REMEDIAL INVESTIGATION REPORT

for

12096 FLATLANDS AVENUE
Brooklyn, New York
NYSDEC BCP Site No. C224290

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CERTIFICATION

I, Steven Ciambruschini, certify that I am currently a Qualified Environmental Professional as defined in 6 New York Codes, Rules, and Regulations Part 375 and that this Remedial Investigation Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10).

Steven Ciambruschini, P.G.

1.0 INTRODUCTION

On behalf of Innovative Urban Living, LLC (the Volunteer), Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) has prepared this Remedial Investigation (RI) Report for the 1.572-acre property located at 12096 Flatlands Avenue (Figure 1), in the East New York neighborhood of Brooklyn, New York (hereinafter the "Site"). Innovative Urban Living, LLC is participating in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) as a Volunteer as defined in ECL 27-1405 (1)(b) and as identified in the Brownfield Cleanup Agreement dated 31 May 2019. The Site is identified in the BCP as Site No. C224290.

The RI was conducted in accordance with the 19 May 2020 Remedial Investigation Work Plan (RIWP) prepared by Langan and approved by the NYSDEC on 14 July 2020. The investigation was completed to further investigate potential on-Site sources and extents of soil and groundwater impacts identified in Langan's 24 August 2018 Phase II Environmental Investigation Report prepared for Innovative Urban Living, LLC, and to assess for the presence of soil vapor impacts. The results of this investigation and the areas of concern identified are described in detail in Section 4.0 of this report. The Remedial Investigation was completed to further assess AOC-1: Former On-Site Gasoline Filling Station, AOC-2: Former On-Site Automotive Dismantling/Wrecking, and AOC-3: Presence of Historic Fill, and to determine the extent of contamination in groundwater, soil, and soil vapor across the Site. The Remedial Investigation was conducted in accordance with the process and requirements identified in the NYSDEC Division of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation (May 2010) and the New York State Department of Health (NYSDOH) "Guidance for Evaluating Soil Vapor Intrusion in the State of New York, with updates" (October 2006/May 2017).

2.0 SITE DESCRIPTION

2.1 Physical Setting

The 1.572-acre Site located on the south side of Flatlands Avenue in Brooklyn, New York, is designated as New York City Tax Block 4434, Lot 10. The Site consists of a vacant gravel lot used for surplus parking for the adjacent Christian Cultural Center (CCC) building, located to the west of the Site.

The Site is bound to the north by Flatlands Avenue (formerly Fairfield Avenue prior to 1967) followed by a gasoline filling station, automotive repair facility, carwash, and Sheffield Avenue. The Site is bound to the east by Pennsylvania Avenue followed by a vacant landscaped lot and the northern courtyard of a twenty-story residential building (part of the Starrett City Complex), to the south by a twelve-story multi-family residential building, and to the west by the western extents of the gravel lot currently used for surplus parking by the CCC.

The Site is currently zoned by the New York City Department of City Planning as R5 Infill, which is identified as a residential district that allows for a variety of residential housing. The Volunteer has initiated a re-zoning action that would be consistent with the proposed redevelopment and, if approved, the resulting zoning designation would be a R7-2 with a commercial overlay, which allows for the development of 100% income-based affordable housing and higher density buildings than currently permitted within the R5 zoning designation.

2.2 Site Stratigraphy and Hydrogeology

Elevations along Flatlands Avenue, adjacent to the north of the Site, are generally at about elevation +9.5 to elevation +12 Brooklyn Highway Datum (BHD) based on map Section provided by the Office of the Brooklyn Borough President Topographical Bureau.

Based on the monitoring well survey completed by Langan as part of the RI the top of the monitoring well covers installed during this RI, which are constructed to be flush with existing Site grade, ranges from about el 13.99 to el 19.41 North American Vertical Datum of 1988 (NAVD88) and slopes toward Flatlands Avenue.

Based on subsurface observations made during environmental and geotechnical investigations completed by Langan in 2018 and 2021, the subsurface strata at the Site consists of historic fill generally consisting of brown, gray, or black fine to coarse sand with varying proportions of fine to coarse gravel, silt, clay, ash, and miscellaneous debris including brick, concrete, asphalt, wood, and glass to depths ranging from approximately 13.5 to at least 30 feet below grade. The fill is underlain by a native brown to dark brown or dark grey sand unit with varying proportion of gravel, silt and clay that extended to the determination depths of all borings, which ranged from 20 to 77 feet below grade.

An ash layer was also identified within the historic fill layer during the 2018 and 2021 environmental investigations. During the 2018 Phase II EI, the top of a 2- to 12-foot thick ash layer was encountered in all soil borings at depths ranging from 6 to 10 feet below existing grade in the northern and central portions of the Site, and at approximately 18 feet below existing grade in the southern portion of the Site. Two separate ash layers were observed within two of the soil borings in the northern portion of the Site. During the 2021 RI, the top of a 0.5- to 2-foot thick ash layer was encountered within the eastern, southwestern and western portions of the site in four of eight soils borings at depths ranging from 4 to 10 feet below existing grade across the site. Subsurface profiles are provided in Figures 2.

The "Surficial Geologic Map of New York; Lower Hudson Sheet" by the New York State Museum State Geological Survey identifies that the surficial Site geology consists of outwash sand and gravel which is generally a well-rounded and stratified layer of coarse to fine gravel with sand. According to the "Geologic Map of New York – Lower Hudson Sheet" by the University of the State of New York, geology at the Site consists of silty clay, sand, and gravel.

Groundwater was encountered between el 2.04 to el 2.60 feet NAVD88 (between 12.13 and 17.44 feet below ground surface) during the RI. Based on area topography, observed water level measurements, and the proximity of the Site to Fresh Creek, groundwater flow is to the south toward Fresh Creek and Jamaica Bay. Groundwater contours are provided as Figure 6 and groundwater elevations are presented in Table 2.

Langan reviewed United States Fish and Wildlife National Wetland Inventory (NWI) and New York State Freshwater Wetlands maps. Based on these documents, no mapped wetlands are listed on the Site. The nearest wetlands are the Fresh Creek Basin (Estuarine and Marine Deepwater habitat), located approximately 1,400 feet to the southwest of the Site.

2.3 Surrounding Property Land Use

According to records maintained online by New York City Open Accessible Space Information System (NYCOASIS) and aerial/street-view observations provided by

Google Maps, surrounding properties include commercial, industrial, and automotive uses to the north, residential properties to the east and south, and parking lots and the CCC building to the west. Adjacent properties and surrounding land use details are presented on Figure 3. The following is a summary of surrounding property use:

Direction	Adjacent Properties			Surrounding Properties
	Block No.	Lot No.	Description	
North	4412	29 & 31	Flatlands Avenue followed by a car wash and automotive repair business and gasoline filling station	Industrial / manufacturing and commercial buildings and a gasoline filling station
East	4435	1 & 100	Pennsylvania Avenue followed by a vacant landscaped lot and the northern courtyard of a twenty-story residential building (part of the Starrett City Complex)	Residential building complex
South	4434	60	A twelve-story multi-family residential building	Residential building complexes
West	4434	1	Western extents of the gravel lot currently used for surplus parking by the CCC	CCC building, commercial buildings, Fresh Creek Nature Preserve

Public infrastructure (storm drains, sewers, and underground utility lines) exists within the street to the north of the Site. Sensitive receptors (as defined in DER-10) located within a half mile of the Site include:

Number	Name (Approximate distance from site)	Address
1	Brooklyn Public Library After School Program, Spring Creek Branch (approximately 650 feet northeast of the site)	12143 Flatlands Avenue Brooklyn, NY 11207
2	PS 306 Ethan Allen (approximately 1,300 feet northeast of the site)	970 Vermont Street Brooklyn, NY 11207
3	Starrett City Early Learning Center (approximately 1,500 feet southeast of the site)	1325 Pennsylvania Avenue Brooklyn, NY 11239

Number	Name (Approximate distance from site)	Address
4	Penn-Wortman Community Center After School Program (approximately 1,700 feet north of the site)	895 Pennsylvania Avenue Brooklyn, NY 11207
5	Charisma Christian Academy daycare (approximately 1,900 feet west of the site)	921 East 107th Street Brooklyn, NY 11236
6	Yeshiva R'tzahd School Annex daycare (approximately 2,000 feet west of the site)	8700 Avenue K Brooklyn, NY 11236
7	PS 260 Breuckelen (approximately 2,100 feet west of the site)	875 Williams Avenue Brooklyn, NY 11207

2.4 Historical Site Usage

According to Langan's review of previous environmental assessments and investigation reports prepared for the Site, as discussed in Section 4.0, historical site use and features include a former gasoline filling station, former operations for automotive dismantling/wrecking, and historical filling during the early 1900's using ash and residue from a city solid waste incinerator.

Historical uses of adjacent and nearby properties include gasoline filling stations and automotive repair to the north between 1950 and 2007 and automotive junk yards adjacent to the west from 1967 through 2001.

3.0 PROPOSED REDEVELOPMENT PLAN

The proposed future use of the Site consists of construction of two mixed-use commercial/residential towers with a single cellar level. The residential portions of the buildings will be comprised of 100% income-based affordable housing, while the commercial portions will be used for a neighborhood community facility and/or retail space. The cellar will consist of below grade parking, mechanical rooms, and storage. The conceptual plans for development are currently being evaluated by New York City as part of the proposed rezoning application.

4.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

Langan reviewed available environmental reports historically prepared for a larger property area including the entire CCC church and all associated parking lots, including this Site ("the entire CCC property"):

- *Fresh Creek Estates, Technical Memorandum to the Draft Environmental Impact Statement (DEIS),* prepared by AKRF, Inc., dated June 1991;
- *Subsurface Investigation and Report,* prepared by Soil Engineering Services, Inc. (SESI), dated March 1994;
- *Phase I Environmental Site Assessment (ESA),* prepared by Soil Mechanics Environmental Services (SMES), dated July 1997; and,
- *Phase I ESA for Flatlands Ave. & Pennsylvania Ave.,* prepared by Soil Mechanics Environmental Services (SMES), dated April 2003.

In addition, Langan prepared the following environmental reports for the Site:

- *Phase II Environmental Investigation Report (EIR),* prepared by Langan, dated 24 August 2018;
- *Phase I ESA,* prepared by Langan, dated 24 August 2018; and,
- *Remedial Investigation Work Plan,* prepared by Langan, dated 19 May 2020.

Previous reports are provided in Appendix C of Langan's 19 May 2020 RIWP. Validated soil, groundwater, and soil vapor analytical results of Langan's 2018 Phase II EIR are summarized in Tables 3 through 5 and on Figures 5 through 7 of this report. Data Usability Summary Reports (DUSRs) for these analytical results are provided as Appendix H.

4.1 Fresh Creek Estates, Technical Memorandum to the DEIS – AKRF, Inc. (1991)

According to the Technical Memorandum, AKRF, Inc. (AKRF) prepared a comprehensive environmental assessment of the proposed Fresh Creek Estates site, which included the Site and a number of surrounding parcels. The Technical Memorandum identified that the Site was originally marshlands and was landfilled during the early 1900's using ash and residue from a city solid waste incinerator. Prior to 1950, a gasoline filling station was located on the northeast portion of the site at the intersection of Pennsylvania Avenue and Flatlands Avenue, which corresponds to the current extents of the Site. Potential subsurface impacts due to historical site use and historic filling operations were investigated by completion of an electromagnetic survey, test pits, soil borings, and monitoring well installation and collection of soil, soil, and groundwater samples. Based on the sample location plan provided, one test pit, two soil borings, and two groundwater monitoring wells were installed on the Site.

Soil and groundwater samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), and metals and groundwater samples were analyzed for total dissolved solids, hexavalent chromium, and chloride. Although a soil vapor sample location map was not provided for review, the sampling methodology discussion identified that all 34 soil vapor samples were collected from the former gasoline filling station and were likely located on the Site. The Technical Memorandum concluded that the Site is underlain by unconsolidated fill containing varying amounts of sand, gravel, clay, bricks, organic material, concrete, glass and asphalt. Groundwater was encountered at depths that ranged from 12.67 to 22.82 feet below existing grades. Soil sample analytical results revealed TPH in soil at concentrations ranging from 91 parts-per-million (ppm) to 25,900 ppm over the entire proposed Fresh Creek Estates development site. However, laboratory analytical packages and summary tables were not provided for review; as such, subsurface soil and groundwater impacts identified during the 1991 environmental investigation could not be correlated to the Site.

The AKRF Technical Memorandum was reviewed by Soil Mechanics Environmental Services (SEMS) and a summary of the AKRF Technical Memorandum investigation and findings was included in the SEMS April 2003 Phase I ESA, as discussed below. According to the 2003 Phase I ESA, results of the soil vapor survey did not indicate elevated VOCs with the exception of methane, which was presumed to be associated from organic material in historic fill and/or underlying marsh deposits. Based on the presence of elevated methane concentrations in soil vapor, AKRF recommended that a Health and Safety Plan (HASP) be implemented including air monitoring protocols during intrusive activities for proposed site development.

4.2 Subsurface Investigation and Report - SESI (1994)

SESI completed a subsurface investigation that included installation of eight soil borings to depths that ranged from 26 to 51.5 feet below existing grade at the entire CCC property for the purposes of evaluating geotechnical conditions and providing recommendations for foundation design and general site development. The report documented that the Site is underlain by a layer of miscellaneous fill of unspecified thickness followed by native medium-dense medium to fine grained sand. The geotechnical report identified that the bottom of planned excavation at the time, likely for the existing church, was approximately 10-feet below grade and would be within the layer of miscellaneous fill. As the report provided was not complete and a geotechnical boring location plan was not provided for review, subsurface conditions could not be correlated to the Site.

4.3 Phase I ESA – SMES (1997)

SMES prepared a Phase I ESA on behalf of Legacy General Contracting Corp. with the intent of constructing an approximately 100,000-square foot two-story building, presumably what became the adjacent CCC building. Based on the descriptions of the subject property and adjacent properties in the SMES Phase I ESA report, it appears that this Phase I ESA was not completed for the Site.

4.4 Phase I ESA for Flatlands Ave. & Pennsylvania Ave. – SMES (1997)

The April 2003 SMES Phase I ESA was completed for the entire CCC property, including the current extents of the Site.

The Phase I ESA did not specifically identify RECs, but recommended completion of and adherence to a Health and Safety Plan (HASP) and installation of a soil capping system and noted that a methane mitigation system may be required as part of any future building construction. SMES also recommended that future site activities be conducted under the oversight of the New York City Department of Environmental Protection (NYCDEP) or NYSDEC and that all underground storage tanks (USTs) encountered during redevelopment be removed in accordance with all applicable laws. The report also identified that proper removal of all miscellaneous waste that was observed on the subject property, including an abandoned crane, rubber tires, and demolition debris, and completion of a groundwater investigation to evaluate for potential impacts from hydraulically upgradient properties of concern, would be required.

4.5 Phase I Environmental Assessment Report and Phase II Environmental Investigation Report – Langan (2018)

Phase I Environmental Assessment Report

Langan conducted a Phase I ESA on behalf of the Volunteer dated 24 August 2018 for the Site. The following recognized environmental conditions (RECs) were identified in Langan's 2018 Phase I ESA, and subsequently investigated as part of Langan's 2018 Phase II EI:

- REC-1: Former On-Site Gasoline Filling Station
- REC-2: Former On-Site Automotive Dismantling/Wrecking
- REC-3: Presence of Historic Fill

Each of these RECs is discussed in detail in Section 5.0 below.

The Phase I ESA also identified business environmental risks (BERs) including the potential presence of undocumented USTs as a result of historical site operations and potential impacts from current and historical operations conducted at adjacent and nearby properties involving automotive junking and wrecking/dismantling sites, automotive repair, gasoline filling stations, dry cleaners, the use of USTs, spills, and the generation and disposal of hazardous waste.

Phase II Environmental Investigation Report

Langan conducted a Phase II EI for the Site in 2018 for the Volunteer. Results of the investigation were summarized in the 24 August 2018 Phase II Environmental Investigation Report, which was submitted to NYSDEC in the BCP Application. The validated analytical results of this investigation are also provided on Tables 3 through 5 and summarized on Figures 5 through 7 of this report.

The investigation included advancement of six soil borings (LSB-15 through LSB-20) and five shallow test pits (LTP-1 through LTP-4, and LTP-7), collection of 12 soil samples, installation of one permanent monitoring well (LMW-5), collection of one groundwater sample, and installation and screening of one temporary methane monitoring point. A limited geophysical survey was also completed in the northeastern portion of the Site in the vicinity of the former gasoline filling station on 29 November 2017.

Analytical results of soil samples collected during the 2018 Phase II EI were compared to the NYSDEC Title 6 NYCRR NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives (SCOs) and Restricted Use SCOs (RUSCOs). Soil analytical results were also compared to NYSDEC Commissioner's Policy 51 (CP-51) Supplemental SCOs. Analytes detected above Restricted-Residential RUSCOs are listed below.

Groundwater sample results were compared to the NYSDEC Title 6 NYCRR Part 703.5 and the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA water (collectively known as NYSDEC SGVs); analytes detected above the regulatory criteria are also summarized below.

Initial Geophysical Survey and Test Pit Investigation Results

The initial geophysical survey completed in November 2017 identified five notable buried anomalies in the approximate footprint of the former gasoline filling station, one of which exhibited a hyperbolic GPR response which is typical of USTs. However, no USTs or fill/distribution piping were identified during the test pit investigation completed during the May 2018 Phase II EI, indicating that concrete and metal debris within the historic fill layer were likely the source of the anomalies identified during the geophysical survey.

Soil Investigation Results

Evidence of petroleum impacts (i.e., elevated PID readings, odor, or staining) were not observed in any of the soil borings completed. An approximately 14- to 16-foot thick layer of historic fill including concrete, brick, asphalt, wood, slag, ash, fabric, and metal debris were generally observed within all soil borings.

Analytical results revealed SVOCs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene were detected in the northern portion of the site in surficial and in the deep soil sample collected from the historic fill material at concentrations exceeding the Unrestricted Use SCOs and Restricted-Residential RUSCOs. Pesticides and polychlorinated biphenyls (PCBs) were detected at concentrations exceeding the Unrestricted Use SCOs in surficial and deep samples collected from historic fill material. Metals including barium, cadmium, copper, lead, and mercury were detected at concentrations exceeding the Restricted-Residential RUSCOs at all but one soil boring location. Iron was also detected in all soil samples above the Supplemental RUSCO for Residential Use and trivalent chromium, nickel, and zinc were also detected above the Unrestricted Use SCOs.

Groundwater Investigation Results

Depth to water measured in one groundwater monitoring well was 13.7 feet below grade.

Analytical results revealed no VOCs, pesticides, or PCBs detected in exceedance of the SGVs. The SVOC benzo(a)anthracene, total metals including iron, lead, manganese, and sodium, and concentrations of dissolved metals including iron, manganese, and sodium were detected at concentrations exceeding the SGVs.

Methane Monitoring Results

A temporary methane monitoring point was installed in the approximate center of the Site and methane concentrations were monitored using a LandTec GEM 2000 Landfill Gas meter over a period of 5-minutes. No measurable methane concentrations were detected over the 5-minute period.

Conclusions and Recommendations

Based on the results of the May 2018 Phase II EI, three Areas of Concern (AOCs) related to historical site operations were identified: former on-site gasoline filling station operations in the northeastern portion of the Site, former automotive dismantling/wrecking operations, and the historical filling using material of an unknown origin throughout the Site. These AOCs are discussed in detail as recognized environmental conditions (RECs) in the summary of the August 2018 Phase I ESA prepared by Langan, above.

May 2018 Phase II EI Data Usability Summary Reports (DUSRs)

DUSRs were prepared for data collected during the previous investigation and are included herein. The DUSRs were prepared in accordance with DER-10 and reviewed by Langan's in-house validator before issuance. The DUSRs presented the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of deficiencies for each analytical method. DUSRs for the Phase II EI are provided in Appendix H.

During the 2018 Phase II, one soil duplicate sample was collected from the LSB-16 location from 0 to 2 feet bgs for VOCs, SVOCs, PCBs, pesticides, herbicides, TAL metals, hexavalent chromium, mercury, and 1,4-dioxane analysis; the analytical results were consistent with those reported for the LSB-16A sample with the exception of barium which were compared to precision criteria and subsequently qualified. One soil sampling field blank was also collected and analyzed for VOCs, SVOCs, PCBs, pesticides, total TAL metals, hexavalent chromium, mercury, and 1,4-dioxane. The metals iron, potassium, and sodium were detected. One trip blank was collected and analyzed for VOCs; no VOCs were detected in the trip blank.

During the 2018 Phase II, one groundwater duplicate sample was collected from the LMW-5 location for VOCs, SVOCs, PCBs, pesticides, herbicides, total and dissolved TAL metals, mercury, hexavalent chromium, and 1,4-dioxane analysis; the analytical results were consistent with those reported for the LMW-5 sample with the exception of the VOCs benzo(a)anthracene and benzo(a)pyrene, which was compared to precision criteria and subsequently qualified. A field blank was collected and analyzed for VOCs, SVOCs, PCBs, pesticides, total and dissolved TAL metals, mercury, hexavalent chromium, and 1,4-dioxane; the VOC acetone, the metal selenium, and the dissolved metal calcium were detected. One trip blank was collected and analyzed for VOCs; no VOCs were detected in the sample.

All data are considered usable, as qualified. Some data qualifiers were appended to the reported results, which have been included in the respective data summary tables (Tables 3A/B through 5).

4.6 May 2020 Remedial Investigation Work Plan – Langan (2020)

A Remedial Investigation Work Plan dated 19 May 2020 was prepared by Langan for the Volunteer. The RIWP was prepared to investigate and characterize "the nature and extent of the contamination at and/or emanating from the brownfield site" per ECL Article 27-1415(2) (Brownfield Cleanup Program) and to further investigate potential on-Site sources and extents of soil and groundwater impacts identified in Langan's 24 August 2018 Phase II EI Report.

The scope of work for the RI presented in the RIWP consisted of:

- A geophysical survey throughout the areas of the Site that were not previously investigated in November 2017;

- Advancement of seven soil borings (LSB-21 through LSB-27) and collection of 22 soil samples (including one duplicate sample);

- Installation of seven permanent monitoring wells (LMW-7 through LMW-14) and collection of nine groundwater samples (including one duplicate sample) from existing well LMW-5 and LMW-7 through LMW-14;

- Survey and gauging of monitoring wells to evaluate groundwater elevation and flow directions; and,

- Installation of eight soil vapor points (LSV-1 through LSV-8) and collection of nine soil vapor samples (including one duplicate sample) and one ambient air sample.

5.0 SUMMARY OF AREAS OF CONCERN

Based on the results of Langan's August 2018 Phase II EI and August 2018 Phase I ESA, three Areas of Concern (AOCs) were identified and are described in detail below. AOC locations are presented on Figures 5 through 7.

5.1 AOC-1: Former On-Site Gasoline Filling Station

Based on the review of historical Sanborn Maps and the City Directory Abstract, a gasoline filling/service station was identified on the subject property (Block 4434, Lot 1 [portion]) from 1949 through 1965. Although not labeled as a gasoline filling station in the 1967 historic Sanborn Map, the one-story structure identified as a gasoline filling station in 1950 remained until 1986. A limited geophysical survey was completed in the vicinity of the former gasoline filling station in November 2017 and identified five subgrade geophysical anomalies. Test pits completed as part of the May 2018 Phase II EI to assess three of the anomalies did not identify the presence of USTs and gasoline impacts were not identified in soil or groundwater in the Phase II EI laboratory results. However, the geophysical survey and investigation were limited in scope and may not be indicative of the overall site conditions.

5.2 AOC-2: Former On-Site Automotive Dismantling/Wrecking

Based on the review of historical Sanborn Fire Insurance Maps and City Directory Abstract, automobile wrecking operations were identified at the subject property from 1967 through 1987. The potential exists for adverse environmental impacts to the subsurface due to the potential cumulative effect of unreported petroleum releases associated with these operations.

5.3 AOC-3: Presence of Historic Fill

The Site historically consisted of marshlands and was filled in circa 1900's. Based on the review of the 2003 Phase I ESA prepared by SMES and the 1991 Technical Memorandum prepared by AKRF, which were prepared for a larger 10-acre area, the Site and surrounding land was reportedly filled with ash and waste from the city solid waste incinerator. During the May 2018 Phase II EI, historic fill containing ash was observed to depths ranging from approximately 13.5- to at least 30-feet below grade and laboratory analytical results for soil revealed the presence of elevated concentrations of PAHs and metals above the NYSDEC Restricted-Residential RUSCOs.

6.0 REMEDIAL INVESTIGATION

The RI was completed to further investigate potential on-Site sources and extents of soil and groundwater impacts identified in Langan's 24 August 2018 Phase II EI Report and assess for the presence of soil vapor impacts.

The objectives of the RI included:

- Supplementing the investigation activities and results provided in the 2018 Phase II EI;
- Confirming the assumed groundwater flow direction;
- Characterizing the nature and vertical and lateral extents of the impacts in soil and groundwater;
- Evaluating contaminants in soil as a potential source of groundwater impacts;
- Based on the groundwater flow direction and groundwater analytical results, determining if groundwater impacts are confined within the Site boundaries or have the potential to migrate off-Site; and
- Completing a Site-wide assessment of soil.

The scope of work for the RI consisted of:

- A site-wide geophysical survey throughout areas of the Site that were not previously investigated during the geophysical survey completed in November 2017 to identify if any subsurface anomalies exist and to assess for the presence of subsurface structures, piping, and underground storage tanks, including previously undiscovered USTs, which may contribute to the presence or migration of contamination.
- Advancement of 7 soil borings (LSB-21 through LSB-27) and collection of 22 soil samples (including one duplicate sample);
- Installation of 8 permanent monitoring wells (LMW-7 through LMW-14) and collection of 10 groundwater samples (including one sample from previously installed LMW-5 and one duplicate sample);
- Survey and gauging of monitoring wells to evaluate groundwater elevation and flow direction; and
- Installation of 8 soil vapor sampling points (LSV-1 through LSV-8) and collection of 9 soil vapor samples (including one duplicate sample) and one ambient air sample.

The results of the geophysical survey are discussed in Section 6.1. Soil, groundwater, and soil vapor sampling procedures are discussed in Sections 6.2, 6.3, and 6.4, respectively. Quality assurance procedures implemented during this investigation and data validation (Data Usability Summary Reports [DUSRs]) that were completed are discussed in Section 6.5 and results of soil, groundwater, and soil vapor sampling are discussed in Section 6.6. Analytical data provided for this investigation are presented in Tables 3 through 5 and the locations of all soil, groundwater, and soil vapor samples collected during this investigation and a summary of the laboratory results are shown on Figures 5 through 7. All samples were analyzed by a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified laboratory. Daily Reports of work performed are provided in Appendix G.

6.1 Geophysical Survey Investigation

A Site-wide geophysical survey was completed 12 April 2021 by Hager-Richter Geoscience, Inc. of Fords, New Jersey using electromagnetic surveying equipment (i.e., the Radiodetection RD 8000 series precision utility location [PUL] instrument, Geonics EM61-MK2 time domain electromagnetic induction metal detector) and ground penetrating radar (i.e., the Geophysical Survey

Systems, Inc. UtilityScan HS system). The purpose of the survey was to provide utility clearance for the investigation and to investigate AOCs and former site features. A copy of the geophysical investigation report is provided in Appendix A.

The geophysical survey identified the presence of linear anomalies attributed to partial segments of three potential unidentified subsurface utilities, electric utility lines associated with light posts, and numerous subsurface metallic anomalies throughout the site. Subsurface metallic anomalies were attributed to the presence of buried debris containing metal and were not consistent with the presence of USTs or drums. Additionally, GPS reflections typical of a buried concrete pad were observed in the vicinity of boring locations LSV-2 and LMW-14 although a concrete pad was not observed while drilling these sample locations.

6.2 Soil Investigation

Seven soil borings (LSB-21 through LSB-27) were completed between 13 and 15 April 2021 by AARCO Environmental Services Corp. of Lindenhurst, New York (AARCO). Soil borings were completed across the Site footprint and in areas of concern that were identified during the previous Phase II EI and in areas not previously investigated, to evaluate the extents of impacts and potential remedial options based on subsurface conditions.

A sampling plan identifying the location, depth and sampling rationale for the completed borings is provided in Table 1 and boring locations are shown on Figure 5 through 7. Subsurface profiles are provided in Figure 2.

6.2.1 Soil Boring Investigation Methodology

Soil borings were completed using GeoProbe®7822DT and AMS Power Probe 9580-VTR track-mounted direct push drill rigs to 20 to 30 feet bgs. Soil borings were completed for the purpose of Site-wide characterization and AOC investigation, as described below and in Table 1:

Soil Boring(s)	Investigation Rationale
LSB-21 through LSB-27	AOC-2 and AOC-3 Investigation and Site-wide characterization

Discrete soil samples were collected from the surface to the final depth of each boring and were visually classified for soil type, grain size, texture, and moisture content. Continuous macrocore samples were collected in 5-foot long acetate liners to the bottom of each boring. Soil cuttings exhibiting no gross impacts were placed back into boreholes after completion of the investigation.

Field screening of soil during sample collection for VOCs using a field calibrated PID equipped with a 10.6-electron volt (eV) lamp was completed during the installation of all seven test borings. Elevated PID readings above background were not detected in any of the soil borings. Additionally, petroleum-like impacts, as evidenced by odors and/or sheen, were not encountered in any of the soil borings. Soil boring logs are provided in Appendix B.

6.2.2 Soil Sampling Methodology

A total of 22 discrete soil samples (including one blind duplicate sample) were collected for laboratory analysis. All samples were collected from the historic fill layer. Eight of these samples were collected from an ash layer identified within the historic fill layer.

Samples were collected from all borings from the 0- to 2-foot interval below grade, the most impacted two-foot interval within the fill layer based on field observations, and the two-foot interval above the groundwater interface. Soil samples were submitted for laboratory analysis of VOCs, SVOCs, PCBs, herbicides, pesticides, Target Analyte List (TAL) Metals, hexavalent chromium, per- and polyfluoroalkyl substances (PFAS), and 1,4-dioxane.

Samples submitted for VOC analysis were collected from a discrete six-inch interval directly from the acetate liner via laboratory-supplied Terra Core soil samplers. PFAS samples were also collected directly from the acetate liner using dedicated nitrile gloves to limit the potential for cross contamination and placed in appropriate laboratory-supplied containers. The remaining two-foot sample interval volume was homogenized and placed in appropriate laboratory-supplied containers for all additional analyses. The sample containers were labeled, placed in a laboratory-supplied cooler and packed on ice (to maintain a temperature of 4±2°C). The sample coolers were picked up and delivered via courier under standard chain-of-custody protocol to by York Analytical Laboratories, Inc. (York) of Stratford, Connecticut, a NYSDOH ELAP-certified analytical laboratory (NYSDOH ELAP certification number 10854)). In addition, QA/QC samples including one duplicate sample, one matrix spike/matrix spike duplicate (MS/MSD) sample, one field blank, and three trip blanks were collected. A sample summary is provided as Table 1.

6.3 Groundwater Investigation

A Langan field engineer documented the installation of permanent groundwater monitoring wells LMW-7 through LMW-14 by AARCO between 13 and 15 April 2021. Monitoring well locations are shown on 6, and well construction logs are included in Appendix B.

6.3.1 Monitoring Well Installation and Development Methodology

Monitoring wells LMW-7 through LMW-14 were installed via direct-push drilling to between 20 and 30 feet bgs. Wells were constructed with 10 feet (LMW-7 through LMW-11 and LMW-13) and 15 feet (LMW-12 and LMW-14) of 2-inch diameter 0.020-inch slot schedule 40 PVC well screen, and the remainder of the well was constructed of 2-inch diameter schedule 40 PVC riser. LMW-12 and LMW-14 were constructed with 15 feet of screen based on depth to groundwater observations in the soil boring or within nearby wells. The annulus around the well screens of was backfilled with No. 2 sand to a depth corresponding to approximately 2-feet above the screened interval. A minimum 2-foot thick hydrated bentonite seal was installed above the sand pack at all well locations. The remaining annulus was backfilled with non-impacted soil cuttings and/or clean sand. The monitoring wells were finished with flush-mount metal protective casings and concrete.

Following well construction completion, each newly installed well, in addition to previously installed LMW-5, was developed using surge pumping techniques across the well screen to agitate and remove fine particles. The whale pump was surged across the submerged well screen in 2- to 3-foot increments for approximately 2 minutes per increment. After surging, the well was purged until the water became clear. No impacts (odor, sheen, and/or product) were observed in the newly installed wells. Purged groundwater from development activities was containerized in 55-gallon UN/DOT approved drums.

All groundwater monitoring wells were surveyed by a licensed surveyor on 26 April 2020. Synoptic groundwater levels were measured at all groundwater monitoring wells on 26 April 2021. Additionally, all groundwater monitoring wells were gauged with an oil/water interface probe prior to sample collection at each well on 26 April 2021. Groundwater was encountered between el 2.04 to el 2.60 feet NAVD88 (between 12.13 and 17.44 feet below ground surface during the RI). The gradient at the Site ranges from approximately el 14 to 20 NAVD88 sloping towards Flatlands Avenue, and groundwater flow appears to be to the south toward Jamaica Bay. A potentiometric surface map generated from measurements taken during the RI and groundwater monitoring well locations are provided on Figure 6. Well construction details are provided in Appendix B.

6.3.2 Groundwater Sampling Methodology

Groundwater samples were collected on 26 April 2021, greater than one week following the well development activities completed between 15 and 16 April 2021. Monitoring wells were sampled for the purpose of site-wide characterization and AOC-investigation, as described below and in Table 1:

Groundwater Monitoring Well(s)	Investigation Rationale
LMW-5 and LMW-14	Site-wide characterization, AOC-1, AOC-2, and AOC-3 investigation
LMW-7 through LMW-13	Site-wide characterization, AOC-2 investigation, and AOC-3 investigation

Samples were collected in accordance with the procedures in the USEPA's low-flow groundwater sampling procedure ("Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells", EQASOP-GW 001, 19 January 2010) to allow for collection of a representative sample. Monitoring wells were purged and physical/chemical parameters (e.g., temperature, dissolved oxygen,

oxygen reduction potential, and turbidity) were allowed to stabilize to ranges specified in the USEPA guidance before sampling, or until one hour of parameter readings were obtained if stabilization did not occur. Monitoring wells were purged and sampled using a peristaltic pump with dedicated high density polyethylene tubing and VOC samples were collected using a dedicated Teflon bailer. PFAS samples were collected using dedicated nitrile gloves to limit cross contamination. No notable field observations of impacts were identified during groundwater sampling procedures. Purge water was placed in 55-gallon, United Nations/ Department of Transportation (UN/DOT)-approved drums. Low flow groundwater sampling parameter sheets are provided in Appendix C.

Nine groundwater samples were collected into laboratory-supplied glassware, packed with ice to maintain a temperature of ±4°C, and transported via courier service to York under chain-of-custody protocol. QA/QC samples including one duplicate sample, one MS/MSD sample, one field blank, and one trip blank were collected. Groundwater samples were collected on 26 April 2021 and were analyzed for VOCs, SVOCs, PCBs, herbicides, pesticides, total and dissolved TAL metals, hexavalent chromium, PFAS, and 1,4-dioxane.

6.4 Soil Vapor Investigation

Eight soil vapor sampling points (LSV-1 through LSV-8) were installed in the interval corresponding to the capillary fringe zone located one foot above observed moisture or groundwater interface. One duplicate soil vapor and one ambient air sample were collected for QA/QC purposes. Sampling was conducted in general accordance with the NYSDOH October 2006 Final Guidance for Evaluating Soil Vapor Intrusion in New York.

6.4.1 Soil Vapor Implant Installation and Sampling Procedures

Temporary soil vapor sampling points LSV-1 through LSV-8 were installed on 16 April 2021 by AARCO and sampled on 19 April 2021 by Langan. Soil vapor points were installed in the capillary fringe zone located one foot above observed moisture or the groundwater interface corresponding to a depth between 10.5 to 16 feet bgs. Each of the soil vapor points was installed via direct push drilling using Teflon-lined polyethylene tubing connected to a dedicated expendable six-inch stainless steel screen. No. 2 sand was used to backfill up to approximately one-foot above the screened interval followed by a hydrated granular bentonite clay seal to the ground surface.

Soil Vapor Sampling Point(s)	Investigation Rationale
LSV-1 and LSV-3 through LSV-8	Site-wide characterization, AOC-2, and AOC-3 investigation
LSV-2	Site-wide characterization, AOC-1, AOC-2, and AOC-3 investigation

Prior to sampling, each soil vapor sampling point was tightness tested using the helium tracer gas method and purged at a flow rate of <200-ml per minute. No evidence of helium breakthrough (i.e., helium concentrations above 5%) was observed in any of the sample locations before sample collection. PID readings for VOCs collected from the purged soil vapor were measured at concentrations ranging from 243 parts per billion (ppb) (LSV-2) to 2,025 ppb (LSV-3) during field screening of each location. Soil vapor sampling locations are shown on Figure 7 and soil vapor sampling field logs are provided in Appendix D.

Soil vapor samples were collected in laboratory-cleaned and certified evacuated 6-L stainless steel summa canisters with regulators supplied by York and were laboratory analyzed for VOCs via USEPA TO-15 Method. The regulators were set to collect each sample over a 2-hour sampling period (a flow-rate of <200-ml per minute) as per USEPA/ITRC soil vapor sampling guidance. Each soil vapor sample was numbered and recorded in a field log book. Samples were transferred to the laboratory immediately after field sampling was completed, and stored at a maximum room temperature of 30° Celsius. Chain-of-custody forms were utilized to document custody for the acquisition, possession, and analysis.

6.4.2 Ambient Air Sampling Procedures

Concurrent with soil vapor sampling, one ambient air sample was collected to evaluate external influences on soil vapor quality for quality assurance purposes.

The ambient air sample was collected in a laboratory-cleaned and certified evacuated 6-L stainless steel summa canister with a regulator supplied by York and was laboratory analyzed for VOCs via USEPA TO-15 Method. The regulator was set to collect the sample over an 8-hour sampling period (a flow-rate of <200-ml per minute). The sample was numbered and recorded in a field log book and subsequently transferred to the laboratory immediately after field sampling was completed, and stored at a maximum room temperature of 30º Celsius. Chain-of-custody forms were utilized to document custody for the acquisition, possession, and analysis.

6.5 Quality Assurance Samples and Data Validation

All soil, groundwater, and soil vapor sampling devices were properly decontaminated according to NYSDEC and ASTM (ASTM D-5088-90) guidelines prior to each sampling location. For soil sampling, this included the use of a dedicated acetate liner within a stainless steel macrocore sampling device. Soil samples were then placed in glassware supplied by the laboratory. For groundwater, dedicated high density polyethylene tubing was used. Groundwater samples were collected directly into glassware supplied by the laboratory. For soil vapor, dedicated expendable six-inch stainless steel screens and tubing were used.

Each sample was numbered and recorded in a field log book. Soil and groundwater samples were transferred to the laboratory immediately after field sampling was completed and were stored at a maximum of 4° Celsius. Soil vapor samples were transferred to the laboratory immediately after field sampling was completed, and were stored at a maximum room temperature of 30º Celsius. Chain-of-custody forms were utilized to document custody for the acquisition, possession and analysis.

Quality assurance (trip blanks) and quality control samples (field blank samples, duplicate samples, matrix spike/matrix spike duplicate [MS/MSD] samples, and ambient air samples) were incorporated into the sampling events and consisted of two field blanks (one for soil and one for groundwater), three duplicate samples (one for soil, one for groundwater, and one for soil vapor), four trip blanks (three for soil and one for groundwater), two MS/MSD samples (one for soil and one for groundwater), and one ambient air sample for soil vapor.

During the 2021 RI, one soil duplicate sample was collected from the LSB-27 location from 0 to 2 feet bgs for VOCs, SVOCs, PCBs, pesticides, herbicides, TAL metals, hexavalent chromium, mercury, PFAS, and 1,4-dioxane analysis; the analytical results were consistent with those reported from the LSB-27 parent sample location.

During the 2021 RI, one soil sampling field blank was also collected and analyzed for VOCs, SVOCs, PCBs, pesticides, herbicides, total TAL metals, hexavalent chromium, mercury, PFAS, and 1,4-dioxane. The VOC methylene chloride, the SVOCs fluorene and pyrene, and the metal potassium were detected. Two additional soil sampling field blanks were also collected during the 2021 RI and analyzed for PFAS and 1,4-dioxane. No compounds were detected in these samples. Three trip blanks were collected and analyzed for VOCs; acetone and tert-butyl alcohol was detected in the trip blank collected on 13 April 2021 and methylene chloride was detected in the trip blanks collected on 14 and 15 April 2021. Data usability is discussed in Section 6.6.4.

During the 2021 RI, one groundwater duplicate sample was collected from the LMW-7 location for VOCs, SVOCs, PCBs, pesticides, herbicides, total and dissolved TAL metals, mercury, hexavalent chromium, PFAS and 1,4-dioxane analysis; the analytical results were consistent with those reported for the LMW-7 sample.

During the 2021 RI, one field blank was also collected and analyzed for VOCs, SVOCs, PCBs, pesticides, herbicides, total and dissolved TAL metals, mercury, hexavalent chromium, PFAS, and 1,4-dioxane analysis. The VOCs acetone and tert-butyl alcohol, the SVOC fluorene, and the metal potassium were detected. One trip blank was collected and analyzed for VOCs; the VOCs acetone and methylene chloride were detected. Data usability is discussed in Section 6.6.4.

A soil vapor duplicate sample was collected from sampling point LSV-2 for VOC analysis; the analytical results were consistent with those reported for the LSV-2 sample. One ambient air sample was collected for VOCs. Compounds detected in the sample include 2-butanone, acetone, benzene, carbon tetrachloride, chloromethane, dichlorofluoromethane, ethyl benzene, hexachlorobutadiene, isopropanol, methyl methacrylate, methylene chloride, n-hexane, o-xylene, p&m xylenes, propylene, toluene, and trichlorofluoromethane.

These compounds were also detected in corresponding soil vapor samples collected. Data usability is discussed in Section 6.6.4.

Analytical data was submitted to a Langan validator for review in accordance with USEPA and NYSDEC validation protocols. A DUSR was prepared for each delivery group following data validation. The DUSR presents the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain-of-custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method. For each of the organic analytical methods, the following was assessed:

- Holding times
- Instrument tuning
- Instrument calibrations
- Blank results
- System monitoring compounds or surrogate recovery compounds (as applicable)
- Internal standard recovery results
- MS/MSD results
- Target compound identification
- Chromatogram quality
- Compound quantization and reported detection limits
- System performance
- Results verification

DUSRs are provided in Appendix F. Based on the results of data validation, the following qualifiers may be assigned to the data in accordance with the USEPA guidelines and best professional judgment:

- **R** – The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
- **J** – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
- **UJ** – The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.

- **U** – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.
- **NJ** – The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

After data validation was complete, validated data was used to prepare the tables and figures included in this report.

6.6 Laboratory Analytical Results

Summaries of the laboratory analytical results for soil, groundwater, and soil vapor are provided in Tables 3A/3B, 4A/4B, and 5, respectively, and are shown on Figures 5A/5B, 6, and 7, respectively. Analytical results are discussed in detail below. The complete laboratory analytical packages are provided in Appendix E.

6.6.1 Soil Analytical Results

All soil analytical results were compared to the NYSDEC Unrestricted Use SCOs, Restricted-Residential RUSCOs, and Protection of Groundwater SCOs and are summarized in Table 3A; PFAS soil analytical results are summarized on Table 3B. All soil analytical results are summarized on Figures 5A/5B. Duplicate soil samples results are not included in the discussion as these samples are collected for quality assurance/quality control verification of the laboratory results only and are discussed in Section 6.5.

Twenty-two discrete soil samples, including one field duplicate, were collected and analyzed for Part 375/TCL VOCs and SVOCs, PCBs, pesticides, and herbicides, Part 375/TAL metals including hexavalent chromium, trivalent chromium, and total cyanide, as well as emerging contaminants (including 1,4-dioxane and PFAS). A summary of laboratory detections for soil samples collected during the RI is provided in Table 3A (VOCs, SVOCs, pesticides, herbicides, PCBs and inorganics) with comparisons to NYSDEC Part 375 Unrestricted Use SCOs, Restricted-Residential RUSCOs, and Protection of Groundwater SCOs and Table 3B (emerging contaminants including 1,4-dioxane and PFAS). Full laboratory reports for the RI are included in Appendix E. Soil sample results that exceed SCOs for samples collected during the RI are shown on Figures 5A and 5B.

