions to prevent a similar incident:

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

VERTEX®

INCIDENT INVESTIGATION REPORT (Continued)

REPORTING AND ACKNOWLEDGEMENT

Name of employee the incident was first reported to: _____

Date of Report: _____ Time of Report: _____

I have reviewed this investigation report and agree, to the best of my recollection, with its contents.

Name of reporting employee (print): _____ Telephone Number: _____

Signature of reporting employee: _____ Date: _____

Name of injured employee (print): _____ Telephone Number: _____

Signature of injured employee: _____ Date: _____

The signatures below indicate that appropriate personnel have been notified of the incident.

Title	Printed Name	Signature	Telephone Number	Date
Corporate Health & Safety Manager				
Supervisor				
Site Safety Coordinator (if applicable)				

Subsequent pages to be completed by the Health and Safety Representative, Human Resources, and Workers Compensation Carrier, respectively.

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

VERTEX®

INCIDENT INVESTIGATION REPORT (Continued)

To Be Completed by the Health and Safety Representative

Classification of Incident:

☐ Injury ☐ Illness ☐ Property damage with no injury or illness

Result of Incident:

☐ Property damage

☐ First aid only

☐ Days away from work

☐ Remained at work but incident resulted in job transfer or work restriction

☐ Incident involved days away and job transfer or work restriction

☐ Medical treatment only

☐ Was incident investigated?

No. of days away from work _____

Date employee left work _____

Date employee returned to work _____

No. of days placed on restriction or job transfer: _____

OSHA Recordable Case Number _____

Reason for Incident: ☐ Lack of Knowledge/Experience ☐ Improper Attitude

☐ Human Limitation ☐ Condition

Corrective Action: ☐ Instruction/Training

☐ Motivation/Discipline

☐ Proper Placement

☐ Repair/Eliminate

☐ Recommended Management

Suggestions for Changes to Avoid a Similar Incident? _____

_____

Signed: _____ Date: _____

Printed Name: _____

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

Revision Date: 1/10/2017

VERTEX®

INCIDENT INVESTIGATION REPORT (Continued)

To Be Completed by Human Resources

Date of hire: _____ Hire date for current job: _____

Wage information: $ _____ per ☐ Hour ☐ Day ☐ Week ☐ Month ☐ Year

Position at time of hire: _____

Current position: _____ Shift hours: _____

State in which employee was hired: _____

Status: ☐ Full-time ☐ Part-time Hours per week: _____ Days per week: _____

Temporary job end date: _____

To Be Completed during Report to Workers Compensation Carrier

Date reported: _____ Reported by: _____

Confirmation number: _____

Name of contact: _____

Field office of claims adjuster: _____

For claims:

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

THE VERTEX® COMPANIES, INC.

NEAR MISS FORM

This is an official document to be initiated by a VERTEX employee, please answer correctly and with much detail as possible. This report should be forwarded to the OHSM within 24 hours of the near miss.

EMPLOYEE(S) INVOLVED: _____ DATE & TIME OF INCIDENT:

PERSON COMPLETING FORM: _____ DATE: _____

PROJECT NAME / NUMBER: _____ TIME: _____ AM/PM

NEAR MISS LOCATION (ADDRESS): _____

DESCRIBE NEAR MISS: (Defined as an event or situation that could have resulted in an accident, injury, or illness but DID NOT, either by chance of time/distance or through timely intervention). Describe fully, the protocol / procedures being followed including all substances, machinery, equipment (including personnel protective equipment) being used as related to the near miss.

_____

_____

SUBCONTRACTORS OR OTHER COMPANY INVOLVED? NO ☐ IF YES, DESCRIBE

_____

ON A SCALE OF 1 TO 10 HOW SEVERE COULD THE EVENT HAVE BEEN?

Least Severe 1 2 3 4 5 6 7 8 9 10 Most Severe

WHAT IS THE PROBABILITY OF AN INCIDENT IF THIS WERE TO OCCUR AGAIN (HIGH, MEDIUM, LOW)?
(Example: HIGH = task occurs frequently and by numerous individuals; MEDIUM = task occurs on a regular basis by certain individuals; LOW = minor or no injury, no lost dollar)

☐ LOW ☐ MEDIUM ☐ High

WHAT ARE THE SUGGESTED CORRECTIVE ACTIONS? _____

_____

_____

_____

_____

_____

EMPLOYEE _____ _____ _____
Printed Name Signature Date

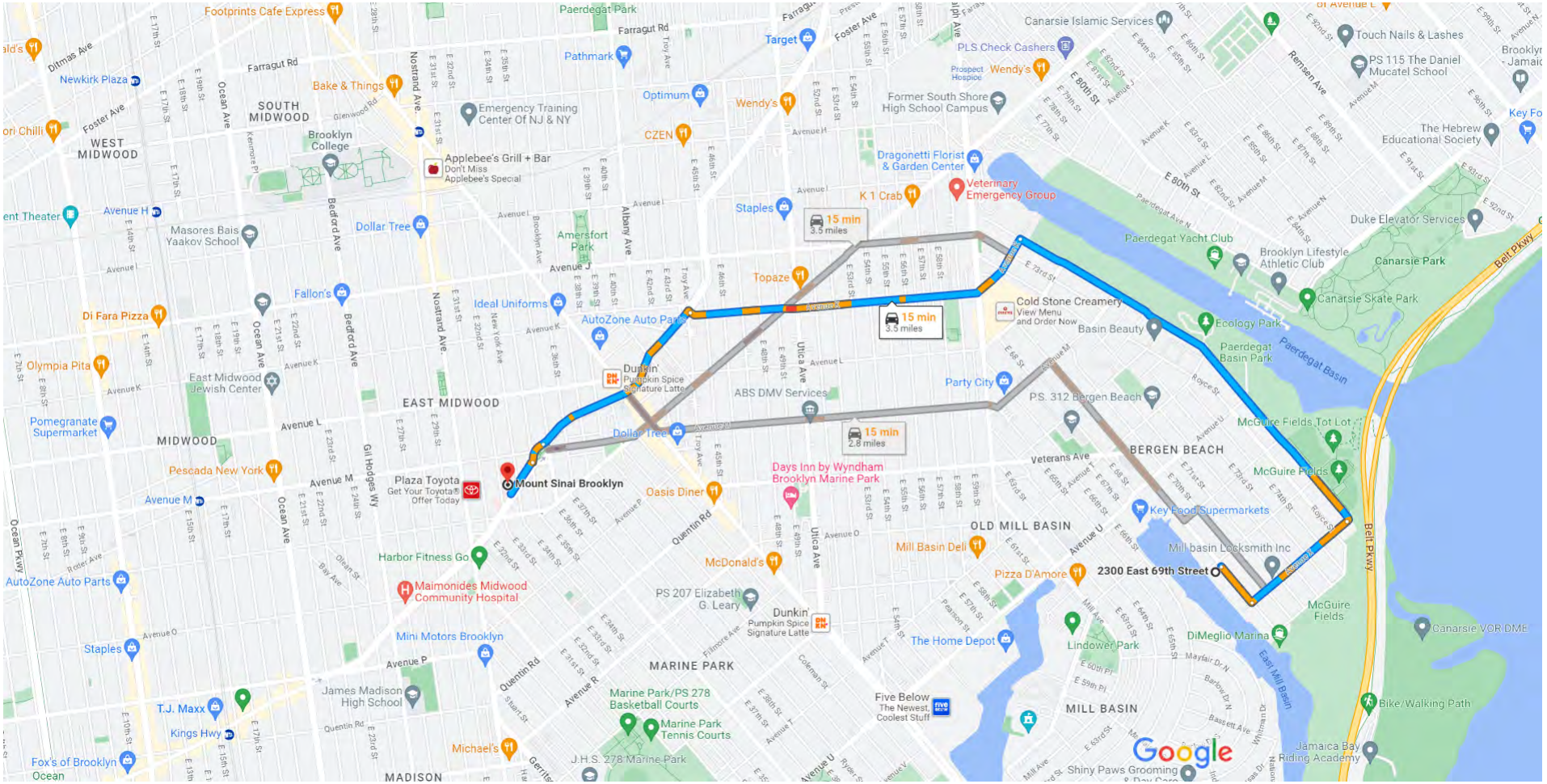
CHSM _____ _____ _____
Printed Name Signature Date

ATTACHMENTS ☐ YES ☐ NO

DIRECTIONS TO THE HOSPITAL

2300 E 69th St, Brooklyn, NY 11234 to Mount Sinai Brooklyn, 3201 Kings Hwy, Brooklyn, NY 11234

Drive 3.5 miles, 15 min



Map data ©2023 Google 1000 ft

2300 E 69th St
Brooklyn, NY 11234

↑ 1. Head southeast on E 69th St toward Avenue X

0.1 mi

2. Turn left at the 1st cross street onto Avenue X

0.3 mi

3. Avenue X turns slightly left and becomes Bergen Ave

1.2 mi

4. Turn left onto Avenue K

Pass by IHOP (on the left)

1.0 mi

5. Turn left onto Kings Hwy

0.6 mi

6. At the traffic circle, take the 2nd exit and stay on Kings Hwy

331 ft

7. Turn right to stay on Kings Hwy

Destination will be on the right

0.1 mi

Mount Sinai Brooklyn

3201 Kings Hwy, Brooklyn, NY 11234

Appendix D:
Community Air Monitoring Plan

ENGINEERING EXCELLENCE SINCE 1889

Lockwood, Kessler & Bartlett, Inc.
One Aerial Way · Syosset, NY 11791
516.938.0600 www.lkbinc.com