The following contaminants were detected at concentrations exceeding NYSDEC Part 375 Unrestricted Use SCOs (normal text), Restricted-Residential RUSCOs (bolded) and/or Protection of Groundwater SCOs (underlined text):

VOCs

Acetone was detected at concentrations exceeding the Unrestricted Use SCOs and Protection of Groundwater SCOs in four soil samples collected from soil borings LSB-23, LSB-24, LSB-25, and LSB-26 at depths ranging from 0 to 20 feet bgs. Acetone is a common laboratory contaminant and its presence is not likely indicative of a release. The following table provides a summary of VOCs that were detected above Unrestricted Use SCOs, Restricted-Residential RUSCOs, and/or Protection of Groundwater SCOs:

Analyte	Minimum Detected Concentration Above SCO (mg/kg)	Maximum Detected Concentration Above SCO (mg/kg)	UU, PGW, and RURR SCOs (mg/kg)
Acetone	<u>0.076</u> in 072_LSB-26A	<u>0.12</u> in 071_LSB-23C	UU: 0.05 PGW: 0.05 RURR: 100

1. Concentrations in regular face exceed Unrestricted Use SCOs (UU).
2. Concentrations that are underlined exceed Protection of Groundwater SCOs (PGW).
3. RURR= Restricted-Residential RUSCOs

SVOCs

Five PAHs were detected at concentrations exceeding the Unrestricted Use SCOs, Restricted-Residential RUSCOs, and/or Protection of Groundwater SCOs in three samples from soil borings LSB-21, LSB-23, and LSB-26 collected at depths ranging from 0 to 14 feet bgs. The following table provides a summary of PAHs that were detected above Unrestricted Use SCOs, Restricted-Residential RUSCOs, and/or Protection of Groundwater SCOs:

Analyte	Minimum Detected Concentration Above SCO (mg/kg)	Maximum Detected Concentration Above SCO (mg/kg)	UU, PGW, and RURR SCOs (mg/kg)
Benzo(a)anthracene	**1.03** in 073_LSB-26B	**1.03** in 073_LSB-26B	UU: 1 PGW: 1 RURR: 1
Benzo(a)pyrene	**1.05** in 073_LSB-26B	**1.09** in 066_LSB-21A	UU: 1 PGW: 22 RURR: 1
Benzo(b)fluoranthene	**1.15** in 066_LSB-21A	**1.15** in 066_LSB-21A	UU: 1 PGW: 1.7 RURR: 1
Benzo(k)fluoranthene	0.908 in 066_LSB-21A	0.908 in 066_LSB-21A	UU: 0.8 PGW: 1.7 RURR: 1.7
Indeno(1,2,3-cd)pyrene	**0.583** in 069_LSB-23A	**0.759** in 066_LSB-21A	UU: 0.5 PGW: 8.2 RURR: 0.5

1. Concentrations in regular face exceed Unrestricted Use SCOs.
2. Concentrations in boldface exceed Restricted-Residential RUSCOs.
3. Concentrations that are underlined exceed Restricted Use PG SCOs.

Pesticides

Four pesticides were detected at concentrations exceeding the Unrestricted Use SCOs in nine samples from soil borings LSB- 21 through LSB-23, LSB-25, and LSB-26 collected at depths ranging from 0 to 22.5 feet bgs. No pesticides were detected above Restricted-Residential RUSCOs or Protection of Groundwater SCOs. The following table provides a summary of the pesticides that were detected above the Unrestricted Use SCOs:

Analyte	Minimum Detected Concentration Above SCO (mg/kg)	Maximum Detected Concentration Above SCO (mg/kg)	UU, PGW, and RURR SCOs (mg/kg)
4,4'-DDD	0.00622 in 074_LSB-25A	0.0148 in 072_LSB-26A	UU: 0.0033 PGW: 14 RURR: 13
4,4'-DDE	0.00920 in 064_LSB-22B	0.00920 in 064_LSB-22B	UU: 0.0033 PGW: 17 RURR: 8.9
4,4'-DDT	0.00489 in 069_LSB-23A	0.0447 in 064_LSB-22B	UU: 0.0033 PGW: 135 RURR: 7.9
Dieldrin	0.00944 in 063_LSB-22A	0.00944 in 063_LSB-22A	UU: 0.005 PGW: 0.1 RURR: 0.2

1. Concentrations in regular face exceed Unrestricted Use SCOs.

Herbicides

No herbicides were detected at concentrations exceeding the Unrestricted Use SCOs, Restricted-Residential RUSCOs and/or Protection of Groundwater SCOs.

PCBs

Total PCBs were detected at concentrations exceeding the Unrestricted Use SCOs and/or Restricted-Residential RUSCOs in two samples from soil borings LSB-22, and LSB-26 collected at depths ranging from 0 to 16 feet bgs. The following table provides a summary of metals that were detected above Unrestricted Use SCOs and/or Restricted-Residential RUSCOs:

Analyte	Minimum Detected Concentration Above SCO (mg/kg)	Maximum Detected Concentration Above SCO (mg/kg)	UU, PGW,and RURR SCOs (mg/kg)
Total PCBs	0.247 in 073_LSB-26B	**2.39** in 064_LSB-22B	UU: 0.1 PGW: 3.2 RURR: 1

1. Concentrations in regular face exceed Unrestricted Use SCOs.
2. Concentrations in boldface exceed Restricted-Residential RUSCOs.

Inorganics

Ten metals were detected at concentrations exceeding the Unrestricted Use SCOs, Restricted-Residential RUSCOs, and/or Protection of Groundwater SCOs in 21 samples from all soil borings collected at depths ranging from 0 to 22.5 feet bgs. The following table provides a summary of metals that were detected above Unrestricted Use SCOs, Restricted-Residential RUSCOs, and/or Protection of Groundwater SCOs:

Analyte	Minimum Detected Concentration Above SCO (mg/kg)	Maximum Detected Concentration Above SCO (mg/kg)	UU, PGW,and RURR SCOs (mg/kg)
Arsenic	15.7 in 074_LSB-25A	15.7 in 074_LSB-25A	UU: 13 PGW: 16 RURR: 16
Barium	365 in 068_LSB-21C	**1,280** in 065_LSB-22C	UU: 350 PGW: 820 RURR: 400
Cadmium	3.58 in 071_LSB-23C	3.58 in 071_LSB-23C	UU: 2.5 PGW: 7.5 RURR: 4.3

Analyte	Minimum Detected Concentration Above SCO (mg/kg)	Maximum Detected Concentration Above SCO (mg/kg)	UU, PGW,and RURR SCOs (mg/kg)
Copper	56.0 in 065_LSB-22C	**2,380** in 071_LSB-23C	UU: 50 PGW: 1,720 RURR: 270
Lead	71.1 in 084_LSB-24C	**4,030** in 067_LSB-21B	UU: 63 PGW: 450 RURR: 400
Mercury	0.19 in 063_LSB-22A	**5.92** in 071_LSB-23C	UU: 0.18 PGW: 0.73 RURR: 0.81
Nickel	38.6 in 088_LSB-27C	43.0 in 074_LSB-25A	UU: 30 PGW: 130 RURR: 310
Selenium	5.24 in 087_LSB-27B	11.3 in 070_LSB-23B	UU: 3.9 PGW: 4 RURR: 180
Silver	2.10 in 071_LSB-23C	7.96 in 075_LSB-25B	UU: 2 PGW: 8.3 RURR: 180
Zinc	116 in 084_LSB-24C and 081_LSB-26C	839 in 075_LSB-25B	UU: 109 PGW: 2,480 RURR: 10,000

1. Concentrations in regular face exceed Unrestricted Use SCOs.
2. Concentrations in boldface exceed Restricted-Residential RUSCOs.
3. Concentrations that are underlined exceed Restricted Use PG SCOs.

Emerging Contaminants (1,4-dioxane and PFAS: 21-Compound List)

Twenty-two soil samples (including one duplicate) were sampled for emerging contaminants PFAS and 1,4-dioxane. Soil sample analytical results for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were compared to the Unrestricted Use, Restricted-Residential, and Protection of Groundwater Guidance Values identified in the NYSDEC Part 375 January 2021 Remedial Programs Guidelines for Sampling and Analysis of PFAS. PFOS was detected above the Unrestricted Use Guidance Value in seven soil samples collected from six soil borings (LSB-21, LSB-22, LSB-23, LSB-24, LSB-26, and LSB-27) between 0 and 12 feet bgs; concentrations above the Unrestricted Use Guidance Value ranged between 1.07 ppb in LSB-26 and 2.14 ppb in LSB-22. PFOA concentrations above the Unrestricted Use Guidance Value ranged between 1.07 ppb in LSB-26 to 1.09 ppb in LSB-23. The compound 1,4-dioxane was not detected in soil samples. Analytical results are shown in Table 3B.

Conclusions

Impacts indicative of contaminated ash fill and historic fill are present on Site. Analytes associated with contaminated historic fill, including PAHs, metals, and pesticides in addition to PCBs, PFOA, and PFOS are present throughout the Site footprint between 0 and 22.5 feet bgs (within the historic fill layer) at concentration exceeding the Unrestricted Use SCOs, Protection of Groundwater, and/or Restricted-Residential RUSCOs. Elevated concentrations of PAHs and PFAS may also be attributed to historical Site operations as a filling station and automotive wrecking facility; however, evidence of petroleum impacts was not identified based on field observations.

Elevated concentrations of PAHs, metals, pesticides, PCBs, and PFOS and PFOA above the Unrestricted Use SCOs, Protection of Groundwater SCOs, and/or Restricted-Residential RUSCOs across the Site footprint are attributed to the presence of ash fill, historic fill of unknown origin, and former on-Site automotive dismantling/wrecking. Elevated concentrations of PAHs identified within the northern portion of the Site may also be attributed to the former gasoline filling station that was historically present in this part of the Site.

6.6.2 Groundwater Analytical Results

A summary of the groundwater sample laboratory detections compared to the NYSDEC SGVs is presented in Table 4A. Emerging contaminant data including 1,4-dioxane and PFAS and 1,4-dioxane results are presented in Table 4B. Groundwater contours, sample locations, and results that exceed the NYSDEC SGVs are presented on Figure 6. Duplicate groundwater samples results are not included in the discussion as these results are discussed in detail in Section 6.5.

Ten groundwater samples, including two QA/QC duplicates, were collected and analyzed for Part 375/TCL VOCs, SVOCs, pesticides, herbicides, and PCBs, Part 375/TAL total and dissolved metals, and for emerging contaminants (including 1,4-dioxane and PFAS). The following contaminants were detected at concentrations exceeding the NYSDEC SGVs:

VOCs

VOCs were not detected above the NYSDEC SGVs in any groundwater samples collected.

SVOCs

SVOCs were not detected above the NYSDEC SGVs in any groundwater samples collected.

Pesticides

Pesticides were not detected above the NYSDEC SGVs in any groundwater samples.

Herbicides

Herbicides were not detected above the NYSDEC SGVs in any groundwater samples.

PCBs

PCBs were not detected above the NYSDEC SGVs in any groundwater samples.

Total Metals

Groundwater samples collected from all monitoring wells contained concentrations of three or more of the four total metals that exceeded the NYSDEC SGVs in groundwater samples as shown in the following table:

Analyte	Minimum Detected Concentration above Class GA SGV (µg/L)	Maximum Detected Concentration above Class GA SGV (µg/L)	NYSDEC SGVs (µg/L)
Barium	1,600 in 108_LMW-12	1,600 in 108_LMW-12	1,000
Iron	7,580 in 107_LMW-14	53,200 in 110_LMW-10	300
Manganese	370 in 111_LMW-13	1,240 in 110_LMW-10	300
Sodium	21,000 in 107_LMW-14	150,000 in 106_LMW-9	20,000

Dissolved Metals

Groundwater samples collected from all monitoring wells contained concentrations of two or more of the four dissolved metals that exceeded the NYSDEC SGVs as shown in the following table:

Analyte	Minimum Detected Concentration above Class GA SGV (µg/L)	Maximum Detected Concentration above Class GA SGV (µg/L)	NYSDEC SGVs (µg/L)
Barium (Dissolved)	1,270 in 108_LMW-12	1,270 in 108_LMW-12	1,000
Iron (Dissolved)	2,020 in 107_LMW-14	35,000 in 110_LMW-10	300
Manganese (Dissolved)	366 in 111_LMW-13	1,250 in 110_LMW-10	300
Sodium (Dissolved)	21,100 in 105_LMW-5	145,000 in 106_LMW-9	20,000

Emerging Contaminants (1,4-dioxane and PFAS: 21-Compound List)

Groundwater samples collected from all monitoring wells were sampled for emerging contaminants PFAS and 1,4-dioxane. Groundwater sample analytical results were compared to the NYSDEC Part 375 January 2021 Remedial Programs Guidelines for Sampling and Analysis of PFAS Guidance Values and the 1,4-dioxane drinking water maximum contaminant level (MCL) adopted by New York State. PFOS was detected above the Guidance Value in three monitoring wells (LMW-7, LMW-9, and LMW-12) between 10 nanograms per liter (ng/L) in LMW-9 and 27.5 ng/L in LMW-7. PFOA was detected above the Guidance Value in all monitoring wells between 18.4 ng/L in LMW-14 and 169 ng/L in LMW-9. Other individual PFAS and total PFAS were not detected above the Guidance Values. The compound 1,4-dioxane was not detected in any of the groundwater samples. Analytical results are shown in Table 4B.

Conclusions

Total metals including barium, iron, manganese, and sodium were also identified in groundwater in exceedance of the SGVs. Total and dissolved barium were detected above the SGV in LMW-12 during the 2021 RI, which is attributed to a combination of sediment entrainment in the sample and the quality of fill in contact with groundwater at that location. Other metals detected in exceedance of NYSDEC SGVs (total and/or dissolved iron, manganese, and sodium) were identified throughout the Site footprint and are attributed to a combination of sediment entrainment in the sample and naturally occurring background concentrations.

PFOS and/or PFOA was detected above the guidance screening level of 10 ng/L in all nine of the groundwater samples collected throughout the Site footprint. Based on a presentation published by the Michigan Chemistry Council, PFAS have been heavily used in the automotive industry including engines, interiors, fuel systems, and steering and break system. According to the Interstate Technology and Resource Council, PFOS production in stain and water resistant products and PFOA production in protective coatings occurred between the 1950s and 1990s. The presence of PFOS and PFOA in groundwater may be attributable to former on-site automotive dismantling/wrecking across the Site footprint from 1967 to 1987.

6.6.3 Soil Vapor Analytical Results

Soil vapor analytical results were compared to NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion Matrices A through C dated October 2006 and revised in May 2017. These results are summarized in Table 5 and are shown on Figure 7.

The soil vapor results identified low levels of petroleum-related VOCs including benzene, toluene, ethylbenzene, and/or xylenes in all soil vapor samples collected at cumulative concentrations that ranged from 10.9 microgram per cubic meter ($\mu g/m^3$) at LSV-1 to 59 $\mu g/m^3$ at LSV-4). Additional petroleum-related VOCs including 1,2,4-trimethylbenzene (1.4 $\mu g/m^3$ – 9 $\mu g/m^3$), and 1,3,5-trimethylbenzene (0.99 $\mu g/m^3$ – 5.4 $\mu g/m^3$) were also detected. The highest concentrations of petroleum related compounds were identified in LSV-4 located in the central portion of the Site.

The VOCs 1,1-dichloroethene, 1,1,1-trichloroethane, and carbon tetrachloride were not detected in any of the soil vapor samples. According to the NYSDOH Soil Vapor Intrusion Matrix A, the cis-1,2 DCE concentration (7.3 $\mu g/m^3$) in soil vapor is above the monitoring and/or mitigation threshold of 6 $\mu g/m^3$ in one soil vapor sample (LSV-4). According to the NYSDOH Soil Vapor Intrusion Matrix C, the vinyl chloride concentration (22 $\mu g/m^3$) in soil vapor is above the monitoring and/or mitigation threshold of 6 $\mu g/m^3$ in one soil vapor sample (LSV-4).

Conclusions

The soil vapor investigation identified impacts that would require monitoring or mitigation per the NYSDOH guidance values in soil vapor sample LSV-4 located in the central portion of the Site. Low levels of petroleum-related VOCs were also identified in this sample and across the Site footprint. Petroleum-related VOCs were not detected at concentrations exceeding NYSDEC threshold values in soil or groundwater at the Site, but concentrations in soil vapor may be attributable to releases associated with historical Site operations. As CVOCs were not detected at concentrations exceeding NYSDEC threshold values in soil or groundwater at the Site, the presence of elevated concentrations of these compounds in one soil vapor sample is attributed to an isolated unknown source.

6.6.4 Data Usability

The DUSRs were prepared in accordance with DER-10 and reviewed by Langan's in-house validator before issuance. The DUSRs presented the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of deficiencies for each analytical method. All data are considered usable, as qualified. Some data qualifiers were appended to the reported results, which have been included in the respective data summary tables (Tables 3A/B through 5). DUSRs for the RI are provided in Appendix F.

6.7 Evaluation of Areas of Concern

This section discusses the results of the RI with respect to the AOCs described in detail in Section 5.0.

6.7.1 AOC-1: Former On-Site Gasoline Filling Station

Historical records identified a gasoline filling/service station in the northeastern corner of the Site from 1949 through 1965. Although not labeled as a gasoline filling station in the 1967 historic Sanborn Map, the one-story structure identified as a gasoline filling station in 1950 remained until 1986.

As discussed in Section 5.1, a limited geophysical survey was completed in the vicinity of the former gasoline filling station in November 2017 and identified five subgrade geophysical anomalies. Test pits completed in this area did not identify the presence of USTs, and gasoline impacts were not observed in the field.

<u>*Soil*</u>

In order to investigate soil within the extents of the former on-site gasoline filling station, a total of 13 discrete soil samples (including one duplicate sample) were collected from six borings (LSB-15 through LSB-20) for laboratory analysis.

Soil analytical results collected at the Site to investigate soil within the extents of the former on-site gasoline filling station are summarized as follows:

- No elevated PID readings or other petroleum-like impacts, including odors, NAPL and/or sheen, were encountered in any soil borings.
- One VOC (acetone) was detected above the Unrestricted Use SCO and Protection of Groundwater SCO. Acetone is a common laboratory contaminant and its presence is not likely indicative of a release or presence of historic fill.
- Seven SVOCs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene) were detected above the Unrestricted Use SCOs, Restricted-Residential RUSCOs, and/or Protection of Groundwater SCOs in six samples from soil borings LSB-15 and LSB-17 collected at depths ranging from 0 to 14 feet bgs. The highest SVOC concentrations were observed in LSB-15 from 0 to 2 feet bgs located in the northern portion of the site.
- The metals barium, cadmium, copper, lead, and mercury were detected above the Restricted-Residential RUSCOs in 8 samples collected from 0 to 14 feet bgs in five boring locations within AOC-1. No other metals were detected above the Restricted-Residential RUSCOs. Metals including barium, cadmium,

trivalent chromium, copper, lead, mercury, nickel, and zinc were detected above the Unrestricted Use SCOs and/or Protection of Groundwater SCOs in all samples collected within AOC-1.

- Three pesticides, including 4,4'-DDE, 4,4'-DDT, and dieldrin were detected above Unrestricted Use SCOs in samples collected 0 to 16 feet bgs in four soil borings (LSB-16, LSB-18, LSB-19, and LSB-20).
- Total PCBs were detected above the Unrestricted Use SCOs in LSB-15 from 0- to 2-feet bgs and in LSB-16 from 14- to 16-feet bgs.
- No herbicides were detected in exceedance of the Unrestricted Use SCOs, Restricted-Residential RUSCOs, or Protection of Groundwater SCOs in any samples collected on the Site.
- No soil samples collected from within AOC-1 were analyzed for PFAS compounds.

Groundwater

In order to investigate groundwater within the extents of the former on-site gasoline filling station, four groundwater samples (including one duplicate sample) were collected from LMW-5 (May 2018 Phase II EI and 2021 RI) and LMW-14 (2021 RI). A summary of the groundwater analytical results for AOC-1 is summarized as follows:

- VOCs were not identified above the SGVs in either well.
- The SVOCs benzo(a)anthracene and benzo(a)pyrene were detected above the SGV in LMW-5 during the 2018 Phase II EI, however they were not detected above the SGV during the 2021 RI. SVOCs were not detected above the SGVs in LMW-14.
- Four total and three dissolved metals, including iron, lead, manganese, and sodium were detected above the SGVs in LMW-5 and LMW-14. Total lead was detected above the SGV during the 2018 Phase II EI but dissolved lead was not; neither total nor dissolved lead were detected above the SGV during the 2021 RI.
- Pesticides, herbicides, and PCBs were not identified above SGVs in either well.
- PFAS compounds were detected in all groundwater samples collected within AOC-1. PFOA was detected above the guidance value of 10 ng/L in LMW-5 and LMW-14.

Soil Vapor

Three soil vapor points (LSV-1, LSV-2, and LSV-5) were installed in or in close proximity to AOC-1. LSV-2 was installed within the northern portion of the extents of the former on-site gasoline filling station. A summary of the soil vapor analytical results for samples collected within the vicinity AOC-1 is summarized as follows:

- No NYSDOH Soil Vapor Intrusion Matrix were identified above the monitoring and/or mitigation thresholds in in the samples collected in or in close proximity to AOC-1.
- Petroleum-related VOCs including benzene, ethylbenzene, toluene, xylenes, 1,2,4-trimethylbenzene, and/or 1,3,5-trimethylbenzene were detected in all three samples.

AOC-1 Conclusions

Evidence of USTs or petroleum impacts were not identified in soil or groundwater in or within the vicinity of AOC-1. The VOC acetone, a common laboratory artifact, was detected in soil above regulatory criteria although is likely not associated with historical site uses.

Elevated concentrations of PAHs, metals, pesticides, and PCBs in soil above the Unrestricted Use SCOs, Protection of Groundwater SCOs, and/or Restricted-Residential RUSCOs identified in AOC-1 are attributed to the presence of ash fill and historic fill of unknown origin. Elevated concentrations of PAHs may also be attributed to former on-Site automotive dismantling/wrecking operations and the former on-Site gasoline filling station.

Elevated concentrations of the SVOCs benzo(a)anthracene and benzo(a)pyrene were detected in groundwater in exceedance of the NYSDEC SGVs in one well (LMW-5) located in the north-central portion of the Site within the extents of AOC-1. These exceedances were only identified in the groundwater sample collected during the 2018 Phase II EI and were not identified when the well was resampled during the 2021 RI. The previous presence of these SVOCs in groundwater are attributed to a combination of sediment entrainment in the sample and the quality of fill in contact with groundwater quality of fill at that location.

The soil vapor investigation identified low levels of petroleum-related VOCs in all three samples. Petroleum-related VOCs were not detected at concentrations exceeding NYSDEC threshold values in soil or groundwater at the Site, but concentrations in soil vapor may be attributable to releases associated with historical Site operations.

6.7.2 AOC-2: Former On-Site Automotive Dismantling/Wrecking

Automobile wrecking operations were identified at the subject property from 1967 through 1987. The potential exists for adverse environmental impacts to the subsurface due to the potential cumulative effect of unreported petroleum releases associated with these operations.

Soil

In order to characterize impacts associated with former Site use, a total of 35 discrete soil samples including two duplicate samples were collected from twelve borings (LSB-15 through LSB-26) for laboratory analysis from across the Site footprint.

Soil analytical results collected at the site to characterize AOC-2, are summarized as follows:

- No elevated PID readings or other petroleum-like impacts, including odors, NAPL and/or sheen, were encountered in any soil borings.
- One VOC (acetone) was detected above the Unrestricted Use SCO. Acetone is a common laboratory contaminant and its presence is not likely indicative of a release or presence of historic fill.
- Seven SVOCs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene) were detected above the Unrestricted Use SCOs, Restricted-Residential RUSCOs, and/or Protection of Groundwater SCOs in six samples from soil borings LSB-15, LSB-17, LSB-21, LSB-23, and LSB-26 collected at depths ranging from 0 to 14 feet bgs. The highest SVOC concentrations were observed in LSB-15 from 0 to 2 feet bgs located in the northern portion of the site.

- The metals barium, cadmium, copper, lead and mercury were detected above the Restricted-Residential RUSCOs in 16 samples collected from - to 20 feet bgs in 12 boring locations across the Site. No other metals were detected above the Restricted-Residential RUSCOs. Metals including arsenic, barium, cadmium, trivalent chromium, copper, lead, mercury, nickel, selenium, silver, and zinc were detected above the Unrestricted Use SCOs and/or Protection of Groundwater SCOs in all samples for which metals were analyzed.
- Four pesticides, including 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and dieldrin were detected above Unrestricted Use SCOs in 16 samples collected 0 to 22.5 feet bgs in nine soil borings (LSB-16, LSB-18, LSB-19, LSB-20, LSB-21, LSB-22, LSB-23, LSB-25, LSB-26).
- Total PCBs were detected above the Restricted-Residential RUSCOs in LSB-22 from 4 to 6 feet bgs and were detected above Unrestricted Use SCOs in LSB-15 from 0 to 2 feet bgs, in LSB-16 from 14 to 16 feet bgs, and in LSB-26 from 10 to 12 feet bgs.
- No herbicides were detected in exceedance of the Unrestricted Use SCOs, Restricted-Residential RUSCOs, or Protection of Groundwater SCOs in any samples collected on the Site.
- PFAS was detected above the Unrestricted Use Guidance Value in seven soil samples collected from six soil borings (LSB-21, LSB-22, LSB-23, LSB-24, LSB-26, and LSB-27) between 0 and 12 feet bgs. PFOS concentrations above the Unrestricted Use Guidance Value ranged between 1.07 ppb in LSB-26 from 10 to 12 feet bgs and 2.14 ppb in LSB-22 from 0 to 2 feet bgs. PFOA concentrations above the Unrestricted Use Guidance Value ranged between 0.683 ppb in LSB-21 from 5 to 7 feet bgs to 1.09 ppb in LSB-23 from 0 to 2 feet bgs. The compound 1,4-dioxane was not detected in soil samples. Samples collected during the 2018 Phase II were not analyzed for PFAs compounds.

Groundwater

Monitoring well LMW-5 and wells LMW-7 through LMW-14 were sampled to characterize subsurface impacts from historical Site operations. Groundwater samples were collected from between 18 and

24 feet bgs, which correspond to the middle of the water column within the screened intervals in the monitoring wells. The groundwater analytical results are summarized as follows:

- No VOCs were detected above the SGVs.
- The SVOCs benzo(a)anthracene and benzo(a)pyrene were detected above the SGV in LMW-5 during the 2018 Phase II EI, however they were not detected above the SGV during the 2021 RI. SVOCs were not detected above the SGVs in any other wells.
- Two or more of total metals including barium, iron, lead, manganese, and sodium were detected above the SGVs in all groundwater samples. Two or more of dissolved metals including barium, iron, manganese, and sodium were detected above the SGVs in all groundwater samples. Total lead was detected above the SGV during the 2018 Phase II EI but dissolved lead was not; neither total nor dissolved lead were detected above the SGV during the 2021 RI. Total and dissolved barium were detected above the SGV at LMW-12.
- Pesticides, herbicides, and PCBs were not detected above the SGVs in any groundwater samples collected.
- PFOS was detected above the Guidance Value in three monitoring wells (LMW-7, LMW-9, and LMW-12) between 10.1 ng/L in LMW-9 and 27.5 ng/L in LMW-7. PFOA was detected above the Guidance Value in all monitoring wells between 18.4 ng/L in LMW-14 and 169 ng/L in LMW-9. Other individual PFAS and total PFAS were not detected above the Guidance Values. The compound 1,4-dioxane was not detected in any of the groundwater samples.

Soil Vapor

Soil vapor points LSV-1 through LSV-8 were installed as part of the site-wide soil vapor assessment and to characterize AOC-2. All soil vapor analytical results are summarized as follows:

- According to the NYSDOH Soil Vapor Intrusion Matrix A, the cis-1,2 DCE concentration (7.3 $\mu g/m^3$) in soil vapor was identified above the monitoring and/or mitigation threshold of 6 $\mu g/m^3$ in one soil vapor samples (LSV-4). According to the NYSDOH Soil

Vapor Intrusion Matrix C, the vinyl chloride concentration (22 μg/m^3) in soil vapor was identified above the monitoring and/or mitigation threshold of 6 μg/m^3 in one soil vapor sample (LSV-4).

- Petroleum-related VOCs including benzene, ethylbenzene, toluene, xylenes, 1,2,4-trimethylbenzene, and/or 1,3,5-trimethylbenzene were identified at cumulative concentrations that ranged from 10.9 μg/m^3 at LSV-1 to 59 μg/m^3 at LSV-4. Low levels of petroleum-related compounds were detected in all soil vapor samples collected. The highest concentrations of petroleum related compounds were identified in LSV-4 located in the central portion of the Site.

AOC-2 Conclusions

Elevated concentrations of PAHs, metals, pesticides, PCBs, and PFAS in soil above the Unrestricted Use SCOs, Protection of Groundwater SCOs, and/or Restricted-Residential RUSCOs identified across the Site footprint are attributed to fill material from the city solid waste incinerator and fill of unknown origin; the presence of SVOCs, metals, and PFAS may also be attributable to historical automotive dismantling operations.

Elevated concentrations of total and dissolved metals in groundwater are attributed to sediment entrainment in the samples or naturally occurring background concentrations, with the exception of elevated concentrations of total lead at LMW-5 total and dissolved barium at LMW-12. The elevated concentrations of these compounds are attributed to a combination of sediment entrainment in the sample and the quality of fill in contact with groundwater quality of fill at that location. Additionally, the presence of PFOS and/or PFAS in all groundwater samples collected throughout the Site may be attributable to former on-Site automotive dismantling/wrecking or the presence of historic fill.

Two CVOCs (cis-1,2 DCE and vinyl chloride) were detected in exceedance of the NYSDOH Soil Vapor Intrusion Matrix monitoring and/or mitigation threshold values at one sample location (LSV-4). Petroleum-related VOCs were also detected in soil vapor at the Site. Petroleum-related VOCs were not detected at concentrations exceeding NYSDEC threshold values in soil or groundwater at the site, but concentrations in soil vapor may be attributable to releases associated with historical Site operations. As CVOCs were not detected at concentrations exceeding NYSDEC threshold values in soil or groundwater at the Site, the presence of elevated concentrations of these compounds in one soil vapor sample is attributed to an isolated unknown source.

6.7.3 AOC-3: Presence of Historic Fill

Based on the review of the 2003 Phase I ESA prepared by Soil Mechanics and the 1991 Technical Memorandum prepared by AKRF which were prepared for a larger 10-acre area, the Site was reportedly filled with ash and waste from the city solid waste incinerator. Based on subsurface observations made during environmental and geotechnical investigations completed by Langan in 2018 and 2021, the subsurface strata at the Site consists of historic fill generally consisting of brown, gray, or black fine to coarse sand with varying proportions of fine to coarse gravel, silt, clay, ash, and miscellaneous debris including brick, concrete, asphalt, wood, and glass to depths ranging from approximately 13.5 to at least 30 feet below grade.

Soil, groundwater, and soil vapor sample were collected across the entire Site footprint to assess for subsurface impacts associated with former on-Site operations (AOC-2) and historic fill. Analytical results for these samples are presented in the discussion of AOC-2 in Section 6.7.2.

AOC-3 Conclusions

Elevated concentrations of PAHs, metals, pesticides, PCBs, and PFAS in soil above the Unrestricted Use SCOs, Protection of Groundwater SCOs, and/or Restricted-Residential RUSCOs identified across the Site footprint are attributed to fill material from the city solid waste incinerator and fill of unknown origin; the presence of SVOCs, metals, and PFAS may also be attributable to historical automotive dismantling operations.

Elevated concentrations of total and dissolved metals in groundwater are attributed to sediment entrainment in the samples or naturally occurring background concentrations, with the exception of elevated concentrations of total lead at LMW-5 total and dissolved barium at LMW-12. The elevated concentrations of these compounds are attributed to a combination of sediment entrainment in the sample and the quality of fill in contact with groundwater quality of fill at that location. Additionally, the presence of PFOS and/or PFAS in all groundwater samples collected throughout the Site may be attributable to former on-Site automotive dismantling/wrecking or the presence of historic fill.

Two CVOCs (cis-1,2 DCE and vinyl chloride) were detected in exceedance of the NYSDOH Soil Vapor Intrusion Matrix monitoring and/or mitigation threshold values at one sample location (LSV-4). Petroleum-related VOCs were also detected in soil vapor at the Site. Petroleum-related VOCs were not detected at concentrations exceeding NYSDEC threshold values in soil or groundwater at the site, but concentrations in soil vapor may be attributable to releases associated with historical Site operations. As CVOCs were not detected at concentrations exceeding NYSDEC threshold values in soil or groundwater at the site, the presence of elevated concentrations of these compounds in one soil vapor sample is attributed to an isolated unknown source unrelated to the presence of historic fill.

7.0 QUALITATIVE HUMAN AND FISH/WILDLIFE EXPOSURE ASSESSMENT

A qualitative human health exposure risk assessment was evaluated performed for both current and future Site and off-Site conditions, in accordance with the May 2010 NYSDEC Final DER-10 Technical Guidance for Site Investigation and Remediation. The assessment includes an evaluation of potential sources and migration pathways of Site contamination, potential receptors, exposure media, and receptor intake routes and exposure pathways.

In addition to the human health exposure assessment, NYSDEC DER-10 requires an on-Site and off-Site Fish and Wildlife Resources Impact Analysis (FWRIA) if certain criteria are met. No significant natural communities, rare plants or animals, or regulated wetlands are located within close proximity to the Site. Based on the requirements stipulated in Section 3.10 and Appendix 3C of DER-10, completion of an FWRIA was not required for the Site.

7.1 Current Conditions

The Site is located on the south side of Flatlands Avenue in Brooklyn, New York, and is designated as New York City Tax Block 4434, Lot 10. The Site consists of a vacant gravel lot used for surplus parking for the CCC building located to the west of the Site.

The Site is bound to the north by Flatlands Avenue followed by a gasoline filling station, automotive repair facility, carwash, and Sheffield Avenue. The Site is bound to the east by Pennsylvania Avenue followed by a vacant landscaped lot and the northern courtyard of a twenty-story residential building (part of the Starrett City Complex), to the south by a twelve-story multi-family residential building, and to the west by the western extents of the gravel lot currently used for surplus parking by the CCC. Sensitive receptors (as defined in DER-10) located with a half-mile of the Site include the schools and childcare facilities listed in Section 2.3.

7.2 Proposed Conditions

The proposed future use of the Site consists of construction of two mixed-use commercial/residential towers with a single cellar level.

7.3 Summary of Environmental Conditions

SVOCs, metals, pesticides, and PCBs were detected at concentrations above the NYSDEC Unrestricted Use SCOs, Restricted-Residential RUSCOs, and/or Protection of Groundwater SCOs in soil samples collected from the historic fill layer. PFAS were also detected at concentrations above the NYSDEC Unrestricted Use Guidance Values. The compound distribution and contaminant concentrations detected are typical of fill material in New York City; however, some compounds present may also be the result of historical site operations. The entire site is covered by a gravel layer and access to the Site is limited by fencing.

SVOCs and metals were detected in groundwater at concentrations above the NYSDEC SGVs. Exceedances of SVOCs and total metals are attributable to sediment entrainment of historic fill in the samples collected; detections of dissolved metals are attributed to naturally occurring background concentrations (iron, manganese, and sodium) and the quality of fill in contact with groundwater at that location (barium). PFOS and/or PFOA was detected above the guidance screening level of 10 ng/L in all nine of the groundwater samples collected throughout the Site, which may be attributable to former on-site automotive dismantling/wrecking across the Site footprint from 1967 to 1987.

Soil vapor sample analytical results revealed CVOCs at concentrations above the NYSDOH guidance levels which would trigger monitoring or mitigation if detected as part of a soil vapor intrusion evaluation; in addition, petroleum-related VOCs were detected for which there are no NYSDOH guidance values. Petroleum-related VOCs were not detected at concentrations exceeding NYSDEC threshold values in soil or groundwater at the site, but concentrations in soil vapor may be attributable to releases associated with historical Site operations. As CVOCs were not detected at concentrations exceeding NYSDEC threshold values in soil or groundwater at the site, the presence of elevated concentrations of these compounds in one soil vapor sample is attributed to an isolated unknown source.

7.4 Conceptual Site Model

A conceptual site model (CSM) was developed based on the findings of the RI and previous investigations to produce a simplified framework for understanding the distribution of impacted materials, potential migration pathways, and potentially complete exposure pathways.

7.4.1 Potential Sources of Contamination

Potential sources of contamination have been identified and include past uses of the Site and contaminated historic fill material. Historical on-Site use as a gasoline filling station and for automotive dismantling/wrecking are potential sources of SVOCs, metals, and PFAS in soil and of PFAS in groundwater. The Site-wide presence of historic fill as a result of filling with ash and waste from the city solid waste incinerator, as well as additional material of unknown origin, has been established as a source of SVOCs, metals, pesticides, PCBs, and potentially PFAS in soil. Historical on- and off-Site operations for automotive dismantling/wrecking and junkyards is a potential source of PFAS in groundwater. Detections of total metals in groundwater are attributable to sediment entrainment of historic fill in the samples collected; detections of dissolved metals are attributed to naturally occurring background concentrations and the quality of fill in contact with groundwater at that location.

As VOCs were not detected in exceedance of NYSDEC SCOs or SGVs in any soil or groundwater samples collected, the presence of CVOCs and petroleum-related VOCs in soil vapor are attributed to an isolated unknown source.

7.4.2 Exposure Media

Impacted media include soil, groundwater, and soil vapor. Analytical data indicates that historic fill material contains SVOCs, pesticides, PCBs and metals at concentrations greater than the Unrestricted Use SCOs, Restricted-Residential RUSCOs, and/or the Protection of Groundwater SCOs and PFAS at concentrations greater than the Unrestricted Use Guidance Values. Groundwater contains SVOCs and metals above the SGVs and PFAS above the NYSDEC guidance thresholds. Soil vapor at the Site is impacted with low levels of petroleum-related VOCs and CVOCs (cis-1,2 DCE and vinyl chloride) which were detected at concentrations above the NYSDOH guidance levels which would trigger monitoring or mitigation if detected as part of a soil vapor intrusion evaluation.

7.4.3 Receptor Populations

The Site currently consists of a vacant gravel-covered lot used for vehicle parking. The Site is enclosed in fencing and access is restricted to personnel completing site investigations and other authorized guests. During Site development and remediation, human receptors will be limited to construction and remediation workers, authorized guests, and design team members visiting the Site; exposures to properties adjacent to the Site as described below will be mitigated by the implementation of a health and safety plan (HASP), a Community Air Monitoring Plan (CAMP), and a Soil/Materials Management Plan (SMMP) discussed herein. Under future conditions, receptors will include the new building tenants, visitors to the building, and building management/maintenance employees.

7.5 Potential Exposure Pathways – On-Site

7.5.1 Current Conditions

Human exposure to contaminated soil is currently limited by the gravel layer covering the Site; therefore, exposure to contaminated soil in the near surface is only possible only during a breach of the gravel layer, to individuals with access to the Site, including personnel completing site investigations, and other authorized guests. There could be a complete exposure pathway for dermal and ingestion exposure if the authorized personnel were not adhering to the HASP during work that allows contact with soil beneath the gravel.

Due to the depth of groundwater, and the fact that groundwater in New York City is not used as a potable water source, there is no complete exposure pathway to groundwater under current Site conditions. However, there is a potential exposure pathway through dermal absorption, inhalation, and ingestion during investigative groundwater sampling, but it is controlled through the implementation of the HASP during sampling.

As there are no buildings present on Site, there are no current on-Site exposure pathways for soil vapor intrusion. Impacted soil vapor may migrate vertically through the subsurface and dissipate and dilute with ambient air; as such, there is no potential exposure pathway under current conditions. Any remaining potential exposure pathways through dermal absorption and inhalation is controlled through the implementation of a HASP during ground-intrusive work.

In localized areas where human exposure to contaminated soil, groundwater, and soil vapor is possible during soil, groundwater and soil vapor sampling, the potential exposure pathways for dermal absorption, inhalation and ingestion are controlled through implementation of a HASP.

7.5.2 Construction/Remediation Conditions

Construction and remediation may result in potential exposures to Site contaminants in the absence of a HASP, CAMP, and a SMMP. Construction and remedial activities will likely include excavation and off-Site disposal of contaminated soil, dewatering of contaminated groundwater, and construction of foundation components. In the absence of a HASP, CAMP, and SMMP, this scenario presents the potential for exposure of soil, groundwater, and soil vapor contaminants to construction and remediation workers via dermal absorption, ingestion, and inhalation of vapors and particulate matter. However, this exposure pathway will be mitigated through the implementation of the HASP, CAMP, and SMMP, including vapor and dust suppression techniques to avoid the creation of the exposure pathway in the first place.

7.5.3 Proposed Future Conditions

The proposed future use of the Site consists of construction of two mixed-use commercial/residential towers with a combined cellar. The residential portions of the buildings will be comprised of 100% income-based affordable housing, while the commercial portions will be used for a neighborhood community facility and/or retail space. The cellar will consist of below grade parking, mechanical rooms, and storage. New development will incorporate engineering and institutional controls which will prevent human exposure to impacted soil, groundwater, and soil vapor following implementation of the remedy.

There is no pathway for ingesting groundwater contaminants, as the Site and surrounding areas obtain their drinking water supply from surface water reservoirs located upstate and not from groundwater.

Based on results of the May 2018 Phase II EIR and this RIR, and the proposed development plan, it is anticipated that a Track 2 restricted residential cleanup will be achieved; institutional controls and/or engineering controls will be included in the remedy to reach a Track 2 restricted residential cleanup and to prevent exposure to any remaining residual contamination post-remediation.

7.6 Potential Exposure Pathways – Off-Site

Soil vapor may migrate off-Site vertically through the subsurface and dissipate and dilute with ambient air under current conditions or during Site construction/remediation.

The potential off-Site migration of Site soil contaminants is not expected to result in a complete exposure pathway for current, construction and remediation, or future conditions for the following reasons:

- The Site is located in an urban area and predominantly covered with a continuous gravel layer.
- During Site redevelopment, remediation, and construction, the following protective measures will be implemented:
    - A Site-specific HASP, CAMP, and SMMP will be implemented to protect on-Site personnel and to monitor the perimeter of the site to mitigate off-Site migration of particulates and VOCs during construction.
    - Air monitoring will be conducted for particulates (i.e., dust) and VOCs during intrusive activities as part of a CAMP. Dust and/or vapor suppression techniques will be employed to limit potential for off-Site migration of soil and vapors, including the use of water to mitigate dust.
    - Vehicle tires and undercarriages will be washed as necessary prior to leaving the Site to prevent tracking material off-Site.
    - A soil erosion/sediment control plan will be implemented during construction to control off-Site migration of soil.

7.7 Evaluation of Human Health Exposure

Based upon the CSM and the review of environmental data, partial on-Site exposure pathways appear to be present under current conditions, and in the absence of institutional and engineering controls, complete on-Site exposure pathways could potentially exist in construction/remediation and future conditions.

Complete exposure pathways have the following five elements: 1) a contaminant source; 2) a contaminant release and transport mechanism; 3) a point of exposure; 4) a route of exposure; and 5) a receptor population.

7.7.1 Current Conditions

Contaminant sources include contaminated historic fill with elevated levels of SVOCs, metals, pesticides, PCBs, and PFAS; groundwater with elevated levels of dissolved metals and PFAS; and, soil vapor with elevated levels of VOCs.

Contaminant release and transport mechanisms include contaminated soil transported as dust (dermal, ingestion, inhalation) and existing soil vapor contaminants (inhalation). Under current conditions, the likelihood of human exposure is limited, as 1) site access is restricted to bus company employees and other authorized personnel; 2) a continuous gravel layer covers the site preventing access to underlying soil; 3) the Site is an open-air vacant lot and impacted soil vapor that migrates vertically would be diluted with ambient air; and; 4) the Site is not a source of drinking water.

7.7.2 Construction/Remediation Activities

During remedial construction, points of exposure include disturbed and exposed soil during excavation, dust and organic vapors generated during Site work and contaminated groundwater that will be encountered during deeper excavations and/or dewatering. Routes of exposure include ingestion and dermal absorption of contaminated soil and groundwater and inhalation of dust and organic vapors arising from contaminated soil. The receptor population includes construction and remediation workers. Potential exposures to the properties adjacent to the site as described in Section 7.4.3 will be mitigated by the implementation of a HASP, CAMP, and SMMP as discussed below.

The potential for completed exposure pathway is present since all five elements (1- a contaminant source, 2- a contaminant release and transport mechanism, 3- a point of exposure, 4- a route of exposure, and 5- a receptor population) exist; however, the risk will be minimized by limiting Site access and through implementation of appropriate health and safety measures in the HASP and CAMP, such as work zone and perimeter air monitoring for organic vapors and dust, using vapor and dust suppression measures, maintaining Site security, and wearing the appropriate personal protective equipment (PPE), and through implementation of SMMP measures including cleaning truck undercarriages before they leave the Site to prevent off-Site soil tracking.

7.7.3 Proposed Future Conditions

Remedial construction is expected to remove on-Site contaminants located within the proposed basement footprint. After construction, residual contaminants will remain on-Site beneath the cover system. Contaminant release and transport mechanisms include penetrations through the cover system. If protective measures and remediation are not implemented, points of exposure include potential cracks in the cover system (such as the proposed building foundation) and exposure during any future soil-disturbing activities. Routes of exposure may include inhalation of vapors or dust during any future soil-disturbing work. The receptor population includes the building tenants, visitors to the building, and building management/maintenance employees. The possible routes of exposure can be avoided or mitigated by construction and maintenance of engineering controls and implementation of a Site Management Plan.

7.7.4 Human Health Exposure Assessment Conclusions

1. Under current conditions, there is a marginal risk for exposure only if there is a breach of the gravel layer. The primary exposure pathways are for dermal contact, ingestion and inhalation of soil or soil vapor by authorized site personnel in instances where the integrity of the gravel layer is compromised or during site investigation. Exposure to groundwater is limited to those completing investigation activities. The exposure risks can be avoided or minimized by limiting Site access and implementing the appropriate health and safety and vapor and dust suppression measures outlined in a Site-specific HASP and CAMP during ground-intrusive activities.
2. In the absence of protective measures, there is a moderate risk of exposure during the construction and remediation activities. The primary exposure pathways are:
    a. Dermal contact, ingestion and inhalation of contaminated soil, groundwater, or soil vapor by Site visitors and construction and remediation workers.
    b. Dermal contact, ingestion and inhalation of soil (dust) and inhalation of soil vapor by the community in the vicinity of the Site.

These exposure pathways can be avoided or minimized by performing community air monitoring, by implementing soil management measures, by following the appropriate health and safety plans, implementing vapor and dust suppression techniques, and using Site security to control access.

3. A complete exposure pathway is possible for the migration of Site contaminants to off-Site human receptors during the remedial construction phase. During this phase, Site access will be limited to authorized personnel and workers and protective measures will be used during construction to prevent completion of this pathway, including following a Site-specific HASP and implementation of a CAMP and SMMP.
4. The existence of a complete exposure pathway for Site contaminants to human receptors during proposed future conditions is unlikely, as on-Site sources of contamination will be excavated and transported for off-Site and engineering and institutional controls will be incorporated into the redevelopment. Regional groundwater is not used as a potable water source in this part of New York City.

8.0 NATURE AND EXTENT OF CONTAMINATION

This section evaluates the nature and extent of soil, groundwater and soil vapor contamination. The nature and extent of the contamination is derived from a combination of field observations, historical analytical data from the 2018 Phase II EIR discussed in Section 4.5, and analytical data from the 2021 RI that was discussed in Section 6.6.

8.1 Soil Contamination

During environmental investigations completed by Langan in 2018 and 2021, an ash and historic fill layer consisting of fine to coarse sand with varying proportions of ash, silt and gravel and miscellaneous debris, including brick, wood, asphalt, glass, concrete, and metal extending from surface grade to between 14 and 30 feet bgs was observed. Thirty-three soil samples were collected from the ash/historic fill layer between 0 and 22.5 feet bgs during the 2018 and 2021 investigations.

The VOC acetone was detected in exceedance of the Unrestricted Use SCO and Protection of Groundwater SCO. Acetone is a common laboratory artifact and is likely not associated with historical site uses. No other VOCs were detected above the Unrestricted Use SCOs, Restricted-Residential RUSCOs, or Protection of Groundwater SCOs in any samples collected.

SVOCs commonly associated with the presence of historic fill material including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene, were detected from 0 to 2 and 10 to 14 feet bgs in six of 33 fill samples collected for SVOC analysis throughout the Site footprint at concentrations exceeding the Unrestricted Use SCOs, Restricted-Residential RUSCOs, and/or Protection of Groundwater SCOs. SVOCs benzo(k)fluoranthene and chrysene were also detected above the Unrestricted Use SCOs and/or Protection of Groundwater SCOs in four fill samples collected from 0 to 2 to and 12 to 14 feet bgs.

Metals including arsenic, barium, cadmium, trivalent chromium, copper, lead, mercury, nickel, selenium, silver, and/or zinc were detected from 0 to 22.5 feet bgs in all soil samples collected for metals analysis throughout the Site footprint at concentrations exceeding Unrestricted Use SCOs, and/or Protection of Groundwater SCOs. Barium, cadmium, copper, lead, and mercury were also detected above the Restricted-Residential RUSCOs from 0 to 20 feet bgs in 16 of the 33 soil samples collected for metals analysis.

Pesticides including 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and dieldrin were detected from 0 to 22.5 feet bgs at concentrations exceeding the Unrestricted Use SCOs in 17 of 33 fill samples collected for pesticides analysis. Total PCBs were detected from 0 to 16 feet bgs at concentrations exceeding the Unrestricted Use SCOs and/or Protection of Groundwater SCOs in three of 33 fill samples collected for PCB analysis and exceeding the Restricted-Residential RUSCOs in one sample.

PFAS compounds including PFOS and/or PFOA were detected from 0 to 12 feet bgs at concentrations exceeding the Unrestricted Use Guidance Values in seven of the 23 soil samples collected for which it was analyzed during the 2021 RI. PFAS was not analyzed for samples collected during the 2018 Phase II EI.

Elevated concentrations of SVOCs, metals, pesticides, PCBs, and PFAS in fill material are attributed to fill material from the city solid waste incinerator and fill of unknown origin; the presence of SVOCs, metals, and PFAS may also be attributable to historical automotive dismantling operations.

8.2 Groundwater Contamination

Groundwater was encountered between 12 and 17.44 feet below ground surface and at depths corresponding to between el 2.27 and 2.24 NAVD88 during the RI. Nine monitoring wells were sampled during the 2021 RI, including one well that was previously installed and sampled during the 2018 Phase II EI.

SVOCs were not detected above the NYSDEC SGVs in any groundwater samples collected during the 2021 RI; however, benzo(a)anthracene and benzo(a)pyrene were detected at concentrations exceeding the SGVs in the groundwater sample collected from LMW-5 during the 2018 Phase II EI. The elevated concentrations of PAHs detected in groundwater in 2018 are attributed to sediment entrainment of fill material of unknown origin in the sample and are not indicative of any discrete releases to the subsurface. PAHs in soil are not considered to be an ongoing source of groundwater contamination.

Total metals including lead, barium, iron, manganese, and/or sodium were detected in groundwater in exceedance of the SGVs in all eight monitoring wells. Total lead was detected in LMW-5 during the 2018 Phase II EI and was not identified in samples collected during the 2021 RI. Dissolved lead was not detected above the SGVs during the 2018 Phase II EI and, as such, the detection of total lead is attributed to sediment entrainment in the sample. Elevated concentrations of barium in soil are present throughout the Site footprint; however, total and dissolved barium were detected above the SGV in only one well, LMW-12, during the 2021 RI. The detection of barium in groundwater is attributed to a combination of sediment entrainment in the sample and the quality of fill in contact with groundwater at that location. Based on the isolation detection of total and dissolved barium in groundwater, barium concentrations in soil are not considered to be an ongoing source of groundwater contamination. Other metals detected in exceedance of NYSDEC SGVs (total and/or dissolved iron, manganese, and sodium) were identified throughout the Site footprint and are attributed to a combination of sediment entrainment in the sample and naturally occurring background concentrations.

PFOS and/or PFOA was detected above the guidance screening level of 10 ng/L in all eight monitoring wells throughout the Site footprint. The presence of PFOS and PFOA in groundwater may be attributable to former on-Site automotive dismantling/wrecking across the Site footprint from 1967 to 1987.

Groundwater sample analytical results did not identify the presence of VOCs, pesticides, herbicides, or PCBs at concentrations above the SGVs in any samples for which it was analyzed.

8.3 Soil Vapor Contamination

Eight soil vapor samples were collected during the 2021 RI. Analytical results revealed the CVOCs cis-1,2 DCE and vinyl chloride at concentrations which would be above the monitoring and/or mitigation threshold according to NYSDOH Soil Vapor Intrusion Guidance Matrix A and B if detected as part of a soil vapor intrusion evaluation in one sample collected from the central portion of the site. Soil vapor sample analytical results also identified low concentrations of petroleum-related VOCs at all sample locations throughout the site footprint.

Petroleum-related VOCs were not detected at concentrations exceeding NYSDEC threshold values in soil or groundwater at the site, but concentrations in soil vapor may be attributable to releases associated with historical Site operations. As CVOCs were not detected at concentrations exceeding NYSDEC threshold values in soil or groundwater at the site, the presence of elevated concentrations of these compounds in one soil vapor sample is attributed to an isolated unknown source.

9.0 CONCLUSIONS

Stratigraphy: A historic fill layer as deep as 30 feet is generally underlain by a native sand layer. Bedrock was not encountered in any of the soil borings advanced during the 2018 Phase II EI or this RI.

Hydrogeology: Groundwater was encountered between el 2.04 to el 2.60 feet NAVD88 (between 12.13 and 17.44 feet below ground surface) during the RI. Based on area topography, observed water level measurements, and the proximity of the Site to Fresh Creek, groundwater flow is to the south toward Fresh Creek and Jamaica Bay.

Historic Fill Quality: Up to 30 feet of fill material was identified below ground surface. Contaminants identified within the fill material include SVOCs, metals, pesticides, PCBs, and PFAS (PFOA and PFOS) which were detected at concentrations above Unrestricted Use SCOs, Restricted-Residential RUSCOs, and/or Protection of Groundwater SCOs within this layer. Elevated concentrations of SVOCs, metals, pesticides, PCBs, and PFAs (PFOA and PFOS) in fill material are attributable to fill material imported from the city solid waste incinerator and fill material of unknown origin; detections of SVOCs, metals, and PFAS may also be attributable to historical site operations for automotive dismantling/wrecking.

Groundwater Quality: Elevated concentrations of PAHs and lead in groundwater are likely attributed to sediment entrainment of fill material in the sample. Elevated concentrations of total and dissolved barium in one groundwater sample collected during the 2021 RI is attributed to sediment entrainment of fill material and isolated impacts related to the presence of historic fill. Other metals detected in groundwater above the SGVs (total and/or dissolved iron, manganese, and sodium) are attributed to naturally occurring background concentrations. The presence of PFOA and PFOS in groundwater may be attributable to the presence of historic fill material, as well as the historical Site operations as an automotive dismantling/wrecking facility.

Soil Vapor Quality: Results of the soil vapor sampling identified concentrations of cis-1,2 DCE and vinyl chloride that would require monitoring and/or mitigation per the NYSDOH Soil Vapor Intrusion Matrix guidance values at one sample location. Low levels of petroleum-related VOCs were also identified in this sample and across the Site footprint. Petroleum-related VOCs were not detected at concentrations exceeding NYSDEC threshold values in soil or groundwater at the site, but concentrations in soil vapor may be attributable to releases associated with historical Site operations. As CVOCs were not detected at concentrations exceeding NYSDEC threshold values in soil or groundwater at the site, the presence of elevated concentrations of these compounds in one soil vapor sample is attributed to an isolated unknown source.

Sufficient analytical data were gathered during the RI and previous studies to define the nature and extent of contamination in soil, groundwater and soil vapor to develop a remedy for the Site. The final remedy will be detailed in the forthcoming Remedial Action Work Plan (RAWP) to be prepared in accordance with NYS BCP guidelines. The remedy will need to address contaminated historic fill impacted with SVOCs, metals, pesticides, and PCBs; groundwater impacted with SVOCs and metals; and VOC-impacted soil vapor.

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TABLES

Table 1
Remedial Investigation Report
Sample Summary and Rationale

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290

Boring(s)	Sample ID	Stratigraphy	Sample Depth/ Screened Interval (feet bgs)	Sample Date	Analytical Parameters	Rationale
Soil						
LSB-15A	005_LSB-15A	Ash	0-2	5/8/2018	VOCs, SVOCs, Pesticides, PCBs, Trivalent Chromium, Metals, Hexavalent Chromium, Mercury	AOC-1, AOC-2, and AOC-3 Investigation, Site-Wide Characterization
LSB-15B	006_LSB-15B	Ash	12-14			
LSB-16A	014_LSB-16A	Ash	0-2			
LSB-16A	015_DUP-1	Ash	0-2			
LSB-16B	016_LSB-16B	Ash	14-16			
LSB-17A	007_LSB-17A	Ash	0-2			
LSB-17B	008_LSB-17B	Ash	10-12			
LSB-18A	011_LSB-18A	Ash	0-2			
LSB-18B	012_LSB-18B	Ash	12-14			
LSB-19A	019_LSB-19A	Ash	0-2			
LSB-19B	020_LSB-19B	Ash	10-12			
LSB-20A	009_LSB-20A	Ash	0-2			
LSB-20B	010_LSB-20B	Ash	9-11			
LSB-21A	066_LSB-21A	Fill/Sand	0-2	4/13/2021	VOCs, SVOCs, 1,4-Dioxane, Pesticides, Herbicides, PCBs, Metals, Hexavalent Chromium, Mercury, Cyanide, Emerging Contaminants	AOC-2 and AOC-3 Investigation, Site-Wide Characterization
LSB-21B	067_LSB-21B	Fill/Sand	5-7			
LSB-21C	068_LSB-21C	Fill/Sand	12-14			
LSB-22A	063_LSB-22A	Fill/Sand	0-2			
LSB-22B	064_LSB-22B	Ash	4-6			
LSB-22C	065_LSB-22C	Fill/Sand	13-15			
LSB-23A	069_LSB-23A	Fill/Sand	0-2			
LSB-23B	070_LSB-23B	Ash	8-10			
LSB-23C	071_LSB-23C	Fill/Sand	18-20			
LSB-24A	082_LSB-24A	Fill/Sand	0-2	4/15/2021		
LSB-24B	083_LSB-24B	Ash	3-5			
LSB-24C	084_LSB-24C	Fill/Sand	13-15			
LSB-25A	074_LSB-25A	Fill/Sand	0-2	4/13/2021		
LSB-25B	075_LSB-25B	Fill/Sand	12-14			
LSB-25C	076_LSB-25C	Fill/Sand	17-19			
LSB-26A	072_LSB-26A	Fill/Sand	0-2			
LSB-26B	073_LSB-26B	Fill/Sand	10-12			
LSB-26C	081_LSB-26C	Fill/Sand	20.5-22.5	4/14/2021		
LSB-27A	085_LSB-27A	Fill/Sand	0-2	4/15/2021		
LSB-27A	086_DUP-4	Fill/Sand	0-2			
LSB-27B	087_LSB-27B	Fill/Sand	7-9			
LSB-27C	088_LSB-27C	Fill/Sand	13-15			
Groundwater						
LMW-5	053_LMW-5	-	10-20	5/14/2018	VOCs, SVOCs, Pesticides, PCBs, Trivalent Chromium, Metals (Total & Dissolved), Hexavalent Chromium, Mercury (Total & Dissolved),	AOC-1, AOC-2, and AOC-3 Investigation, Site-Wide Characterization
	054_DUP-3	-	10-20			
	105_LMW-5	-	10-20	4/26/2021	VOCs, SVOCs, 1,4-Dioxane, Pesticides, Herbicides, PCBs, Trivalent Chromium, Metals (Total & Dissolved) Hexavalent Chromium, Mercury (Total & Dissolved), Cyanide, Emerging Contaminants	
LMW-7	102_LMW-7	-	10-20			AOC-2 and AOC-3 Investigation, Site-Wide Characterization
	103_DUP-1	-	10-20			
LMW-8	101_LMW-8	-	10-20			
LMW-9	106_LMW-9	-	15-25			
LMW-10	110_LMW-10	-	12.5-22.5			
LMW-11	109_LMW-11	-	15-25			
LMW-12	108_LMW-12	-	15-30			
LMW-13	111_LMW-13	-	12-22			
LMW-14	107_LMW-14	-	10-25			AOC-1, AOC-2, and AOC-3 Investigation, Site-Wide Characterization
Soil Vapor						
LSV-2	092_LSV-2	-	10.5	4/19/2021	VOCs	AOC-1, AOC-2, and AOC-3 Investigation, Site-Wide Characterization
LSV-2	100_DUP-1	-	10.5			
AMBIENT-1	099_AMBIENT-1	-	-			AOC-2 and AOC-3 Investigation, Site-Wide Characterization
LSV-1	091_LSV-1	-	10.5			
LSV-3	093_LSV-3	-	14			
LSV-4	094_LSV-4	-	12.5			
LSV-5	095_LSV-5	-	11.5			
LSV-6	096_LSV-6	-	14			
LSV-7	097_LSV-7	-	16			
LSV-8	098_LSV-8	-	12.5			
Quality Assurance/Quality Control						
Trip Blank	004_TB-1	-	-	5/8/2018	VOCs	
Field Blank	013_FB-1	-	-		VOCs, SVOCs, Pesticides, PCBs, Trivalent Chromium, Metals (Total & Dissolved), Hexavalent Chromium, Mercury (Total & Dissolved)	
Trip Blank	056_TB-5	-	-	5/14/2018	VOCs	
Field Blank	057_FB-2	-	-		VOCs, SVOCs, Pesticides, PCBs, Trivalent Chromium, Metals (Total & Dissolved), Hexavalent Chromium, Mercury (Total & Dissolved),	
Field Blank	077_FB-3	-	-	4/13/2021	1,4-Dioxane, Emerging Contaminants	
Trip Blank	078_TB-7	-	-		VOCs	
Field Blank	079_FB-4	-	-	4/14/2021	VOCs, SVOCs, 1,4-Dioxane, Pesticides, Herbicides, PCBs, Metals, Hexavalent Chromium, Mercury, Emerging Contaminants	
Trip Blank	080_TB-8	-	-		VOCs	
Field Blank	089_FB-5	-	-	4/15/2021	1,4-Dioxane, Emerging Contaminants	
Trip Blank	090_TB-9	-	-		VOCs	
Field Blank	104_FB-1	-	-	4/26/2021	VOCs, SVOCs, 1,4-Dioxane, Pesticides, Herbicides, PCBs, Trivalent Chromium, Metals (Total & Dissolved), Hexavalent Chromium,, Mercury (Total & Dissolved), Cyanide, Emerging Contaminants	
Trip Blank	112_TB-1	-	-		VOCs	

Table 2
Remedial Investigation Report
Groundwater Elevation Data

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Sample Location	Casing Elevation (feet NAVD88)	Groundwater Elevation (feet NAVD88)	
		4/19/2021	4/26/2021
LMW-5	16.20	2.82	2.6
LMW-7	14.27	---	2.27
LMW-8	18.44	2.36	2.04
LMW-9	18.91	2.45	2.14
LMW-10	15.10	2.51	2.16
LMW-11	17.71	2.59	2.34
LMW-12	19.68	2.54	2.24
LMW-13	16.27	2.49	2.17
LMW-14	14.52	2.67	2.39

Notes:
--- = well was not accessible at the time of data collection

Table 3A
Remedial Investigation Report
Soil Sample Analytical Results

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs) Stratigraphy	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	NYSDEC Part 375 Restricted Use Restricted-Residential SCOs	LSB-15A 005_LSB-15A 18E0411-05 5/8/2018 0-2 Ash	LSB-15B 006_LSB-15B 18E0411-06 5/8/2018 12-14 Ash	LSB-16A 014_LSB-16A 18E0411-14 5/8/2018 0-2 Ash	LSB-16A 015_DUP-1 18E0411-15 5/8/2018 0-2 Ash	LSB-16B 016_LSB-16B 18E0411-16 5/8/2018 14-16 Ash	LSB-17A 007_LSB-17A 18E0411-07 5/8/2018 0-2 Ash	LSB-17B 008_LSB-17B 18E0411-08 5/8/2018 10-12 Ash	LSB-18A 011_LSB-18A 18E0411-11 5/8/2018 0-2 Ash	LSB-18B 012_LSB-18B 18E0411-12 5/8/2018 12-14 Ash	LSB-19A 019_LSB-19A 18E0411-19 5/8/2018 0-2 Ash	LSB-19B 020_LSB-19B 18E0411-20 5/8/2018 10-12 Ash	LSB-20A 009_LSB-20A 18E0411-09 5/8/2018 0-2 Ash	LSB-20B 010_LSB-20B 18E0411-10 5/8/2018 9-11 Ash	LSB-21A 066_LSB-21A 21D0604-04 4/13/2021 0-2 Fill/Sand	LSB-21B 067_LSB-21B 21D0604-05 4/13/2021 5-7 Fill/Sand	LSB-21C 068_LSB-21C 21D0604-06 4/13/2021 12-14 Fill/Sand	LSB-22A 063_LSB-22A 21D0604-01 4/13/2021 0-2 Fill/Sand	LSB-22B 064_LSB-22B 21D0604-02 4/13/2021 4-6 Ash
Volatile Organic Compounds (mg/kg)																					
1,1,1,2-Tetrachloroethane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,1,1-Trichloroethane	0.68	0.68	100	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,1,2,2-Tetrachloroethane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 UJ	0.0031 UJ	0.0024 UJ	0.0019 UJ	0.0023 UJ
1,1,2-Trichloroethane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,1-Dichloroethane	0.27	0.27	26	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,1-Dichloroethene	0.33	0.33	100	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 UJ	0.0031 UJ	0.0024 UJ	0.0019 UJ	0.0023 UJ
1,1-Dichloropropene	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,2,3-Trichlorobenzene	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,2,3-Trichloropropane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,2,4-Trichlorobenzene	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,2,4-Trimethylbenzene	3.6	3.6	52	0.0024 UJ	0.003 UJ	0.0031 UJ	0.0026 UJ	0.0022 UJ	0.0025 UJ	0.0046 UJ	0.0025 UJ	0.0032 UJ	0.0028 UJ	0.0026 UJ	0.0026 UJ	0.0034 UJ	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0068
1,2-Dibromo-3-Chloropropane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,2-Dibromoethane (Ethylene Dibromide)	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,2-Dichlorobenzene	1.1	1.1	100	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,2-Dichloroethane	0.02	0.02	3.1	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,2-Dichloropropane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	8.4	52	0.0024 UJ	0.003 UJ	0.0031 UJ	0.0026 UJ	0.0022 UJ	0.0025 UJ	0.0046 UJ	0.0025 UJ	0.0032 UJ	0.0028 UJ	0.0026 UJ	0.0026 UJ	0.0034 UJ	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0036 J
1,3-Dichlorobenzene	2.4	2.4	49	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,3-Dichloropropane	~	~	~	0.0024 UJ	0.003 UJ	0.0031 UJ	0.0026 UJ	0.0022 UJ	0.0025 UJ	0.0046 UJ	0.0025 UJ	0.0032 UJ	0.0028 UJ	0.0026 UJ	0.0026 UJ	0.0034 UJ	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,4-Dichlorobenzene	1.8	1.8	13	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
1,4-Dioxane (P-Dioxane)	0.1	0.1	13	0.049 UJ	0.06 UJ	0.061 UJ	0.052 UJ	0.045 UJ	0.051 UJ	0.093 UJ	0.049 UJ	0.065 UJ	0.057 UJ	0.052 UJ	0.051 UJ	0.068 UJ	0.042 U	0.062 U	0.047 U	0.039 U	0.046 U
2,2-Dichloropropane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 UJ	0.0031 UJ	0.0024 UJ	0.0019 UJ	0.0023 UJ
2-Chlorotoluene	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
2-Hexanone (MBK)	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0024 J
4-Chlorotoluene	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Acetone	0.05	0.05	100	0.0078 J	0.043 J	0.013 J	0.0052 UJ	0.033 J	0.0051 UJ	**0.08** J	0.0049 UJ	0.029 J	0.011 J	0.04 J	0.014 J	0.0096 J	0.0042 UJ	0.0062 UJ	0.029 J	0.0077 U	0.05 J
Acrolein	~	~	~	0.0049 U	0.006 U	0.0061 U	0.0052 U	0.0045 U	0.0051 U	0.0093 U	0.0049 U	0.0065 U	0.0057 U	0.0052 U	0.0051 U	0.0068 U	0.0042 UJ	0.0062 UJ	0.0047 UJ	0.0039 UJ	0.0046 UJ
Acrylonitrile	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Benzene	0.06	0.06	4.8	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Bromobenzene	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Bromochloromethane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Bromodichloromethane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Bromoform	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Bromomethane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Carbon Disulfide	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0045 J	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Carbon Tetrachloride	0.76	0.76	2.4	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Chlorobenzene	1.1	1.1	100	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Chloroethane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 UJ	0.0031 UJ	0.0024 UJ	0.0019 UJ	0.0023 UJ
Chloroform	0.37	0.37	49	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0042 U	0.0062 U	0.0047 U	0.0039 U	0.0046 U
Chloromethane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 UJ	0.0031 UJ	0.0024 UJ	0.0019 UJ	0.0023 UJ
Cis-1,2-Dichloroethene	0.25	0.25	100	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Cis-1,3-Dichloropropene	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Cyclohexane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Dibromochloromethane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Dibromomethane	~	~	~	0.0024 UJ	0.003 UJ	0.0031 UJ	0.0026 UJ	0.0022 UJ	0.0025 UJ	0.0046 UJ	0.0025 UJ	0.0032 UJ	0.0028 UJ	0.0026 UJ	0.0026 UJ	0.0034 UJ	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Dichlorodifluoromethane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Ethylbenzene	1	1	41	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Hexachlorobutadiene	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Isopropylbenzene (Cumene)	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
M,P-Xylene	~	~	~	0.0049 U	0.006 U	0.0061 U	0.0052 U	0.0045 U	0.0051 U	0.0093 U	0.0049 U	0.0065 U	0.0057 U	0.0052 U	0.0051 U	0.0068 U	0.0042 U	0.0062 U	0.0047 U	0.0039 U	0.0046 U
Methyl Acetate	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Methyl Ethyl Ketone (2-Butanone)	0.12	0.12	100	0.0024 U	0.0074	0.0031 U	0.0026 U	0.009	0.0025 U	0.013	0.0025 U	0.0089	0.0028 U	0.008	0.0026 U	0.0034 U	0.0021 UJ	0.0031 UJ	0.003 J	0.0019 UJ	0.018 J
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Methylcyclohexane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Methylene Chloride	0.05	0.05	100	0.0094 J	0.006 UJ	0.0076 J	0.0052 UJ	0.005 J	0.0051 UJ	0.013 J	0.0049 UJ	0.0065 UJ	0.0062 J	0.0052 UJ	0.0075 J	0.0068 UJ	0.0051 J	0.0062 U	0.0047 U	0.0048 J	0.0046 U
n-Butylbenzene	12	12	100	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
n-Propylbenzene	3.9	3.9	100	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
o-Xylene (1,2-Dimethylbenzene)	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
p-Cymene (p-Isopropyltoluene)	~	~	~	0.0024 UJ	0.003 UJ	0.0031 UJ	0.0026 UJ	0.0022 UJ	0.0025 UJ	0.0046 UJ	0.0025 UJ	0.0032 UJ	0.0028 UJ	0.0026 UJ	0.0026 UJ	0.0034 UJ	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Sec-Butylbenzene	11	11	100	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Styrene	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
T-Butylbenzene	5.9	5.9	100	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Tert-Butyl Alcohol	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 UJ	0.0031 UJ	0.0024 UJ	0.0019 UJ	0.0023 UJ
Tert-Butyl Methyl Ether	0.93	0.93	100	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Tetrachloroethene (PCE)	1.3	1.3	19	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 UJ	0.0031 UJ	0.0024 UJ	0.0019 UJ	0.0023 UJ
Toluene	0.7	0.7	100	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Total Xylenes	0.26	1.6	100	0.0073 U	0.0089 U	0.0092 U	0.0078 U	0.0067 U	0.0076 U	0.014 U	0.0074 U	0.0097 U	0.0085 U	0.0078 U	0.0077 U	0.01 U	0.0063 U	0.0093 U	0.0071 U	0.0058 U	0.0069 U
Trans-1,2-Dichloroethene	0.19	0.19	100	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Trans-1,3-Dichloropropene	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Trichloroethene (TCE)	0.47	0.47	21	0.0024 UJ	0.003 UJ	0.0031 UJ	0.0026 UJ	0.0022 UJ	0.0025 UJ	0.0046 UJ	0.0025 UJ	0.0032 UJ	0.0028 UJ	0.0026 UJ	0.0026 UJ	0.0034 UJ	0.0021 U	0.0031 U	0.0024 U	0.0019 U	0.0023 U
Trichlorofluoromethane	~	~	~	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 UJ	0.0031 UJ	0.0024 UJ	0.0019 UJ	0.0023 UJ
Vinyl Chloride	0.02	0.02	0.9	0.0024 U	0.003 U	0.0031 U	0.0026 U	0.0022 U	0.0025 U	0.0046 U	0.0025 U	0.0032 U	0.0028 U	0.0026 U	0.0026 U	0.0034 U	0.0021 UJ	0.0031 UJ	0.0024 UJ	0.0019 UJ	0.0023 UJ
Total BTEX	~	~	~	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs	~	~	~	0.0172	0.0504	0.0206	ND	0.047	ND	0.106	ND	0.0424	0.0172	0.048	0.0215	0.0096	0.0051	ND	0.032	0.0048	0.0808

Notes provided on Page 6.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Protection of Groundwater SCOs are underlined.
Concentrations above Restricted Use Restricted-Residential SCOs are shaded.

Table 3A
Remedial Investigation Report
Soil Sample Analytical Results

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Location	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	NYSDEC Part 375 Restricted Use Restricted-Residential SCOs	LSB-15A	LSB-15B	LSB-16A	LSB-16A	LSB-16B	LSB-17A	LSB-17B	LSB-18A	LSB-18B	LSB-19A	LSB-19B	LSB-20A	LSB-20B	LSB-21A	LSB-21B	LSB-21C	LSB-22A	LSB-22B
Sample ID				005_LSB-15A	006_LSB-15B	014_LSB-16A	015_DUP-1	016_LSB-16B	007_LSB-17A	008_LSB-17B	011_LSB-18A	012_LSB-18B	019_LSB-19A	020_LSB-19B	009_LSB-20A	010_LSB-20B	066_LSB-21A	067_LSB-21B	068_LSB-21C	063_LSB-22A	064_LSB-22B
Laboratory ID				18E0411-05	18E0411-06	18E0411-14	18E0411-15	18E0411-16	18E0411-07	18E0411-08	18E0411-11	18E0411-12	18E0411-19	18E0411-20	18E0411-09	18E0411-10	21D0604-04	21D0604-05	21D0604-06	21D0604-01	21D0604-02
Sample Date				5/8/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018	5/8/2018	4/13/2021	4/13/2021	4/13/2021	4/13/2021	4/13/2021
Sample Depth (feet bgs)				0-2	12-14	0-2	0-2	14-16	0-2	10-12	0-2	12-14	0-2	10-12	0-2	9-11	0-2	5-7	12-14	0-2	4-6
Stratigraphy				Ash	Ash	Ash	Ash	Ash	Ash	Ash	Ash	Ash	Ash	Ash	Ash	Ash	Fill/Sand	Fill/Sand	Fill/Sand	Fill/Sand	Ash
Semivolatile Organic Compounds (mg/kg)																					
1,2,4,5-Tetrachlorobenzene	~	~	~	0.0882 U	0.107 U	0.0923 U	0.0917 U	0.0916 U	0.0891 U	0.103 U	0.0888 U	0.0953 U	0.0884 U	0.0933 U	0.0894 U	0.099 U	0.0923 U	0.103 U	0.0969 U	0.0888 U	0.434 U
1,2,4-Trichlorobenzene	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
1,2-Dichlorobenzene	1.1	1.1	100	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
1,2-Diphenylhydrazine	~	~	~	0.0442 UJ	0.0538 UJ	0.0463 UJ	0.0459 UJ	0.0459 UJ	0.0447 UJ	0.0517 UJ	0.0445 UJ	0.0478 UJ	0.0443 UJ	0.0468 UJ	0.0448 UJ	0.0496 UJ	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
1,3-Dichlorobenzene	2.4	2.4	49	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
1,4-Dichlorobenzene	1.8	1.8	13	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
1,4-Dioxane (P-Dioxane)	0.1	0.1	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00971 U	0.00952 U	0.00962 U	0.0098 U	0.0098 U
2,3,4,6-Tetrachlorophenol	~	~	~	0.0882 U	0.107 U	0.0923 U	0.0917 U	0.0916 U	0.0891 U	0.103 U	0.0888 U	0.0953 U	0.0884 U	0.0933 U	0.0894 U	0.099 U	0.0923 U	0.103 U	0.0969 U	0.0888 U	0.434 UJ
2,4,5-Trichlorophenol	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 UJ
2,4,6-Trichlorophenol	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 UJ
2,4-Dichlorophenol	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 UJ
2,4-Dimethylphenol	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 UJ
2,4-Dinitrophenol	~	~	~	0.0882 UJ	0.107 UJ	0.0923 UJ	0.0917 UJ	0.0916 UJ	0.0891 UJ	0.103 UJ	0.0888 UJ	0.0953 UJ	0.0884 UJ	0.0933 UJ	0.0894 UJ	0.099 UJ	0.0923 UJ	0.103 UJ	0.0969 UJ	0.0888 UJ	0.434 UJ
2,4-Dinitrotoluene	~	~	~	0.0442 UJ	0.0538 UJ	0.0463 UJ	0.0459 UJ	0.0459 UJ	0.0447 UJ	0.0517 UJ	0.0445 UJ	0.0478 UJ	0.0443 UJ	0.0468 UJ	0.0448 UJ	0.0496 UJ	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
2,6-Dinitrotoluene	~	~	~	0.0442 UJ	0.0538 UJ	0.0463 UJ	0.0459 UJ	0.0459 UJ	0.0447 UJ	0.0517 UJ	0.0445 UJ	0.0478 UJ	0.0443 UJ	0.0468 UJ	0.0448 UJ	0.0496 UJ	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
2-Chloronaphthalene	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
2-Chlorophenol	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 UJ
2-Methylnaphthalene	~	~	~	0.213 DE	0.423 DE	0.0463 U	0.0459 U	0.0459 U	0.784 DE	0.0517 U	0.0445 U	0.0478 U	0.0608 JDE	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0961 JD	0.0445 U	0.218 U
2-Methylphenol (o-Cresol)	0.33	0.33	100	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 UJ
2-Nitroaniline	~	~	~	0.0882 UJ	0.107 UJ	0.0923 UJ	0.0917 UJ	0.0916 UJ	0.0891 UJ	0.103 UJ	0.0888 UJ	0.0953 UJ	0.0884 UJ	0.0933 UJ	0.0894 UJ	0.099 UJ	0.0923 U	0.103 U	0.0969 U	0.0888 U	0.434 U
2-Nitrophenol	~	~	~	0.0442 UJ	0.0538 UJ	0.0463 UJ	0.0459 UJ	0.0459 UJ	0.0447 UJ	0.0517 UJ	0.0445 UJ	0.0478 UJ	0.0443 UJ	0.0468 UJ	0.0448 UJ	0.0496 UJ	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 UJ
3 & 4 Methylphenol (m&p Cresol)	0.33	0.33	100	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 UJ
3,3'-Dichlorobenzidine	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
3-Nitroaniline	~	~	~	0.0882 UJ	0.107 UJ	0.0923 UJ	0.0917 UJ	0.0916 UJ	0.0891 UJ	0.103 UJ	0.0888 UJ	0.0953 UJ	0.0884 UJ	0.0933 UJ	0.0894 UJ	0.099 UJ	0.0923 U	0.103 U	0.0969 U	0.0888 U	0.434 U
4,6-Dinitro-2-Methylphenol	~	~	~	0.0882 UJ	0.107 UJ	0.0923 UJ	0.0917 UJ	0.0916 UJ	0.0891 UJ	0.103 UJ	0.0888 UJ	0.0953 UJ	0.0884 UJ	0.0933 UJ	0.0894 UJ	0.099 UJ	0.0923 U	0.103 U	0.0969 U	0.0888 U	0.434 UJ
4-Bromophenyl Phenyl Ether	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
4-Chloro-3-Methylphenol	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 UJ
4-Chloroaniline	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
4-Chlorophenyl Phenyl Ether	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
4-Nitroaniline	~	~	~	0.0882 UJ	0.107 UJ	0.0923 UJ	0.0917 UJ	0.0916 UJ	0.0891 UJ	0.103 UJ	0.0888 UJ	0.0953 UJ	0.0884 UJ	0.0933 UJ	0.0894 UJ	0.099 UJ	0.0923 U	0.103 U	0.0969 U	0.0888 U	0.434 U
4-Nitrophenol	~	~	~	0.0882 U	0.107 U	0.0923 U	0.0917 U	0.0916 U	0.0891 U	0.103 U	0.0888 U	0.0953 U	0.0884 U	0.0933 U	0.0894 U	0.099 U	0.0923 U	0.103 U	0.0969 U	0.0888 U	0.434 UJ
Acenaphthene	20	98	100	1.05 DE	0.697 DE	0.0463 U	0.0459 U	0.0459 U	0.779 DE	0.0517 U	0.0445 U	0.0478 U	0.0473 JDE	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.122 D	0.0445 U	0.218 U
Acenaphthylene	100	107	100	0.0909 DE	0.0652 JDE	0.0959 DE	0.0894 JDE	0.0703 JDE	0.39 DE	0.061 JDE	0.0696 JDE	0.0478 U	0.194 DE	0.0977 DE	0.0879 JDE	0.0496 U	0.258 D	0.0518 U	0.0899 JD	0.0468 JD	0.218 U
Acetophenone	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Aniline (Phenylamine, Aminobenzene)	~	~	~	0.177 U	0.215 U	0.185 U	0.184 U	0.183 U	0.178 U	0.206 U	0.178 U	0.191 U	0.177 U	0.187 U	0.179 U	0.198 U	0.185 U	0.207 U	0.194 U	0.178 U	0.87 U
Anthracene	100	1,000	100	2.55 DE	0.957 DE	0.159 DE	0.147 DE	0.0459 U	1.64 DE	0.0517 U	0.13 DE	0.0478 U	0.225 DE	0.2 DE	0.132 DE	0.0496 U	0.39 D	0.0518 U	0.358 D	0.0461 JD	0.218 U
Atrazine	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Benzaldehyde	~	~	~	0.0442 UJ	0.0538 UJ	0.0463 UJ	0.0459 UJ	0.0459 UJ	0.0447 UJ	0.0517 UJ	0.0445 U	0.0478 UJ	0.0443 UJ	0.0468 UJ	0.0448 UJ	0.0496 UJ	0.0649 JD	0.0518 U	0.0486 U	0.0445 U	0.218 U
Benzidine	~	~	~	0.177 U	0.215 U	0.185 U	0.184 U	0.183 U	0.178 U	0.206 U	0.178 U	0.191 U	0.177 U	0.187 U	0.179 U	0.198 U	0.185 UJ	0.207 UJ	0.194 UJ	0.178 UJ	0.87 UJ
Benzo(a)anthracene	1	1	1	**4.12** DE	**1.29** DE	0.522 DE	0.403 DE	0.19 DE	**2.96** DE	0.0517 U	0.555 DE	0.099 DE	0.787 DE	0.699 DE	0.565 DE	0.122 DE	0.885 D	0.0587 JD	0.635 D	0.221 D	0.358 JD
Benzo(a)pyrene	1	22	1	**3.63** DE	**1.32** DE	0.55 DE	0.438 DE	0.247 DE	**2.81** DE	0.0517 U	0.541 DE	0.0952 JDE	0.928 DE	0.781 DE	0.588 DE	0.112 DE	**1.09** D	0.0678 JD	0.662 D	0.285 D	0.413 JD
Benzo(b)fluoranthene	1	1.7	1	**2.85** DE	0.719 DE	0.434 DE	0.366 DE	0.17 DE	**1.57** DE	0.0517 U	0.435 DE	0.08 JDE	0.7 DE	0.536 DE	0.473 DE	0.0973 JDE	**1.15** D	0.0554 JD	0.487 D	0.283 D	0.392 JD
Benzo(g,h,i)Perylene	100	1,000	100	2.3 DE	0.742 DE	0.452 DE	0.335 DE	0.176 DE	1.72 DE	0.0517 U	0.405 DE	0.0685 JDE	0.56 DE	0.376 DE	0.433 DE	0.0878 JDE	0.66 D	0.0518 U	0.359 D	0.193 D	0.368 JD
Benzo(k)fluoranthene	0.8	1.7	3.9	**2.73** DE	**0.818** DE	0.393 DE	0.342 DE	0.178 DE	**1.86** DE	0.0517 U	0.445 DE	0.0754 JDE	0.683 DE	0.563 DE	0.468 DE	0.0933 JDE	**0.908** D	0.0521 JD	0.428 D	0.228 D	0.33 JD
Benzoic Acid	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 UJ	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Benzyl Alcohol	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Benzyl Butyl Phthalate	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0456 JDE	0.0517 U	0.0469 JDE	0.0478 U	0.0813 JDE	0.396 DE	0.0448 U	0.0496 U	0.0605 JD	0.0518 U	0.0486 U	0.0445 U	0.218 U
Biphenyl (Diphenyl)	~	~	~	0.0691 JDE	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.113 DE	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Bis(2-chloroethoxy) methane	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Bis(2-chloroethyl) ether (2-chloroethyl ether)	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Bis(2-chloroisopropyl) ether	~	~	~	0.0442 UJ	0.0538 UJ	0.0463 UJ	0.0459 UJ	0.0459 UJ	0.0447 UJ	0.0517 UJ	0.0445 UJ	0.0478 UJ	0.0443 UJ	0.0468 UJ	0.0448 UJ	0.0496 UJ	0.0463 UJ	0.0518 UJ	0.0486 UJ	0.0445 UJ	0.218 UJ
Bis(2-ethylhexyl) phthalate	~	~	~	0.111 DE	0.238 DE	0.128 DE	11.8 DE	0.116 DE	0.244 DE	1.09 DE	0.0959 DE	0.167 DE	0.3 DE	0.177 DE	0.112 DE	0.0704 JDE	0.0952 D	0.0518 U	0.0486 U	2.65 D	2.45 D
Caprolactam	~	~	~	0.0882 U	0.107 U	0.0923 U	0.0917 U	0.0916 U	0.0891 U	0.103 U	0.0888 U	0.0953 U	0.0884 U	0.0933 U	0.0894 U	0.099 U	0.0923 U	0.103 U	0.0969 U	0.0888 U	0.434 U
Carbazole	~	~	~	0.578 DE	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0627 JDE	0.0517 U	0.0445 U	0.0478 U	0.0488 JDE	0.0529 JDE	0.0448 U	0.0496 U	0.161 D	0.0518 U	0.0486 U	0.0445 U	0.218 U
Chrysene	1	1	3.9	**3.59** DE	**1.51** DE	0.553 DE	0.43 DE	0.173 DE	**3.23** DE	0.0519 JDE	0.557 DE	0.099 DE	0.773 DE	0.674 DE	0.521 DE	0.108 DE	0.914 D	0.0653 JD	0.712 D	0.238 D	0.455 D
Dibenz(a,h)anthracene	0.33	1,000	0.33	**0.729** J	0.234 J	0.12 J	0.106 J	0.0459 UJ	**0.519** J	0.0517 UJ	0.126 DE	0.0478 UJ	0.194 J	0.142 J	0.127 J	0.0496 UJ	0.217 D	0.0518 U	0.126 D	0.0511 JD	0.218 U
Dibenzofuran	7	210	59	0.607 DE	0.0635 JDE	0.0463 U	0.0459 U	0.0459 U	0.0976 DE	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Dibutyl phthalate	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Diethyl phthalate	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Dimethyl phthalate	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Dioctyl phthalate	~	~	~	0.0442 U	0.0538 U	0.0463 U	2.2 DE	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.126 D	0.218 U
Fluoranthene	100	1,000	100	8.52 DE	2.59 DE	0.728 DE	0.576 DE	0.202 DE	5.28 DE	0.0742 JDE	0.925 DE	0.154 DE	1.14 DE	0.859 DE	0.786 DE	0.183 DE	1.35 D	0.0984 JD	1.27 D	0.348 D	0.701 D
Fluorene	30	386	100	1.06 DE	0.739 DE	0.0465 JDE	0.0498 JDE	0.0459 U	1.25 DE	0.0517 U	0.0445 U	0.0478 U	0.122 DE	0.0843 JDE	0.0448 U	0.0496 U	0.0642 JD	0.0518 U	0.212 D	0.0445 U	0.218 U
Hexachlorobenzene	0.33	3.2	1.2	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Hexachlorobutadiene	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Hexachlorocyclopentadiene	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Hexachloroethane	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	**1.99** J	**0.58** J	0.304 J	0.262 J	0.127 J	**1.39** J	0.0517 UJ	0.334 DE	0.0525 J	0.452 J	0.304 J	0.342 J	0.0696 J	**0.759** D	0.0518 U	0.383 D	0.174 D	0.292 JD
Isophorone	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Naphthalene	12	12	100	0.211 DE	0.12 DE	0.0463 U	0.0459 U	0.0459 U	0.234 DE	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.249 D	0.0445 U	0.218 U
Nitrobenzene	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
n-Nitrosodimethylamine	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
n-Nitrosodi-N-Propylamine	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
n-Nitrosodiphenylamine	~	~	~	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 U
Pentachlorophenol	0.8	0.8	6.7	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 UJ
Phenanthrene	100	1,000	100	9.51 DE	3.96 DE	0.537 DE	0.41 DE	0.0629 JDE	8.6 DE	0.061 JDE	0.486 DE	0.0998 DE	0.749 DE	0.555 DE	0.358 DE	0.128 DE	0.518 D	0.0518 U	1.33 D	0.14 D	0.295 JD
Phenol	0.33	0.33	100	0.0442 U	0.0538 U	0.0463 U	0.0459 U	0.0459 U	0.0447 U	0.0517 U	0.0445 U	0.0478 U	0.0443 U	0.0468 U	0.0448 U	0.0496 U	0.0463 U	0.0518 U	0.0486 U	0.0445 U	0.218 UJ
Pyrene	100	1,000	100	10.9 J	4.58 J	1.03 DE	0.706 DE	0.287 DE	8.38 J	0.0948 JDE	1.14 DE	0.19 DE	1.41 DE	1.13 DE	0.949 DE	0.221 DE	1.38 D	0.0884 JD	1.51 D	0.328 D	1.12 D
Pyridine	~	~	~	0.177 U	0.215 U	0.185 U	0.184 U	0.183 U	0.178 U	0.206 U	0.178 U	0.191 U	0.177 U	0.187 U	0.179 U	0.198 U	0.185 U	0.207 U	0.194 U	0.178 U	0.87 U

Notes provided on Page 6.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Protection of Groundwater SCOs are underlined.
Concentrations above Restricted Use Restricted-Residential SCOs are shaded.