COMMUNITY AIR MONITORING PLAN

2250 East 69th Street Site
2250 East 69th Street
Brooklyn, Kings County, New York
Block 8437, Lot 54
NYSDEC Site No. C224404

PREPARED FOR:
2300 69 Property LLC
4 Bryant Park, Suite 200
New York, New York 10018

PREPARED BY:
Lockwood, Kessler & Bartlett, Inc.
One Aerial Way
Syosset, New York 11791

LKB PROJECT NO: 10321.LK

FEBRUARY 2025

Table of Contents

APPENDICES

Community Air Monitoring Plan (CAMP)
2250 East 69th Street Site
2250 East 69th Street
Brooklyn, New York
Block 8437, Lot 54
NYSDEC Site No. C224404

1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) has been developed to provide specific procedures for monitoring, documenting, and responding to potential airborne contaminants during remedial activities at 2250 East 69th Street in Brooklyn, Kings County, New York (Site). The purpose of this CAMP is to protect the downwind community (i.e., off-site receptors including residences, businesses, and on-site workers not directly involved in the intrusive work) from potential releases associated with remedial work conducted at the Site. The CAMP requires real-time monitoring for volatile organic compound (VOC) and particulate (i.e., dust) contaminants at the downwind perimeter of each designated work area. The monitoring requirements outlined in the CAMP will be conducted during all ground intrusive activities.

The CAMP was prepared in accordance with Appendix 1A – New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan and Appendix 1B – Fugitive Dust and Particulate Monitoring in the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation, May 3, 2010.

2.0 MONITORING REQUIREMENTS

The air monitoring program will be implemented during all ground intrusive activities to mitigate exposure of field staff and the public. The air monitoring findings will be used to determine appropriate response actions.

Real-time air monitoring for VOCs and particulate levels at the perimeter of the work area would be performed. Continuous monitoring would be performed for all ground intrusive activities and during the handling of contaminated media. Based on the layout of the site, any work areas will be cordoned off with caution tape or other appropriate measure to prevent the community from entering the work area. At this time no major intrusive activities are foreseen or are planned for the site. Intrusive activities may include drilling of wells, drilling and collection of soil samples, development of wells, pumping of well water, and sampling of well water.

2.1 Meteorological Data

Meteorological data will be measured at the start of each workday and periodically thereafter to establish background conditions. The meteorological data to be recorded may include wind speed, wind direction, temperature, barometric pressure, and relative humidity. The wind direction data will be used to determine the position of the air monitoring equipment in appropriate upwind and downwind locations.

2.2 VOC Monitoring, Response Levels, and Actions

VOCs will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis during invasive work. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at

least weekly for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

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

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume.

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

All readings will be recorded and made available for NYSDEC and NYSDOH project managers. Exceedances of action levels will be reported to NYSDEC and NYSDOH project managers.

2.3 Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the work area at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The

equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

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

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

All readings will be recorded and made available for NYSDEC and NYSDOH project managers. Exceedances of action levels will be reported to NYSDEC and NYSDOH project managers.

3.0 POTENTIAL CORRECTIVE ACTIONS

Air emission control and fugitive dust suppression techniques will be implemented during the remedial work activities, on an as needed basis, to limit emissions from the Site.

The following VOC control techniques may be used during remedial activities:

- Collection of purge/development groundwater in covered containers.
- Use of VOC suppression foams.
- Restricting square footage of open excavations.
- Limiting handling, stockpiling and movement of soils around the site.
- Storage of excess sample and drill cuttings in drums; and
- Use of polyethylene sheeting to cover soil stockpiles and open areas.

The following dust suppression techniques may be used during remedial activities:

- Water spray (soil, concrete, roads, equipment, excavation faces).
- Storing and hauling materials in properly tarped or covered containers.
- Restricting vehicle speed.
- Restricting square footage of open excavations.
- Maintaining a clean work site; and
- Use of polyethylene sheeting to cover soil stockpiles.

4.0 QUALITY ASSURANCE/QUALITY CONTROL

Quality assurance/quality control (QA/QC) procedures will be used to provide performance information regarding accuracy, precision, sensitivity, representation, completeness, and comparability associated with the monitoring activities of the CAMP.

To ensure quality of the air monitoring data, equipment will be operated in accordance with the manufacturer's specifications, including calibration of all field instruments, which will be performed prior to the initiation of field work and on a schedule indicated by the manufacturer.

5.0 REPORTING

All air monitoring data must be recorded on daily log sheets and made available for review by the NYSDEC and NYSDOH project managers. A copy of the Air Monitoring Daily Field Form is included in Appendix A. Calibration measurements will be recorded in a field activity logbook.