Table 3A
Remedial Investigation Report
Soil Sample Analytical Results

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs) Stratigraphy	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	NYSDEC Part 375 Restricted Use Restricted-Residential SCOs	LSB-15A 005_LSB-15A 18E0411-05 5/8/2018 0-2 Ash	LSB-15B 006_LSB-15B 18E0411-06 5/8/2018 12-14 Ash	LSB-16A 014_LSB-16A 18E0411-14 5/8/2018 0-2 Ash	LSB-16A 015_DUP-1 18E0411-15 5/8/2018 0-2 Ash	LSB-16B 016_LSB-16B 18E0411-16 5/8/2018 14-16 Ash	LSB-17A 007_LSB-17A 18E0411-07 5/8/2018 0-2 Ash	LSB-17B 008_LSB-17B 18E0411-08 5/8/2018 10-12 Ash
Pesticides (mg/kg)										
4,4'-DDD	0.0033	14	13	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
4,4'-DDE	0.0033	17	8.9	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
4,4'-DDT	0.0033	136	7.9	0.00174 UJ	0.00212 UJ	**0.0141** J	**0.00867** J	**0.0127** J	0.00176 UJ	0.00205 U
Aldrin	0.005	0.19	0.097	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
Alpha BHC (Alpha Hexachlorocyclohexane)	0.02	0.02	0.48	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
Alpha Chlordane	0.094	2.9	4.2	0.00576 J	0.00212 UJ	0.00771 J	0.00438 J	0.0018 UJ	0.0149 J	0.00205 U
Alpha Endosulfan	2.4	102	24	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.09	0.36	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
Beta Endosulfan	2.4	102	24	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
Chlordane (alpha and gamma)	~	~	~	0.0348 UJ	0.0425 UJ	0.0364 UJ	0.0363 UJ	0.036 UJ	0.0352 UJ	0.0409 U
Delta Bhc (Delta Hexachlorocyclohexane)	0.04	0.25	100	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
Dieldrin	0.005	0.1	0.2	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00454 J	0.0018 UJ	0.00176 UJ	0.00205 U
Endosulfan Sulfate	2.4	1,000	24	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
Endrin	0.014	0.06	11	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
Endrin Aldehyde	~	~	~	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
Endrin Ketone	~	~	~	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
Gamma Bhc (Lindane)	0.1	0.1	1.3	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
Gamma-Chlordane	~	~	~	0.00453 J	0.00212 UJ	0.0076 J	0.00449 J	0.0018 UJ	0.0101 J	0.00205 U
Heptachlor	0.042	0.38	2.1	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
Heptachlor Epoxide	~	~	~	0.00174 UJ	0.00212 UJ	0.00182 UJ	0.00182 UJ	0.0018 UJ	0.00176 UJ	0.00205 U
Methoxychlor	~	~	~	0.0087 UJ	0.0106 UJ	0.00911 UJ	0.00908 UJ	0.00901 UJ	0.00881 UJ	0.0102 U
Toxaphene	~	~	~	0.0881 UJ	0.107 UJ	0.0922 UJ	0.0919 UJ	0.0912 UJ	0.0891 UJ	0.104 U
Herbicides (mg/kg)										
2,4,5-T (Trichlorophenoxyacetic Acid)	~	~	~	NA	NA	NA	NA	NA	NA	NA
2,4-D (Dichlorophenoxyacetic Acid)	~	~	~	NA	NA	NA	NA	NA	NA	NA
Silvex (2,4,5-Tp)	3.8	3.8	100	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls (mg/kg)										
PCB-1016 (Aroclor 1016)	~	~	~	0.0176 U	0.0214 U	0.0184 U	0.0183 U	0.0182 U	0.0178 U	0.0207 U
PCB-1221 (Aroclor 1221)	~	~	~	0.0176 U	0.0214 U	0.0184 U	0.0183 U	0.0182 U	0.0178 U	0.0207 U
PCB-1232 (Aroclor 1232)	~	~	~	0.0176 U	0.0214 U	0.0184 U	0.0183 U	0.0182 U	0.0178 U	0.0207 U
PCB-1242 (Aroclor 1242)	~	~	~	0.0176 U	0.0214 U	0.0184 U	0.0183 U	0.0182 U	0.0178 U	0.0207 U
PCB-1248 (Aroclor 1248)	~	~	~	0.0176 U	0.0214 U	0.0184 U	0.0183 U	0.0182 U	0.0178 U	0.0207 U
PCB-1254 (Aroclor 1254)	~	~	~	0.0176 U	0.0214 U	0.0184 U	0.0183 U	0.151 P	0.0178 U	0.0207 U
PCB-1260 (Aroclor 1260)	~	~	~	0.208	0.0214 U	0.0969	0.069	0.0635	0.097	0.0342
Total PCBs	0.1	3.2	1	**0.208**	0.0214 U	0.0969	0.069	**0.215**	0.097	0.0342
Inorganics (mg/kg)										
Aluminum	~	~	~	5250	5630	6670	4920	6760	6120	3600
Antimony	~	~	~	0.53 U	0.713	1.45	1.23	0.549 U	1.14	0.651
Arsenic	13	16	16	1.46	3.54	7.71	5.08	1.1 U	1.07 U	5.94
Barium	350	820	400	113	168	**697**	346	63.7	269	**10400**
Beryllium	7.2	47	72	0.244	0.308	0.447	0.41	0.294	0.318	0.389
Cadmium	2.5	7.5	4.3	0.617	**10.7**	1.14	1.16	0.33 U	2.08	**4.68**
Calcium	~	~	~	8380	6550	11700	10200	6060	11200	4960
Chromium, Hexavalent	1	19	110	0.53 U	0.644 U	0.554 U	0.552 U	0.549 U	0.855	0.622 U
Chromium, Total	~	~	~	17.9	21.9	29.4	19	14.3	25.2	13.2
Chromium, Trivalent	30	~	180	17.9	21.9	29.4	19	14.3	24.3	13.2
Cobalt	~	~	~	5.09	5.79	7.77	5.62	5.57	7.35	14.8
Copper	50	1,720	270	**70.7**	**63.9**	**155**	**152**	22	**127**	40.8
Cyanide	27	40	27	NA	NA	NA	NA	NA	NA	NA
Iron	~	~	~	13900	21900	20200	15600	15800	42600	5830
Lead	63	450	400	**166**	**309**	**490**	**446**	**98.6**	**431**	**566**
Magnesium	~	~	~	4220	1560	3420	3190	2750	3240	489
Manganese	1,600	2,000	2,000	215	192	205	196	226	322	75.2
Mercury	0.18	0.73	0.81	**0.241**	**0.213**	**0.465**	**0.35**	0.084	**0.432**	0.0951
Nickel	30	130	310	17	15	27.6	20.6	20.6	**66.4**	9.49
Potassium	~	~	~	504	431	537	466	748	541	511
Selenium	3.9	4	180	1.06 U	1.29 U	1.11 U	1.1 U	1.1 U	1.07 U	1.24 U
Silver	2	8.3	180	0.53 U	0.644 U	0.554 U	0.552 U	0.549 U	0.534 U	0.622 U
Sodium	~	~	~	107	130	182	164	143	132	166
Thallium	~	~	~	1.06 U	1.29 U	1.11 U	1.1 U	1.1 U	1.07 U	1.24 U
Vanadium	~	~	~	20.5	15.7	26.6	22.7	19.7	23.9	19.3
Zinc	109	2,480	10,000	**203**	**3540**	**431**	**384**	88.1	**635**	**9280** D
General Chemistry (%)										
Solids, Percent	~	~	~	94.4	77.7	90.3	90.6	91	93.6	80.4

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs) Stratigraphy	LSB-18A 011_LSB-18A 18E0411-11 5/8/2018 0-2 Ash	LSB-18B 012_LSB-18B 18E0411-12 5/8/2018 12-14 Ash	LSB-19A 019_LSB-19A 18E0411-19 5/8/2018 0-2 Ash	LSB-19B 020_LSB-19B 18E0411-20 5/8/2018 10-12 Ash	LSB-20A 009_LSB-20A 18E0411-09 5/8/2018 0-2 Ash	LSB-20B 010_LSB-20B 18E0411-10 5/8/2018 9-11 Ash	LSB-21A 066_LSB-21A 21D0604-04 4/13/2021 0-2 Fill/Sand	LSB-21B 067_LSB-21B 21D0604-05 4/13/2021 5-7 Fill/Sand	LSB-21C 068_LSB-21C 21D0604-06 4/13/2021 12-14 Fill/Sand	LSB-22A 063_LSB-22A 21D0604-01 4/13/2021 0-2 Fill/Sand	LSB-22B 064_LSB-22B 21D0604-02 4/13/2021 4-6 Ash
Pesticides (mg/kg)											
4,4'-DDD	0.00177 UJ	0.00188 UJ	0.00174 UJ	0.00185 UJ	0.00177 UJ	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	**0.00928** D
4,4'-DDE	0.00177 UJ	**0.0134** J	0.00174 UJ	0.00185 UJ	0.00177 UJ	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	**0.0092** D
4,4'-DDT	**0.013** J	**0.0084** J	**0.0117** J	**0.00444** J	**0.0112** J	0.00196 U	**0.0066** D	0.00203 U	0.0019 U	**0.00506** D	**0.0447** D
Aldrin	0.00177 UJ	0.00188 UJ	0.00174 UJ	0.00185 UJ	0.00177 UJ	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	0.00169 U
Alpha BHC (Alpha Hexachlorocyclohexane)	0.00177 UJ	0.00188 UJ	0.00174 UJ	0.00185 UJ	0.00177 UJ	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	0.00169 U
Alpha Chlordane	0.0739 J	0.00188 UJ	0.0121 J	0.00185 UJ	0.0639 J	0.00196 U	0.025 D	0.00203 U	0.0019 U	0.0418 D	0.00169 U
Alpha Endosulfan	0.00177 UJ	0.00188 UJ	0.00174 UJ	0.00185 UJ	0.00177 UJ	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	0.00169 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.00177 UJ	0.00188 UJ	0.00174 UJ	0.00185 UJ	0.00177 UJ	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	0.00169 U
Beta Endosulfan	0.00177 UJ	0.00188 UJ	0.00174 UJ	0.00185 UJ	0.00177 UJ	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	0.00169 U
Chlordane (alpha and gamma)	0.113 J	0.0377 UJ	0.0349 UJ	0.037 UJ	0.102 J	0.0391 U	NA	NA	NA	NA	NA
Delta Bhc (Delta Hexachlorocyclohexane)	0.00177 UJ	0.00188 UJ	0.00174 UJ	0.00185 UJ	0.00177 UJ	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	0.00169 U
Dieldrin	**0.00695** J	0.00188 UJ	**0.00559** J	0.00185 UJ	0.00434 J	0.00196 U	0.00184 U	0.00203 U	0.0019 U	**0.00944** D	0.00169 U
Endosulfan Sulfate	0.00177 UJ	0.00188 UJ	0.00174 UJ	0.00185 UJ	0.00177 UJ	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	0.00169 U
Endrin	0.00177 UJ	0.00188 UJ	0.00174 UJ	0.00185 UJ	0.00177 UJ	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	0.00169 U
Endrin Aldehyde	0.00177 UJ	0.00188 UJ	0.00174 UJ	0.00185 UJ	0.00177 UJ	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	0.00169 U
Endrin Ketone	0.00177 UJ	0.00188 UJ	0.00174 UJ	0.00185 UJ	0.00177 UJ	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	0.00169 U
Gamma Bhc (Lindane)	0.00177 UJ	0.00188 UJ	0.00174 UJ	0.00185 UJ	0.00177 UJ	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	0.00169 U
Gamma-Chlordane	0.0394 J	0.00188 UJ	0.00938 J	0.00185 UJ	0.0384 J	0.00196 U	0.0198 D	0.00203 U	0.0019 U	0.0286 D	0.00169 U
Heptachlor	0.0105 J	0.00188 UJ	0.00174 UJ	0.00185 UJ	0.00862 J	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00461 D	0.00169 U
Heptachlor Epoxide	0.00177 UJ	0.00188 UJ	0.00174 UJ	0.00185 UJ	0.00177 UJ	0.00196 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	0.00169 U
Methoxychlor	0.00883 UJ	0.00942 UJ	0.00871 UJ	0.00925 UJ	0.00886 UJ	0.00978 U	0.00184 U	0.00203 U	0.0019 U	0.00173 U	0.00169 U
Toxaphene	0.0894 UJ	0.0953 UJ	0.0882 UJ	0.0936 UJ	0.0897 UJ	0.099 U	0.184 U	0.203 U	0.19 U	0.173 U	0.169 U
Herbicides (mg/kg)											
2,4,5-T (Trichlorophenoxyacetic Acid)	NA	NA	NA	NA	NA	NA	0.0223 U	0.0246 U	0.0229 U	0.0213 U	0.0207 U
2,4-D (Dichlorophenoxyacetic Acid)	NA	NA	NA	NA	NA	NA	0.0223 U	0.0246 U	0.0229 U	0.0213 U	0.0207 U
Silvex (2,4,5-Tp)	NA	NA	NA	NA	NA	NA	0.0223 U	0.0246 U	0.0229 U	0.0213 U	0.0207 U
Polychlorinated Biphenyls (mg/kg)											
PCB-1016 (Aroclor 1016)	0.0178 U	0.019 U	0.0176 U	0.0187 U	0.0179 U	0.0198 U	0.0186 U	0.0205 U	0.0192 U	0.0175 U	0.0854 U
PCB-1221 (Aroclor 1221)	0.0178 U	0.019 U	0.0176 U	0.0187 U	0.0179 U	0.0198 U	0.0186 U	0.0205 U	0.0192 U	0.0175 U	0.0854 U
PCB-1232 (Aroclor 1232)	0.0178 U	0.019 U	0.0176 U	0.0187 U	0.0179 U	0.0198 U	0.0186 U	0.0205 U	0.0192 U	0.0175 U	0.0854 U
PCB-1242 (Aroclor 1242)	0.0178 U	0.019 U	0.0176 U	0.0187 U	0.0179 U	0.0198 U	0.0186 U	0.0205 U	0.0192 U	0.0175 U	0.0854 U
PCB-1248 (Aroclor 1248)	0.0178 U	0.019 U	0.0176 U	0.0187 U	0.0179 U	0.0198 U	0.0186 U	0.0205 U	0.0192 U	0.0175 U	1.97 D
PCB-1254 (Aroclor 1254)	0.0178 U	0.019 U	0.0176 U	0.0187 U	0.0179 U	0.0198 U	0.0186 U	0.0205 U	0.0192 U	0.0175 U	0.0854 U
PCB-1260 (Aroclor 1260)	0.0482	0.0363	0.0353	0.0187 U	0.0179 U	0.0198 U	0.0731	0.0205 U	0.0192 U	0.0301	0.416 D
Total PCBs	0.0482	0.0363	0.0353	0.0187 U	0.0179 U	0.0198 U	0.0731	0.0205 U	0.0192 U	0.0301	**2.39** D
Inorganics (mg/kg)											
Aluminum	7030	7310	6350	5750	6690	2730	6490	6270	6680	5900	3760
Antimony	0.536 U	0.572 U	0.531 U	0.587	0.54 U	0.934	2.8 U	18.5 J	2.91 U	2.68 U	2.61 U
Arsenic	5.1	1.14 U	3.73	2.62	4.82	1.19 U	5.68	7.69	3.64	5.67	4.58
Barium	104	93.2	305	**481**	101	330	231	**801**	**365**	85.6	87
Beryllium	0.261	0.285	0.321	0.298	0.249	0.309	0.056 U	0.116	0.277	0.054 U	0.052 U
Cadmium	0.426	0.343 U	1.17	0.72	0.431	1.51	1.79	0.374 U	0.35 U	0.419	0.773
Calcium	32900	10000	19300	18600	32400	4370	29100	2320	5080	31500	64200
Chromium, Hexavalent	0.536 U	0.572 U	0.531 U	0.561 UJ	0.54 U	0.596 U	0.561 U	0.624 U	0.583 U	0.536 U	0.523 U
Chromium, Total	18.4	26.9	20.9	23.9	17.3	74.6	21.3	23.7	15.2	19.2	34
Chromium, Trivalent	18.4	26.9	20.9	23.9	17.3	**74.6**	NA	NA	NA	NA	NA
Cobalt	6.33	5.91	6.74	5.54	5.54	22.2	6.22	6.06	7.01	4.95	5.69
Copper	35.3	35.4	**104**	**120**	34.6	**319**	**133**	**111**	43.5	27.2	**88.8**
Cyanide	NA	NA	NA	NA	NA	NA	0.561 U	0.624 U	0.583 U	0.536 U	0.523 U
Iron	12600	22100	19100	17400	11300	86300	22800	9120	15400	10800	21200
Lead	**111**	**139**	**426**	**288**	**130**	**543**	**340**	**4030**	**150**	**91.8**	**190**
Magnesium	8320	2290	7500	4150	6970	562	13900	457	978	6860	15400
Manganese	263	290	246	221	201	405	236	69.7	117	160	188
Mercury	**0.211**	0.103	**0.505**	**0.256**	**0.183**	**1.53**	**0.468**	**0.304**	0.074	**0.19**	0.0786
Nickel	**31**	18.9	24.6	21	20	**52.7**	26.6	15.8	16.2	20.2	22.5
Potassium	1470	702	639	654	864	276	695 B	503 B	954 B	1230 B	676 B
Selenium	1.07 U	1.14 U	1.06 U	1.12 U	1.08 U	1.19 U	2.8 U	3.12 U	2.91 U	2.68 U	2.61 U
Silver	0.536 U	0.572 U	0.531 U	0.561 U	0.54 U	1.75	0.561 U	0.624 U	0.583 U	0.536 U	0.523 U
Sodium	139	152	170	272	189	106	209	241	224	134	162
Thallium	1.07 U	1.14 U	1.06 U	1.12 U	1.08 U	1.19 U	2.8 U	3.12 U	2.91 U	2.68 U	2.61 U
Vanadium	22	22.8	22.9	17.8	19.9	17.2	30.8	26.2	32.8	28.6	27
Zinc	**115**	95.2	**414**	**235**	**135**	**423**	**634**	103	**169**	97.9	**139**
General Chemistry (%)											
Solids, Percent	93.4	87.4	94.1	89.1	92.7	83.9	89.2	80.1	85.8	93.3	95.7

Notes provided on Page 6.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Protection of Groundwater SCOs are underlined.
Concentrations above Restricted Use Restricted-Residential SCOs are shaded.

Table 3A
Remedial Investigation Report
Soil Sample Analytical Results

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Location	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	NYSDEC Part 375 Restricted Use Restricted-Residential SCOs	LSB-22C		LSB-23A		LSB-23B		LSB-23C		LSB-24A		LSB-24B		LSB-24C	
Sample ID				065_LSB-22C		069_LSB-23A		070_LSB-23B		071_LSB-23C		082_LSB-24A		083_LSB-24B		084_LSB-24C	
Laboratory ID				21D0604-03		21D0604-07		21D0604-08		21D0604-09		21D0750-01		21D0750-02		21D0750-03	
Sample Date				4/13/2021		4/13/2021		4/13/2021		4/13/2021		4/15/2021		4/15/2021		4/15/2021	
Sample Depth (feet bgs)				13-15		0-2		8-10		18-20		0-2		3-5		13-15	
Stratigraphy				Fill/Sand		Fill/Sand		Ash		Fill/Sand		Fill/Sand		Ash		Fill/Sand	
Volatile Organic Compounds (mg/kg)																	
1,1,1,2-Tetrachloroethane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,1,1-Trichloroethane	0.68	0.68	100	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,1,2,2-Tetrachloroethane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	~	~	~	0.0026	UJ	0.0019	UJ	0.002	UJ	0.0027	UJ	0.002	UJ	0.002	UJ	0.0023	UJ
1,1,2-Trichloroethane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,1-Dichloroethane	0.27	0.27	26	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,1-Dichloroethene	0.33	0.33	100	0.0026	UJ	0.0019	UJ	0.002	UJ	0.0027	UJ	0.002	UJ	0.002	UJ	0.0023	UJ
1,1-Dichloropropene	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,2,3-Trichlorobenzene	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,2,3-Trichloropropane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,2,4-Trichlorobenzene	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,2,4-Trimethylbenzene	3.6	3.6	52	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,2-Dibromo-3-Chloropropane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,2-Dibromoethane (Ethylene Dibromide)	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,2-Dichlorobenzene	1.1	1.1	100	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,2-Dichloroethane	0.02	0.02	3.1	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,2-Dichloropropane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	8.4	52	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,3-Dichlorobenzene	2.4	2.4	49	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,3-Dichloropropane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,4-Dichlorobenzene	1.8	1.8	13	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
1,4-Dioxane (P-Dioxane)	0.1	0.1	13	0.052	U	0.039	U	0.04	U	0.054	U	0.04	U	0.039	U	0.047	U
2,2-Dichloropropane	~	~	~	0.0026	UJ	0.0019	UJ	0.002	UJ	0.0027	UJ	0.002	UJ	0.002	UJ	0.0023	UJ
2-Chlorotoluene	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
2-Hexanone (MBK)	~	~	~	0.0026	U	0.0019	U	0.0051		0.0027	U	0.002	U	0.002	U	0.0023	U
4-Chlorotoluene	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Acetone	0.05	0.05	100	0.031	J	0.0077	U	0.014	U	**0.12**	J	0.0064	J	0.011	J	**0.093**	J
Acrolein	~	~	~	0.0052	UJ	0.0039	UJ	0.004	UJ	0.0054	UJ	0.004	UJ	0.0039	UJ	0.0047	UJ
Acrylonitrile	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Benzene	0.06	0.06	4.8	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Bromobenzene	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Bromochloromethane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Bromodichloromethane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Bromoform	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Bromomethane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	UJ	0.002	UJ	0.0023	UJ
Carbon Disulfide	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0032	J	0.002	U	0.002	U	0.0023	U
Carbon Tetrachloride	0.76	0.76	2.4	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Chlorobenzene	1.1	1.1	100	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Chloroethane	~	~	~	0.0026	UJ	0.0019	UJ	0.002	UJ	0.0027	UJ	0.002	UJ	0.002	UJ	0.0023	UJ
Chloroform	0.37	0.37	49	0.0052	U	0.0039	U	0.004	U	0.0054	U	0.002	U	0.002	U	0.0023	U
Chloromethane	~	~	~	0.0026	UJ	0.0019	UJ	0.002	UJ	0.0027	UJ	0.002	UJ	0.002	UJ	0.0023	UJ
Cis-1,2-Dichloroethene	0.25	0.25	100	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Cis-1,3-Dichloropropene	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Cyclohexane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Dibromochloromethane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Dibromomethane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Dichlorodifluoromethane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	UJ	0.002	UJ	0.0023	UJ
Ethylbenzene	1	1	41	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Hexachlorobutadiene	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Isopropylbenzene (Cumene)	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
M,P-Xylene	~	~	~	0.0052	U	0.0039	U	0.004	U	0.0054	U	0.004	U	0.0039	U	0.0047	U
Methyl Acetate	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Methyl Ethyl Ketone (2-Butanone)	0.12	0.12	100	0.0068	J	0.0019	UJ	0.0069	J	0.033	J	0.002	U	0.0022	J	0.03	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	~	~	0.0026	U	0.0019	U	0.0036	J	0.0027	U	0.002	U	0.002	U	0.0023	U
Methylcyclohexane	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Methylene Chloride	0.05	0.05	100	0.0052	U	0.0039	U	0.0069	J	0.0072	J	0.0081	U	0.0079	U	0.0047	U
n-Butylbenzene	12	12	100	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
n-Propylbenzene	3.9	3.9	100	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
o-Xylene (1,2-Dimethylbenzene)	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
p-Cymene (p-Isopropyltoluene)	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Sec-Butylbenzene	11	11	100	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Styrene	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
T-Butylbenzene	5.9	5.9	100	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Tert-Butyl Alcohol	~	~	~	0.0026	UJ	0.0019	UJ	0.002	UJ	0.0027	UJ	0.002	U	0.002	U	0.0023	U
Tert-Butyl Methyl Ether	0.93	0.93	100	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Tetrachloroethene (PCE)	1.3	1.3	19	0.0026	UJ	0.0019	UJ	0.002	UJ	0.0027	UJ	0.002	UJ	0.002	UJ	0.0023	UJ
Toluene	0.7	0.7	100	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Total Xylenes	0.26	1.6	100	0.0078	U	0.0058	U	0.006	U	0.0081	U	0.006	U	0.0059	U	0.007	U
Trans-1,2-Dichloroethene	0.19	0.19	100	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Trans-1,3-Dichloropropene	~	~	~	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Trichloroethene (TCE)	0.47	0.47	21	0.0026	U	0.0019	U	0.002	U	0.0027	U	0.002	U	0.002	U	0.0023	U
Trichlorofluoromethane	~	~	~	0.0026	UJ	0.0019	UJ	0.002	UJ	0.0027	UJ	0.002	UJ	0.002	UJ	0.0023	UJ
Vinyl Chloride	0.02	0.02	0.9	0.0026	UJ	0.0019	UJ	0.002	UJ	0.0027	UJ	0.002	UJ	0.002	UJ	0.0023	UJ
Total BTEX	~	~	~	ND		ND		ND		ND		ND		ND		ND	
Total VOCs	~	~	~	0.0378		ND		0.0225		0.163		0.0064		0.0132		0.123	

Location	LSB-25A		LSB-25B		LSB-25C		LSB-26A		LSB-26B		LSB-26C		LSB-27A		LSB-27A		LSB-27B		LSB-27C	
Sample ID	074_LSB-25A		075_LSB-25B		076_LSB-25C		072_LSB-26A		073_LSB-26B		081_LSB-26C		085_LSB-27A		086_DUP-4		087_LSB-27B		088_LSB-27C	
Laboratory ID	21D0604-12		21D0604-13		21D0604-14		21D0604-10		21D0604-11		21D0652-01		21D0750-04		21D0750-05		21D0750-06		21D0750-07	
Sample Date	4/13/2021		4/13/2021		4/13/2021		4/13/2021		4/13/2021		4/14/2021		4/15/2021		4/15/2021		4/15/2021		4/15/2021	
Sample Depth (feet bgs)	0-2		12-14		17-19		0-2		10-12		20.5-22.5		0-2		0-2		7-9		13-15	
Stratigraphy	Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand	
Volatile Organic Compounds (mg/kg)																				
1,1,1,2-Tetrachloroethane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,1,1-Trichloroethane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,1,2,2-Tetrachloroethane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.002	UJ	0.0022	UJ	0.0033	UJ	0.0025	U	0.0021	UJ	0.0025	UJ	0.002	UJ	0.002	UJ	0.0024	UJ	0.0021	UJ
1,1,2-Trichloroethane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,1-Dichloroethane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,1-Dichloroethene	0.002	UJ	0.0022	UJ	0.0033	UJ	0.0025	U	0.0021	UJ	0.0025	UJ	0.002	UJ	0.002	UJ	0.0024	UJ	0.0021	UJ
1,1-Dichloropropene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,2,3-Trichlorobenzene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,2,3-Trichloropropane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,2,4-Trichlorobenzene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,2,4-Trimethylbenzene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,2-Dibromo-3-Chloropropane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,2-Dibromoethane (Ethylene Dibromide)	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,2-Dichlorobenzene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,2-Dichloroethane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,2-Dichloropropane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,3,5-Trimethylbenzene (Mesitylene)	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,3-Dichlorobenzene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,3-Dichloropropane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,4-Dichlorobenzene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
1,4-Dioxane (P-Dioxane)	0.041	U	0.044	U	0.066	U	0.05	UJ	0.042	U	0.049	U	0.041	U	0.04	U	0.048	U	0.042	U
2,2-Dichloropropane	0.002	UJ	0.0022	UJ	0.0033	UJ	0.0025	U	0.0021	UJ	0.0025	UJ	0.002	UJ	0.002	UJ	0.0024	UJ	0.0021	UJ
2-Chlorotoluene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
2-Hexanone (MBK)	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
4-Chlorotoluene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Acetone	0.038	J	0.036	J	**0.11**	J	**0.076**	J	0.025	J	0.018	J	0.031	J	0.032	J	0.0048	UJ	0.022	J
Acrolein	0.0041	UJ	0.0044	UJ	0.0066	UJ	0.005	UJ	0.0042	UJ	0.0049	UJ	0.0041	UJ	0.004	UJ	0.0048	UJ	0.0042	UJ
Acrylonitrile	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Benzene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Bromobenzene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Bromochloromethane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Bromodichloromethane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Bromoform	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Bromomethane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	UJ	0.002	UJ	0.0024	UJ	0.0021	UJ
Carbon Disulfide	0.0021	J	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Carbon Tetrachloride	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Chlorobenzene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Chloroethane	0.002	UJ	0.0022	UJ	0.0033	UJ	0.0025	U	0.0021	UJ	0.0025	UJ	0.002	UJ	0.002	UJ	0.0024	UJ	0.0021	UJ
Chloroform	0.0041	U	0.0044	U	0.0066	U	0.0025	U	0.0042	U	0.0049	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Chloromethane	0.002	UJ	0.0022	UJ	0.0033	UJ	0.0025	U	0.0021	UJ	0.0025	UJ	0.002	UJ	0.002	UJ	0.0024	UJ	0.0021	UJ
Cis-1,2-Dichloroethene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Cis-1,3-Dichloropropene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Cyclohexane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Dibromochloromethane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Dibromomethane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Dichlorodifluoromethane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	UJ	0.002	UJ	0.0024	UJ	0.0021	UJ
Ethylbenzene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Hexachlorobutadiene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Isopropylbenzene (Cumene)	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
M,P-Xylene	0.0041	U	0.0044	U	0.0066	U	0.005	U	0.0042	U	0.0049	U	0.0041	U	0.004	U	0.0048	U	0.0042	U
Methyl Acetate	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Methyl Ethyl Ketone (2-Butanone)	0.0056	J	0.0065	J	0.033	J	0.017	J	0.0037	J	0.0026	J	0.0075		0.0079		0.0024	U	0.0047	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Methylcyclohexane	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Methylene Chloride	0.0041	U	0.0044	U	0.0066	U	0.006	J	0.0042	U	0.0049	U	0.0041	U	0.004	U	0.0097	U	0.0042	U
n-Butylbenzene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
n-Propylbenzene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
o-Xylene (1,2-Dimethylbenzene)	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
p-Cymene (p-Isopropyltoluene)	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Sec-Butylbenzene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Styrene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
T-Butylbenzene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Tert-Butyl Alcohol	0.002	UJ	0.0022	UJ	0.0033	UJ	0.0025	U	0.0021	UJ	0.0025	UJ	0.002	U	0.002	U	0.0024	U	0.0021	U
Tert-Butyl Methyl Ether	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Tetrachloroethene (PCE)	0.002	UJ	0.0022	UJ	0.0033	UJ	0.0025	U	0.0021	UJ	0.0025	UJ	0.002	UJ	0.002	UJ	0.0024	UJ	0.0021	UJ
Toluene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Total Xylenes	0.0061	U	0.0065	U	0.0098	U	0.0075	U	0.0062	U	0.0074	U	0.0061	U	0.0059	U	0.0073	U	0.0063	U
Trans-1,2-Dichloroethene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Trans-1,3-Dichloropropene	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Trichloroethene (TCE)	0.002	U	0.0022	U	0.0033	U	0.0025	U	0.0021	U	0.0025	U	0.002	U	0.002	U	0.0024	U	0.0021	U
Trichlorofluoromethane	0.002	UJ	0.0022	UJ	0.0033	UJ	0.0025	U	0.0021	UJ	0.0025	UJ	0.002	UJ	0.002	UJ	0.0024	UJ	0.0021	UJ
Vinyl Chloride	0.002	UJ	0.0022	UJ	0.0033	UJ	0.0025	U	0.0021	UJ	0.0025	UJ	0.002	UJ	0.002	UJ	0.0024	UJ	0.0021	UJ
Total BTEX	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Total VOCs	0.0457		0.0425		0.143		0.099		0.0287		0.0206		0.0385		0.0399		ND		0.0267	

Notes provided on Page 6.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Protection of Groundwater SCOs are underlined.
Concentrations above Restricted Use Restricted-Residential SCOs are shaded.

Table 3A
Remedial Investigation Report
Soil Sample Analytical Results

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs) Stratigraphy	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	NYSDEC Part 375 Restricted Use Restricted-Residential SCOs	LSB-22C 065_LSB-22C 21D0604-03 4/13/2021 13-15 Fill/Sand		LSB-23A 069_LSB-23A 21D0604-07 4/13/2021 0-2 Fill/Sand		LSB-23B 070_LSB-23B 21D0604-08 4/13/2021 8-10 Ash		LSB-23C 071_LSB-23C 21D0604-09 4/13/2021 18-20 Fill/Sand		LSB-24A 082_LSB-24A 21D0750-01 4/15/2021 0-2 Fill/Sand		LSB-24B 083_LSB-24B 21D0750-02 4/15/2021 3-5 Ash		LSB-24C 084_LSB-24C 21D0750-03 4/15/2021 13-15 Fill/Sand		LSB-25A 074_LSB-25A 21D0604-12 4/13/2021 0-2 Fill/Sand		LSB-25B 075_LSB-25B 21D0604-13 4/13/2021 12-14 Fill/Sand		LSB-25C 076_LSB-25C 21D0604-14 4/13/2021 17-19 Fill/Sand		LSB-26A 072_LSB-26A 21D0604-10 4/13/2021 0-2 Fill/Sand		LSB-26B 073_LSB-26B 21D0604-11 4/13/2021 10-12 Fill/Sand		LSB-26C 081_LSB-26C 21D0652-01 4/14/2021 20.5-22.5 Fill/Sand		LSB-27A 085_LSB-27A 21D0750-04 4/15/2021 0-2 Fill/Sand		LSB-27A 086_DUP-4 21D0750-05 4/15/2021 0-2 Fill/Sand		LSB-27B 087_LSB-27B 21D0750-06 4/15/2021 7-9 Fill/Sand		LSB-27C 088_LSB-27C 21D0750-07 4/15/2021 13-15 Fill/Sand	
Semivolatile Organic Compounds (mg/kg)																																					
1,2,4,5-Tetrachlorobenzene	~	~	~	0.11	U	0.663	U	0.859	U	0.11	U	0.093	U	0.0877	U	0.0991	U	0.0914	U	0.0901	U	0.101	U	0.095	U	0.0964	U	0.0988	U	0.0905	U	0.0884	U	0.107	U	0.0919	U
1,2,4-Trichlorobenzene	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
1,2-Dichlorobenzene	1.1	1.1	100	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
1,2-Diphenylhydrazine	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
1,3-Dichlorobenzene	2.4	2.4	49	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
1,4-Dichlorobenzene	1.8	1.8	13	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
1,4-Dioxane (P-Dioxane)	0.1	0.1	13	0.00962	U	0.00917	U	0.00935	U	0.00962	U	0.0098	UJ	0.0098	U	0.0098	U	0.00935	U	0.00935	U	0.00943	U	0.0098	U	0.00926	U	0.00943	U	0.0098	U	0.0098	U	0.0098	U	0.0098	U
2,3,4,6-Tetrachlorophenol	~	~	~	0.11	U	0.663	U	0.859	U	0.11	U	0.093	UJ	0.0877	UJ	0.0991	UJ	0.0914	U	0.0901	U	0.101	U	0.095	U	0.0964	U	0.0988	UJ	0.0905	UJ	0.0884	UJ	0.107	UJ	0.0919	UJ
2,4,5-Trichlorophenol	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
2,4,6-Trichlorophenol	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	UJ	0.0453	U	0.0443	U	0.0535	U	0.046	U
2,4-Dichlorophenol	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
2,4-Dimethylphenol	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
2,4-Dinitrophenol	~	~	~	0.11	UJ	0.663	UJ	0.859	UJ	0.11	UJ	0.093	UJ	0.0877	UJ	0.0991	UJ	0.0914	UJ	0.0901	UJ	0.101	UJ	0.095	UJ	0.0964	UJ	0.0988	UJ	0.0905	UJ	0.0884	UJ	0.107	UJ	0.0919	UJ
2,4-Dinitrotoluene	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	UJ	0.044	UJ	0.0497	UJ	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	UJ	0.0453	UJ	0.0443	UJ	0.0535	UJ	0.046	UJ
2,6-Dinitrotoluene	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	UJ	0.044	UJ	0.0497	UJ	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	UJ	0.0453	UJ	0.0443	UJ	0.0535	UJ	0.046	UJ
2-Chloronaphthalene	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
2-Chlorophenol	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
2-Methylnaphthalene	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.112	D	0.115	D	0.0451	U	0.0504	U	0.0476	U	0.0655	JD	0.06	JD	0.0542	JD	0.0443	U	0.0535	U	0.046	U
2-Methylphenol (o-Cresol)	0.33	0.33	100	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
2-Nitroaniline	~	~	~	0.11	U	0.663	U	0.859	U	0.11	U	0.093	UJ	0.0877	UJ	0.0991	UJ	0.0914	U	0.0901	U	0.101	U	0.095	U	0.0964	U	0.0988	UJ	0.0905	UJ	0.0884	UJ	0.107	UJ	0.0919	UJ
2-Nitrophenol	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	UJ	0.044	UJ	0.0497	UJ	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	UJ	0.0453	UJ	0.0443	UJ	0.0535	UJ	0.046	UJ
3 & 4 Methylphenol (m&p Cresol)	0.33	0.33	100	0.156	D	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
3,3'-Dichlorobenzidine	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	UJ	0.044	UJ	0.0497	UJ	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	UJ	0.0453	UJ	0.0443	UJ	0.0535	UJ	0.046	UJ
3-Nitroaniline	~	~	~	0.11	U	0.663	U	0.859	U	0.11	U	0.093	UJ	0.0877	UJ	0.0991	UJ	0.0914	U	0.0901	U	0.101	U	0.095	U	0.0964	U	0.0988	UJ	0.0905	UJ	0.0884	UJ	0.107	UJ	0.0919	UJ
4,6-Dinitro-2-Methylphenol	~	~	~	0.11	U	0.663	U	0.859	U	0.11	U	0.093	UJ	0.0877	UJ	0.0991	UJ	0.0914	U	0.0901	U	0.101	U	0.095	U	0.0964	U	0.0988	UJ	0.0905	UJ	0.0884	UJ	0.107	UJ	0.0919	UJ
4-Bromophenyl Phenyl Ether	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
4-Chloro-3-Methylphenol	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
4-Chloroaniline	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
4-Chlorophenyl Phenyl Ether	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
4-Nitroaniline	~	~	~	0.11	U	0.663	U	0.859	U	0.11	U	0.093	UJ	0.0877	UJ	0.0991	UJ	0.0914	U	0.0901	U	0.101	U	0.095	U	0.0964	U	0.0988	UJ	0.0905	UJ	0.0884	UJ	0.107	UJ	0.0919	UJ
4-Nitrophenol	~	~	~	0.11	U	0.663	U	0.859	U	0.11	U	0.093	UJ	0.0877	UJ	0.0991	UJ	0.0914	U	0.0901	U	0.101	U	0.095	U	0.0964	U	0.0988	U	0.0905	UJ	0.0884	UJ	0.107	UJ	0.0919	UJ
Acenaphthene	20	98	100	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.18	D	0.0727	JD	0.0504	U	0.0476	U	0.189	D	0.0884	JD	0.0453	U	0.0735	JD	0.0535	U	0.046	U
Acenaphthylene	100	107	100	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0751	JD	0.044	U	0.0497	U	0.0782	JD	0.0533	JD	0.0504	U	0.0547	JD	0.0801	JD	0.0495	U	0.0593	JD	0.0799	JD	0.0535	U	0.046	U
Acetophenone	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Aniline (Phenylamine, Aminobenzene)	~	~	~	0.22	U	1.33	U	1.72	U	0.221	U	0.186	U	0.176	U	0.198	U	0.183	U	0.18	U	0.201	U	0.19	U	0.193	U	0.198	U	0.181	U	0.177	U	0.214	U	0.184	U
Anthracene	100	1,000	100	0.0551	U	0.332	U	0.43	U	0.0552	U	0.133	D	0.0659	JD	0.15	D	0.277	D	0.281	D	0.0504	U	0.143	D	0.534	D	0.214	D	0.124	D	0.17	D	0.0982	JD	0.0558	JD
Atrazine	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Benzaldehyde	~	~	~	0.0551	U	0.332	U	0.43	U	1.14	D	0.0466	U	0.044	U	0.174	D	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.687	D	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Benzidine	~	~	~	0.22	UJ	1.33	UJ	1.72	UJ	0.221	UJ	0.186	U	0.176	U	0.198	U	0.183	UJ	0.18	UJ	0.201	UJ	0.19	UJ	0.193	UJ	0.198	U	0.181	U	0.177	U	0.214	U	0.184	U
Benzo(a)anthracene	1	1	1	0.0721	JD	0.863	D	0.43	U	0.0687	JD	0.408	D	0.182	D	0.435	D	0.573	D	0.775	D	0.0504	U	0.445	D	**1.03**	D	0.489	D	0.438	D	0.546	D	0.454	D	0.171	D
Benzo(a)pyrene	1	22	1	0.0703	JD	0.911	D	0.43	U	0.0678	JD	0.441	D	0.215	D	0.402	D	0.589	D	0.675	D	0.0504	U	0.518	D	**1.05**	D	0.415	D	0.565	D	0.667	D	0.665	D	0.184	D
Benzo(b)fluoranthene	1	1.7	1	0.0651	JD	0.848	D	0.43	U	0.066	JD	0.328	D	0.171	D	0.348	D	0.5	D	0.56	D	0.0504	U	0.427	D	0.882	D	0.311	D	0.429	D	0.542	D	0.53	D	0.142	D
Benzo(g,h,i)Perylene	100	1,000	100	0.0551	U	0.583	JD	0.43	U	0.0552	U	0.282	D	0.137	D	0.228	D	0.417	D	0.365	D	0.0504	U	0.267	D	0.35	D	0.246	D	0.311	D	0.375	D	0.334	D	0.103	D
Benzo(k)fluoranthene	0.8	1.7	3.9	0.0615	JD	0.683	D	0.43	U	0.059	JD	0.343	D	0.171	D	0.27	D	0.456	D	0.523	D	0.0504	U	0.384	D	0.781	D	0.352	D	0.387	D	0.521	D	0.48	D	0.145	D
Benzoic Acid	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	UJ	0.044	UJ	0.0497	UJ	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	UJ	0.0443	UJ	0.0535	UJ	0.046	UJ
Benzyl Alcohol	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Benzyl Butyl Phthalate	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	UJ	0.044	UJ	0.0497	UJ	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0678	JD	0.0495	UJ	0.0453	UJ	0.0443	UJ	0.0535	UJ	1.44	J
Biphenyl (Diphenyl)	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Bis(2-chloroethoxy) methane	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Bis(2-chloroethyl) ether (2-chloroethyl ether)	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Bis(2-chloroisopropyl) ether	~	~	~	0.0551	UJ	0.332	UJ	0.43	UJ	0.0552	UJ	0.0466	U	0.044	U	0.0497	U	0.0458	UJ	0.0451	UJ	0.0504	UJ	0.0476	UJ	0.0483	UJ	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Bis(2-ethylhexyl) phthalate	~	~	~	0.188	D	0.482	JD	0.43	U	0.0616	JD	0.0832	J	0.0856	J	0.285	J	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	1.42	D	0.0453	UJ	0.0594	J	0.0535	UJ	0.173	J
Caprolactam	~	~	~	0.11	U	0.663	U	0.859	U	0.11	U	0.093	UJ	0.0877	UJ	0.0991	UJ	0.0914	U	0.0901	U	0.101	U	0.095	U	0.0964	U	0.0988	U	0.0905	UJ	0.0884	UJ	0.107	UJ	0.0919	UJ
Carbazole	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0504	JD	0.0583	JD	0.0504	U	0.0476	U	0.125	D	0.0497	JD	0.0453	U	0.0481	JD	0.0535	U	0.046	U
Chrysene	1	1	3.9	0.0809	JD	0.789	D	0.43	U	0.074	JD	0.389	D	0.18	D	0.668	D	0.594	D	0.794	D	0.0504	U	0.423	D	0.998	D	0.483	D	0.424	D	0.543	D	0.444	D	0.162	D
Dibenz(a,h)anthracene	0.33	1,000	0.33	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0602	JD	0.044	U	0.102	D	0.156	D	0.152	D	0.0504	U	0.0995	D	0.123	D	0.0813	JD	0.103	D	0.125	D	0.114	D	0.046	U
Dibenzofuran	7	210	59	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0534	JD	0.0451	U	0.0504	U	0.0476	U	0.0871	JD	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Dibutyl phthalate	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.135	D
Diethyl phthalate	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Dimethyl phthalate	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Dioctyl phthalate	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	UJ	0.044	UJ	0.0497	UJ	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	UJ	0.047	J	0.0443	UJ	0.0535	UJ	0.046	UJ
Fluoranthene	100	1,000	100	0.148	D	1.3	D	0.43	U	0.118	D	0.719	D	0.325	D	0.653	D	1.02	D	1.23	D	0.0504	U	0.973	D	2.55	D	0.903	D	0.748	D	0.945	D	0.762	D	0.278	D
Fluorene	30	386	100	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0657	JD	0.229	D	0.0972	D	0.0504	U	0.0539	JD	0.227	D	0.111	D	0.0453	U	0.0806	JD	0.0535	U	0.046	U
Hexachlorobenzene	0.33	3.2	1.2	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Hexachlorobutadiene	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Hexachlorocyclopentadiene	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	UJ	0.0453	U	0.0443	U	0.0535	U	0.046	U
Hexachloroethane	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	0.0551	U	**0.583**	JD	0.43	U	0.0552	U	0.282	D	0.142	D	0.233	D	0.464	D	0.415	D	0.0504	U	0.289	D	0.403	D	0.227	D	0.317	D	0.385	D	0.342	D	0.105	D
Isophorone	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Naphthalene	12	12	100	0.255	D	0.332	U	0.43	U	0.0828	JD	0.0466	U	0.044	U	0.0958	JD	0.177	D	0.0583	JD	0.0504	U	0.0889	JD	0.166	D	0.102	D	0.122	D	0.0672	JD	0.0535	U	0.046	U
Nitrobenzene	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
n-Nitrosodimethylamine	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
n-Nitrosodi-N-Propylamine	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
n-Nitrosodiphenylamine	~	~	~	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Pentachlorophenol	0.8	0.8	6.7	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Phenanthrene	100	1,000	100	0.15	D	0.514	JD	0.43	U	0.0819	JD	0.406	D	0.214	D	0.746	D	0.925	D	1.1	D	0.0504	U	0.406	D	1.6	D	0.706	D	0.422	D	0.566	D	0.334	D	0.193	D
Phenol	0.33	0.33	100	0.0551	U	0.332	U	0.43	U	0.0552	U	0.0466	U	0.044	U	0.0497	U	0.0458	U	0.0451	U	0.0504	U	0.0476	U	0.0483	U	0.0495	U	0.0453	U	0.0443	U	0.0535	U	0.046	U
Pyrene	100	1,000	100	0.137	D	1.23	D	0.43	U	0.109	JD	0.734	D	0.297	D	0.671	D	1.19	D	1.28	D	0.0504	U	0.71	D	1.76	D	1.02	D	0.7	D	0.87	D	0.68	D	0.269	D
Pyridine	~	~	~	0.22	U	1.33	U	1.72	U	0.221	U	0.186	U	0.176	U	0.198	U	0.183	U	0.18	U	0.201	U	0.19	U	0.193	U	0.198	U	0.181	U	0.177	U	0.214	U	0.184	U

Notes provided on Page 6.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Protection of Groundwater SCOs are underlined.
Concentrations above Restricted Use Restricted-Residential SCOs are shaded.

Table 3A
Remedial Investigation Report
Soil Sample Analytical Results

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs) Stratigraphy	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	NYSDEC Part 375 Restricted Use Restricted-Residential SCOs	LSB-22C 065_LSB-22C 21D0604-03 4/13/2021 13-15 Fill/Sand	LSB-23A 069_LSB-23A 21D0604-07 4/13/2021 0-2 Fill/Sand	LSB-23B 070_LSB-23B 21D0604-08 4/13/2021 8-10 Ash	LSB-23C 071_LSB-23C 21D0604-09 4/13/2021 18-20 Fill/Sand	LSB-24A 082_LSB-24A 21D0750-01 4/15/2021 0-2 Fill/Sand	LSB-24B 083_LSB-24B 21D0750-02 4/15/2021 3-5 Ash	LSB-24C 084_LSB-24C 21D0750-03 4/15/2021 13-15 Fill/Sand	LSB-25A 074_LSB-25A 21D0604-12 4/13/2021 0-2 Fill/Sand	LSB-25B 075_LSB-25B 21D0604-13 4/13/2021 12-14 Fill/Sand	LSB-25C 076_LSB-25C 21D0604-14 4/13/2021 17-19 Fill/Sand	LSB-26A 072_LSB-26A 21D0604-10 4/13/2021 0-2 Fill/Sand	LSB-26B 073_LSB-26B 21D0604-11 4/13/2021 10-12 Fill/Sand	LSB-26C 081_LSB-26C 21D0652-01 4/14/2021 20.5-22.5 Fill/Sand	LSB-27A 085_LSB-27A 21D0750-04 4/15/2021 0-2 Fill/Sand	LSB-27A 086_DUP-4 21D0750-05 4/15/2021 0-2 Fill/Sand	LSB-27B 087_LSB-27B 21D0750-06 4/15/2021 7-9 Fill/Sand	LSB-27C 088_LSB-27C 21D0750-07 4/15/2021 13-15 Fill/Sand
Pesticides (mg/kg)																				
4,4'-DDD	0.0033	14	13	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	**0.00622** D	0.00179 U	0.00198 U	**0.0148** D	**0.0118** D	**0.00977** D	0.00179 U	0.00177 U	0.00211 U	0.00184 U
4,4'-DDE	0.0033	17	8.9	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
4,4'-DDT	0.0033	136	7.9	0.00217 U	**0.00489** D	**0.00601** D	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Aldrin	0.005	0.19	0.097	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Alpha BHC (Alpha Hexachlorocyclohexane)	0.02	0.02	0.48	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Alpha Chlordane	0.094	2.9	4.2	0.00217 U	0.0139 D	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Alpha Endosulfan	2.4	102	24	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.036	0.09	0.36	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Beta Endosulfan	2.4	102	24	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Chlordane (alpha and gamma)	~	~	~	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta Bhc (Delta Hexachlorocyclohexane)	0.04	0.25	100	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Dieldrin	0.005	0.1	0.2	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Endosulfan Sulfate	2.4	1,000	24	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Endrin	0.014	0.06	11	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Endrin Aldehyde	~	~	~	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Endrin Ketone	~	~	~	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Gamma Bhc (Lindane)	0.1	0.1	1.3	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Gamma-Chlordane	~	~	~	0.00217 U	0.0136 D	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Heptachlor	0.042	0.38	2.1	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Heptachlor Epoxide	~	~	~	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Methoxychlor	~	~	~	0.00217 U	0.00175 U	0.00165 U	0.00219 U	0.00184 UJ	0.00173 U	0.00197 UJ	0.00185 U	0.00179 U	0.00198 U	0.00189 U	0.00189 U	0.00197 U	0.00179 U	0.00177 U	0.00211 U	0.00184 U
Toxaphene	~	~	~	0.217 U	0.175 U	0.165 U	0.219 U	0.184 UJ	0.173 U	0.197 UJ	0.185 U	0.179 U	0.198 U	0.189 U	0.189 U	0.197 U	0.179 U	0.177 U	0.211 U	0.184 U
Herbicides (mg/kg)																				
2,4,5-T (Trichlorophenoxyacetic Acid)	~	~	~	0.0264 U	0.0209 U	0.0205 U	0.0263 U	0.022 U	0.021 U	0.0238 U	0.0223 U	0.022 U	0.0238 U	0.0231 U	0.0226 U	0.0237 U	0.0218 U	0.0213 U	0.0259 U	0.0222 U
2,4-D (Dichlorophenoxyacetic Acid)	~	~	~	0.0264 U	0.0209 U	0.0205 U	0.0263 U	0.022 U	0.021 U	0.0238 U	0.0223 U	0.022 U	0.0238 U	0.0231 U	0.0226 U	0.0237 U	0.0218 U	0.0213 U	0.0259 U	0.0222 U
Silvex (2,4,5-Tp)	3.8	3.8	100	0.0264 U	0.0209 U	0.0205 U	0.0263 U	0.022 U	0.021 U	0.0238 U	0.0223 U	0.022 U	0.0238 U	0.0231 U	0.0226 U	0.0237 U	0.0218 U	0.0213 U	0.0259 U	0.0222 U
Polychlorinated Biphenyls (mg/kg)																				
PCB-1016 (Aroclor 1016)	~	~	~	0.0219 U	0.0176 U	0.0167 U	0.0221 U	0.0186 UJ	0.0175 UJ	0.0199 UJ	0.0186 U	0.018 U	0.02 U	0.0191 U	0.0191 U	0.0199 U	0.0181 U	0.0178 U	0.0213 U	0.0185 U
PCB-1221 (Aroclor 1221)	~	~	~	0.0219 U	0.0176 U	0.0167 U	0.0221 U	0.0186 UJ	0.0175 UJ	0.0199 UJ	0.0186 U	0.018 U	0.02 U	0.0191 U	0.0191 U	0.0199 U	0.0181 U	0.0178 U	0.0213 U	0.0185 U
PCB-1232 (Aroclor 1232)	~	~	~	0.0219 U	0.0176 U	0.0167 U	0.0221 U	0.0186 UJ	0.0175 UJ	0.0199 UJ	0.0186 U	0.018 U	0.02 U	0.0191 U	0.0191 U	0.0199 U	0.0181 U	0.0178 U	0.0213 U	0.0185 U
PCB-1242 (Aroclor 1242)	~	~	~	0.0219 U	0.0176 U	0.0167 U	0.0221 U	0.0186 UJ	0.0175 UJ	0.0199 UJ	0.0186 U	0.018 U	0.02 U	0.0191 U	0.0191 U	0.0199 U	0.0181 U	0.0178 U	0.0213 U	0.0185 U
PCB-1248 (Aroclor 1248)	~	~	~	0.0219 U	0.0176 U	0.0167 U	0.0221 U	0.0186 UJ	0.0175 UJ	0.0199 UJ	0.0186 U	0.018 U	0.02 U	0.0191 U	0.0191 U	0.0199 U	0.0181 U	0.0178 U	0.0213 U	0.0185 U
PCB-1254 (Aroclor 1254)	~	~	~	0.0219 U	0.0176 U	0.0167 U	0.0221 U	0.0186 UJ	0.0175 UJ	0.0199 UJ	0.0186 U	0.018 U	0.02 U	0.0191 U	0.247	0.0199 U	0.0181 U	0.0178 U	0.0213 U	0.0185 U
PCB-1260 (Aroclor 1260)	~	~	~	0.0219 U	0.0579	0.0354	0.0221 U	0.0186 UJ	0.0175 UJ	0.0199 UJ	0.0622	0.018 U	0.02 U	0.0291 J	0.0191 U	0.0199 U	0.0181 U	0.0178 U	0.0213 U	0.0509
Total PCBs	0.1	3.2	1	0.0219 U	0.0579	0.0354	0.0221 U	0.0186 UJ	0.0175 UJ	0.0199 UJ	0.0622	0.018 U	0.02 U	0.0291 J	**0.247**	0.0199 U	0.0181 U	0.0178 U	0.0213 U	0.0509
Inorganics (mg/kg)																				
Aluminum	~	~	~	5630	7740	2590	9360	6670	3770	9720	7960	5400	3830	8090	6820	6040	7100	6870	3810	6320
Antimony	~	~	~	3.31 U	2.67 U	2.58 U	3.37 U	2.82 UJ	2.67 UJ	3.01 UJ	8.14 J	6.18 J	3.04 U	2.91 U	2.9 U	3.02 U	2.75 UJ	2.69 UJ	3.24 UJ	2.79 U
Arsenic	13	16	16	10.8	3.98	1.55 U	5.62	11.1 J	2.33	3.18	**15.7**	4.05	5.02	5.04	4.4	3.38	6.69	6.7	4.27	8.25
Barium	350	820	400	**1280**	194	44.8	**1190**	**438** J	92.5	120	**563**	**545**	265	**411**	279	115	**491**	**465**	170	218
Beryllium	7.2	47	72	0.264	0.053 U	0.052 U	0.067 U	0.056 U	0.053 U	0.06 U	0.056 U	0.056 U	0.061 U	0.058 U	0.058 U	0.06 U	0.055 U	0.054 U	0.065 U	0.056 U
Cadmium	2.5	7.5	4.3	0.989	0.98	0.31 U	**3.58**	0.943	0.32 U	0.361 U	2.28	2.08	0.376	0.874	0.963	0.364	1.37	1.27	0.689	1.4
Calcium	~	~	~	3050	18300	36800	3660	8870 B	24800 B	1780 B	16000	11100	3180	7320	17400	20000 B	14200 B	10200 B	88300 B	13100 B
Chromium, Hexavalent	1	19	110	0.662 U	0.535 U	0.517 U	0.674 U	0.565 UJ	0.533 U	0.602 U	0.563 U	0.556 U	0.609 U	0.581 U	0.58 U	0.604 UJ	0.55 U	0.537 U	0.649 U	0.558 U
Chromium, Total	~	~	~	30.7	26.9	10.2	36.7	30.8 J	12	16.1	50.7	236	17.5	23.3	43.6	26.9	28.4	29.7	13.3	33.7
Chromium, Trivalent	30	~	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	~	~	~	6.73	6.64	2.33	5.71	8.58 J	3.36	3.23	11.6	7.54	4.87	6.81	6.1	5.26	7.08	6.25	4.14	8.72
Copper	50	1,720	270	**56**	**69.3**	7.35	**2380**	**146** J	48.4	20.1	**687**	**447**	**133**	**71.8**	**71.4**	**63.5**	**143**	**173**	**263**	**83**
Cyanide	27	40	27	0.662 U	0.535 U	0.517 U	0.674 U	0.0113 UJ	0.0107 U	0.012 U	0.563 U	0.556 U	0.609 U	0.581 U	0.58 U	0.604 U	0.011 U	0.0107 U	0.013 U	0.0112 U
Iron	~	~	~	7590	17600	5780	13800	40200 J	8650	10500	67500	28900	9010	18800	19700	13600	24900	18700	19500	27300
Lead	63	450	400	**580**	**287**	8.64	**1360**	**1690** J	**102**	**71.1**	**3820**	**823**	**142**	**433**	**367**	**134**	**544**	**483**	**214**	**461**
Magnesium	~	~	~	1510	7480	16200	1140	2560 J	12800	1720	3390	4100	460	2250	5620	4970	4130	3230	49300	4140
Manganese	1,600	2,000	2,000	93.4	233	108	117	291 J	91.9	94.8	480	236	74.5	138	203	237	234	200	201	268
Mercury	0.18	0.73	0.81	**1.22**	**0.424**	0.031 U	**5.92**	**0.463**	0.0757	0.0721	**0.256**	**0.64**	0.109	**0.314**	**0.341**	0.142	**0.644**	**0.616**	**0.467**	**0.222**
Nickel	30	130	310	20.3	24.7	16.9	16.9	27.6 J	14.4	14.4	**43**	**43.8**	17.7	20.9	22	17.7	24.3	22.7	12.8	**38.6**
Potassium	~	~	~	622 B	1150 B	1190 B	610 B	742 B	609 B	706 B	1210 B	626 B	418 B	613 B	801 B	727 B	1060 B	708 B	647 B	768 B
Selenium	3.9	4	180	3.31 U	2.67 U	**11.3** J	3.37 U	2.82 UJ	**5.48** J	3.01 U	2.81 U	2.78 U	3.04 U	2.91 U	2.9 U	3.02 U	2.75 U	2.69 U	**5.24** J	2.79 U
Silver	2	8.3	180	0.662 U	0.535 U	0.517 U	**2.1**	0.565 UJ	0.533 U	0.602 U	0.692	**7.96**	0.609 U	0.581 U	0.58 U	0.604 U	0.55 U	1.2	0.649 U	0.558 U
Sodium	~	~	~	453	220	301	691	283 J	136	148 J	1380	166	382	461	313	193	471	611	213	196
Thallium	~	~	~	3.31 U	2.67 U	2.58 U	3.37 U	2.82 U	2.67 U	3.01 U	2.81 U	2.78 U	3.04 U	2.91 U	2.9 U	3.02 U	2.75 U	2.69 U	3.24 U	2.79 U
Vanadium	~	~	~	24.9	33.7	93.5	24.1	25.2 J	44	19.3	26.7	30	15.9	23.6	25	19.6	34.7	25	22.6	21.6
Zinc	109	2,480	10,000	**719**	**325**	14	**589**	**532** J	**121**	**116**	**632**	**839**	**169**	**295**	**267**	**116**	**448**	**470**	**732**	**711**
General Chemistry (%)																				
Solids, Percent	~	~	~	75.6	93.5	96.8	74.2	88.5	93.8	83.1	88.8	89.9	82.2	86	86.2	82.8	91	93.1	77.1	89.6

Notes provided on Page 6.
Concentrations above Unrestricted Use SCOs are bolded.
Concentrations above Protection of Groundwater SCOs are underlined.
Concentrations above Restricted Use Restricted-Residential SCOs are shaded.

Table 3B
Remedial Investigation Report
Soil Sample Analytical Results - PFAS

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Location	NYSDEC Part 375 Unrestricted Use Guidance Values	NYSDEC Part 375 Protection of Groundwater Guidance Values	NYSDEC Part 375 Restricted Use Restricted-Residential Guidance Values	LSB-21A		LSB-21B		LSB-21C		LSB-22A		LSB-22B		LSB-22C		LSB-23A		LSB-23B		LSB-23C		LSB-24A		LSB-24B	
Sample ID				066_LSB-21A		067_LSB-21B		068_LSB-21C		063_LSB-22A		064_LSB-22B		065_LSB-22C		069_LSB-23A		070_LSB-23B		071_LSB-23C		082_LSB-24A		083_LSB-24B	
Laboratory ID				21D0604-04		21D0604-05		21D0604-06		21D0604-01		21D0604-02		21D0604-03		21D0604-07		21D0604-08		21D0604-09		21D0750-01		21D0750-02	
Sample Date				4/13/2021		4/13/2021		4/13/2021		4/13/2021		4/13/2021		4/13/2021		4/13/2021		4/13/2021		4/13/2021		4/15/2021		4/15/2021	
Sample Depth (feet bgs)				0-2		5-7		12-14		0-2		4-6		13-15		0-2		8-10		18-20		0-2		3-5	
Stratigraphy				Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand		Ash		Fill/Sand		Fill/Sand		Ash		Fill/Sand		Fill/Sand		Ash	
Analyte				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Per and Polyfluoroalkyl Substances (ppb)																									
N-ethyl perfluorooctane- sulfonamidoacetic Acid (NEtFOSAA)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
N-methyl perfluorooctane- sulfonamidoacetic Acid (NMeFOSAA)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Perfluorobutanesulfonic Acid (PFBS)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Perfluorobutanoic acid (PFBA)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.786		0.69		0.477	U	1.97		0.518	U	0.511	U
Perfluorodecanesulfonic Acid (PFDS)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Perfluorodecanoic Acid (PFDA)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Perfluorododecanoic Acid (PFDoA)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Perfluoroheptanesulfonic Acid (PFHpS)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Perfluorohexanesulfonic Acid (PFHxS)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Perfluorohexanoic Acid (PFHxA)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Perfluorononanoic Acid (PFNA)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Perfluorooctanesulfonamide (FOSA)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Perfluorooctanesulfonic Acid (PFOS)	0.88	3.7	44	**1.34**		0.591	U	0.564	U	**2.14**		0.5	U	0.627	U	**1.47**		0.477	U	0.653	U	**1.61**		0.511	U
Perfluorooctanoic Acid (PFOA)	0.66	1.1	33	0.57		**0.683**		0.59		0.577		0.5	U	0.627	U	**1.09**		0.477	U	0.653	U	0.518	U	0.511	U
Perfluoropentanoic Acid (PFPeA)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Perfluorotetradecanoic Acid (PFTA)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Perfluorotridecanoic Acid (PFTrDA)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Perfluoroundecanoic Acid (PFUnA)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	~	~	~	0.51	U	0.591	U	0.564	U	0.512	U	0.5	U	0.627	U	0.514	U	0.477	U	0.653	U	0.518	U	0.511	U

Notes are provided on Page 3.
Concentrations above Unrestricted Use Guidance Values are bolded.
Concentrations above Restricted Use Restricted-Residential Guidance Values are shaded.
Concentrations above PGW Guidance Values are underlined.

Table 3B
Remedial Investigation Report
Soil Sample Analytical Results - PFAS

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Location	NYSDEC Part 375 Unrestricted Use Guidance Values	NYSDEC Part 375 Protection of Groundwater Guidance Values	NYSDEC Part 375 Restricted Use Restricted-Residential Guidance Values	LSB-24C		LSB-25A		LSB-25B		LSB-25C		LSB-26A		LSB-26B		LSB-26C		LSB-27A		LSB-27A		LSB-27B		LSB-27C	
Sample ID				084_LSB-24C		074_LSB-25A		075_LSB-25B		076_LSB-25C		072_LSB-26A		073_LSB-26B		081_LSB-26C		085_LSB-27A		086_DUP-4		087_LSB-27B		088_LSB-27C	
Laboratory ID				21D0750-03		21D0604-12		21D0604-13		21D0604-14		21D0604-10		21D0604-11		21D0652-01		21D0750-04		21D0750-05		21D0750-06		21D0750-07	
Sample Date				4/15/2021		4/13/2021		4/13/2021		4/13/2021		4/13/2021		4/13/2021		4/14/2021		4/15/2021		4/15/2021		4/15/2021		4/15/2021	
Sample Depth (feet bgs)				13-15		0-2		12-14		17-19		0-2		10-12		20.5-22.5		0-2		0-2		7-9		13-15	
Stratigraphy				Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand		Fill/Sand	
Analyte				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Per and Polyfluoroalkyl Substances (ppb)																									
N-ethyl perfluorooctane- sulfonamidoacetic Acid (NEtFOSAA)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
N-methyl perfluorooctane- sulfonamidoacetic Acid (NMeFOSAA)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluorobutanesulfonic Acid (PFBS)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluorobutanoic acid (PFBA)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.584		0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluorodecanesulfonic Acid (PFDS)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluorodecanoic Acid (PFDA)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluorododecanoic Acid (PFDoA)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluoroheptanesulfonic Acid (PFHpS)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluorohexanesulfonic Acid (PFHxS)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluorohexanoic Acid (PFHxA)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluorononanoic Acid (PFNA)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluorooctanesulfonamide (FOSA)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluorooctanesulfonic Acid (PFOS)	0.88	3.7	44	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	**1.07**		0.578	U	0.514	U	0.509	U	0.625	U	0.843	
Perfluorooctanoic Acid (PFOA)	0.66	1.1	33	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	**0.879**		0.578	U	0.514	U	0.509	U	**1.03**		0.545	U
Perfluoropentanoic Acid (PFPeA)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluorotetradecanoic Acid (PFTA)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluorotridecanoic Acid (PFTrDA)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Perfluoroundecanoic Acid (PFUnA)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	~	~	~	0.568	U	0.539	U	0.532	U	0.581	U	0.565	U	0.543	U	0.578	U	0.514	U	0.509	U	0.625	U	0.545	U

Notes are provided on Page 3.
Concentrations above Unrestricted Use Guidance Values are bolded.
Concentrations above Restricted Use Restricted-Residential Guidance Values are shaded.
Concentrations above PGW Guidance Values are underlined.

Table 3B
Remedial Investigation Report
Soil Sample Analytical Results - PFAS

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Notes:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Part 375 Remedial Programs Guidelines for Sampling and Analysis of Per- and Polyfluoroalkyl Substances (PFAS) Unrestricted Use, Protection of Groundwater, Restricted Use Restricted-Residential Guidance Values (Janurary 2021).
2. Detected analytical results above Unrestricted Use Guidance Values are bolded.
3. Detected analytical results above Protection of Groundwater Guidance Values are underlined.
4. Detected analytical results above Restricted Use Restricted-Residential Guidance Values are shaded.
5. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
6. Sample 086_DUP-4 is a duplicate sample of 085_LSB-27A.
7. ~ = Regulatory limit for this analyte does not exist
8. bgs = below grade surface
9. ppb = parts per billion

Qualifiers:

U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

Table 4A
Remedial Investigation Report
Groundwater Sample Analytical Results

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Location	NYSDEC SGVs	LMW-5		LMW-5		LMW-5		LMW-7		LMW-7		LMW-8		LMW-9		LMW-10		LMW-11		LMW-12		LMW-13		LMW-14	
Sample ID		053_LMW-5		054_DUP-3		105_LMW-5		102_LMW-7		103_DUP-1		101_LMW-8		106_LMW-9		110_LMW-10		109_LMW-11		108_LMW-12		111_LMW-13		107_LMW-14	
Laboratory ID		18E0702-01		18E0702-02		21D1189-05		21D1189-02		21D1189-03		21D1189-01		21D1189-06		21D1189-10		21D1189-09		21D1189-08		21D1189-11		21D1189-07	
Sample Date		5/14/2018		5/14/2018		4/26/2021		4/26/2021		4/26/2021		4/26/2021		4/26/2021		4/26/2021		4/26/2021		4/26/2021		4/26/2021		4/26/2021	
Volatile Organic Compounds (µg/L)																									
1,1,1,2-Tetrachloroethane	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,1,1-Trichloroethane	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,1,2,2-Tetrachloroethane	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	5	0.2	UJ	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,1,2-Trichloroethane	1	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,1-Dichloroethane	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,1-Dichloroethene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,1-Dichloropropene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,2,3-Trichlorobenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,2,3-Trichloropropane	0.04	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U
1,2,4-Trichlorobenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,2,4-Trimethylbenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,2-Dibromo-3-Chloropropane	0.04	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U
1,2-Dibromoethane (Ethylene Dibromide)	0.0006	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U	*0.2*	U
1,2-Dichlorobenzene	3	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,2-Dichloroethane	0.6	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,2-Dichloropropane	1	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,3,5-Trimethylbenzene (Mesitylene)	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,3-Dichlorobenzene	3	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,3-Dichloropropane	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,4-Dichlorobenzene	3	0.2	UJ	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
1,4-Dioxane (P-Dioxane)	~	40	UJ	40	UJ	40	U	40	U	40	U	40	U	40	U	40	U	40	U	40	U	40	U	40	U
2,2-Dichloropropane	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
2-Chlorotoluene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
2-Hexanone (MBK)	50	0.2	U	0.2	U	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ
4-Chlorotoluene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Acetone	50	2	U	2	U	1	U	1	U	1	U	2.93	J	22.2		2	U	1	U	3.27	J	1	U	1	U
Acrolein	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Acrylonitrile	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Benzene	1	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.36	J	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Bromobenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Bromochloromethane	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Bromodichloromethane	50	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Bromoform	50	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Bromomethane	5	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ
Carbon Disulfide	60	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	1.89		0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Carbon Tetrachloride	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Chlorobenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.57		0.2	U	0.2	U	0.2	U	0.2	U
Chloroethane	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Chloroform	7	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.28	J	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Chloromethane	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Cis-1,2-Dichloroethene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Cis-1,3-Dichloropropene	0.4	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Cyclohexane	~	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Dibromochloromethane	50	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Dibromomethane	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Dichlorodifluoromethane	5	0.2	UJ	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Ethylbenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Hexachlorobutadiene	0.5	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ
Isopropylbenzene (Cumene)	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
M,P-Xylene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl Acetate	~	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Methyl Ethyl Ketone (2-Butanone)	50	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.57		1.3		0.36	J	0.2	U	0.36	J	0.2	U	0.2	U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.5	U	0.2	U
Methylcyclohexane	~	0.2	UJ	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Methylene Chloride	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
n-Butylbenzene	5	0.2	U	0.2	U	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ
n-Propylbenzene	5	0.2	UJ	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
o-Xylene (1,2-Dimethylbenzene)	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
p-Cymene (p-Isopropyltoluene)	~	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.92		0.2	U
Sec-Butylbenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Styrene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
T-Butylbenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Tert-Butyl Alcohol	~	0.5	U	0.5	U	0.5	U	1.2	J	1.22	J	4.84		7.54		0.5	U	0.5	U	4.9		0.5	U	1.51	J
Tert-Butyl Methyl Ether	10	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.33	J	0.2	U	0.2	U
Tetrachloroethene (PCE)	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Toluene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.61		0.2	U
Total Xylenes	5	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
Trans-1,2-Dichloroethene	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Trans-1,3-Dichloropropene	0.4	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Trichloroethene (TCE)	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Trichlorofluoromethane	5	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Vinyl Chloride	2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Total BTEX	~	ND		ND		ND		ND		ND		0.36		ND		ND		ND		ND		0.61		ND	
Total CVOCs	~	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Total VOCs	~	ND		ND		ND		1.2		1.22		10.9		31		0.93		ND		8.86		1.53		1.51	

Table 4A
Remedial Investigation Report
Groundwater Sample Analytical Results

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Location Sample ID Laboratory ID Sample Date	NYSDEC SGVs	LMW-5 053_LMW-5 18E0702-01 5/14/2018	LMW-5 054_DUP-3 18E0702-02 5/14/2018	LMW-5 105_LMW-5 21D1189-05 4/26/2021	LMW-7 102_LMW-7 21D1189-02 4/26/2021	LMW-7 103_DUP-1 21D1189-03 4/26/2021	LMW-8 101_LMW-8 21D1189-01 4/26/2021	LMW-9 106_LMW-9 21D1189-06 4/26/2021	LMW-10 110_LMW-10 21D1189-10 4/26/2021	LMW-11 109_LMW-11 21D1189-09 4/26/2021	LMW-12 108_LMW-12 21D1189-08 4/26/2021	LMW-13 111_LMW-13 21D1189-11 4/26/2021	LMW-14 107_LMW-14 21D1189-07 4/26/2021
Semivolatile Organic Compounds (µg/L)													
1,2,4,5-Tetrachlorobenzene	5	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
1,2,4-Trichlorobenzene	5	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 UJ	2.86 UJ	2.78 UJ	2.78 UJ	2.7 U
1,2-Dichlorobenzene	3	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
1,2-Diphenylhydrazine	0	2.63 UJ	3.03 UJ	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
1,3-Dichlorobenzene	3	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
1,4-Dichlorobenzene	3	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
2,3,4,6-Tetrachlorophenol	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
2,4,5-Trichlorophenol	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
2,4,6-Trichlorophenol	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
2,4-Dichlorophenol	1	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
2,4-Dimethylphenol	1	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
2,4-Dinitrophenol	1	2.63 UJ	3.03 UJ	2.7 UJ	2.63 UJ	2.63 UJ	2.7 UJ	2.78 UJ	2.78 UJ	2.86 UJ	2.78 UJ	2.78 UJ	2.7 UJ
2,4-Dinitrotoluene	5	2.63 UJ	3.03 UJ	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
2,6-Dinitrotoluene	5	2.63 UJ	3.03 UJ	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
2-Chloronaphthalene	10	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
2-Chlorophenol	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
2-Methylnaphthalene	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
2-Methylphenol (o-Cresol)	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
2-Nitroaniline	5	2.63 UJ	3.03 UJ	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
2-Nitrophenol	~	2.63 UJ	3.03 UJ	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
3 & 4 Methylphenol (m&p Cresol)	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
3,3'-Dichlorobenzidine	5	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
3-Nitroaniline	5	2.63 UJ	3.03 UJ	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
4,6-Dinitro-2-Methylphenol	~	2.63 UJ	3.03 UJ	2.7 UJ	2.63 UJ	2.63 UJ	2.7 UJ	2.78 UJ	2.78 UJ	2.86 UJ	2.78 UJ	2.78 UJ	2.7 UJ
4-Bromophenyl Phenyl Ether	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
4-Chloro-3-Methylphenol	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
4-Chloroaniline	5	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
4-Chlorophenyl Phenyl Ether	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
4-Nitroaniline	5	2.63 UJ	3.03 UJ	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
4-Nitrophenol	~	5.26 U	6.06 U	5.41 U	5.26 U	5.26 U	5.41 U	5.56 U	5.56 U	5.71 U	5.56 U	5.56 U	5.41 U
Acenaphthene	20	0.0526 U	0.0606 U	0.0541 U	0.768	0.726	0.184	0.0556 U	0.0556 U	0.103	0.622	0.0556 U	2.63
Acenaphthylene	~	0.0526 U	0.0606 U	0.0541 U	0.0526 U	0.0526 U	0.0541 U	0.0556 U	0.0556 U	0.0571 U	0.0556 U	0.0556 U	0.0541 U
Acetophenone	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Aniline (Phenylamine, Aminobenzene)	5	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Anthracene	50	0.0526 U	0.0606 U	0.0541 U	0.211	0.211	0.0649	0.0556	0.0556 U	0.0571 U	0.1	0.0556 U	0.0541 U
Atrazine	7.5	0.526 UJ	0.606 UJ	0.541 U	0.526 U	0.526 U	0.541 U	0.556 U	0.556 U	0.571 U	0.556 U	0.556 U	0.541 U
Benzaldehyde	~	2.63 U	3.03 U	2.7 UJ	2.63 UJ	2.63 UJ	2.7 UJ	2.78 UJ	2.78 UJ	2.86 UJ	2.78 UJ	2.78 UJ	2.7 UJ
Benzidine	5	5.26 UJ	6.06 UJ	5.41 UJ	5.26 UJ	5.26 UJ	5.41 UJ	5.56 UJ	5.56 UJ	5.71 UJ	5.56 UJ	5.56 UJ	5.41 UJ
Benzo(a)anthracene	0.002	**0.0632**	0.0606 U	0.0541 UJ	0.0526 UJ	0.0526 UJ	0.0541 UJ	0.0556 UJ	0.0556 UJ	0.0571 UJ	0.0556 UJ	0.0556 UJ	0.0541 UJ
Benzo(a)pyrene	0	**0.0526** J	0.0606 UJ	0.0541 U	0.0526 U	0.0526 U	0.0541 U	0.0556 U	0.0556 U	0.0571 U	0.0556 U	0.0556 U	0.0541 U
Benzo(b)fluoranthene	0.002	0.0526 U	0.0606 U	0.0541 U	0.0526 U	0.0526 U	0.0541 U	0.0556 U	0.0556 U	0.0571 U	0.0556 U	0.0556 U	0.0541 U
Benzo(g,h,i)Perylene	~	0.0526 U	0.0606 U	0.0541 UJ	0.0526 UJ	0.0526 UJ	0.0541 UJ	0.0556 UJ	0.0556 UJ	0.0571 UJ	0.0556 UJ	0.0556 UJ	0.0541 UJ
Benzo(k)fluoranthene	0.002	0.0526 U	0.0606 U	0.0541 U	0.0526 U	0.0526 U	0.0541 U	0.0556 U	0.0556 U	0.0571 U	0.0556 U	0.0556 U	0.0541 U
Benzoic Acid	~	26.3 UJ	30.3 UJ	2.7 UJ	2.63 UJ	2.63 UJ	2.7 UJ	2.78 UJ	2.78 UJ	2.86 UJ	2.78 UJ	2.78 UJ	2.7 UJ
Benzyl Alcohol	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Benzyl Butyl Phthalate	50	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Biphenyl (Diphenyl)	5	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Bis(2-chloroethoxy) methane	5	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Bis(2-chloroethyl) ether (2-chloroethyl ether)	1	1.05 U	1.21 U	1.08 U	1.05 U	1.05 U	1.08 U	1.11 U	1.11 U	1.14 U	1.11 U	1.11 U	1.08 U
Bis(2-chloroisopropyl) ether	5	2.63 UJ	3.03 UJ	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Bis(2-ethylhexyl) phthalate	5	0.526 U	0.606 U	2.99 J	1.29 J	0.526 UJ	0.541 UJ	0.556 UJ	0.678 J	0.571 UJ	0.556 UJ	0.556 UJ	0.541 UJ
Caprolactam	~	2.63 U	3.03 U	2.7 UJ	2.63 UJ	2.63 UJ	2.7 UJ	2.78 UJ	2.78 U	2.86 U	2.78 U	2.78 U	2.7 UJ
Carbazole	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Chrysene	0.002	0.0526 U	0.0606 U	0.0541 U	0.0526 U	0.0526 U	0.0541 U	0.0556 U	0.0556 U	0.0571 U	0.0556 U	0.0556 U	0.0541 U
Dibenz(a,h)anthracene	~	0.0526 U	0.0606 U	0.0541 UJ	0.0526 UJ	0.0526 UJ	0.0541 UJ	0.0556 UJ	0.0556 UJ	0.0571 UJ	0.0556 UJ	0.0556 UJ	0.0541 UJ
Dibenzofuran	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Dibutyl phthalate	50	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Diethyl phthalate	50	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Dimethyl phthalate	50	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Dioctyl phthalate	50	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Fluoranthene	50	0.105	0.0727	0.0541 U	0.305	0.274	0.0649	0.0556 U	0.0556 U	0.0571 U	0.0556 U	0.0556 U	0.0541
Fluorene	50	0.0526 U	0.0606 U	0.389 J	0.6 J	0.568 J	0.151 U	0.0556 U	0.367 J	0.0571 U	0.222 U	0.356 J	0.119 U
Hexachlorobenzene	0.04	0.0211 UJ	0.0242 UJ	0.0216 U	0.0211 U	0.0211 U	0.0216 U	0.0222 U	0.0222 U	0.0229 U	0.0222 U	0.0222 U	0.0216 U
Hexachlorobutadiene	0.5	0.526 U	0.606 U	0.541 U	0.526 U	0.526 U	0.541 U	0.556 U	0.556 U	0.571 U	0.556 U	0.556 U	0.541 U
Hexachlorocyclopentadiene	5	5.26 UJ	6.06 UJ	5.41 UJ	5.26 UJ	5.26 UJ	5.41 UJ	5.56 UJ	5.56 U	5.71 U	5.56 U	5.56 U	5.41 UJ
Hexachloroethane	5	0.526 UJ	0.606 UJ	0.541 U	0.526 U	0.526 U	0.541 U	0.556 U	0.556 U	0.571 U	0.556 U	0.556 U	0.541 U
Indeno(1,2,3-cd)pyrene	0.002	0.0526 U	0.0606 U	0.0541 UJ	0.0526 UJ	0.0526 UJ	0.0541 UJ	0.0556 UJ	0.0556 UJ	0.0571 UJ	0.0556 UJ	0.0556 UJ	0.0541 UJ
Isophorone	50	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Naphthalene	10	0.0526 U	0.0606 U	0.0541 U	0.789	0.726	0.259	0.0556	0.0556 U	0.0571 U	0.0778	0.0556 U	0.0541 U
Nitrobenzene	0.4	0.263 U	0.303 U	0.27 U	0.263 U	0.263 U	0.27 U	0.278 U	0.278 U	0.286 U	0.278 U	0.278 U	0.27 U
n-Nitrosodimethylamine	~	0.526 UJ	0.606 UJ	0.541 U	0.526 U	0.526 U	0.541 U	0.556 U	0.556 U	0.571 U	0.556 U	0.556 U	0.541 U
n-Nitrosodi-N-Propylamine	~	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
n-Nitrosodiphenylamine	50	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Pentachlorophenol	1	0.263 UJ	0.303 UJ	0.27 UJ	0.263 UJ	0.263 UJ	0.27 UJ	0.278 UJ	0.278 UJ	0.286 UJ	0.278 UJ	0.278 UJ	0.27 UJ
Phenanthrene	50	0.0526	0.0606 U	0.0541 U	1.13	1.04	0.216	0.0556 U	0.0556 U	0.0571	0.278	0.0556 U	0.0541 U
Phenol	1	2.63 U	3.03 U	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U
Pyrene	50	0.0737	0.0606 U	0.0541 U	0.211	0.189	0.0757 J	0.0556 U	0.0556 U	0.0571 U	0.0556 U	0.0556 U	0.0541 U
Pyridine	50	2.63 UJ	3.03 UJ	2.7 U	2.63 U	2.63 U	2.7 U	2.78 U	2.78 U	2.86 U	2.78 U	2.78 U	2.7 U

Table 4A
Remedial Investigation Report
Groundwater Sample Analytical Results

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Location	NYSDEC	LMW-5		LMW-5		LMW-5		LMW-7		LMW-7		LMW-8		LMW-9		LMW-10		LMW-11		LMW-12		LMW-13		LMW-14	
Sample ID	SGVs	053_LMW-5		054_DUP-3		105_LMW-5		102_LMW-7		103_DUP-1		101_LMW-8		106_LMW-9		110_LMW-10		109_LMW-11		108_LMW-12		111_LMW-13		107_LMW-14	
Laboratory ID		18E0702-01		18E0702-02		21D1189-05		21D1189-02		21D1189-03		21D1189-01		21D1189-06		21D1189-10		21D1189-09		21D1189-08		21D1189-11		21D1189-07	
Sample Date		5/14/2018		5/14/2018		4/26/2021		4/26/2021		4/26/2021		4/26/2021		4/26/2021		4/26/2021		4/26/2021		4/26/2021		4/26/2021		4/26/2021	
Pesticides (µg/L)																									
4,4'-DDD	0.3	0.00457	U	0.00432	UJ	0.00421	U	0.00444	U	0.0041	UJ	0.0041	U	0.00421	U	0.004	U	0.0041	U	0.004	U	0.00421	U	0.004	U
4,4'-DDE	0.2	0.00457	U	0.00432	UJ	0.00421	U	0.00444	U	0.0041	UJ	0.0041	U	0.00421	U	0.004	U	0.0041	U	0.004	U	0.00421	U	0.004	U
4,4'-DDT	0.2	0.00457	U	0.00432	UJ	0.00421	U	0.00444	U	0.0041	UJ	0.0041	U	0.00421	U	0.004	U	0.0041	U	0.004	U	0.00421	U	0.004	U
Aldrin	0	*0.00457*	U	*0.00432*	UJ	*0.00421*	U	*0.00444*	U	*0.0041*	UJ	*0.0041*	U	*0.00421*	U	*0.004*	U	*0.0041*	U	*0.004*	U	*0.00421*	U	*0.004*	U
Alpha BHC (Alpha Hexachlorocyclohexane)	0.01	0.00457	U	0.00432	UJ	0.00421	U	0.00444	U	0.0041	UJ	0.0041	U	0.00421	U	0.004	U	0.0041	U	0.004	U	0.00421	U	0.004	U
Alpha Chlordane	~	0.00457	U	0.00432	UJ	0.00421	U	0.00444	U	0.0041	UJ	0.0041	U	0.00421	U	0.004	U	0.0041	U	0.004	U	0.00421	U	0.004	U
Alpha Endosulfan	~	0.00457	U	0.00432	UJ	0.00421	U	0.00444	U	0.0041	UJ	0.0041	U	0.00421	U	0.004	U	0.0041	U	0.004	U	0.00421	U	0.004	U
Beta Bhc (Beta Hexachlorocyclohexane)	0.04	0.00457	U	0.00432	UJ	0.00421	U	0.00444	U	0.0041	UJ	0.0041	U	0.00421	U	0.004	U	0.0041	U	0.004	U	0.00421	U	0.004	U
Beta Endosulfan	~	0.00457	U	0.00432	UJ	0.00421	U	0.00444	U	0.0041	UJ	0.0041	U	0.00421	U	0.004	U	0.0041	U	0.004	U	0.00421	U	0.004	U
Chlordane (alpha and gamma)	0.05	0.0229	U	0.0216	UJ	0.0105	U	0.0111	U	0.0103	UJ	0.0103	U	0.0105	U	0.01	U	0.0103	U	0.01	U	0.0105	U	0.01	U
Delta Bhc (Delta Hexachlorocyclohexane)	0.04	0.00457	U	0.00432	UJ	0.00421	U	0.00444	U	0.0041	UJ	0.0041	U	0.00421	U	0.004	U	0.0041	U	0.004	U	0.00421	U	0.004	U
Dieldrin	0.004	0.00229	U	0.00216	UJ	0.00211	U	0.00222	U	0.00205	UJ	0.00205	U	0.00211	U	0.002	U	0.00205	U	0.002	U	0.00211	U	0.002	U
Endosulfan Sulfate	~	0.00457	U	0.00432	UJ	0.00421	U	0.00444	U	0.0041	UJ	0.0041	U	0.00421	U	0.004	U	0.0041	U	0.004	U	0.00421	U	0.004	U
Endrin	0	*0.00457*	U	*0.00432*	UJ	*0.00421*	U	*0.00444*	U	*0.0041*	UJ	*0.0041*	U	*0.00421*	U	*0.004*	U	*0.0041*	U	*0.004*	U	*0.00421*	U	*0.004*	U
Endrin Aldehyde	5	0.0114	U	0.0108	UJ	0.0105	U	0.0111	U	0.0103	UJ	0.0103	U	0.0105	U	0.01	U	0.0103	U	0.01	U	0.0105	U	0.01	U
Endrin Ketone	5	0.0114	U	0.0108	UJ	0.0105	U	0.0111	U	0.0103	UJ	0.0103	U	0.0105	U	0.01	U	0.0103	U	0.01	U	0.0105	U	0.01	U
Gamma Bhc (Lindane)	0.05	0.00457	U	0.00432	UJ	0.00421	U	0.00444	U	0.0041	UJ	0.0041	U	0.00421	U	0.004	U	0.0041	U	0.004	U	0.00421	U	0.004	U
Gamma-Chlordane	~	0.0114	U	0.0108	UJ	0.0105	U	0.0111	U	0.0103	UJ	0.0103	U	0.0105	U	0.01	U	0.0103	U	0.01	U	0.0105	U	0.01	U
Heptachlor	0.04	0.00457	U	0.00432	UJ	0.00421	U	0.00444	U	0.0041	UJ	0.0041	U	0.00421	U	0.004	U	0.0041	U	0.004	U	0.00421	U	0.004	U
Heptachlor Epoxide	0.03	0.00457	U	0.00432	UJ	0.00421	U	0.00444	U	0.0041	UJ	0.0041	U	0.00421	U	0.004	U	0.0041	U	0.004	U	0.00421	U	0.004	U
Methoxychlor	35	0.00457	U	0.00432	UJ	0.00421	U	0.00444	U	0.0041	UJ	0.0041	U	0.00421	U	0.004	U	0.0041	U	0.004	U	0.00421	U	0.004	U
Toxaphene	0.06	*0.114*	U	*0.108*	UJ	*0.105*	U	*0.111*	U	*0.103*	UJ	*0.103*	U	*0.105*	U	*0.1*	U	*0.103*	U	*0.1*	U	*0.105*	U	*0.1*	U
Herbicides (µg/L)																									
2,4,5-T (Trichlorophenoxyacetic Acid)	35	NA		NA		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2,4-D (Dichlorophenoxyacetic Acid)	50	NA		NA		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Silvex (2,4,5-Tp)	0.26	NA		NA		*5*	U	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U
Polychlorinated Biphenyls (µg/L)																									
PCB-1016 (Aroclor 1016)	~	0.0571	UJ	0.0541	UJ	0.0526	U	0.0556	U	0.0513	U	0.0513	U	0.0526	U	0.05	U	0.0513	U	0.05	U	0.0526	U	0.05	U
PCB-1221 (Aroclor 1221)	~	0.0571	UJ	0.0541	UJ	0.0526	U	0.0556	U	0.0513	U	0.0513	U	0.0526	U	0.05	U	0.0513	U	0.05	U	0.0526	U	0.05	U
PCB-1232 (Aroclor 1232)	~	0.0571	UJ	0.0541	UJ	0.0526	U	0.0556	U	0.0513	U	0.0513	U	0.0526	U	0.05	U	0.0513	U	0.05	U	0.0526	U	0.05	U
PCB-1242 (Aroclor 1242)	~	0.0571	UJ	0.0541	UJ	0.0526	U	0.0556	U	0.0513	U	0.0513	U	0.0526	U	0.05	U	0.0513	U	0.05	U	0.0526	U	0.05	U
PCB-1248 (Aroclor 1248)	~	0.0571	UJ	0.0541	UJ	0.0526	U	0.0556	U	0.0513	U	0.0513	U	0.0526	U	0.05	U	0.0513	U	0.05	U	0.0526	U	0.05	U
PCB-1254 (Aroclor 1254)	~	0.0571	UJ	0.0541	UJ	0.0526	U	0.0556	U	0.0513	U	0.0513	U	0.0526	U	0.05	U	0.0513	U	0.05	U	0.0526	U	0.05	U
PCB-1260 (Aroclor 1260)	~	0.0571	UJ	0.0541	UJ	0.0526	U	0.0556	U	0.0513	U	0.0513	U	0.0526	U	0.05	U	0.0513	U	0.05	U	0.0526	U	0.05	U
Total PCBs	0.09	0.0571	UJ	0.0541	UJ	0.0526	U	0.0556	U	0.0513	U	0.0513	U	0.0526	U	0.05	U	0.0513	U	0.05	U	0.0526	U	0.05	U

Notes provided on Page 5.