CAMP readings will be reported to the NYSDEC/NYSDOH on a weekly basis, and exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH project managers on the same day or the next business day, if after hours. Reporting of the CAMP exceedance will include the nature of the exceedance, corrective actions taken, and a summary of the effectiveness of the corrective actions taken.

APPENDIX A

AIR MONITORING DAILY FIELD FORM

AIR MONITORING DAILY FIELD FORM

Date:	
Site Address:	
Description of Activities:	

Weather Conditions	**AM**	**PM**
Ambient Air Temperature:		
Wind Speed:		
Wind Direction:		
Barometic Pressure:		
Relative Humidity:		

Time	**Location** (upwind / downwind)	**Visual Observation of Dust** (yes / no)	**Particulate Concentration** (ug/m3)	**VOC Concentration** (ppm)

Appendix E:
Qualifications

Richard Tobia, PE
Technical Director - NY/NJ Region

E rtobia@vertexeng.com |
P 908.448.2627

BIOGRAPHY

Mr. Tobia serves as Technical Director for Strategic Environmental Services. Mr. Tobia has over 35 years of environmental engineering experience in the specification, design, troubleshooting and installation of various soil and groundwater environmental remediation and industrial wastewater pretreatment systems. For most of those years, he has also worked as a project manager/engineer with technical focus in environmental engineering for industrial clients and the Federal government. His consulting experience spans privately and publicly held industrial clients from diverse industries, including real estate, chemical, pharmaceutical, consumer goods, food, retail, manufacturing, and law firms.

Mr. Tobia has been involved in soil and groundwater investigation and remediation, vapor intrusion investigation and mitigation design, underground storage tank (UST) and aboveground (AST) closures and installations, characterization and disposal of contaminated soil, wastewater and stormwater compliance, and industrial wastewater pretreatment system design and installation. Mr. Tobia has more than 8 years of Superfund experience in the execution of bench-, pilot- and full-scale remediation systems and multi-media site characterization.

As Technical Director and a Professional Engineer in multiple states, Mr. Tobia is responsible for the development of remediation strategies, preparation of remediation system design documents, and technical document development and review.

EDUCATION/TRAINING

B.S., Chemical Engineering, Rutgers College of Engineering 1987

LICENSES/CERTIFICATIONS

UST Subsurface Evaluator - Closure, State of NJ
Professional Engineer (PE) – Chemical/Environmental, State of CT, NJ, NY, WA
Professional Engineer (PE) – Environmental, State of NC, TX
OSHA 40 Hour HAZWOPER Training
OSHA 10 Hour Construction Training
OSHA 8 Hour Site Supervisor Training
HAZWOPER 8-hour Refresher

ASSOCIATIONS

American Chemical Society (ACS)

Highlights

- Vapor Intrusion
- Remediation System Engineering
- Industrial Wastewater Pretreatment
- Expert Testimony
- Environmental Permitting

Expertise

- Groundwater & Soil Characterization
- Remedial Design & Feasibility Studies
- Vapor Intrusion Investigations & Remediation
- Environmental Health & Safety
- Litigation Support & Expert Testimony (Environmental)
- Environmental Permitting
- Hazardous Materials/Waste
- Site Characterization
- Environmental Engineering
- UST Removal
- Chemical Engineering

PUBLICATIONS/PRESENTATIONS

"Washing Studies for PCP and Creosote-Contaminated Soil," Journal of Hazardous Materials, Vol. 38 (1994) pp. 145-161.

"In-Situ Soil Remediation of Hexavalent Chromium - Obstacles to a Successful Remediation," EBC 2nd Innovative Environmental Technology Conference, Newark, NJ, October 2007

"Mercury Removal from Thimerosal-Containing Wastewater to Achieve Discharge Standards," LFR Engineering Conference, Scottsdale, AZ, October 2004

"Evaluation of Impact of Oxygen Addition to LNAPL and Dissolved Phase Hydrocarbon Equilibrium in Groundwater," 17th International Conference on Contaminated Soils, Sediments and Water, Amherst, MA, October 2001

"Hydraulic Oil Disappearing Act," LFR Annual Technical Conference, Lake Tahoe, CA, September 2000

"An Overview: Total Maximum Daily Loads," Nabisco Environmental Leadership Conference, East Hanover, NJ, May 2000

"Pilot Scale Use of Trees to Address VOC Contamination in Groundwater and Explosives Contaminated Soil at Aberdeen Proving Ground," IBC's 2nd International Conference on Phytoremediation, Seattle, WA, June 1997

"Phytoremediation of Groundwater Contaminated with Volatile Organics Using Hybrid Poplar Trees," IGT 9th Symposium on Gas, Oil and Environmental Biotechnology, Colorado Springs, CO, December 1996