Table 4A
Remedial Investigation Report
Groundwater Sample Analytical Results

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Location	NYSDEC SGVs	LMW-5	LMW-5	LMW-5	LMW-7	LMW-7	LMW-8	LMW-9	LMW-10	LMW-11	LMW-12	LMW-13	LMW-14
Sample ID		053_LMW-5	054_DUP-3	105_LMW-5	102_LMW-7	103_DUP-1	101_LMW-8	106_LMW-9	110_LMW-10	109_LMW-11	108_LMW-12	111_LMW-13	107_LMW-14
Laboratory ID		18E0702-01	18E0702-02	21D1189-05	21D1189-02	21D1189-03	21D1189-01	21D1189-06	21D1189-10	21D1189-09	21D1189-08	21D1189-11	21D1189-07
Sample Date		5/14/2018	5/14/2018	4/26/2021	4/26/2021	4/26/2021	4/26/2021	4/26/2021	4/26/2021	4/26/2021	4/26/2021	4/26/2021	4/26/2021
Inorganics (µg/L)													
Aluminum	~	480 J	260 J	55.6 U	61.3	55.6 U	59	55.6 U	94.1	55.6 U	65.1	55.6 U	55.6 U
Aluminum (Dissolved)	~	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	101	55.6 U	224
Antimony	3	1.11 UJ	1.11 UJ	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U
Antimony (Dissolved)	3	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ
Arsenic	25	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	7.59 J	1.2	1.11 U	1.16	13.2	1.16	1.11 U
Arsenic (Dissolved)	25	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.96	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U
Barium	1,000	506	497	406	320	325	144	306	492	789	**1600**	358	228
Barium (Dissolved)	1,000	378	371	346	275	261	66.6	175	378	576	**1270**	237	209
Beryllium	3	1.11 U	1.11 U	0.333 U	0.333 U	0.333 U	0.333 UJ	0.333 U	0.333 U	0.333 U	0.333 U	0.333 U	0.333 U
Beryllium (Dissolved)	3	1.11 UJ	1.11 UJ	0.333 UJ	0.333 UJ	0.333 UJ	0.333 UJ	0.333 UJ	0.333 UJ	0.333 UJ	0.333 UJ	0.333 UJ	0.333 UJ
Cadmium	5	1.11 U	1.11 U	0.556 UJ	0.556 UJ	0.556 UJ	0.556 UJ	0.556 UJ	0.556 UJ	0.556 UJ	0.556 UJ	0.556 UJ	0.556 UJ
Cadmium (Dissolved)	5	1.11 U	1.11 U	0.556 UJ	0.556 UJ	0.556 UJ	0.556 UJ	0.556 UJ	0.556 UJ	0.556 UJ	0.556 UJ	0.556 UJ	0.556 UJ
Calcium	~	225000 J	224000 J	225000	158000	160000	281000	117000	140000	185000	120000	162000	231000
Calcium (Dissolved)	~	224000	220000	220000 B	157000 B	156000 B	276000 B	115000 B	133000 B	181000 B	119000 B	157000 B	226000 B
Chromium, Hexavalent	50	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chromium, Total	50	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U
Chromium, Total (Dissolved)	50	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U
Chromium, Trivalent	~	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	~	5.56 U	5.56 U	4.44 U	4.44 U	4.44 U	4.44 U	4.44 U	4.44 U	4.44 U	4.44 U	4.44 U	4.44 U
Cobalt (Dissolved)	~	5.56 U	5.56 U	4.44 U	4.44 U	4.44 U	4.44 U	4.44 U	4.44 U	4.44 U	4.44 U	4.44 U	4.44 U
Copper	200	9.56 J	7.46	22.2 U	22.2 U	22.2 U	22.2 U	22.2 U	22.2 U	22.2 U	22.2 U	22.2 U	22.2 U
Copper (Dissolved)	200	5.56 J	5.56 U	22.2 U	22.2 U	22.2 U	22.2 U	22.2 U	22.2 U	22.2 U	22.2 U	22.2 U	22.2 U
Cyanide	200	NA	NA	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U
Iron	300	**32800**	**32500**	**13300**	**33200**	**33700**	**25900**	**28200**	**53200**	**41100**	**25300**	**47100**	**7580**
Iron (Dissolved)	300	**7000**	**6980**	**7780**	**24800**	**22000**	278 U	278 U	**35000**	**22300**	**5600**	**20700**	**2020**
Lead	25	**53.3** J	**41.6**	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U
Lead (Dissolved)	25	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U
Magnesium	35,000	23500	23200	21800	9910	9910	29400	22600	17400	15000	31900	15200	18400
Magnesium (Dissolved)	35,000	23900	23000	21200	9700	9760	29500	22500	17100	15100	32800	15000	18100
Manganese	300	**1030**	**1010**	**537**	**1180**	**1200**	**976**	**605**	**1240**	**569**	167	**370**	**400**
Manganese (Dissolved)	300	**1030**	**999**	**517**	**1180**	**1160**	**871**	**582**	**1250**	**564**	160	**366**	**407**
Mercury	0.7	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Mercury (Dissolved)	0.7	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	100	5.56 U	5.56 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U
Nickel (Dissolved)	100	5.56 U	5.56 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U
Potassium	~	13800	13200	12100	5040	4990	22400	25200	17200	9690	20500	7490	11200
Potassium (Dissolved)	~	13000	12800	11400	5030	5060	22800	25900	17700	9800	19500	7550	11300
Selenium	10	1.98 J	1.94 J	1.11 U	1.37 J	1.24 J	1.51 J	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U
Selenium (Dissolved)	10	1.84	2.27	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ	1.11 UJ
Silver	50	5.56 UJ	5.56 UJ	5.56 U	5.56 U	5.56 U	5.56 UJ	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U
Silver (Dissolved)	50	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 UJ	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U
Sodium	20,000	**25900** J	**25900** J	**22100**	16300	16500	**55300**	**150000**	**49900**	**30600**	**70700**	**29300**	**21000**
Sodium (Dissolved)	20,000	**25900**	**25800**	**21100**	15900	16100	**47100**	**145000**	**50100**	**30400**	**69000**	**29700**	19900
Thallium	0.5	*1.11* UJ	*1.11* UJ	*1.11* U	*1.11* U	*1.11* U	*1.11* U	*1.11* U	*1.11* U	*1.11* U	*1.11* U	*1.11* U	*1.11* U
Thallium (Dissolved)	0.5	*1.11* U	*1.11* U	*1.11* UJ	*1.11* UJ	*1.11* UJ	*1.11* UJ	*1.11* UJ	*1.11* UJ	*1.11* UJ	*1.11* UJ	*1.11* U	*1.11* UJ
Vanadium	~	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U
Vanadium (Dissolved)	~	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U
Zinc	2,000	76.4	65.2	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	81.5	52.9
Zinc (Dissolved)	2,000	22.5 J	18.1	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	49.7

Table 4A
Remedial Investigation Report
Groundwater Sample Analytical Results

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Notes:

1. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules and Regulations (NYCRR) Part 703.5 and the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA Water (herein collectively referenced as "NYSDEC SGVs").
2. Criterion comparisons for total xylenes and m,p-xylene are provided for reference. Promulgated NYSDEC SGVs are for o-xylene, m-xylene, and p-xylene.
3. Detected analytical results above NYSDEC SGVs are bolded and shaded.
4. Analytical results with reporting limits (RL) above NYSDEC SGVs are italicized.
5. Sample 054_DUP-3 is a duplicate sample of 053_LMW-5 and sample 103_DUP-1 is a duplicate sample of 102_LMW-7.
6. ~ = Regulatory limit for this analyte does not exist
7. μg/l = micrograms per liter
8. NA = Not analyzed
9. ND = Not detected

Qualifiers:

B = The analyte was found in the associated analysis batch blank.
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected at a level greater than or equal to the RL; however, the reported RL is approximate and may be inaccurate or imprecise.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

Table 4B
Remedial Investigation Report
Groundwater Sample Analytical Results - Emerging Contaminants

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Location Sample ID Laboratory ID Sample Date	NYSDEC January 2021 Guidance Values	LMW-5 105_LMW-5 21D1189-05 4/26/2021		LMW-7 102_LMW-7 21D1189-02 4/26/2021		LMW-7 103_DUP-1 21D1189-03 4/26/2021		LMW-8 101_LMW-8 21D1189-01 4/26/2021		LMW-9 106_LMW-9 21D1189-06 4/26/2021		LMW-10 110_LMW-10 21D1189-10 4/26/2021		LMW-11 109_LMW-11 21D1189-09 4/26/2021		LMW-12 108_LMW-12 21D1189-08 4/26/2021		LMW-13 111_LMW-13 21D1189-11 4/26/2021		LMW-14 107_LMW-14 21D1189-07 4/26/2021	
Semivolatile Organic Compounds (µg/L)																					
1,4-Dioxane (P-Dioxane)	1,000	300	U	300	U	300	U	300	U	300	U	300	U	300	U	300	U	300	U	300	U
Per and Polyfluoroalkyl Substances (µg/L)																					
N-ethyl perfluorooctane- sulfonamidoacetic Acid (NEtFOSAA)	100	1.85	U	1.89	U	1.94	U	1.94	U	1.8	U	1.94	U	1.81	U	2.52		1.94	U	1.89	U
N-methyl perfluorooctane- sulfonamidoacetic Acid (NMeFOSAA)	100	1.85	UJ	1.89	U	1.94	U	1.94	U	1.8	UJ	1.94	UJ	1.81	UJ	1.95	UJ	1.94	UJ	1.89	UJ
Perfluorobutanesulfonic Acid (PFBS)	100	1.85	U	3.73		3.72		5.33		3.87		1.94	U	1.82		4.82		2.32		1.99	
Perfluorobutanoic acid (PFBA)	100	3.61	J	11		9.41		15.7	J	14.5	J	3.53	J	2.45	J	10.1	J	3.07		2.52	
Perfluorodecanesulfonic Acid (PFDS)	100	1.85	U	1.89	U	1.94	U	1.94	U	1.8	U	1.94	U	1.81	U	1.95	U	1.94	U	1.89	U
Perfluorodecanoic Acid (PFDA)	100	1.85	U	1.89	U	1.94	U	1.94	U	1.8	U	1.94	U	1.81	U	1.95	U	1.94	U	1.89	U
Perfluorododecanoic Acid (PFDoA)	100	1.85	UJ	1.89	UJ	1.94	UJ	1.94	UJ	1.8	UJ	1.94	UJ	1.81	UJ	1.95	UJ	1.94	UJ	1.89	UJ
Perfluoroheptanesulfonic Acid (PFHpS)	100	1.85	U	1.91		1.94	U	1.94	U	1.8	U	1.94	U	1.81	U	1.95	U	1.94	U	1.89	U
Perfluoroheptanoic acid (PFHpA)	100	3.59		25.3		24.8		23.5		41.4		5.74		4.46		12.3		3.5		2.81	
Perfluorohexanesulfonic Acid (PFHxS)	100	2.06		24.2		24.7		4.55		8.07	J	1.94	U	1.81	U	6.76	J	1.94	U	1.89	U
Perfluorohexanoic Acid (PFHxA)	100	1.85	U	12.5		11.7		34.1		18.2		3.59		2.33		7.71		2.83		1.89	U
Perfluorononanoic Acid (PFNA)	100	1.85	U	2.09		2.01		1.94	U	2.14	J	1.94	U	1.81	U	1.95	U	1.94	U	1.89	U
Perfluorooctanesulfonamide (FOSA)	100	1.85	U	1.89	U	1.94	U	1.94	U	1.8	U	1.94	U	1.81	U	1.95	U	1.94	U	1.89	U
Perfluorooctanesulfonic Acid (PFOS)	10	2.72		**27.5**		**26.3**		5.33	J	**10.1**	J	3.27		1.81	U	**23.4**	J	5.62		3.26	
Perfluorooctanoic Acid (PFOA)	10	**29.3**		**43.4**		**39.8**		**73.5**		**169**		**30.3**		**32.6**		**70.3**		**24.9**		**18.4**	
Perfluoropentanoic Acid (PFPeA)	100	1.89		7.58		7.7		24.2		21.4	J	3.98		1.81	U	9.82		1.94	U	1.89	U
Perfluorotetradecanoic Acid (PFTA)	100	1.85	U	1.89	U	1.94	U	1.94	U	1.8	U	1.94	U	1.81	U	1.95	U	1.94	U	1.89	U
Perfluorotridecanoic Acid (PFTrDA)	100	1.85	U	1.89	U	1.94	U	1.94	U	1.8	U	1.94	U	1.81	U	1.95	U	1.94	U	1.89	U
Perfluoroundecanoic Acid (PFUnA)	100	1.85	U	1.89	U	1.94	U	1.94	U	1.8	U	1.94	U	1.81	U	1.95	U	1.94	U	1.89	U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	100	1.85	U	1.89	U	1.94	U	1.94	U	1.8	U	1.94	U	1.81	U	1.95	U	1.94	U	1.89	U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	100	4.63	U	4.73	U	4.84	U	4.84	U	4.5	U	4.84	U	4.53	U	4.88	U	4.84	U	4.73	U
Total PFAS	500	43.2		159		150		186		289		50.4		43.7		148		42.2		29	

Notes Provided on Page 2.

Table 4B
Remedial Investigation Report
Groundwater Sample Analytical Results - Emerging Contaminants

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Notes:

1. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Part 375 Remedial Programs Guidelines for Sampling and Analysis of Per- and Polyfluoroalkyl Substances (PFAS) (January 2021) and the 1,4-Dioxane value reflects the drinking water maximum contaminant level (MCL) adopted by New York State for public water systems (July 2020). Pursuant to Part 375-1.7(f)(2), the NYSDEC will treat the MCL as relevant and appropriate and will consider this value in remedy selection.
2. Detected analytical results above NYSDEC January 2021 Guidance Values are bolded and shaded.
3. Analytical results with reporting limits (RL) above NYSDEC January 2021 Guidance Values are italicized.
4. Sample 103_DUP-1 is a duplicate sample of 102_LMW-7.
5. ng/l = nanograms per liter

Qualifiers:

J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected at a level greater than or equal to the RL; however, the reported RL is approximate and may be inaccurate or imprecise.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

Table 5
Remedial Investigation Report
Soil Vapor Sample Analytical Results

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

Location	NYSDOH Decision Matrices Minimum Concnetrations	AMBIENT-1		LSV-1		LSV-2		LSV-2		LSV-3		LSV-4		LSV-5		LSV-6		LSV-7		LSV-8	
Sample ID		099_AMBIENT-1		091_LSV-1		092_LSV-2		100_DUP-1		093_LSV-3		094_LSV-4		095_LSV-5		096_LSV-6		097_LSV-7		098_LSV-8	
Laboratory ID		21D0856-09		21D0856-01		21D0856-02		21D0856-10		21D0856-03		21D0856-04		21D0856-05		21D0856-06		21D0856-07		21D0856-08	
Sample Date		4/19/2021		4/19/2021		4/19/2021		4/19/2021		4/19/2021		4/19/2021		4/19/2021		4/19/2021		4/19/2021		4/19/2021	
sample Type		AA		SV		SV		SV		SV		SV		SV		SV		SV		SV	
Volatile Organic Compounds (μg/m³)																					
1,1,1,2-Tetrachloroethane	~	0.77	U	2	U	1.1	U	1	U	2.2	U	1.1	U	1.2	U	2.2	U	2.1	U	1.1	U
1,1,1-Trichloroethane	100	0.61	U	1.6	U	0.86	U	0.82	U	1.7	U	0.91	U	0.92	U	1.8	U	1.7	U	0.85	U
1,1,2,2-Tetrachloroethane	~	0.77	U	2	U	1.1	U	1	U	2.2	U	1.1	U	1.2	U	2.2	U	2.1	U	1.1	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	~	0.86	U	2.3	U	1.2	U	1.1	U	2.4	U	1.3	U	1.3	U	2.5	U	2.3	U	1.2	U
1,1,2-Trichloroethane	~	0.61	U	1.6	U	0.86	U	0.82	U	1.7	U	0.91	U	0.92	U	1.8	U	1.7	U	0.85	U
1,1-Dichloroethane	~	0.45	U	1.2	U	0.64	U	0.61	U	1.3	U	0.68	U	0.68	U	1.3	U	1.2	U	0.63	U
1,1-Dichloroethene	6	0.11	U	0.29	U	0.16	U	0.15	U	0.31	U	0.17	U	0.17	U	0.32	U	0.3	U	0.15	U
1,2,4-Trichlorobenzene	~	0.83	U	2.2	U	1.2	U	1.1	U	2.3	U	1.2	U	1.2	U	2.4	U	2.3	U	1.2	U
1,2,4-Trimethylbenzene	~	0.55	U	1.5	U	1.5	D	1.4	D	2.2	D	9	D	4.8	D	2.4	D	8.7	D	3.2	D
1,2-Dibromoethane (Ethylene Dibromide)	~	0.86	U	2.3	U	1.2	U	1.2	U	2.4	U	1.3	U	1.3	U	2.5	U	2.4	U	1.2	U
1,2-Dichlorobenzene	~	0.68	U	1.8	U	0.95	U	0.9	U	1.9	U	1	U	1	U	1.9	U	1.8	U	0.94	U
1,2-Dichloroethane	~	0.45	U	1.2	U	0.64	U	0.61	U	1.3	U	0.68	U	0.68	U	1.3	U	1.2	U	0.63	U
1,2-Dichloropropane	~	0.52	U	1.4	U	0.73	U	0.69	U	1.5	U	0.77	U	0.78	U	1.5	U	1.4	U	0.72	U
1,2-Dichlorotetrafluoroethane	~	0.79	U	2.1	U	1.1	U	1	U	2.2	U	1.2	U	1.2	U	2.3	U	2.1	U	1.1	U
1,3,5-Trimethylbenzene (Mesitylene)	~	0.55	U	1.5	U	0.77	U	0.74	U	1.5	U	5.4	D	4.1	D	1.6	U	2.7	D	0.99	D
1,3-Butadiene	~	0.75	U	2	U	1	U	0.99	U	2.1	U	1.1	U	1.1	U	2.1	U	2	U	1	U
1,3-Dichlorobenzene	~	0.68	U	1.8	U	0.95	U	0.9	U	1.9	U	1	U	1	U	1.9	U	1.8	U	7.8	D
1,3-Dichloropropane	~	0.52	U	1.4	U	0.73	U	0.69	U	1.5	U	0.77	U	0.78	U	1.5	U	1.4	U	0.72	U
1,4-Dichlorobenzene	~	0.68	U	1.8	U	0.95	U	0.9	U	1.9	U	1.3	D	1	U	1.9	U	1.8	U	0.94	U
1,4-Dioxane (P-Dioxane)	~	0.81	U	2.1	U	1.1	U	1.1	U	2.3	U	1.2	U	1.2	U	2.3	U	2.2	U	1.1	U
2-Hexanone (MBK)	~	0.92	U	2.4	U	1.3	U	1.2	U	2.6	U	1.4	U	1.4	U	2.7	U	2.5	U	1.3	U
4-Ethyltoluene	~	0.55	U	1.5	U	1.3	D	1.2	D	1.5	U	5.6	D	1.3	D	1.8	D	6.9	D	3	D
Acetone	~	9	D	47	D	5.1	J	8.1	J	41	D	120	D	26	D	21	D	120	D	81	D
Acrylonitrile	~	0.24	U	0.64	U	0.34	U	0.33	U	0.68	U	0.36	U	0.37	U	0.7	U	0.66	U	0.34	U
Allyl Chloride (3-Chloropropene)	~	1.8	U	4.6	U	2.5	U	2.3	U	4.9	U	2.6	U	2.6	U	5.1	U	4.8	U	2.4	U
Benzene	~	0.68	D	1.2	D	0.75	D	0.81	D	3.3	D	19	D	23	D	3.3	D	3.3	D	3.9	D
Benzyl Chloride	~	0.58	U	1.5	U	0.81	U	0.78	U	1.6	U	0.86	U	0.87	U	1.7	U	1.6	U	0.81	U
Bromodichloromethane	~	0.75	U	2	U	1.1	U	1	U	2.1	U	1.1	U	1.1	U	2.2	U	2.1	U	1	U
Bromoethene	~	0.49	U	1.3	U	0.69	U	0.66	U	1.4	U	0.73	U	0.74	U	1.4	U	1.3	U	0.68	U
Bromoform	~	1.2	U	3.1	U	1.6	U	1.5	U	3.3	U	1.7	U	1.7	U	3.3	U	3.2	U	1.6	U
Bromomethane	~	0.44	U	1.1	U	0.61	U	0.58	U	1.2	U	0.65	U	0.65	U	1.3	U	1.2	U	0.6	U
Carbon Disulfide	~	0.35	U	45	D	19	D	18	D	160	D	12	D	1.8	D	16	D	11	D	0.73	D
Carbon Tetrachloride	6	0.57	D	0.46	U	0.25	U	0.24	U	0.5	U	0.26	U	0.26	U	0.51	U	0.48	U	0.24	U
Chlorobenzene	~	0.52	U	1.4	U	0.72	U	0.69	U	1.5	U	1.8	D	0.78	U	1.5	U	3.5	D	0.72	D
Chloroethane	~	0.3	U	0.78	U	0.41	U	0.4	U	0.83	U	0.44	U	0.44	U	0.85	U	0.81	U	0.41	U
Chloroform	~	0.55	U	1.4	U	0.77	U	0.73	U	1.5	U	0.81	U	0.82	U	1.6	U	1.5	U	0.76	U
Chloromethane	~	1.4	D	0.61	U	0.32	U	0.31	U	0.65	U	0.34	U	0.35	U	0.67	U	0.63	U	0.32	U
Cis-1,2-Dichloroethene	6	0.11	U	0.29	U	0.16	U	0.15	U	2	D	**7.3**	D	0.17	U	0.32	U	5.1	D	0.15	U
Cis-1,3-Dichloropropene	~	0.51	U	1.3	U	0.71	U	0.68	U	1.4	U	0.76	U	0.76	U	1.5	U	1.4	U	0.71	U
Cyclohexane	~	0.39	U	1.9	D	1.4	D	1.5	D	170	D	34	D	40	D	270	D	180	D	1.2	D
Dibromochloromethane	~	0.96	U	2.5	U	1.3	U	1.3	U	2.7	U	1.4	U	1.4	U	2.8	U	2.6	U	1.3	U
Dichlorodifluoromethane	~	2.3	D	1.5	U	1.3	D	1.3	D	2.6	D	12	D	1.8	D	190	D	1.5	U	6.2	D
Ethyl Acetate	~	0.81	U	2.1	U	1.1	U	1.1	U	2.3	U	1.2	U	1.2	U	20	D	18	D	1.9	D
Ethylbenzene	~	1.2	D	1.9	D	1.2	D	0.91	D	6.7	D	6.3	D	4	D	3.4	D	5.7	D	2	D
Hexachlorobutadiene	~	1.2	D	3.1	U	1.7	U	1.6	U	3.4	U	1.8	U	1.8	U	3.5	U	3.3	U	1.7	U
Isopropanol	~	13	J	1.5	UJ	2.9	J	6	J	1.5	UJ	5.4	J	3.4	J	3.3	J	4.3	J	8.1	J
M,P-Xylene	~	6	D	2.7	D	5.3	D	4	D	13	D	13	D	6.8	D	7.3	D	14	D	7.4	D
Methyl Ethyl Ketone (2-Butanone)	~	0.83	D	11	D	5.7	D	5.6	D	17	D	39	D	9.7	D	8.1	D	29	D	47	D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	0.46	U	1.2	U	1.4	D	0.61	U	1.3	U	0.68	U	0.69	U	34	D	1.3	U	0.64	U
Methyl Methacrylate	~	0.51	D	1.2	U	0.64	U	0.61	U	1.3	U	0.68	U	0.69	U	1.3	U	17	D	0.96	D
Methylene Chloride	100	20	D	20	D	3.1	J	1.6	J	2.2	U	1.9	J	1.9	J	5.7	J	11	D	4.6	J
n-Heptane	~	0.46	U	9.1	D	1	D	0.92	D	1.3	U	21	D	34	D	41	D	40	D	3.3	D
n-Hexane	~	0.75	D	19	D	2	D	2	D	160	D	72	D	130	D	160	D	290	D	6.9	D
o-Xylene (1,2-Dimethylbenzene)	~	1.4	D	1.3	U	2	D	1.8	D	1.4	U	6.7	D	2.9	D	2.4	D	10	D	3	D
Propylene	~	0.97	D	54	D	2.5	D	2.5	D	130	D	0.29	U	0.29	U	0.56	U	0.53	U	0.27	U
Styrene	~	0.48	U	1.3	U	0.67	U	0.64	U	1.3	U	0.71	U	0.72	U	1.4	U	1.3	U	0.66	U
Tert-Butyl Methyl Ether	~	0.4	U	1.1	U	0.57	U	0.54	U	1.1	U	0.6	U	0.61	U	1.2	U	1.1	U	0.56	U
Tetrachloroethene (PCE)	100	0.76	U	2	U	1.8	D	2	D	2.1	U	3.2	D	1.3	D	2.2	U	2.7	D	1.1	U
Tetrahydrofuran	~	0.66	U	1.7	U	16	D	16	D	1.9	U	0.98	U	0.99	U	1.9	U	1.8	U	160	D
Toluene	~	2.1	D	5.1	D	2.4	D	2.4	D	2.7	D	14	D	9.4	D	3.3	D	8.9	D	7.6	D
Trans-1,2-Dichloroethene	~	0.45	U	1.2	U	0.62	U	0.59	U	1.2	U	0.99	D	0.67	U	1.3	U	1.2	U	0.62	U
Trans-1,3-Dichloropropene	~	0.51	U	1.3	U	0.71	U	0.68	U	1.4	U	0.76	U	0.76	U	1.5	U	1.4	U	0.71	U
Trichloroethene (TCE)	6	0.15	U	0.4	U	0.25	D	0.2	U	0.42	U	0.22	U	0.23	U	0.44	U	0.41	U	0.21	U
Trichlorofluoromethane	~	1.8	D	1.7	U	4.9	D	5.1	D	1.8	U	0.94	D	0.95	U	1.8	U	1.7	U	2.4	D
Vinyl Acetate	~	0.4	U	1	U	0.55	U	0.53	U	1.1	U	0.59	U	0.59	U	1.1	U	2	D	0.55	U
Vinyl Chloride	6	0.14	U	0.38	U	0.2	U	0.19	U	4.8	D	**22**	D	0.22	U	0.41	U	2.3	D	0.2	U
Total BTEX	~	11.4		10.9		11.7		9.92		25.7		59		46.1		19.7		41.9		23.9	
Total CVOCs	~	20.6		20		5.15		3.6		6.8		34.4		3.2		5.7		21.1		4.6	

Table 5
Remedial Investigation Report
Soil Vapor Sample Analytical Results

12096 Flatlands Avenue
Brooklyn, New York
NYSDEC BCP Site No.: C224290
Langan Project No.: 100688801

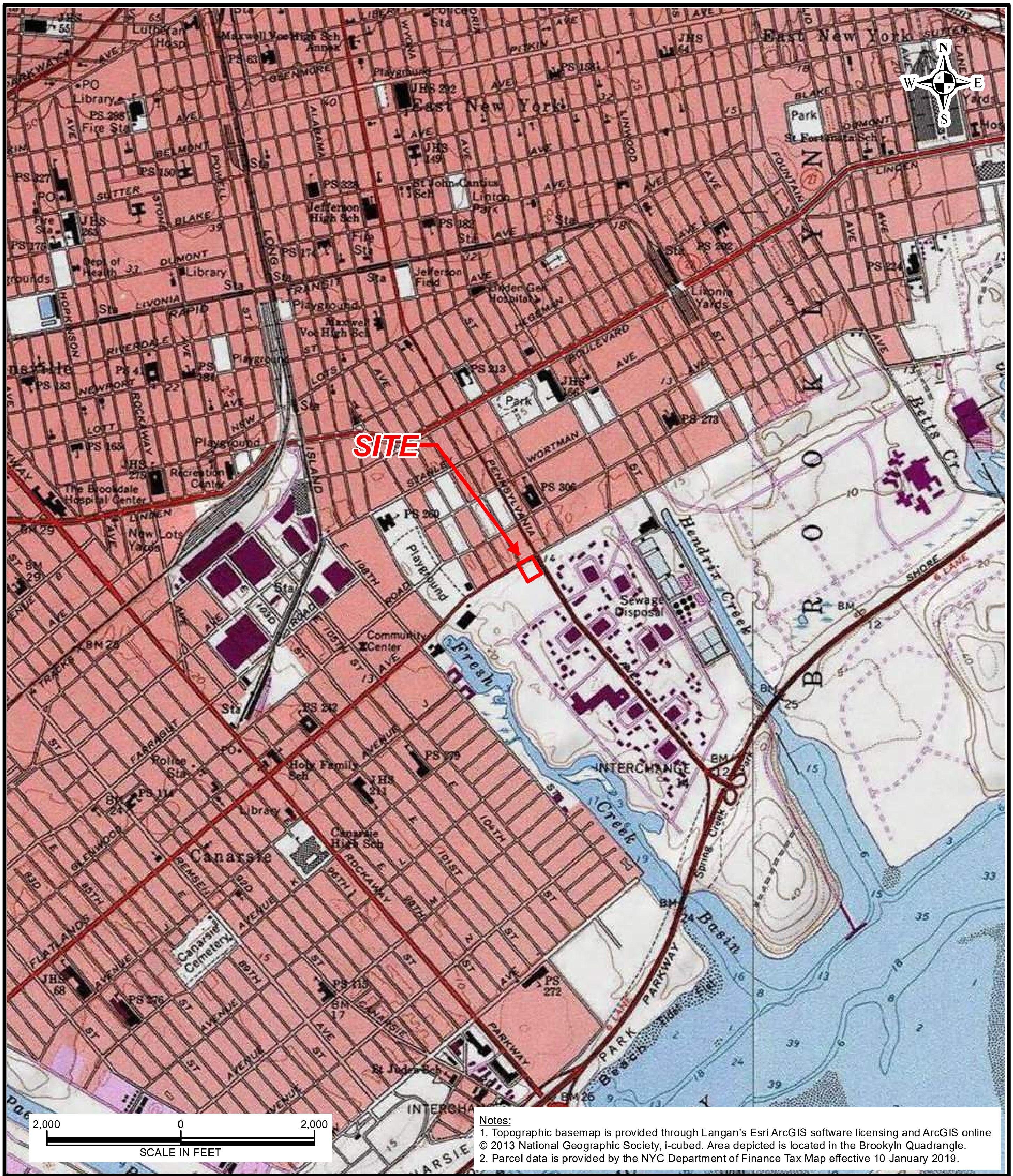
Notes:

1. Soil vapor sample analytical results are compared to the minimum soil vapor concentrations at which mitigation is recommended as set forth in the New York State Department of Health (NYSDOH) October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York Decision Matrices for Sub-Slab Vapor and Indoor Air and subsequent updates (2017).
2. Ambient air sample analytical results are shown for reference only.
3. Detected analytical results above the minimum soil vapor concentrations recommending mitigation are bolded and shaded.
4. Analytical results with reporting limits (RL) above the minimum soil vapor concentrations recommending mitigation are italicized.
5. Sample 100_DUP-1 is a duplicate of parent sample 092_LSV-2.
6. ~ = Regulatory limit for this analyte does not exist
7. μg/m³ = micrograms per cubic meter
8. AA = Ambient Air
9. SV = Soil Vapor

Qualifiers:

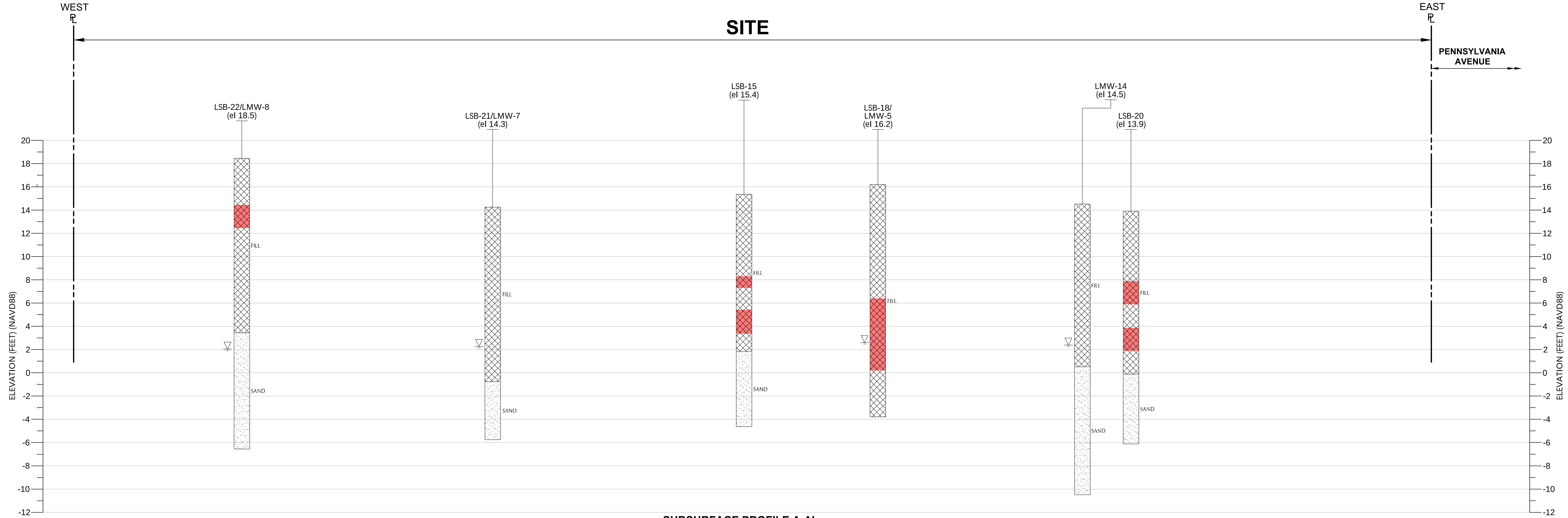
D = The concentration reported is a result of a diluted sample.
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

FIGURES



Notes:
1. Topographic basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online © 2013 National Geographic Society, i-cubed. Area depicted is located in the Brookyln Quadrangle.
2. Parcel data is provided by the NYC Department of Finance Tax Map effective 10 January 2019.

LANGAN	Project	Drawing Title	Project No. 100688801	Figure
300 Kimball Drive, Parsippany, NJ 07054. T: 973.560.4900 F: 973.560.4901 www.langan.com	12096 FLATLANDS AVENUE	SITE LOCATION MAP	Date 6/21/2021	1
Langan Engineering & Environmental Services, Inc. Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. Langan International LLC. Collectively known as Langan	BLOCK No. 4434, LOT No. 10		Scale 1"=2,000'	
	BROOKLYN		Drawn By JR	
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400	KINGS COUNTY NEW YORK		Last Revised 6/21/2021	



SUBSURFACE PROFILE A-A'
VERTICAL SCALE: 1" = 4'
HORIZONTAL SCALE: 1" = 8'

SUBSURFACE PROFILE B-B'
VERTICAL SCALE: 1" = 4'
HORIZONTAL SCALE: 1" = 8'

KEY PLAN N.T.S.

NOTES:

1. THIS PROFILE SHOWS GENERALIZED SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. VARIATIONS IN SUBSURFACE CONDITIONS SHOULD BE EXPECTED BETWEEN BORINGS. FOR A DETAILED DESCRIPTION OF CONDITIONS ENCOUNTERED, SEE BORING LOGS INCLUDED IN APPENDIX B AND APPENDIX H.
2. SOIL BORING LOCATIONS ARE APPROXIMATE. GROUND SURFACE ELEVATIONS FOR LSB-15 THROUGH LSB-20, WITH THE EXCEPTION OF LSB-18, ARE INFERRED FROM LIDAR FILES. GROUND SURFACE ELEVATIONS OF SOIL BORINGS COLLOCATED WITH MONITORING WELLS (LSB-18 AND LSB-21 THROUGH LSB-27) WERE SURVEYED USING GPS LOCATING TECHNIQUES.
3. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD88.
4. SOIL BORINGS LSB-15 THROUGH LSB-20 WERE COMPLETED ON 18 MAY 2018 AS PART OF THE 2018 PHASE II INVESTIGATION. LSB-21 THROUGH LSB-27 WERE COMPLETED BETWEEN 13 AND 15 APRIL 2021 AS PART OF THE 2021 REMEDIAL INVESTIGATION.

BORING KEY:

B-X
(el XX±)

MATERIAL (AS SPECIFIED)

LEGEND:

B-X	DRILLED BORING IDENTIFICATION
el XX±	APPROXIMATE SURFACE ELEVATION AT THE TIME OF BORING (NAVD88)
▽	GROUNDWATER IN MONITORING WELL
(red)	ASH LAYER OBSERVED

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, LAND SURVEYOR OR GEOLOGIST, TO ALTER THIS ITEM IN ANY WAY.

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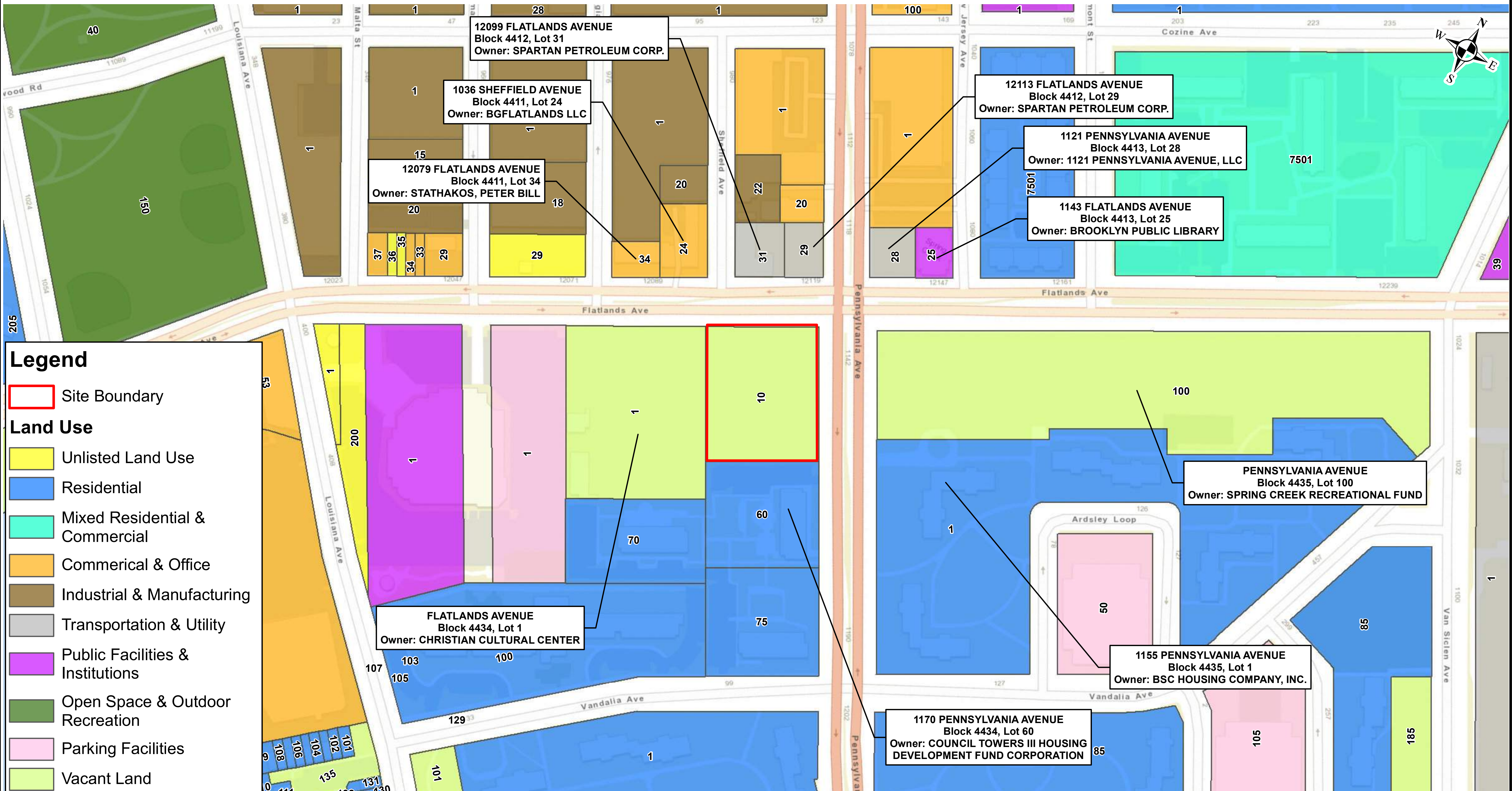
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project	Drawing Title	Project No. 100688801	Drawing No.
12096 FLATLANDS AVENUE BLOCK NO. 4434, LOT NO. 10 BROOKLYN KINGS COUNTY NEW YORK	SUBSURFACE PROFILES A-A' & B-B'	Date 06/24/2021 Drawn By AC Checked By BR	2

PROJECT NO. 100688801



References:
1.World street basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online.
2. Land use information from MapPLUTO 21v1 copyrighted by the New York City Department of Planning.

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Langan International LLC
Collectively known as Langan

NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project	Drawing Title	Project No.	Figure
12096 FLATLANDS AVENUE BLOCK No. 4434, LOT No. 10 BROOKLYN KINGS COUNTY NEW YORK	ADJACENT PROPERTY AND SURROUNDING LAND USE MAP	100688801 Date 6/21/2021 Scale 1 " = 200 ' Drawn By ATR Last Revised 6/21/2021	3

Path: \\Langan.com\data\PAR\data8\100688801\Project Data\ArcGIS\MXD\Environmental_Figures\2021-06 BCP RIR (Lot 10)\Figure 3 - Adjacent Property and Surrounding Land Use.mxd Date: 6/21/2021 User: aruane Time: 1:27:06 PM

References:
1. Aerial imagery provided by Nearmap ltd., collected April 8, 2018.
2. Parcel information from MapPLUTO 21v1 copyrighted by the New York City Department of Planning.

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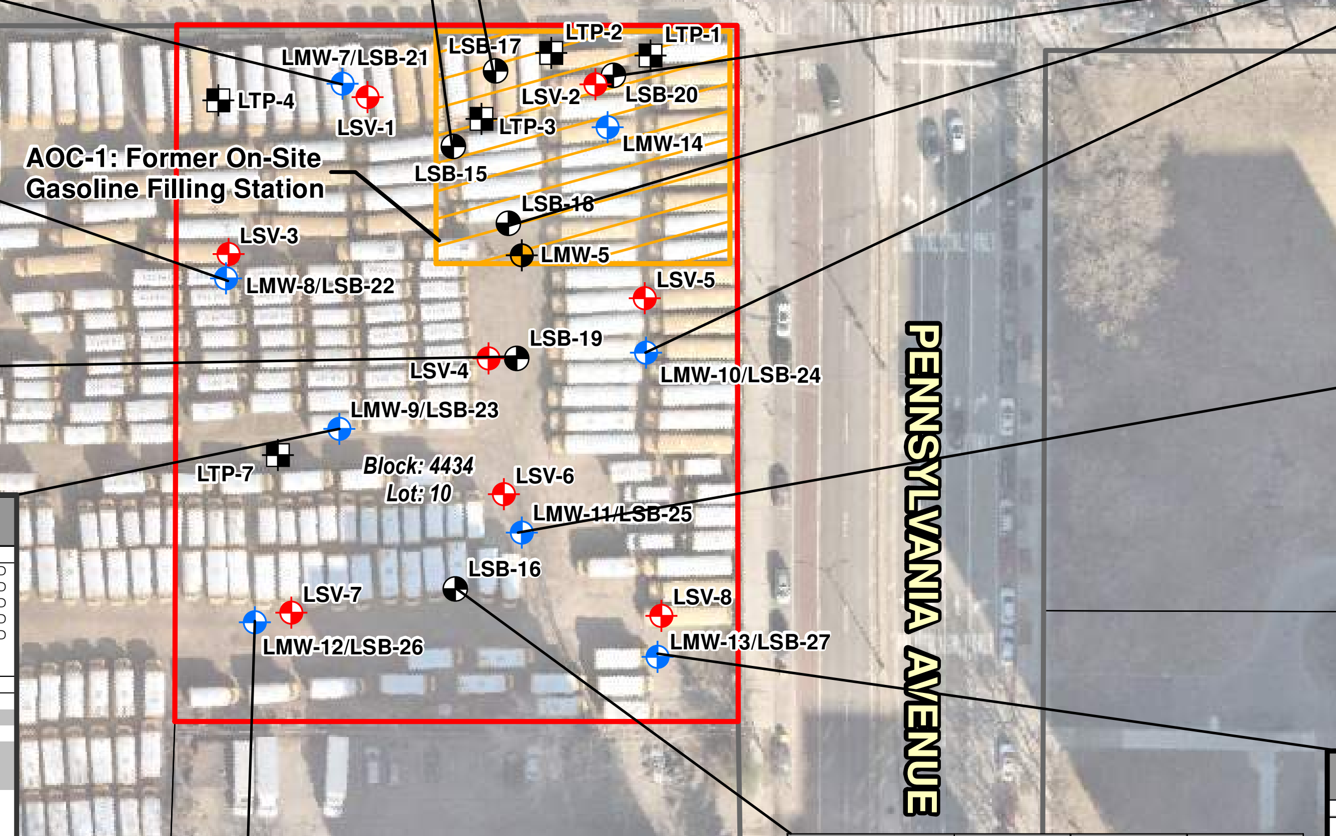
Project	Drawing Title	Project No.	Figure
12096 FLATLANDS AVENUE BLOCK No. 4434, LOT No. 10 BROOKLYN KINGS COUNTY NEW YORK	SITE PLAN	100688801	4
		Date: 6/21/2021	
		Scale: 1 " = 50 '	
		Drawn By: ATR	
		Last Revised: 6/21/2021	

Path: \\Langan.com\data\PAR\data8\100688801\Project Data\ArcGIS\MXD\Environmental_Figures\2021-06 BCP RIR (Lot 10)\Figure 4 - Site Plan.mxd Date: 6/21/2021 User: aruane Time: 12:45:45 PM



Sample ID	063_LSB-22A	064_LSB-22B	065_LSB-22C
Sample Date	4/13/2021	4/13/2021	4/13/2021
Sample Depth (feet bgs)	0-2	4-6	13-15
SVOCs (mg/kg)			
Benzo(a)anthracene	0.221 D	0.358 JD	0.0721 JD
Benzo(a)pyrene	0.285 D	0.413 JD	0.0703 JD
Benzo(b)fluoranthene	0.283 D	0.392 JD	0.0651 JD
Benzo(k)fluoranthene	0.228 D	0.33 JD	0.0615 JD
Chrysene	0.238 D	0.455 D	0.0809 JD
Dibenz(a,h)anthracene	0.0511 JD	ND	ND
Indeno(1,2,3-cd)pyrene	0.174 D	0.292 JD	ND
Inorganics (mg/kg)			
Arsenic	5.67	4.58	10.8
Barium	85.6	87	1280
Cadmium	0.419	0.773	0.989
Copper	27.2	88.8	56
Lead	91.8	190	580
Mercury	0.19	0.0786	1.22
Nickel	20.2	22.5	20.3
Selenium	ND	ND	ND
Silver	ND	ND	ND
Zinc	97.9	139	719

Sample ID	066_LSB-21A	067_LSB-21B	068_LSB-21C
Sample Date	4/13/2021	4/13/2021	4/13/2021
Sample Depth (feet bgs)	0-2	5-7	12-14
SVOCs (mg/kg)			
Benzo(a)anthracene	0.885 D	0.0587 JD	0.635 D
Benzo(a)pyrene	1.09 D	0.0678 JD	0.662 D
Benzo(b)fluoranthene	1.15 D	0.0554 JD	0.487 D
Benzo(k)fluoranthene	0.908 D	0.0521 JD	0.428 D
Chrysene	0.914 D	0.0653 JD	0.712 D
Dibenz(a,h)anthracene	0.217 D	ND	0.126 D
Indeno(1,2,3-cd)pyrene	0.759 D	ND	0.383 D
Inorganics (mg/kg)			
Arsenic	5.68	7.69	3.64
Barium	231	801	365
Cadmium	1.79	ND	ND
Copper	133	111	43.5
Lead	340	4030	150
Mercury	0.468	0.304	0.074
Nickel	26.6	15.8	16.2
Selenium	ND	ND	ND
Silver	ND	ND	ND
Zinc	634	103	169

Sample ID	005_LSB-15A	006_LSB-15B
Sample Date	5/8/2018	5/8/2018
Sample Depth (feet bgs)	0-2	12-14
SVOCs (mg/kg)		
Benzo(a)anthracene	4.12 DE	1.29 DE
Benzo(a)pyrene	3.63 DE	1.32 DE
Benzo(b)fluoranthene	2.85 DE	0.719 DE
Benzo(k)fluoranthene	2.73 DE	0.818 DE
Chrysene	3.59 DE	1.51 DE
Dibenz(a,h)anthracene	0.729 J	0.234 J
Indeno(1,2,3-cd)pyrene	1.99 J	0.58 J
Inorganics (mg/kg)		
Arsenic	1.46	3.54
Barium	113	168
Cadmium	0.617	10.7
Chromium, Trivalent	17.9	21.9
Copper	70.7	63.9
Lead	166	309
Mercury	0.241	0.213
Nickel	17	15
Selenium	ND	ND
Silver	ND	ND
Zinc	203	3540

Sample ID	007_LSB-17A	008_LSB-17B
Sample Date	5/8/2018	5/8/2018
Sample Depth (feet bgs)	0-2	10-12
SVOCs (mg/kg)		
Benzo(a)anthracene	2.96 DE	ND
Benzo(a)pyrene	2.81 DE	ND
Benzo(b)fluoranthene	1.57 DE	ND
Benzo(k)fluoranthene	1.86 DE	ND
Chrysene	3.23 DE	0.0519 JDE
Dibenz(a,h)anthracene	0.519 J	ND
Indeno(1,2,3-cd)pyrene	1.39 J	ND
Inorganics (mg/kg)		
Arsenic	ND	5.94
Barium	269	10400
Cadmium	2.08	4.68
Chromium, Trivalent	24.3	13.2
Copper	127	40.8
Lead	431	566
Mercury	0.432	0.0951
Nickel	66.4	9.49
Selenium	ND	ND
Silver	ND	ND
Zinc	635	9280 D

Sample ID	009_LSB-20A	010_LSB-20B
Sample Date	5/8/2018	5/8/2018
Sample Depth (feet bgs)	0-2	9-11
SVOCs (mg/kg)		
Benzo(a)anthracene	0.565 DE	0.122 DE
Benzo(a)pyrene	0.588 DE	0.112 DE
Benzo(b)fluoranthene	0.473 DE	0.0973 JDE
Benzo(k)fluoranthene	0.468 DE	0.0933 JDE
Chrysene	0.521 DE	0.108 DE
Dibenz(a,h)anthracene	0.127 J	ND
Indeno(1,2,3-cd)pyrene	0.342 J	0.0696 J
Inorganics (mg/kg)		
Arsenic	4.82	ND
Barium	101	330
Cadmium	0.431	1.51
Chromium, Trivalent	17.3	74.6
Copper	34.6	319
Lead	130	543
Mercury	0.183	1.53
Nickel	20	52.7
Selenium	ND	ND
Silver	ND	1.75
Zinc	135	423

Sample ID	011_LSB-18A	012_LSB-18B
Sample Date	5/8/2018	5/8/2018
Sample Depth (feet bgs)	0-2	12-14
SVOCs (mg/kg)		
Benzo(a)anthracene	0.555 DE	0.099 DE
Benzo(a)pyrene	0.541 DE	0.0952 JDE
Benzo(b)fluoranthene	0.435 DE	0.08 JDE
Benzo(k)fluoranthene	0.445 DE	0.0754 JDE
Chrysene	0.557 DE	0.099 DE
Dibenz(a,h)anthracene	0.126 DE	ND
Indeno(1,2,3-cd)pyrene	0.334 DE	0.0525 J
Inorganics (mg/kg)		
Arsenic	5.1	ND
Barium	104	93.2
Cadmium	0.426	ND
Chromium, Trivalent	18.4	26.9
Copper	35.3	35.4
Lead	111	139
Mercury	0.211	0.103
Nickel	31	18.9
Selenium	ND	ND
Silver	ND	ND
Zinc	115	95.2

Sample ID	019_LSB-19A	020_LSB-19B
Sample Date	5/8/2018	5/8/2018
Sample Depth (feet bgs)	0-2	10-12
SVOCs (mg/kg)		
Benzo(a)anthracene	0.787 DE	0.699 DE
Benzo(a)pyrene	0.928 DE	0.781 DE
Benzo(b)fluoranthene	0.7 DE	0.536 DE
Benzo(k)fluoranthene	0.683 DE	0.563 DE
Chrysene	0.773 DE	0.674 DE
Dibenz(a,h)anthracene	0.194 J	0.142 J
Indeno(1,2,3-cd)pyrene	0.452 J	0.304 J
Inorganics (mg/kg)		
Arsenic	3.73	2.62
Barium	305	481
Cadmium	1.17	0.72
Chromium, Trivalent	20.9	23.9
Copper	104	120
Lead	426	288
Mercury	0.505	0.256
Nickel	24.6	21
Selenium	ND	ND
Silver	ND	ND
Zinc	414	235

Analyte	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	NYSDEC Part 375 Restricted Use Restricted-Residential SCOs
SVOCs (mg/kg)			
Benzo(a)anthracene	1	1	1
Benzo(a)pyrene	1	22	1
Benzo(b)fluoranthene	1	1.7	1
Benzo(k)fluoranthene	0.8	1.7	1.7
Chrysene	1	1	3.9
Dibenz(a,h)anthracene	0.33	1,000	0.33
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5
Inorganics (mg/kg)			
Arsenic	13	16	16
Barium	350	820	400
Cadmium	2.5	7.5	4.3
Chromium, Trivalent	30	~	180
Copper	50	1,720	270
Lead	63	450	400
Mercury	0.18	0.73	0.81
Nickel	30	130	310
Selenium	3.9	4	180
Silver	2	8.3	180
Zinc	109	2,480	10,000

Sample ID	069_LSB-23A	070_LSB-23B	071_LSB-23C
Sample Date	4/13/2021	4/13/2021	4/13/2021
Sample Depth (feet bgs)	0-2	8-10	18-20
SVOCs (mg/kg)			
Benzo(a)anthracene	0.863 D	ND	0.0687 JD
Benzo(a)pyrene	0.911 D	ND	0.0678 JD
Benzo(b)fluoranthene	0.848 D	ND	0.066 JD
Benzo(k)fluoranthene	0.683 D	ND	0.059 JD
Chrysene	0.789 D	ND	0.074 JD
Dibenz(a,h)anthracene	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.583 JD	ND	ND
Inorganics (mg/kg)			
Arsenic	3.98	ND	5.62
Barium	194	44.8	1190
Cadmium	0.98	ND	3.58
Copper	69.3	7.35	2380
Lead	287	8.64	1360
Mercury	0.424	ND	5.92
Nickel	24.7	16.9	16.9
Selenium	ND	11.3 J	ND
Silver	ND	ND	2.1
Zinc	325	14	589

Sample ID	072_LSB-26A	073_LSB-26B	081_LSB-26C
Sample Date	4/13/2021	4/13/2021	4/14/2021
Sample Depth (feet bgs)	0-2	10-12	20.5-22.5
SVOCs (mg/kg)			
Benzo(a)anthracene	0.445 D	1.03 D	0.489 D
Benzo(a)pyrene	0.518 D	1.05 D	0.415 D
Benzo(b)fluoranthene	0.427 D	0.882 D	0.311 D
Benzo(k)fluoranthene	0.384 D	0.781 D	0.352 D
Chrysene	0.423 D	0.998 D	0.483 D
Dibenz(a,h)anthracene	0.0995 D	0.123 D	0.0813 JD
Indeno(1,2,3-cd)pyrene	0.289 D	0.403 D	0.227 D
Inorganics (mg/kg)			
Arsenic	5.04	4.4	3.38
Barium	411	279	115
Cadmium	0.874	0.963	0.364
Copper	71.8	71.4	63.5
Lead	433	367	134
Mercury	0.314	0.341	0.142
Nickel	20.9	22	17.7
Selenium	ND	ND	ND
Silver	ND	ND	ND
Zinc	295	267	116

Sample ID	014_LSB-16A	015_DUP-1	016_LSB-16B
Sample Date	5/8/2018	5/8/2018	5/8/2018
Sample Depth (feet bgs)	0-2	0-2	14-16
SVOCs (mg/kg)			
Benzo(a)anthracene	0.522 DE	0.403 DE	0.19 DE
Benzo(a)pyrene	0.55 DE	0.438 DE	0.247 DE
Benzo(b)fluoranthene	0.434 DE	0.366 DE	0.17 DE
Benzo(k)fluoranthene	0.393 DE	0.342 DE	0.178 DE
Chrysene	0.553 DE	0.43 DE	0.173 DE
Dibenz(a,h)anthracene	0.12 J	0.106 J	ND
Indeno(1,2,3-cd)pyrene	0.304 J	0.262 J	0.127 J
Inorganics (mg/kg)			
Arsenic	7.71	5.08	ND
Barium	697	346	63.7
Cadmium	1.14	1.16	ND
Chromium, Trivalent	29.4	19	14.3
Copper	155	152	22
Lead	490	446	98.6
Mercury	0.465	0.35	0.084
Nickel	27.6	20.6	20.6
Selenium	ND	ND	ND
Silver	ND	ND	ND
Zinc	431	384	88.1

Sample ID	082_LSB-24A	083_LSB-24B	084_LSB-24C
Sample Date	4/15/2021	4/15/2021	4/15/2021
Sample Depth (feet bgs)	0-2	3-5	13-15
SVOCs (mg/kg)			
Benzo(a)anthracene	0.408 D	0.182 D	0.435 D
Benzo(a)pyrene	0.441 D	0.215 D	0.402 D
Benzo(b)fluoranthene	0.328 D	0.171 D	0.348 D
Benzo(k)fluoranthene	0.343 D	0.171 D	0.27 D
Chrysene	0.389 D	0.18 D	0.668 D
Dibenz(a,h)anthracene	0.0602 JD	ND	0.102 D
Indeno(1,2,3-cd)pyrene	0.282 D	0.142 D	0.233 D
Inorganics (mg/kg)			
Arsenic	11.1 J	2.33	3.18
Barium	438 J	92.5	120
Cadmium	0.943	ND	ND
Copper	146 J	48.4	20.1
Lead	1690 J	102	71.1
Mercury	0.463	0.0757	0.0721
Nickel	27.6 J	14.4	14.4
Selenium	ND	5.48 J	ND
Silver	ND	ND	ND
Zinc	532 J	121	116

Sample ID	074_LSB-25A	075_LSB-25B	076_LSB-25C
Sample Date	4/13/2021	4/13/2021	4/13/2021
Sample Depth (feet bgs)	0-2	12-14	17-19
SVOCs (mg/kg)			
Benzo(a)anthracene	0.573 D	0.775 D	ND
Benzo(a)pyrene	0.589 D	0.675 D	ND
Benzo(b)fluoranthene	0.5 D	0.56 D	ND
Benzo(k)fluoranthene	0.456 D	0.523 D	ND
Chrysene	0.594 D	0.794 D	ND
Dibenz(a,h)anthracene	0.156 D	0.152 D	ND
Indeno(1,2,3-cd)pyrene	0.464 D	0.415 D	ND
Inorganics (mg/kg)			
Arsenic	15.7	4.05	5.02
Barium	563	545	265
Cadmium	2.28	2.08	0.376
Copper	687	447	133
Lead	3820	823	142
Mercury	0.256	0.64	0.109
Nickel	43	43.8	17.7
Selenium	ND	ND	ND
Silver	0.692	7.96	ND
Zinc	632	839	169

Sample ID	085_LSB-27A	086_DUP-4	087_LSB-27B	088_LSB-27C
Sample Date	4/15/2021	4/15/2021	4/15/2021	4/15/2021
Sample Depth (feet bgs)	0-2	0-2	7-9	13-15
SVOCs (mg/kg)				
Benzo(a)anthracene	0.438 D	0.546 D	0.454 D	0.171 D
Benzo(a)pyrene	0.565 D	0.667 D	0.665 D	0.184 D
Benzo(b)fluoranthene	0.429 D	0.542 D	0.53 D	0.142 D
Benzo(k)fluoranthene	0.387 D	0.521 D	0.48 D	0.145 D
Chrysene	0.424 D	0.543 D	0.444 D	0.162 D
Dibenz(a,h)anthracene	0.103 D	0.125 D	0.114 D	ND
Indeno(1,2,3-cd)pyrene	0.317 D	0.385 D	0.342 D	0.105 D
Inorganics (mg/kg)				
Arsenic	6.69	6.7	4.27	8.25
Barium	491	465	170	218
Cadmium	1.37	1.27	0.689	1.4
Copper	143	173	263	83
Lead	544	483	214	461
Mercury	0.644	0.616	0.467	0.222
Nickel	24.3	22.7	12.8	38.6
Selenium	ND	ND	5.24 J	ND
Silver	ND	1.2	ND	ND
Zinc	448	470	732	711

Notes:
1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use, Protection of Groundwater, and Restricted Use Restricted-Residential Soil Cleanup Objectives (SCO).
2. Detected analytical results above Unrestricted Use SCOs are bolded.
3. Detected analytical results above Protection of Groundwater SCOs are underlined.
4. Detected analytical results above Restricted Use Restricted-Residential SCOs are shaded.
5. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
6. Sample 015_DUP-1 is a duplicate sample of 014_LSB-16A and sample 086_DUP-4 is a duplicate sample of 085_LSB-27A.
7. ~ = Regulatory limit for this analyte does not exist
8. bgs = below grade surface
9. mg/kg = milligrams per kilogram
10. ND = Not detected

Qualifiers:
D = The concentration reported is a result of a diluted sample.
E = The result is estimated and cannot be accurately reported due to levels encountered or interferences.
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

80 0 80
SCALE IN FEET

Legend

- Site Boundary
- 2018 Phase II Soil Boring Location
- 2018 Phase II Test Pit Location
- 2018 Phase II Monitoring Well Location
- 2021 RI Monitoring Well / Soil Boring Location
- 2021 RI Soil Vapor Point Location
- Tax Parcel
- Tax Block
- AOC-1

Notes:
1. Aerial imagery provided by Nearmap ltd., collected March 10, 2021.
2. Parcel information from MapPLUTO 21v1 copyrighted by the New York City Department of Planning.
3. AOC-1 location is based on a Sanborn Fire Insurance Map dated 1950.
4. 2018 Phase II EI Sample and Test Pit Locations obtained from Phase II EI Report conducted by Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology, D.P.C. dated 8/24/2018.
5. Sample locations for the RI were collected for soil borings and monitoring wells using classic survey techniques and for soil vapor points using the ArcGIS Collector application on a tablet utilizing the GPS location.
6. Chemboxes for samples collected during the 2021 RI are shown with a bold outline.

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Collectively known as Langan

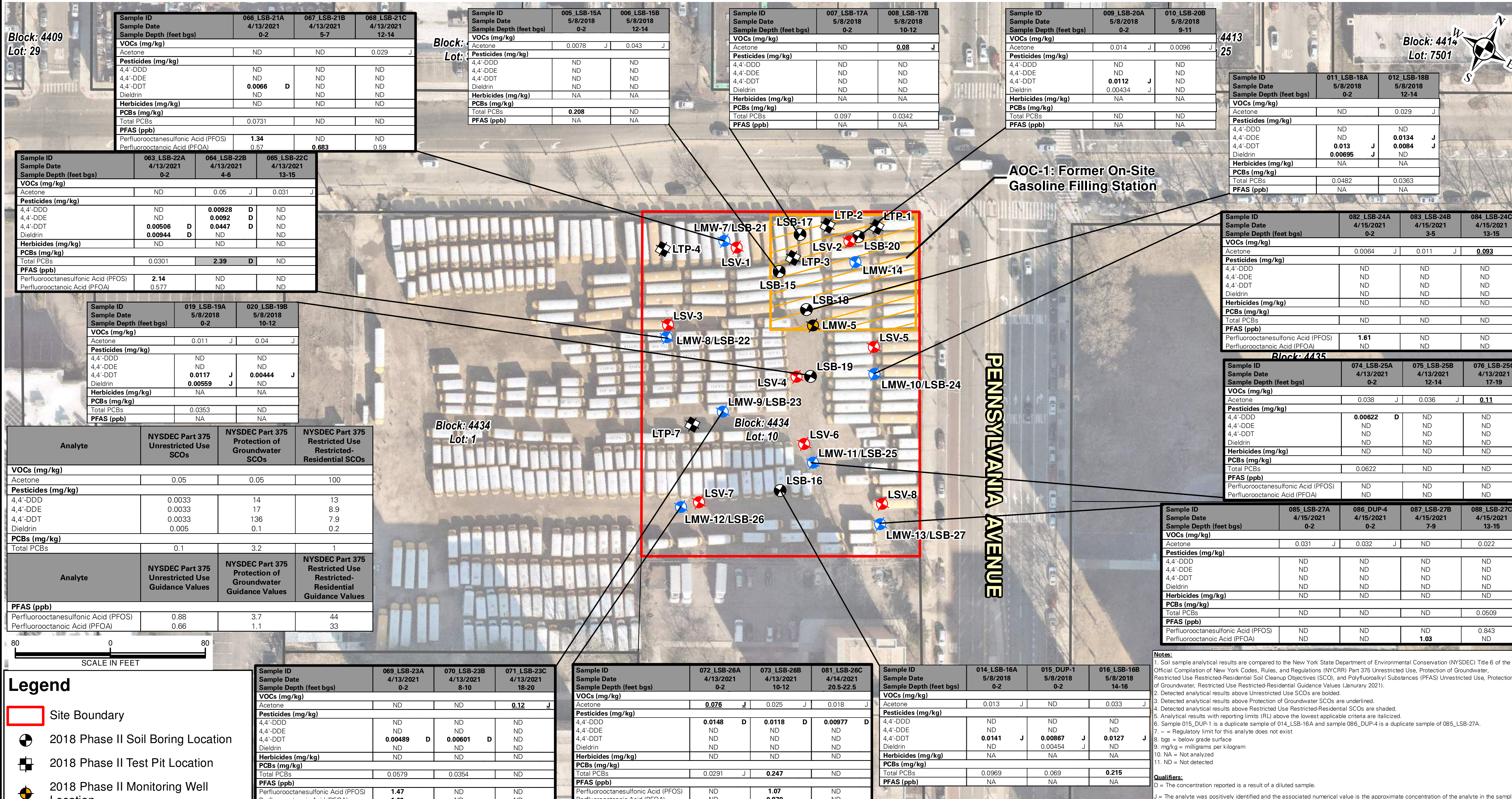
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project
12096 FLATLANDS AVENUE
BLOCK No. 4434, LOT No. 10
BROOKLYN
KINGS COUNTY NEW YORK

Drawing Title
PHASE II EI AND REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS - SVOCs AND METALS

Project No. 100688801
Date 6/21/2021
Scale 1 " = 80 '
Drawn By ATR
Last Revised 7/27/2021
Figure 5A

Path: \\Langan.com\data\PAR\data8\100688801\Project Data\ArcGIS\MXD\Environmental_Figures\2021-06 BCP RIR (Lot 10)\Figure 5A - Phase II EI and RI Soil Analytical Results - SVOCs and Metals.mxd Date: 7/27/2021 User: ibaker Time: 2:53:29 PM



Sample ID Sample Date Sample Depth (feet bgs)	066_LSB-21A 4/13/2021 0-2	067_LSB-21B 4/13/2021 5-7	068_LSB-21C 4/13/2021 12-14
VOCs (mg/kg)			
Acetone	ND	ND	0.029 J
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	ND	ND	ND
4,4'-DDT	**0.0066 D**	ND	ND
Dieldrin	ND	ND	ND
Herbicides (mg/kg)	ND	ND	ND
PCBs (mg/kg)			
Total PCBs	0.0731	ND	ND
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	**1.34**	ND	ND
Perfluorooctanoic Acid (PFOA)	0.57	**0.683**	0.59

Sample ID Sample Date Sample Depth (feet bgs)	005_LSB-15A 5/8/2018 0-2	006_LSB-15B 5/8/2018 12-14
VOCs (mg/kg)		
Acetone	0.0078 J	0.043 J
Pesticides (mg/kg)		
4,4'-DDD	ND	ND
4,4'-DDE	ND	ND
4,4'-DDT	ND	ND
Dieldrin	ND	ND
Herbicides (mg/kg)	NA	NA
PCBs (mg/kg)		
Total PCBs	**0.208**	ND
PFAS (ppb)	NA	NA

Sample ID Sample Date Sample Depth (feet bgs)	007_LSB-17A 5/8/2018 0-2	008_LSB-17B 5/8/2018 10-12
VOCs (mg/kg)		
Acetone	ND	**0.08 J**
Pesticides (mg/kg)		
4,4'-DDD	ND	ND
4,4'-DDE	ND	ND
4,4'-DDT	ND	ND
Dieldrin	ND	ND
Herbicides (mg/kg)	NA	NA
PCBs (mg/kg)		
Total PCBs	0.097	0.0342
PFAS (ppb)	NA	NA

Sample ID Sample Date Sample Depth (feet bgs)	009_LSB-20A 5/8/2018 0-2	010_LSB-20B 5/8/2018 9-11
VOCs (mg/kg)		
Acetone	0.014 J	0.0096 J
Pesticides (mg/kg)		
4,4'-DDD	ND	ND
4,4'-DDE	ND	ND
4,4'-DDT	**0.0112 J**	ND
Dieldrin	0.00434 J	ND
Herbicides (mg/kg)	NA	NA
PCBs (mg/kg)		
Total PCBs	ND	ND
PFAS (ppb)	NA	NA

Sample ID Sample Date Sample Depth (feet bgs)	011_LSB-18A 5/8/2018 0-2	012_LSB-18B 5/8/2018 12-14
VOCs (mg/kg)		
Acetone	ND	0.029 J
Pesticides (mg/kg)		
4,4'-DDD	ND	ND
4,4'-DDE	ND	**0.0134 J**
4,4'-DDT	**0.013 J**	**0.0084 J**
Dieldrin	**0.00695 J**	ND
Herbicides (mg/kg)	NA	NA
PCBs (mg/kg)		
Total PCBs	0.0482	0.0363
PFAS (ppb)	NA	NA

Sample ID Sample Date Sample Depth (feet bgs)	063_LSB-22A 4/13/2021 0-2	064_LSB-22B 4/13/2021 4-6	065_LSB-22C 4/13/2021 13-15
VOCs (mg/kg)			
Acetone	ND	0.05 J	0.031 J
Pesticides (mg/kg)			
4,4'-DDD	ND	**0.00928 D**	ND
4,4'-DDE	ND	**0.0092 D**	ND
4,4'-DDT	**0.00506 D**	**0.0447 D**	ND
Dieldrin	**0.00944 D**	ND	ND
Herbicides (mg/kg)	ND	ND	ND
PCBs (mg/kg)			
Total PCBs	0.0301	**2.39 D**	ND
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	**2.14**	ND	ND
Perfluorooctanoic Acid (PFOA)	0.577	ND	ND

Sample ID Sample Date Sample Depth (feet bgs)	082_LSB-24A 4/15/2021 0-2	083_LSB-24B 4/15/2021 3-5	084_LSB-24C 4/15/2021 13-15
VOCs (mg/kg)			
Acetone	0.0064 J	0.011 J	**0.093 J**
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	ND	ND	ND
4,4'-DDT	ND	ND	ND
Dieldrin	ND	ND	ND
Herbicides (mg/kg)	ND	ND	ND
PCBs (mg/kg)			
Total PCBs	ND	ND	ND
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	**1.61**	ND	ND
Perfluorooctanoic Acid (PFOA)	ND	ND	ND

Sample ID Sample Date Sample Depth (feet bgs)	019_LSB-19A 5/8/2018 0-2	020_LSB-19B 5/8/2018 10-12
VOCs (mg/kg)		
Acetone	0.011 J	0.04 J
Pesticides (mg/kg)		
4,4'-DDD	ND	ND
4,4'-DDE	ND	ND
4,4'-DDT	**0.0117 J**	**0.00444 J**
Dieldrin	**0.00559 J**	ND
Herbicides (mg/kg)	NA	NA
PCBs (mg/kg)		
Total PCBs	0.0353	ND
PFAS (ppb)	NA	NA

Sample ID Sample Date Sample Depth (feet bgs)	074_LSB-25A 4/13/2021 0-2	075_LSB-25B 4/13/2021 12-14	076_LSB-25C 4/13/2021 17-19
VOCs (mg/kg)			
Acetone	0.038 J	0.036 J	**0.11 J**
Pesticides (mg/kg)			
4,4'-DDD	**0.00622 D**	ND	ND
4,4'-DDE	ND	ND	ND
4,4'-DDT	ND	ND	ND
Dieldrin	ND	ND	ND
Herbicides (mg/kg)	ND	ND	ND
PCBs (mg/kg)			
Total PCBs	0.0622	ND	ND
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ND
Perfluorooctanoic Acid (PFOA)	ND	ND	ND

Analyte	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	NYSDEC Part 375 Restricted Use Restricted-Residential SCOs
VOCs (mg/kg)			
Acetone	0.05	0.05	100
Pesticides (mg/kg)			
4,4'-DDD	0.0033	14	13
4,4'-DDE	0.0033	17	8.9
4,4'-DDT	0.0033	136	7.9
Dieldrin	0.005	0.1	0.2
PCBs (mg/kg)			
Total PCBs	0.1	3.2	1
Analyte	**NYSDEC Part 375 Unrestricted Use Guidance Values**	**NYSDEC Part 375 Protection of Groundwater Guidance Values**	**NYSDEC Part 375 Restricted Use Restricted-Residential Guidance Values**
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.88	3.7	44
Perfluorooctanoic Acid (PFOA)	0.66	1.1	33

Sample ID Sample Date Sample Depth (feet bgs)	085_LSB-27A 4/15/2021 0-2	086_DUP-4 4/15/2021 0-2	087_LSB-27B 4/15/2021 7-9	088_LSB-27C 4/15/2021 13-15
VOCs (mg/kg)				
Acetone	0.031 J	0.032 J	ND	0.022 J
Pesticides (mg/kg)				
4,4'-DDD	ND	ND	ND	ND
4,4'-DDE	ND	ND	ND	ND
4,4'-DDT	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND
Herbicides (mg/kg)	ND	ND	ND	ND
PCBs (mg/kg)				
Total PCBs	ND	ND	ND	0.0509
PFAS (ppb)				
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ND	0.843
Perfluorooctanoic Acid (PFOA)	ND	ND	**1.03**	ND

Sample ID Sample Date Sample Depth (feet bgs)	069_LSB-23A 4/13/2021 0-2	070_LSB-23B 4/13/2021 8-10	071_LSB-23C 4/13/2021 18-20
VOCs (mg/kg)			
Acetone	ND	ND	**0.12 J**
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	ND	ND	ND
4,4'-DDT	**0.00489 D**	**0.00601 D**	ND
Dieldrin	ND	ND	ND
Herbicides (mg/kg)	ND	ND	ND
PCBs (mg/kg)			
Total PCBs	0.0579	0.0354	ND
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	**1.47**	ND	ND
Perfluorooctanoic Acid (PFOA)	**1.09**	ND	ND

Sample ID Sample Date Sample Depth (feet bgs)	072_LSB-26A 4/13/2021 0-2	073_LSB-26B 4/13/2021 10-12	081_LSB-26C 4/14/2021 20.5-22.5
VOCs (mg/kg)			
Acetone	**0.076 J**	0.025 J	0.018 J
Pesticides (mg/kg)			
4,4'-DDD	**0.0148 D**	**0.0118 D**	**0.00977 D**
4,4'-DDE	ND	ND	ND
4,4'-DDT	ND	ND	ND
Dieldrin	ND	ND	ND
Herbicides (mg/kg)	ND	ND	ND
PCBs (mg/kg)			
Total PCBs	0.0291 J	**0.247**	ND
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	ND	**1.07**	ND
Perfluorooctanoic Acid (PFOA)	ND	**0.879**	ND

Sample ID Sample Date Sample Depth (feet bgs)	014_LSB-16A 5/8/2018 0-2	015_DUP-1 5/8/2018 0-2	016_LSB-16B 5/8/2018 14-16
VOCs (mg/kg)			
Acetone	0.013 J	ND	0.033 J
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	ND	ND	ND
4,4'-DDT	**0.0141 J**	**0.00867 J**	**0.0127 J**
Dieldrin	ND	0.00454 J	ND
Herbicides (mg/kg)	NA	NA	NA
PCBs (mg/kg)			
Total PCBs	0.0969	0.069	**0.215**
PFAS (ppb)	NA	NA	NA

Notes:
1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use, Protection of Groundwater, Restricted Use Restricted-Residential Soil Cleanup Objectives (SCO), and Polyfluoroalkyl Substances (PFAS) Unrestricted Use, Protection of Groundwater, Restricted Use Restricted-Residential Guidance Values (Janurary 2021).
2. Detected analytical results above Unrestricted Use SCOs are bolded.
3. Detected analytical results above Protection of Groundwater SCOs are underlined.
4. Detected analytical results above Restricted Use Restricted-Residential SCOs are shaded.
5. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
6. Sample 015_DUP-1 is a duplicate sample of 014_LSB-16A and sample 086_DUP-4 is a duplicate sample of 085_LSB-27A.
7. ~ = Regulatory limit for this analyte does not exist
8. bgs = below grade surface
9. mg/kg = milligrams per kilogram
10. NA = Not analyzed
11. ND = Not detected

Qualifiers:
D = The concentration reported is a result of a diluted sample.
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

Legend

- Site Boundary
- 2018 Phase II Soil Boring Location
- 2018 Phase II Test Pit Location
- 2018 Phase II Monitoring Well Location
- 2021 RI Monitoring Well / Soil Boring Location
- 2021 RI Soil Vapor Point Location
- Tax Parcel
- Tax Block
- AOC-1

Notes:
1. Aerial imagery provided by Nearmap ltd., collected March 10, 2021.
2. Parcel information from MapPLUTO 21v1 copyrighted by the New York City Department of Planning.
3. AOC-1 location is based on a Sanborn Fire Insurance Map dated 1950.
4. 2018 Phase II EI Sample and Test Pit Locations obtained from Phase II EI Report conducted by Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology, D.P.C. dated 8/24/2018.
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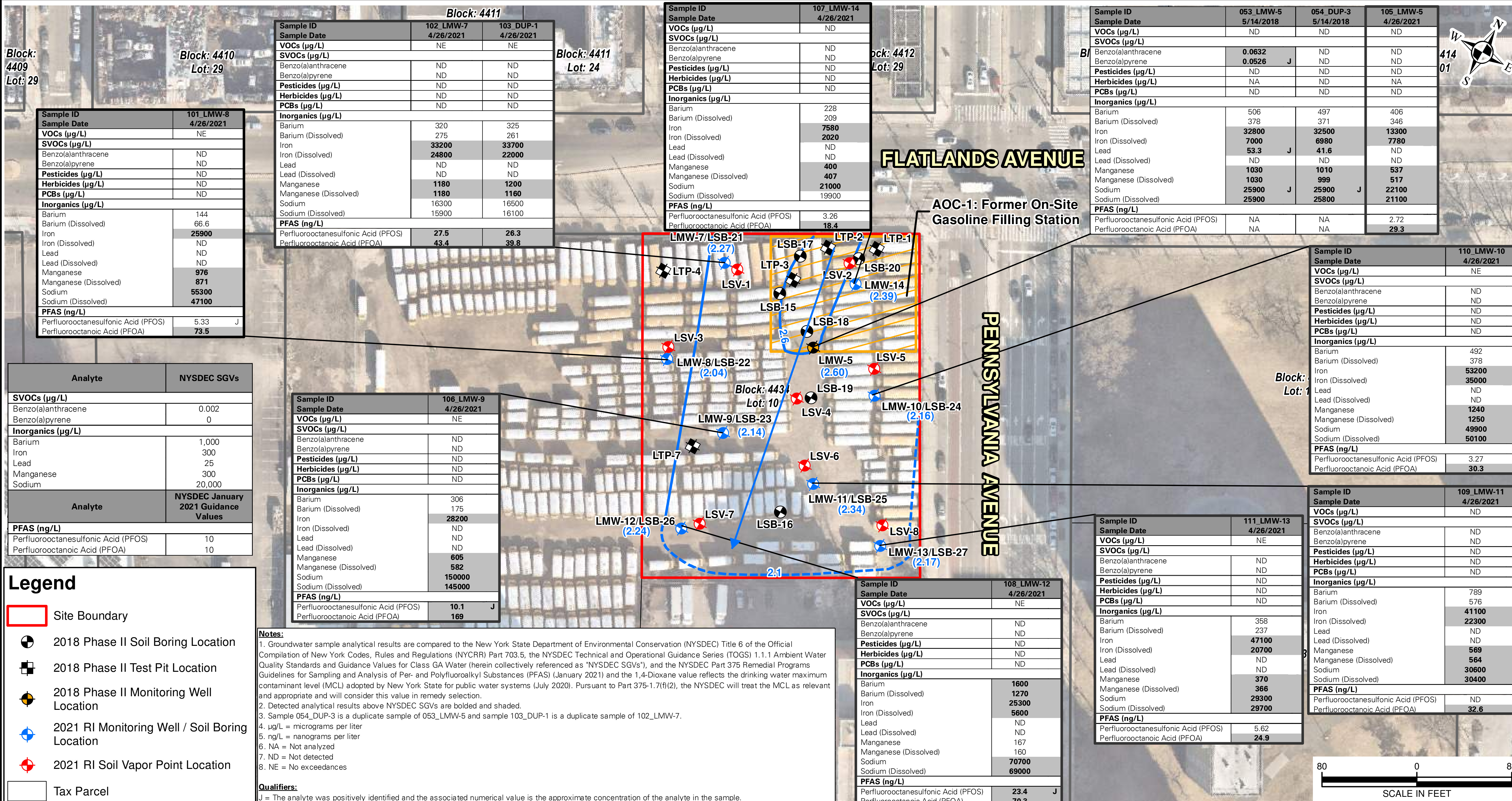
Collectively known as Langan
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project
12096 FLATLANDS AVENUE
BLOCK No. 4434, LOT No. 10
BROOKLYN
KINGS COUNTY NEW YORK

Drawing Title
PHASE II EI AND REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS - VOCs, PESTICIDES, HERBICIDES, PCBs, AND PFAs

Project No. 100688801
Date 6/21/2021
Scale 1 " = 80 '
Drawn By ATR
Last Revised 7/27/2021
Figure 5B

Path: \\Langan.com\data\PAR\data8\100688801\Project Data\ArcGIS\MXD\Environmental_Figures\2021-06 BCP RIR (Lot 10)\Archive\Figure 5B - Phase II EI and RI Soil Analytical Results - VOCs, Pesticides, Herbicides, PCBs, and PFAs.mxd Date: 7/27/2021 User: ibaker Time: 12:08:33 PM



Sample ID Sample Date	101_LMW-8 4/26/2021
VOCs (µg/L)	NE
SVOCs (µg/L)	
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Pesticides (µg/L)	ND
Herbicides (µg/L)	ND
PCBs (µg/L)	ND
Inorganics (µg/L)	
Barium	144
Barium (Dissolved)	66.6
Iron	**25900**
Iron (Dissolved)	ND
Lead	ND
Lead (Dissolved)	ND
Manganese	**976**
Manganese (Dissolved)	**871**
Sodium	**55300**
Sodium (Dissolved)	**47100**
PFAS (ng/L)	
Perfluorooctanesulfonic Acid (PFOS)	5.33 J
Perfluorooctanoic Acid (PFOA)	**73.5**