"Evaluation of Treatment Options for Mercury/PCB Contaminated Soil," Edison, NJ, 1995

"Remediation Case Study: Horizontal Groundwater Extraction Modeling and Remediation at a Metal Plating Site," Edison, NJ 1995

"An Evaluation of a Pentachlorophenol Immunoassay Soil Test Kit," National Immunochemistry Summit IV, Las Vegas, NV, August 1995

"PCP/Creosote Soil Washing Studies Followed by Residual Treatment," Edison, NJ, 1994

"Washing of PCP Contaminated Soils with Aqueous Surfactants," Eleventh Annual Environmental Management and Technology Conference/International, Atlantic City, NJ, June 1993

"Washing of Creosote and PCP-Contaminated Soils with Aqueous Surfactants as a precursor to Slurry Phase Bioremediation," FRPS 46th Annual Meeting, Charleston, SC June 1992

RELEVANT EXPERIENCE

Chlorinated Solvent Plume Investigation | Montvale & Garfield, NJ

Investigated sources and delineation of large chlorinated solvent plumes. Provided vapor intrusion investigation and remediation guidance for multiple receptors including daycare facilities, homes, and commercial facilities. Prepared conceptual site models.

Vapor Intrusion/Expert Witness | Dry Cleaner, Monticello, NY

Analyzed and upgraded sub-slab vapor intrusion remediation system. Provided expert testimony affidavit for litigation case for the Supreme Court of the State of New York County of Sullivan. Case involves dry cleaner indoor air pollutants and contamination of adjoining tenant spaces. Case is ongoing.

Methane Mitigation Design | Storage/Warehouse Facilities - NJ, NY, TX

Designed and installed methane mitigation systems for commercial facilities. Troubleshot and upgraded existing methane monitoring system components. Prepared design drawings and engineering reports for submission to regulatory agencies.

AST Design/Expert Testimony | Various - NJ

Prepared site plans for the installation of gasoline and diesel fuel oil aboveground storage tanks and generator projects. Provided expert testimony as the project Professional Engineer for Local Planning Board and Zoning Board variances and approvals. Specified and designed aboveground storage tank systems and appurtenances for fueling of facility vehicles and emergency generators. Industries served: transportation, automobile auction, telecommunication, and jewelry manufacturing.

Wastewater and Air Permitting | Jewelry Manufacturer, New York City

Working with architectural firm and luxury jewelry clients to prepare industrial wastewater and industrial process air permit applications for jewelry manufacturing facilities located in the Manhattan Borough. Preparing calculations and supporting documents for submission in accordance with NYC DEP Rules and Regulations and Federal Regulations.

Remediation | Shopping Plaza - Cornwall, NY

Completed installation of Sub-Slab Depressurization (SSD) system for mitigation of chlorinated VOCs impacting sub-slab and indoor air within leaseholds. Evaluated ongoing enhanced bioremediation remedial action using emulsified vegetable oil as the carbon substrate. Evaluated fate and transport of contaminants and effectiveness of enhanced bioremediation remedial action. Prepared NYSDEC Brownfields SMP and FER reports for submission to the State. Site has been issued a Certificate of Completion.

Groundwater Remediation | Former Industrial and Commercial Sites, NJ

Designed and implemented injection well layout and injection plans for remediation of PCE-contaminated groundwater utilizing sodium and potassium permanganate.

Site Assessment | Industrial Site - Carteret, NJ

Performed Phase I and Phase II activities to support sale of former industrial site under the NJ LSRP program. Prepared engineering and remediation cost estimates for closure. Designed active sub-slab depressurization system for new buildings. Prepared Request for Proposal and evaluated bids for excavation of contaminated site soils. Excavated VOC, metal and PCB contaminated soils.

In-Situ Stabilization/Solidification | Residential Tower - Newark, NJ

Performed bench-scale treatability studies and prepared Remedial Action Workplan for novel in-situ solidification/stabilization (ISS) project for a No. 4 fuel oil UHOT site with LNAPL. Received NJDEP approval of the RAWP for this first-of-its-kind project in NJ. ISS was implemented over an area of 25,000 square feet to a depth of 25 feet. Designed LNAPL recovery system for No. 4 fuel oil.

Phytoremediation | Superfund - MD, NJ

Investigated the use of trees to remediate and control the migration of chlorinated volatile organic compounds in groundwater. Subcontracted the planting of one-acre test plots of hybrid poplar trees. Investigated monitoring and sampling techniques to determine effectiveness of the phytoremediation systems.

Vapor Extraction/Suppression | Superfund - CA, ME

Collaborated on the design, construction, installation, and operation of pilot-scale in-situ vapor extraction systems for the removal of volatile organics from soil. Studied the use of vapor suppression technologies to reduce SO2 and H2S emissions during test excavation.

Soil Vapor Extraction/Dual Phase Extraction (SVE/DPE) | Various - NJ, NY

Designed soil vapor extraction systems for remediation of petroleum and chlorinated solvent contaminated soils. Specified piping, blowers, and vapor-phase treatment systems for a fully operational system to remediate soils to below State remediation standards. Prepared design drawings in accordance with State technical guidance documents.

Groundwater Treatment | Gas Station NY, PA

Collaborated on the design of groundwater treatment systems for BTEX, MTBE and TBA. Systems included in-situ ozonation and ex-situ pump and treat via carbon and air stripping. Provided oversight of pipeline installation, prepared and reviewed RFPs, and developed Process Flow Diagrams and P&IDs.

Herbicide Remediation | Superfund - CA

Performed field-scale ultraviolet/ozone wastewater treatment pilot testing to break down dinoseb-contaminated wash water from a soil washing process. Refine treatment parameters including recirculation of wastewater and engineer makeshift cooling pond.

Pesticide Remediation | Superfund - AZ

Performed in-situ feasibility field studies for anaerobic biodegradation of toxaphene and lindane-contaminated soils from former livestock dipping vat operations.

Industrial Wastewater Pretreatment | Various - NJ

Designed, procured, and installed several industrial wastewater pretreatment systems. Specified, procured, and installed equipment including pumps, mixers, tanks, chemical feed systems, and controls for the pretreatment of wastewater pH, oil & grease, metals, VOCs prior to discharge to the sanitary sewer system. Managed O&M, sampling, and reporting to various State, Local and Municipal agencies in accordance with discharge permits. Prepared wastewater permit applications. Industries served: food, automobile auction, jewelry manufacturing, pharmaceutical, fragrance manufacturing.

SSDS Design | Various - NJ, NY, NC

Designed sub-slab depressurization systems for several commercial, residential, and industrial buildings. Performed pilot tests and evaluated testing data for full-scale design. Specified piping, blowers and sub-grade materials to impart a negative pressure on the sub-slab environment to prevent vapor-phase contaminants from entering the occupied space. Prepared design drawings in accordance with State technical guidance documents and Local regulations. Industries served: pharmaceutical, dry cleaning, airport, chemical.

SPCC/DPCC | Various - National/NJ

Prepared and signed as Professional Engineer on numerous Spill Prevention Control and Countermeasure (SPCC) plans developed in accordance with Federal regulations and Discharge Prevention, Containment and Countermeasure (DPCC) developed in accordance with NJDEP regulations. Industries served: banking, transportation, chemical industry, consumer products, pharmaceutical, telecommunications.

Engineered System Troubleshooting | Various - National

Perform engineering evaluations and third-party of numerous soil and groundwater environmental remediation systems. Reviewed historical operational and contaminant data and provided an analysis of current system and unit operation performance. Recommend engineered upgrades to various unit operations and systems. Prepared evaluation and recommendation reports including cost benefit analysis.

Thermal Treatment | Superfund - CA, FL, MO

Oversaw and evaluated the pilot-scale testing of the feasibility of thermal distillation process to dechlorinate and remove dioxin, PCP, and creosote contaminants from soil and sludge. Performed dioxin QA/QC sampling of the Times Beach incineration process.

Multimedia Site Investigations | Superfund - Multiple States

Performed numerous multimedia investigations at various sites throughout the country. Sites included wood-preserving facilities (cerosote, PCP, metals, dioxin), metal plating facilities (metals, hexavalent chromium), pesticide/herbicide facilities (dinoseb, toxaphene), military arsenals (metals, VOCs).

Hexavalent Chromium Remediation - Soil & Groundwater | Metal Plating Site - PA

Evaluated the use of calcium polysulfide (CaSx) for the remediation of hexavalent chromium contaminated soils and groundwater at northeastern PA site. Subcontracted innovative high pressure lance injections of CaSx for shallow soil remediation. Scheduled shipments of CaSx by rail and tank truck. Oversaw upgrades and operation and maintenance of groundwater and surface water treatment systems utilizing ion exchange resins for treatment of hexavalent and trivalent chromium.

Stormwater Permitting | Various - NJ, PA

Prepared numerous NPDES Storm Water Permits for compliance with State regulations and monitoring program for industrial clients. Managed storm water sampling and reporting for various clients.

Potable Water Treatment and O&M | Various - NJ, NY

Designed potable water treatment systems for small industrial users. Managed O&M, sampling and reporting in accordance with County DOH and State regulations. Prepared O&M manuals for system operation.

Soil Washing | Superfund - NH, FL, GA

Designed, performed, and evaluated several bench-scale and pilot-scale soil washing studies for PCP, creosote, PCB, metals, and mercury contaminated soils. Investigated the use of chemical additives and temperature effects on the removal of the contaminants. Studied various wastewater and residual treatment technologies.

Bioremediation | Superfund - AL, AZ, MD

Performed preliminary biodegradation studies on pesticide and PAH contaminated soils. Assisted in the construction and operation of pilot-scale composting and landfarming projects. Installed computer-controlled data acquisition system to remotely monitor and control composting activities.

Groundwater Treatment | Superfund - FL

Provided engineering support in the design of a groundwater extraction and treatment system for hexavalent chromium using novel horizontal extraction wells and conventional reduction and flocculation.

Stabilization/Solidification | Superfund - AL, CA, GA, IA, ME, MD, NH

Performed bench-scale and pilot-scale solidification studies on metal and semi-volatile contaminated sludges and soils. Utilized chemical and physical methods to determine the integrity of solidified waste. Provided technical assistance and recommendations for full-scale stabilization projects.

Multi-media Site Investigations | Superfund - CA, GA, IL, MS, NH

Performed, managed, and provided engineering support for multi-media site investigations. Sampling involved groundwater, surface water, sediment, waste pile, soil, soil gas and air.

Timothy Biercz
Regional Service Area Lead

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P 908.448.2627

BIOGRAPHY

Mr. Biercz has 20 years of experience performing environmental site assessment, site investigation, and remediation projects at industrial, commercial, and residential properties throughout the United States. As a Regional Service Area Lead, Mr. Biercz provides technical and organizational support for VERTEX projects. These activities include client and regulatory agency interaction; preparation of proposals and remedial cost opinions; budget management; field sampling and data management; staff training and scheduling, preparation and review of technical reports; and project management.

His due diligence experiences include site reconnaissance, interviews, research of historical information, interpretation of environmental databases, review of documentation, and technical report preparation. Mr. Biercz also has experience preparing cost estimates and interpreting results for the sampling of asbestos-containing materials (ACM), lead-based paint (LBP), and radon.

Mr. Biercz has experience in the design, budgeting, management, and implementation of soil, groundwater, and vapor intrusion (soil vapor and indoor air) investigations and remediation. Remedial experiences include soil excavation and soil management oversight; remedial injections (in-situ bioremediation); groundwater pump & treat; enhanced fluid recovery (EFR); dual-phase extraction; and vapor intrusion mitigation including vapor barrier and sub-slab depressurization system (SSDS).

Mr. Biercz is a certified New Jersey Department of Environmental Protection (NJDEP) Subsurface Evaluator and certified NJDEP Underground Storage Tank Closure individual, who has experience assisting in the closure of numerous underground storage tanks (USTs) in the State of New Jersey. In addition, Mr. Biercz is a New York City Office of Environmental Remediation Gold Certified Professional with experience working to obtain regulatory closure through the New York City E-Designation Program. Furthermore, Mr. Biercz has worked closely with the New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) to obtain regulatory closure of spill cases and obtain a Certificate of Completion through the Brownfield Cleanup Program (BCP).

EDUCATION/TRAINING

B.S., Natural Resource Management & Applied Ecology, Rutgers University 2002

LICENSES/CERTIFICATIONS

Certified NJDEP Underground Storage Tank Closure, State of NJ
Certified NJDEP Subsurface Evaluator, State of NJ
New York City Office of Environmental Remediation Gold Certified Professional
Hazwoper
Hazwoper 8-hour Refresher
OSHA 10-hour Construction

Highlights

Subsurface Investigation Expertise
Nationwide Due Diligence Experience
Environmental Site Assessment and Remediation

Expertise

Analysis
Database Review
Environmental Permitting
Environmental Portfolio Reviews
Phase I ESAs
Phase II LSI
Environmental Health & Safety
Environmental Permitting
Groundwater & Soil Characterization
Hazardous Materials/Waste
Land Development
Remedial Design & Feasibility Studies
Remediation & Construction Management
Site Characterization
UST Removal
Vapor Intrusion Investigations & Remediation
Soil Disposal

SPECIAL TRAINING

Vegetation Identification for Wetland Delineation
Site Remediation Reform Act and LSRP Program
Site Remediation Basics
Regulatory Training in Underground Storage Tanks
NJDEP SRRA Implementation: The Final Rule Package
Environmental Funding

RELEVANT EXPERIENCE

Due Diligence Investigations | Various Locations

Mr. Biercz has completed Phase I Environmental Site Assessments, Preliminary Assessments, and Phase II Limited Subsurface Investigations for various clients in numerous states of the continental United States and Puerto Rico. The clients include lending institutions, corporations, developers, and private individuals.

Site Characterization / Remediation / Redevelopment | New York

Mr. Biercz was the Project Manager throughout the pre-purchase due diligence activities and complete redevelopment of a former commercial/industrial property in New York. Due diligence activities included the completion of a Phase I ESA, Phase II subsurface investigation, Property Condition Assessment, and Pre-Demolition Asbestos and Lead-Based Paint Survey. Following the acquisition of the property, Mr. Biercz coordinated asbestos abatement activities; additional soil, groundwater, and soil vapor sampling; removal of nine underground storage tanks and updating NYSDEC Petroleum Bulk Storage records; waste characterization and off-site disposal of historic fill materials; vapor intrusion sampling and mitigation via the installation of a vapor barrier; and closure of two NYSDEC Spill listings associated with the property.

Brownfield Cleanup Program | New York

In support of the acquisition of the property in New York, Mr. Biercz assisted the client in the characterization of current conditions via soil, groundwater, soil vapor, and indoor air sampling and analytical data analysis. Mr. Biercz prepared a remedial cost opinion to evaluate potential costs associated with enrollment of the property in the Brownfield Cleanup Program (BCP) and remediation/mitigation of the identified environmental concerns. Mr. Biercz prepared the BCP application and secured a Brownfield Cleanup Agreement between the property owner and the NYSDEC. Following the acceptance into the BCP, Mr. Biercz was the Project Manager overseeing regulatory submittals and execution of the remedial investigation and remedial actions (soil excavation and vapor mitigation). Regulatory closure was achieved via a Certificate of Completion, and Mr. Biercz continues to assist the client with post-closure inspections, monitoring, and reporting.

Industrial Site Recovery Act | New Jersey

Mr. Biercz was the Project Manager during the investigation and remediation of a former dye manufacturing facility in New Jersey. The remediation is being completed under the NJ Industrial Site Recovery Act (ISRA) program, under the oversight of a Licensed Site Remedial Professional (LSRP). Remedial activities included the development of site-specific remedial standards; excavation and off-site disposal of approximately 4,300 tons of soil; evaluation of post-excavation soil samples via compliance averaging (75%/10X procedure); remediation of PCB-impacted soil under a United States Environmental Protection Agency (USEPA) Self-Implementing Plan; installation of multiple sub-slab depressurization systems in newly constructed buildings; establishment of a Classification Exception Area (CEA) for monitored natural attenuation of groundwater; and regulatory submittals.

Litigation Support | New York

Mr. Biercz provided litigation support services for legal counsel, with the focus on evaluating potentially impacted fill material and historic agricultural activities at a property in Long Island, NY. The scope of services included a desktop review of available Phase I ESA, Phase II, and Phase III reports; evaluation of historic analytical data to current regulatory standards; and completion of a site investigation to characterize current conditions.

Preliminary Assessment / Site Characterization | New Jersey

Mr. Biercz completed a Preliminary Assessment of an 11-acre former commercial and residential property in New Jersey. Following the identification of several areas of concern, Mr. Biercz coordinated the completion of a limited subsurface investigation which included groundwater sampling via temporary monitoring wells and soil gas screening via a mobile laboratory. The results of the groundwater and soil gas screening were used to generate a remedial cost opinion for the client.

Underground Storage Tank Closure | New Jersey

As a NJDEP-licensed Subsurface Evaluator, Mr. Biercz assisted in the closure of a 500-gallon unregulated heating oil underground storage tank in New Jersey. Mr. Biercz provided oversight during the cleaning and removal of the tank; collection of post-excavation soil samples; off-site disposal of petroleum-impacted soils; and preparation of regulatory submittal documentation to the NJDEP. Following review of the documentation, the NJDEP issued a No Further Action determination and closed the case number associated with the property.

E-Designation Services | New York

Mr. Biercz was the Project Manager throughout pre-purchase due diligence activities, including the completion of a Phase I, asbestos survey, property condition assessment, and Phase II. Following property acquisition, Mr. Biercz assisted the client to satisfy the requirements of an E-Designation for Hazardous Materials by working closely with the New York City Office of Environmental Remediation (OER). Redevelopment activities were conducted in accordance with an OER-approved Soil/Materials Management Plan, and Mr. Biercz directed waste characterization, soil management oversight, and underground storage tank (UST) removal. Following preparation of a Remedial Closure Report, a Notice of Satisfaction was issued by OER.

Act 2 Consulting | Philadelphia, PA

Mr. Biercz assisted with the oversight and management of a redevelopment project to obtain liability protection through the participation in Act 2 by demonstrating attainment of Non-Residential, Used Aquifer Site Specific Standards. The scope of work included the review of previous investigation findings, soil and groundwater sampling, soil excavation, and technical report preparation (Remedial Investigation Report/Cleanup Plan). Mr. Biercz also worked with Pennsylvania Department of Environmental Protection (PADEP) regulators to generate a Cleanup Plan Addendum, outlining revisions to the proposed capping plan.