Sample ID Sample Date	102_LMW-7 4/26/2021	103_DUP-1 4/26/2021
VOCs (µg/L)	NE	NE
SVOCs (µg/L)		
Benzo(a)anthracene	ND	ND
Benzo(a)pyrene	ND	ND
Pesticides (µg/L)	ND	ND
Herbicides (µg/L)	ND	ND
PCBs (µg/L)	ND	ND
Inorganics (µg/L)		
Barium	320	325
Barium (Dissolved)	275	261
Iron	**33200**	**33700**
Iron (Dissolved)	**24800**	**22000**
Lead	ND	ND
Lead (Dissolved)	ND	ND
Manganese	**1180**	**1200**
Manganese (Dissolved)	**1180**	**1160**
Sodium	16300	16500
Sodium (Dissolved)	15900	16100
PFAS (ng/L)		
Perfluorooctanesulfonic Acid (PFOS)	**27.5**	**26.3**
Perfluorooctanoic Acid (PFOA)	**43.4**	**39.8**

Sample ID Sample Date	107_LMW-14 4/26/2021
VOCs (µg/L)	ND
SVOCs (µg/L)	
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Pesticides (µg/L)	ND
Herbicides (µg/L)	ND
PCBs (µg/L)	ND
Inorganics (µg/L)	
Barium	228
Barium (Dissolved)	209
Iron	**7580**
Iron (Dissolved)	**2020**
Lead	ND
Lead (Dissolved)	ND
Manganese	**400**
Manganese (Dissolved)	**407**
Sodium	**21000**
Sodium (Dissolved)	19900
PFAS (ng/L)	
Perfluorooctanesulfonic Acid (PFOS)	3.26
Perfluorooctanoic Acid (PFOA)	**18.4**

Sample ID Sample Date	053_LMW-5 5/14/2018	054_DUP-3 5/14/2018	105_LMW-5 4/26/2021
VOCs (µg/L)	ND	ND	ND
SVOCs (µg/L)			
Benzo(a)anthracene	**0.0632**	ND	ND
Benzo(a)pyrene	**0.0526** J	ND	ND
Pesticides (µg/L)	ND	ND	ND
Herbicides (µg/L)	NA	ND	NA
PCBs (µg/L)	ND	ND	ND
Inorganics (µg/L)			
Barium	506	497	406
Barium (Dissolved)	378	371	346
Iron	**32800**	**32500**	**13300**
Iron (Dissolved)	**7000**	**6980**	**7780**
Lead	**53.3** J	**41.6**	ND
Lead (Dissolved)	ND	ND	ND
Manganese	**1030**	**1010**	**537**
Manganese (Dissolved)	**1030**	**999**	**517**
Sodium	**25900** J	**25900** J	**22100**
Sodium (Dissolved)	**25900**	**25800**	**21100**
PFAS (ng/L)			
Perfluorooctanesulfonic Acid (PFOS)	NA	NA	2.72
Perfluorooctanoic Acid (PFOA)	NA	NA	**29.3**

Sample ID Sample Date	110_LMW-10 4/26/2021
VOCs (µg/L)	NE
SVOCs (µg/L)	
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Pesticides (µg/L)	ND
Herbicides (µg/L)	ND
PCBs (µg/L)	ND
Inorganics (µg/L)	
Barium	492
Barium (Dissolved)	378
Iron	**53200**
Iron (Dissolved)	**35000**
Lead	ND
Lead (Dissolved)	ND
Manganese	**1240**
Manganese (Dissolved)	**1250**
Sodium	**49900**
Sodium (Dissolved)	**50100**
PFAS (ng/L)	
Perfluorooctanesulfonic Acid (PFOS)	3.27
Perfluorooctanoic Acid (PFOA)	**30.3**

Analyte	NYSDEC SGVs
SVOCs (µg/L)	
Benzo(a)anthracene	0.002
Benzo(a)pyrene	0
Inorganics (µg/L)	
Barium	1,000
Iron	300
Lead	25
Manganese	300
Sodium	20,000
Analyte	**NYSDEC January 2021 Guidance Values**
PFAS (ng/L)	
Perfluorooctanesulfonic Acid (PFOS)	10
Perfluorooctanoic Acid (PFOA)	10

Sample ID Sample Date	106_LMW-9 4/26/2021
VOCs (µg/L)	NE
SVOCs (µg/L)	
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Pesticides (µg/L)	ND
Herbicides (µg/L)	ND
PCBs (µg/L)	ND
Inorganics (µg/L)	
Barium	306
Barium (Dissolved)	175
Iron	**28200**
Iron (Dissolved)	ND
Lead	ND
Lead (Dissolved)	ND
Manganese	**605**
Manganese (Dissolved)	**582**
Sodium	**150000**
Sodium (Dissolved)	**145000**
PFAS (ng/L)	
Perfluorooctanesulfonic Acid (PFOS)	**10.1** J
Perfluorooctanoic Acid (PFOA)	**169**

Sample ID Sample Date	109_LMW-11 4/26/2021
VOCs (µg/L)	ND
SVOCs (µg/L)	
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Pesticides (µg/L)	ND
Herbicides (µg/L)	ND
PCBs (µg/L)	ND
Inorganics (µg/L)	
Barium	789
Barium (Dissolved)	576
Iron	**41100**
Iron (Dissolved)	**22300**
Lead	ND
Lead (Dissolved)	ND
Manganese	**569**
Manganese (Dissolved)	**564**
Sodium	**30600**
Sodium (Dissolved)	**30400**
PFAS (ng/L)	
Perfluorooctanesulfonic Acid (PFOS)	ND
Perfluorooctanoic Acid (PFOA)	**32.6**

Sample ID Sample Date	111_LMW-13 4/26/2021
VOCs (µg/L)	NE
SVOCs (µg/L)	
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Pesticides (µg/L)	ND
Herbicides (µg/L)	ND
PCBs (µg/L)	ND
Inorganics (µg/L)	
Barium	358
Barium (Dissolved)	237
Iron	**47100**
Iron (Dissolved)	**20700**
Lead	ND
Lead (Dissolved)	ND
Manganese	**370**
Manganese (Dissolved)	**366**
Sodium	**29300**
Sodium (Dissolved)	**29700**
PFAS (ng/L)	
Perfluorooctanesulfonic Acid (PFOS)	5.62
Perfluorooctanoic Acid (PFOA)	**24.9**

Sample ID Sample Date	108_LMW-12 4/26/2021
VOCs (µg/L)	NE
SVOCs (µg/L)	
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Pesticides (µg/L)	ND
Herbicides (µg/L)	ND
PCBs (µg/L)	ND
Inorganics (µg/L)	
Barium	**1600**
Barium (Dissolved)	**1270**
Iron	**25300**
Iron (Dissolved)	**5600**
Lead	ND
Lead (Dissolved)	ND
Manganese	167
Manganese (Dissolved)	160
Sodium	**70700**
Sodium (Dissolved)	**69000**
PFAS (ng/L)	
Perfluorooctanesulfonic Acid (PFOS)	**23.4** J
Perfluorooctanoic Acid (PFOA)	**70.3**

Legend

- Site Boundary
- 2018 Phase II Soil Boring Location
- 2018 Phase II Test Pit Location
- 2018 Phase II Monitoring Well Location
- 2021 RI Monitoring Well / Soil Boring Location
- 2021 RI Soil Vapor Point Location
- Tax Parcel
- Tax Block
- AOC-1
- Groundwater Flow Direction
- Groundwater Elevation Contour
- Inferred Groundwater Elevation Contour

Notes:

1. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules and Regulations (NYCRR) Part 703.5, the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA Water (herein collectively referenced as "NYSDEC SGVs"), and the NYSDEC Part 375 Remedial Programs Guidelines for Sampling and Analysis of Per- and Polyfluoroalkyl Substances (PFAS) (January 2021) and the 1,4-Dioxane value reflects the drinking water maximum contaminant level (MCL) adopted by New York State for public water systems (July 2020). Pursuant to Part 375-1.7(f)(2), the NYSDEC will treat the MCL as relevant and appropriate and will consider this value in remedy selection.
2. Detected analytical results above NYSDEC SGVs are bolded and shaded.
3. Sample 054_DUP-3 is a duplicate sample of 053_LMW-5 and sample 103_DUP-1 is a duplicate sample of 102_LMW-7.
4. µg/L = micrograms per liter
5. ng/L = nanograms per liter
6. NA = Not analyzed
7. ND = Not detected
8. NE = No exceedances

Qualifiers:

J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

Notes:
1. Aerial imagery provided by Nearmap ltd., collected March 10, 2021.
2. Parcel information from MapPLUTO 21v1 copyrighted by the New York City Department of Planning.
3. AOC-1 location is based on a Sanborn Fire Insurance Map dated 1950.
4. 2018 Phase II EI Sample and Test Pit Locations obtained from Phase II EI Report conducted by Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology, D.P.C. dated 8/24/2018.
5. Sample locations for the RI were collected for soil borings and monitoring wells using classic survey techniques and for soil vapor points using the ArcGIS Collector application on a tablet utilizing the GPS location.
6. LMW-5 was installed in 2018 as part of the Phase II EI and was re-sampled as part of the RI.
7. Groundwater elevations are referenced to North American Vertical Datum of 1988.
8.. Chemboxes for samples collected during the 2021 RI are shown with a bold outline.

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Langan Engineering & Environmental Services, Inc.
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Langan International LLC
Collectively known as Langan

NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project

12096 FLATLANDS AVENUE

BLOCK No. 4434, LOT No. 10

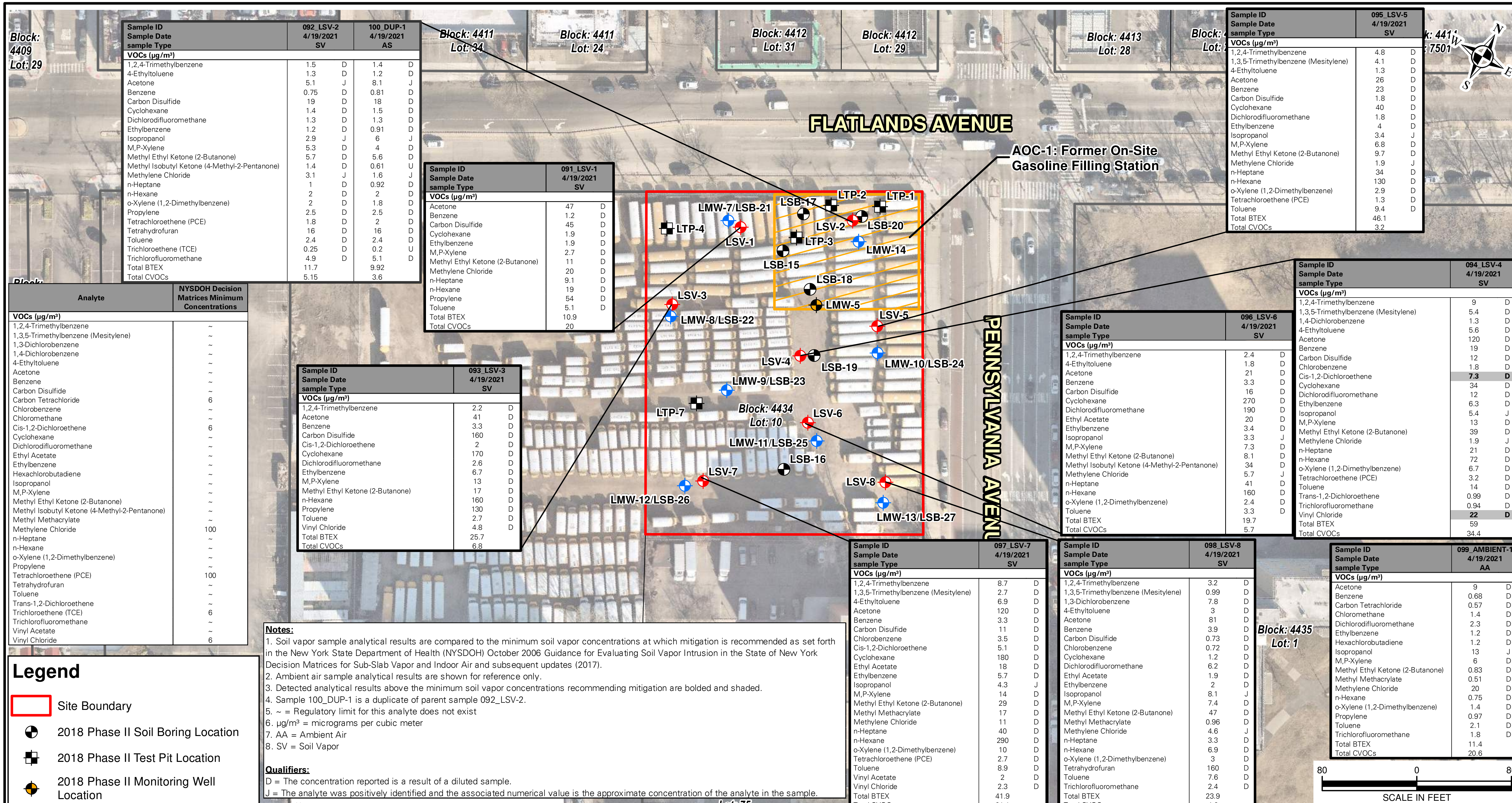
BROOKLYN

KINGS COUNTY NEW YORK

Drawing Title

GROUNDWATER CONTOURS AND PHASE II EI AND REMEDIAL INVESTIGATION ANALYTICAL RESULTS

Project No.	Figure
100688801	6
Date	
6/21/2021	
Scale	
1 " = 80 '	
Drawn By	
ATR	
Last Revised	
8/16/2021	



Sample ID Sample Date sample Type	092_LSV-2 4/19/2021 SV		100_DUP-1 4/19/2021 AS	
VOCs (µg/m³)				
1,2,4-Trimethylbenzene	1.5	D	1.4	D
4-Ethyltoluene	1.3	D	1.2	D
Acetone	5.1	J	8.1	J
Benzene	0.75	D	0.81	D
Carbon Disulfide	19	D	18	D
Cyclohexane	1.4	D	1.5	D
Dichlorodifluoromethane	1.3	D	1.3	D
Ethylbenzene	1.2	D	0.91	D
Isopropanol	2.9	J	6	J
M,P-Xylene	5.3	D	4	D
Methyl Ethyl Ketone (2-Butanone)	5.7	D	5.6	D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	1.4	D	0.61	U
Methylene Chloride	3.1	J	1.6	J
n-Heptane	1	D	0.92	D
n-Hexane	2	D	2	D
o-Xylene (1,2-Dimethylbenzene)	2	D	1.8	D
Propylene	2.5	D	2.5	D
Tetrachloroethene (PCE)	1.8	D	2	D
Tetrahydrofuran	16	D	16	D
Toluene	2.4	D	2.4	D
Trichloroethene (TCE)	0.25	D	0.2	U
Trichlorofluoromethane	4.9	D	5.1	D
Total BTEX	11.7		9.92	
Total CVOCs	5.15		3.6	

Analyte	NYSDOH Decision Matrices Minimum Concentrations
VOCs (µg/m³)	
1,2,4-Trimethylbenzene	~
1,3,5-Trimethylbenzene (Mesitylene)	~
1,3-Dichlorobenzene	~
1,4-Dichlorobenzene	~
4-Ethyltoluene	~
Acetone	~
Benzene	~
Carbon Disulfide	~
Carbon Tetrachloride	6
Chlorobenzene	~
Chloromethane	~
Cis-1,2-Dichloroethene	6
Cyclohexane	~
Dichlorodifluoromethane	~
Ethyl Acetate	~
Ethylbenzene	~
Hexachlorobutadiene	~
Isopropanol	~
M,P-Xylene	~
Methyl Ethyl Ketone (2-Butanone)	~
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~
Methyl Methacrylate	~
Methylene Chloride	100
n-Heptane	~
n-Hexane	~
o-Xylene (1,2-Dimethylbenzene)	~
Propylene	~
Tetrachloroethene (PCE)	100
Tetrahydrofuran	~
Toluene	~
Trans-1,2-Dichloroethene	~
Trichloroethene (TCE)	6
Trichlorofluoromethane	~
Vinyl Acetate	~
Vinyl Chloride	6

Sample ID Sample Date sample Type	091_LSV-1 4/19/2021 SV	
VOCs (µg/m³)		
Acetone	47	D
Benzene	1.2	D
Carbon Disulfide	45	D
Cyclohexane	1.9	D
Ethylbenzene	1.9	D
M,P-Xylene	2.7	D
Methyl Ethyl Ketone (2-Butanone)	11	D
Methylene Chloride	20	D
n-Heptane	9.1	D
n-Hexane	19	D
Propylene	54	D
Toluene	5.1	D
Total BTEX	10.9	
Total CVOCs	20	

Sample ID Sample Date sample Type	093_LSV-3 4/19/2021 SV	
VOCs (µg/m³)		
1,2,4-Trimethylbenzene	2.2	D
Acetone	41	D
Benzene	3.3	D
Carbon Disulfide	160	D
Cis-1,2-Dichloroethene	2	D
Cyclohexane	170	D
Dichlorodifluoromethane	2.6	D
Ethylbenzene	6.7	D
M,P-Xylene	13	D
Methyl Ethyl Ketone (2-Butanone)	17	D
n-Hexane	160	D
Propylene	130	D
Toluene	2.7	D
Vinyl Chloride	4.8	D
Total BTEX	25.7	
Total CVOCs	6.8	

Sample ID Sample Date sample Type	095_LSV-5 4/19/2021 SV	
VOCs (µg/m³)		
1,2,4-Trimethylbenzene	4.8	D
1,3,5-Trimethylbenzene (Mesitylene)	4.1	D
4-Ethyltoluene	1.3	D
Acetone	26	D
Benzene	23	D
Carbon Disulfide	1.8	D
Cyclohexane	40	D
Dichlorodifluoromethane	1.8	D
Ethylbenzene	4	D
Isopropanol	3.4	J
M,P-Xylene	6.8	D
Methyl Ethyl Ketone (2-Butanone)	9.7	D
Methylene Chloride	1.9	J
n-Heptane	34	D
n-Hexane	130	D
o-Xylene (1,2-Dimethylbenzene)	2.9	D
Tetrachloroethene (PCE)	1.3	D
Toluene	9.4	D
Total BTEX	46.1	
Total CVOCs	3.2	

Sample ID Sample Date sample Type	094_LSV-4 4/19/2021 SV	
VOCs (µg/m³)		
1,2,4-Trimethylbenzene	9	D
1,3,5-Trimethylbenzene (Mesitylene)	5.4	D
1,4-Dichlorobenzene	1.3	D
4-Ethyltoluene	5.6	D
Acetone	120	D
Benzene	19	D
Carbon Disulfide	12	D
Chlorobenzene	1.8	D
Cis-1,2-Dichloroethene	**7.3**	**D**
Cyclohexane	34	D
Dichlorodifluoromethane	12	D
Ethylbenzene	6.3	D
Isopropanol	5.4	J
M,P-Xylene	13	D
Methyl Ethyl Ketone (2-Butanone)	39	D
Methylene Chloride	1.9	J
n-Heptane	21	D
n-Hexane	72	D
o-Xylene (1,2-Dimethylbenzene)	6.7	D
Tetrachloroethene (PCE)	3.2	D
Toluene	14	D
Trans-1,2-Dichloroethene	0.99	D
Trichlorofluoromethane	0.94	D
Vinyl Chloride	**22**	**D**
Total BTEX	59	
Total CVOCs	34.4	

Sample ID Sample Date sample Type	096_LSV-6 4/19/2021 SV	
VOCs (µg/m³)		
1,2,4-Trimethylbenzene	2.4	D
4-Ethyltoluene	1.8	D
Acetone	21	D
Benzene	3.3	D
Carbon Disulfide	16	D
Cyclohexane	270	D
Dichlorodifluoromethane	190	D
Ethyl Acetate	20	D
Ethylbenzene	3.4	D
Isopropanol	3.3	J
M,P-Xylene	7.3	D
Methyl Ethyl Ketone (2-Butanone)	8.1	D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	34	D
Methylene Chloride	5.7	J
n-Heptane	41	D
n-Hexane	160	D
o-Xylene (1,2-Dimethylbenzene)	2.4	D
Toluene	3.3	D
Total BTEX	19.7	
Total CVOCs	5.7	

Sample ID Sample Date sample Type	097_LSV-7 4/19/2021 SV	
VOCs (µg/m³)		
1,2,4-Trimethylbenzene	8.7	D
1,3,5-Trimethylbenzene (Mesitylene)	2.7	D
4-Ethyltoluene	6.9	D
Acetone	120	D
Benzene	3.3	D
Carbon Disulfide	11	D
Chlorobenzene	3.5	D
Cis-1,2-Dichloroethene	5.1	D
Cyclohexane	180	D
Ethyl Acetate	18	D
Ethylbenzene	5.7	D
Isopropanol	4.3	J
M,P-Xylene	14	D
Methyl Ethyl Ketone (2-Butanone)	29	D
Methyl Methacrylate	17	D
Methylene Chloride	11	D
n-Heptane	40	D
n-Hexane	290	D
o-Xylene (1,2-Dimethylbenzene)	10	D
Tetrachloroethene (PCE)	2.7	D
Toluene	8.9	D
Vinyl Acetate	2	D
Vinyl Chloride	2.3	D
Total BTEX	41.9	
Total CVOCs	21.1	

Sample ID Sample Date sample Type	098_LSV-8 4/19/2021 SV	
VOCs (µg/m³)		
1,2,4-Trimethylbenzene	3.2	D
1,3,5-Trimethylbenzene (Mesitylene)	0.99	D
1,3-Dichlorobenzene	7.8	D
4-Ethyltoluene	3	D
Acetone	81	D
Benzene	3.9	D
Carbon Disulfide	0.73	D
Chlorobenzene	0.72	D
Cyclohexane	1.2	D
Dichlorodifluoromethane	6.2	D
Ethyl Acetate	1.9	D
Ethylbenzene	2	D
Isopropanol	8.1	J
M,P-Xylene	7.4	D
Methyl Ethyl Ketone (2-Butanone)	47	D
Methyl Methacrylate	0.96	D
Methylene Chloride	4.6	J
n-Heptane	3.3	D
n-Hexane	6.9	D
o-Xylene (1,2-Dimethylbenzene)	3	D
Tetrahydrofuran	160	D
Toluene	7.6	D
Trichlorofluoromethane	2.4	D
Total BTEX	23.9	
Total CVOCs	4.6	

Sample ID Sample Date sample Type	099_AMBIENT-1 4/19/2021 AA	
VOCs (µg/m³)		
Acetone	9	D
Benzene	0.68	D
Carbon Tetrachloride	0.57	D
Chloromethane	1.4	D
Dichlorodifluoromethane	2.3	D
Ethylbenzene	1.2	D
Hexachlorobutadiene	1.2	D
Isopropanol	13	J
M,P-Xylene	6	D
Methyl Ethyl Ketone (2-Butanone)	0.83	D
Methyl Methacrylate	0.51	D
Methylene Chloride	20	D
n-Hexane	0.75	D
o-Xylene (1,2-Dimethylbenzene)	1.4	D
Propylene	0.97	D
Toluene	2.1	D
Trichlorofluoromethane	1.8	D
Total BTEX	11.4	
Total CVOCs	20.6	

80 0 80
SCALE IN FEET

Notes:
1. Soil vapor sample analytical results are compared to the minimum soil vapor concentrations at which mitigation is recommended as set forth in the New York State Department of Health (NYSDOH) October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York Decision Matrices for Sub-Slab Vapor and Indoor Air and subsequent updates (2017).
2. Ambient air sample analytical results are shown for reference only.
3. Detected analytical results above the minimum soil vapor concentrations recommending mitigation are bolded and shaded.
4. Sample 100_DUP-1 is a duplicate of parent sample 092_LSV-2.
5. ~ = Regulatory limit for this analyte does not exist
6. µg/m³ = micrograms per cubic meter
7. AA = Ambient Air
8. SV = Soil Vapor

Qualifiers:
D = The concentration reported is a result of a diluted sample.
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

Legend

- Site Boundary
- 2018 Phase II Soil Boring Location
- 2018 Phase II Test Pit Location
- 2018 Phase II Monitoring Well Location
- 2021 RI Monitoring Well / Soil Boring Location
- 2021 RI Soil Vapor Point Location
- Tax Parcel
- Tax Block
- AOC-1

Notes:
1. Aerial imagery provided by Nearmap ltd., collected March 10, 2021.
2. Parcel information from MapPLUTO 21v1 copyrighted by the New York City Department of Planning.
3. AOC-1 location is based on a Sanborn Fire Insurance Map dated 1950.
4. 2018 Phase II EI Sample and Test Pit Locations obtained from Phase II EI Report conducted by Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology, D.P.C. dated 8/24/2018.
5. Sample locations for the RI were collected for soil borings and monitoring wells using classic survey techniques and for soil vapor points using the ArcGIS Collector application on a tablet utilizing the GPS location.
6. LMW-5 was installed in 2018 as part of the Phase II EI and was re-sampled as part of the RI.
7. Chemboxes for samples collected during the 2021 RI are shown with a bold outline.

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Langan International LLC
Collectively known as Langan
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project
12096 FLATLANDS AVENUE
BLOCK No. 4434, LOT No. 10
BROOKLYN
KINGS COUNTY NEW YORK

Drawing Title
REMEDIAL INVESTIGATION SOIL VAPOR ANLAYTICAL RESULTS

Project No.	100688801
Date	6/21/2021
Scale	1 " = 80 '
Drawn By	ATR
Last Revised	7/26/2021
Figure	7

Path: \\Langan.com\data\PAR\data8\100688801\Project Data\ArcGIS\MXD\Environmental_Figures\2021-06 BCP RIR (Lot 10)\Figure 7 - RI Soil Vapor Analytical Results105.mxd Date: 7/26/2021 User: ibaker Time: 5:32:47 PM

APPENDIX A

Geophysical Survey

HAGER-RICHTER
GEOSCIENCE, INC.

GEOPHYSICAL SURVEY
12096 FLATLANDS AVENUE
BROOKLYN, NEW YORK

Prepared for:

LANGAN
300 Kimball Drive, 4th Floor
Parsippany, New Jersey 07054

Prepared by:

Hager-Richter Geoscience, Inc.
dba HR Geological Services in New York
846 Main Street
Fords, New Jersey 08863

File 19JCC89
April, 2021

April 23, 2021
File 19JCC89

Allyson Kritzer
Senior Staff Engineer
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Tel: 973.560.4289
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Email: AKritzer@Langan.com

RE: Geophysical Survey
12096 Flatlands Avenue
Brooklyn, New York

Dear Ms. Kritzer:

In this report, we summarize the results of a geophysical survey conducted by Hager-Richter Geoscience, Inc., dba HR Geological Services in New York, (HRGS) at the above referenced site in Brooklyn, New York for LANGAN in April 2021. The scope of the survey and area of interest were specified by LANGAN.

INTRODUCTION

The site is located at 12096 Flatlands Avenue, in Brooklyn, New York. The site is currently a soil and gravel covered parking lot. The general location of the site is shown in Figure 1. LANGAN specified an approximately 1.5-acre portion of the lot as the area of interest (AOI). LANGAN required a geophysical survey to determine the locations of possible subsurface utilities, underground storage tanks (USTs), etc. LANGAN was also interested in clearing utilities at 16 proposed boring locations. Figure 2 is a site plan provided by LANGAN showing historic borings and proposed boring locations (blue and red).

OBJECTIVE

The objective of the geophysical survey was to detect, and if detected, to locate possible utilities, USTs, etc. in the accessible portions of the specified AOI, and to clear utilities in the vicinity of 16 proposed boring locations.

THE SURVEY

Alexis Martinez, Amanda Fabian, P.G., and Justin Covert of HRGS conducted the geophysical survey on April 12th, 2021. The project was coordinated with Ms. Amanda Forsburg of LANGAN. Mr. Brandon Reiner, also of LANGAN, was on site for the duration of the survey.

The geophysical survey of the specified area was conducted using three complementary methods: time domain electromagnetic induction metal detection (EM), ground penetrating radar (GPR), and precision utility location (PUL). The EM data were acquired at approximately 8-inch intervals along lines spaced 5 feet apart across the accessible portions of the specified areas of interest. The EM survey detects buried metal. However, the EM method cannot provide information on the type of objects causing an EM anomaly.

GPR data were acquired along traverses oriented in two mutually perpendicular directions, with lines spaced no more than 5 feet apart across the accessible portions of the areas of interest. The GPR method can detect both metal and nonmetal objects.

The PUL method was used to search for subsurface utilities in the areas of interest by passively searching for signals from active electric lines and by actively tracing signals applied by direct connections to accessible utility structures such as light poles.

The locations of utilities detected at the time of the survey with the PUL were marked on site and their locations were recorded with respect to the local survey grid for inclusion on the site plan. The geophysical data were reviewed in the office and additional utility segments were identified, and their locations are shown on the plan included in this report.

The proposed locations of the boreholes were marked in the field by LANGAN at the beginning of the survey. The locations of the proposed borings on the plan included in this report are shown as the final locations when the survey was completed. Utilities and other features detected in the vicinity of proposed borings were marked on the ground at the time of the survey. Mr. Reiner was notified where proposed boring locations conflicted with detected utilities or features.

EQUIPMENT

EM61. The EM survey was conducted using a Geonics EM61-MK2 time domain electromagnetic induction metal detector. The EM61-MK2 instrument was designed specifically for detecting buried metal objects such as utilities, underground storage tanks (USTs), and drums. An air-cored transmitter coil generates a pulsed primary magnetic field in the earth, thereby inducing eddy currents in nearby metal objects. The eddy current produces a secondary magnetic field that is sensed by two receiver coils, one coincident with the transmitter and one positioned 40 cm above the main coil. By measuring the secondary magnetic field after the current in the ground has dissipated but before the current in metal objects has dissipated, the instrument responds only to the secondary magnetic field produced by metal objects. Four channels of secondary response are measured in mV and are recorded on a digital data logger. The system is generally operated by pushing the coils configured as a wagon with an odometer mounted on the axle to trigger the data logger automatically at approximately 8-inch intervals.
GPR. The GPR survey was conducted using a Geophysical Survey Systems, Inc. UtilityScan Hyper Stacking digital GPR system using a 350 MHZ antenna with 50 ns time window.
GPR uses a high-frequency electromagnetic pulse (referred to herein as “radar signal”) transmitted from a radar antenna to probe the subsurface. The transmitted radar signals are

reflected from subsurface interfaces of materials with contrasting electrical properties. Travel times of the radar signal can be converted to approximate depth below the surface by correlation with targets of known depths and by a curve matching routine. We monitor the acquisition of GPR data in the field and record the GPR data digitally for subsequent processing. Interpretation of the records is based on the nature and intensity of the reflected signals and on the resulting patterns.

Data from the GPR survey were processed using RADAN 7.4 GPR processing software from Geophysical Survey Systems, Inc. We reviewed profile images of the GPR data. Interpretation of the records is based on the nature and intensity of the reflected signals and on the resulting patterns.

PUL. The PUL survey was conducted using a Radiodetection RD 7000 series PUL instrument. The RD 7000 series consists of separate transmitter and receiver. The system can be used in "passive" and "active" modes to locate buried pipes by detecting electromagnetic signals carried by the pipes. In the "passive" mode, only the receiver unit is used to detect signals carried by the pipe from nearby power lines, live signals transmitted along underground power cables, or very low frequency radio signals resulting from long wave radio transmissions that flow along buried conductors. In the "active" mode of operation, the transmitter is used to induce a signal on a target pipe, and the receiver is used to trace the signal along the length of the pipe. Our system uses a 10W transmitter.

LIMITATIONS OF THE METHODS

> HRGS MAKES NO GUARANTEE THAT ALL TARGETS WERE DETECTED IN THIS SURVEY. HRGS IS NOT RESPONSIBLE FOR DETECTING TARGETS THAT CANNOT BE DETECTED BY THE METHODS EMPLOYED OR BECAUSE OF SITE CONDITIONS. GPR SIGNAL PENETRATION MIGHT NOT BE SUFFICIENT TO DETECT ALL TARGETS.

Field mark-outs. Utilities detected by the PUL method at the time of the survey are marked in the field. Adverse weather and site conditions (rain, snow, snow and soil piles, uneven surfaces, high traffic, etc.) can hamper in-field interpretation. Mark-outs made on wet pavement, snow, snow piles, gravel surfaces, or in active construction zones may not last. HRGS is not responsible for maintaining utility mark-outs after leaving the work area.

EM61. The EM61 cannot detect non-metallic objects. The data from an EM61 survey are adversely affected by surface metal. The EM61 has a depth sensitivity limited to about 12 feet. The instrument is relatively cumbersome and works best where the transmit and receive coils can be hand pushed in a small wagon.
Detection and identification should be clearly differentiated. Detection is the recognition of the presence of a metal object, and the electromagnetic method is excellent for such purposes. Identification, on the other hand, is determination of the nature of the causative body (i.e., what is the body -- a cache of drums, UST, automobile, white goods, etc.?). Although the EM data

cannot be used to identify all buried metal objects, they provide excellent guides to the identification of some objects. For example, buried metal utilities produce anomalies with lengths many times their widths.

GPR. There are limitations of the GPR technique as used to detect and/or locate targets such as those of the objectives of this survey. Limitations include: (1) surface conditions, (2) electrical conductivity of the ground, (3) contrast of the electrical properties of the target and the surrounding soil, and (4) spacing of the traverses. Of these restrictions, only the last is controllable by us.

The condition of the ground surface can affect the quality of the GPR data and the depth of penetration of the GPR signal. Sites covered with snow piles, high grass, bushes, landscape structures, debris, obstacles, soil mounds, etc. limit the survey access and the coupling of the GPR antenna with the ground. In many cases, the GPR signal will not penetrate below concrete pavement, especially inside buildings, and a target may not be detectable. The GPR method also commonly does not provide useful data under canopies found at some facilities.

The electrical conductivity of the ground determines the attenuation of the GPR signal and thereby limits the maximum depth of exploration. For example, the GPR signal does not penetrate clay-rich soils, and targets buried in clay might not be detected.
A definite contrast in the electrical conductivities of the surrounding ground and the target material is required to obtain a reflection of the GPR signal. If the contrast is too small, possibly due to construction details or deeply corroded metal in the target, then the reflection may be too weak to recognize, and the target can be missed.

Spacing of the traverses is limited by access at many sites, but where flexibility of traverse spacing is possible, the spacing is adjusted to the size of the target. The GPR operator controls the spacing between lines, and the design of the survey is based on the dimensions of the smallest feature of interest. Targets with dimensions smaller than the spacing between GPR survey lines can be missed.

PUL. The PUL equipment cannot detect non-metallic utilities, such as pipes constructed of vitrified clay, transite, plastic, PVC, and unreinforced concrete, when used in passive mode alone. Such pipes can be detected if a wire tracer is installed with access to such tracer for transmission of a signal or where access (such as floor drains and clean-outs) permits insertion of a device on which a signal can be transmitted. In some, but not all cases, the subsurface utility designation equipment cannot detect metal utilities reliably under reinforced concrete because the signal couples onto the metal reinforcing in the concrete. Similarly, the method commonly cannot be used adjacent to grounded metal structures such as chain link fences and metal guardrails. In congested areas, where several utilities are bundled or located within a short distance of each other, the signal transmitted on one utility can couple onto adjacent utilities, and the accuracy of the location indicated by the instrument decreases.

RESULTS

General. The geophysical survey was conducted using the EM61, GPR, and PUL methods across the accessible portions of the AOI specified by LANGAN. Figure 2 shows a color contour plot of the EM61 survey results, and Figure 3 shows the locations of the GPR traverses and the integrated interpretation of the geophysical data.

EM61. The EM61 data were acquired at approximately 8-inch intervals along survey lines spaced 5 feet apart across the accessible portions of the area of interest. As indicated above, the results of the EM61 survey are shown in color contour form in Figure 2. Interpretation of EM61 data is based on the relative response of the instrument in millivolts to local conditions. The instrument is not calibrated to provide an absolute measure of a particular property, such as the conductivity of the soil or the strength of the earth's magnetic field. Subsurface metal objects produce sharply defined positive anomalies when the EM61 is positioned directly over them. Acquiring data at short intervals along closely spaced lines, as was done at the subject site, provides high spatial resolution of the location and footprint of the targets. Thus, buried metal is recognized in contour plots of EM61 data by positive anomalies with spatial dimensions roughly corresponding to the dimensions of the buried metal.

Several moderate- to high-amplitude EM anomalies (green to red areas) are present within the area of interest. Some anomalies are attributed to surface features such as chain link fencing, vehicles, light poles, etc. The locations of anomalies attributed to surface metal objects are depicted as blue hatched areas in the integrated interpretation shown in Figure 3. We note that the presence or absence of subsurface metal in such areas cannot be determined based on the EM data alone because of the anomalies caused by the surface metal objects.

Many EM anomalies, ranging from low to high amplitude and not attributable to surface metal, were detected throughout the AOI. The GPR records for the locations of EM anomalies were carefully examined to determine the cause of the anomalies. When no specific cause can be determined, the EM anomaly is simply attributed to buried metal and their locations are shown on Figure 3 as red-hatched areas.

GPR Survey and Integrated Interpretation. The locations of the GPR traverses and the integrated interpretation of the geophysical data are shown in Figure 3. Apparent GPR signal penetration was variable across the site, with two-way travel time reflections received from 10-30 ns. Based upon site specific velocity matching calibrations, the GPR signal penetration is estimated to have been 2-4 feet.

The GPR records exhibit numerous scattered reflections typical for widespread debris throughout the AOI. We note that those shallow reflections make difficult to identify regular shaped anomalies caused by USTs, former foundations, utilities, etc. due to the GPR signal distortion caused by the debris. Careful examination of the GPR records at the locations of regularly shaped EM anomalies did not reveal the presence of USTs or foundations.

The GPR records exhibit a few linear alignments of reflections interpreted as possible utilities or segments of utilities, and their locations are shown as black-dashed lines on Figure 3. GPR reflections typical of a buried concrete pad were observed in the vicinity of boring locations LSV-2 and LMW-14. The possible structure was noted and marked in field; however, the western limit was not determined due to parked buses in the area. Whether other buried structures such as utilities or USTs occur at a depth greater than the effective depth of investigation of the GPR (about 2-4 feet) or in areas inaccessible to the geophysical survey cannot be determined from the geophysical data.

PUL. The PUL transmitter was attached to light poles throughout the site. We also conducted a PUL survey in “passive” mode to detect signals carried by utilities from nearby power lines. Electric utilities were detected connecting the light poles. No additional utilities were detected with the PUL. The locations of detected utilities are shown on Figure 3.

CONCLUSIONS

Based upon the geophysical survey conducted by HRGS at the 12096 Flatlands Avenue for LANGAN in April 2021, we conclude:

- Many areas of buried metal were detected throughout the area of interest.
- Three unidentified segments of possible utilities were detected.
- No other subsurface features, such as utilities, USTs, or former foundations were detected within the effective depth of penetration of the GPR signal (about 2-4 feet).

LIMITATIONS ON USE OF THIS REPORT

This letter report was prepared for the exclusive use of LANGAN (Client). No other party shall be entitled to rely on this Report, or any information, documents, records, data, interpretations, advice, or opinions given to Client by Hager-Richter Geoscience, Inc. (HRGS) in the performance of its work. The Report relates solely to the specific project for which HRGS has been retained and shall not be used or relied upon by Client or any third party for any variation or extension of this project, any other project or any other purpose without the express written permission of HRGS. Any unpermitted use by Client or any third party shall be at Client's or such third party's own risk and without any liability to HRGS.

HRGS has used reasonable care, skill, competence and judgment in the performance of' its services for this project consistent with professional standards for those providing similar services at the same time, in the same locale, and under like circumstances. Unless otherwise stated, the work performed by HRGS should be understood to be exploratory and interpretational in character and any results, findings or recommendations contained in this Report or resulting from the work proposed may include decisions which are judgmental in nature and not necessarily based solely on pure science or engineering. It should be noted that our conclusions might be modified if subsurface conditions were better delineated with additional subsurface exploration including, but not limited to, test pits, soil borings with collection of soil and water samples, and laboratory testing.

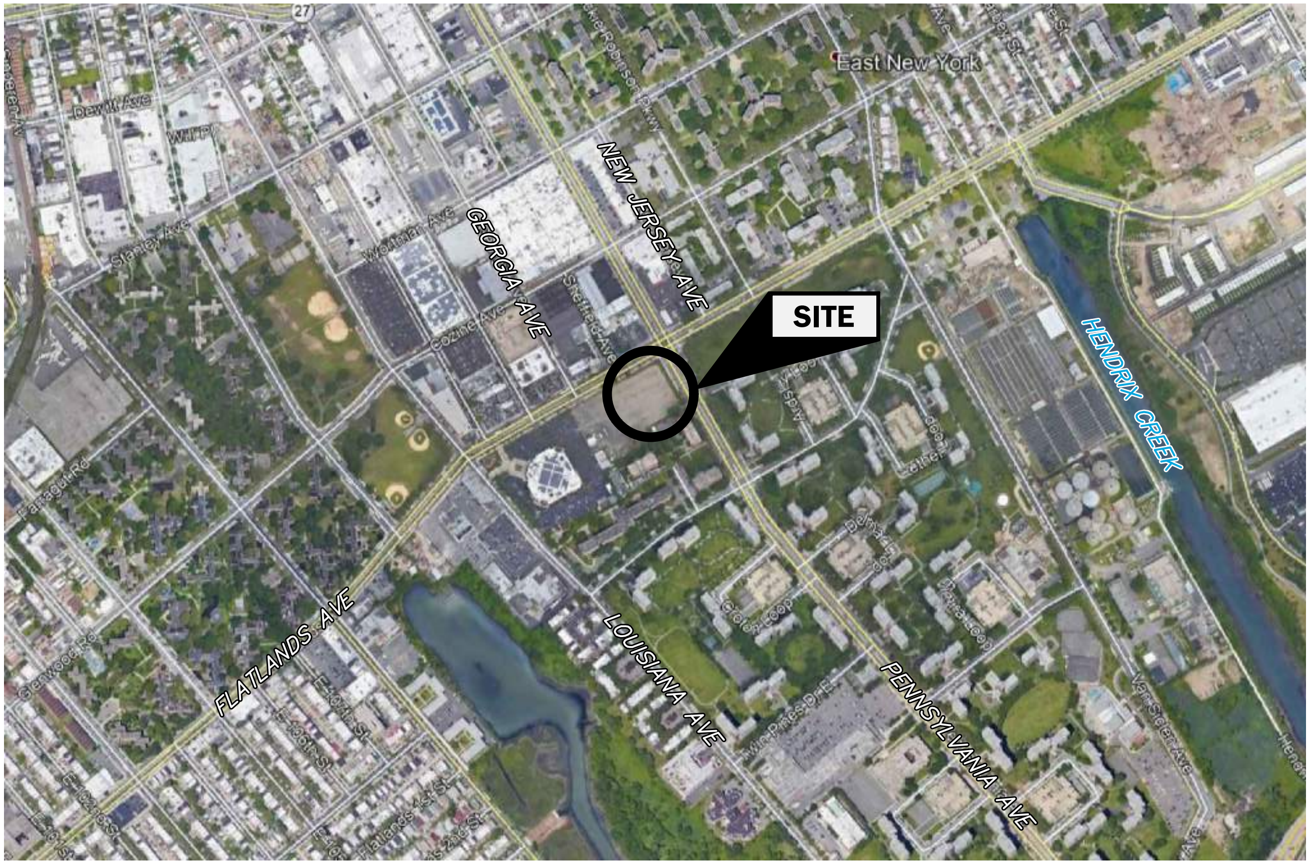
Except as expressly provided in this limitations section, HRGS makes no other representation or warranty of any kind whatsoever, oral or written, expressed or implied; and all implied warranties of merchantability and fitness for a particular purpose, are hereby disclaimed. If you have any questions or comments on this letter report, please contact us at your convenience. It has been a pleasure to work with LANGAN on this project. We look forward to working with you again in the future.

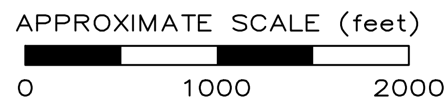
Sincerely,
HAGER-RICHTER GEOSCIENCE, INC.
dba HR Geological Services in NY

Amanda Fabian, P.G. (NY 000567)
Geophysicist

Alexis Martinez
Senior Geophysicist

Attachments: Figures 1 – 3





NOTE:

Modified from Google Earth Pro aerial photograph.

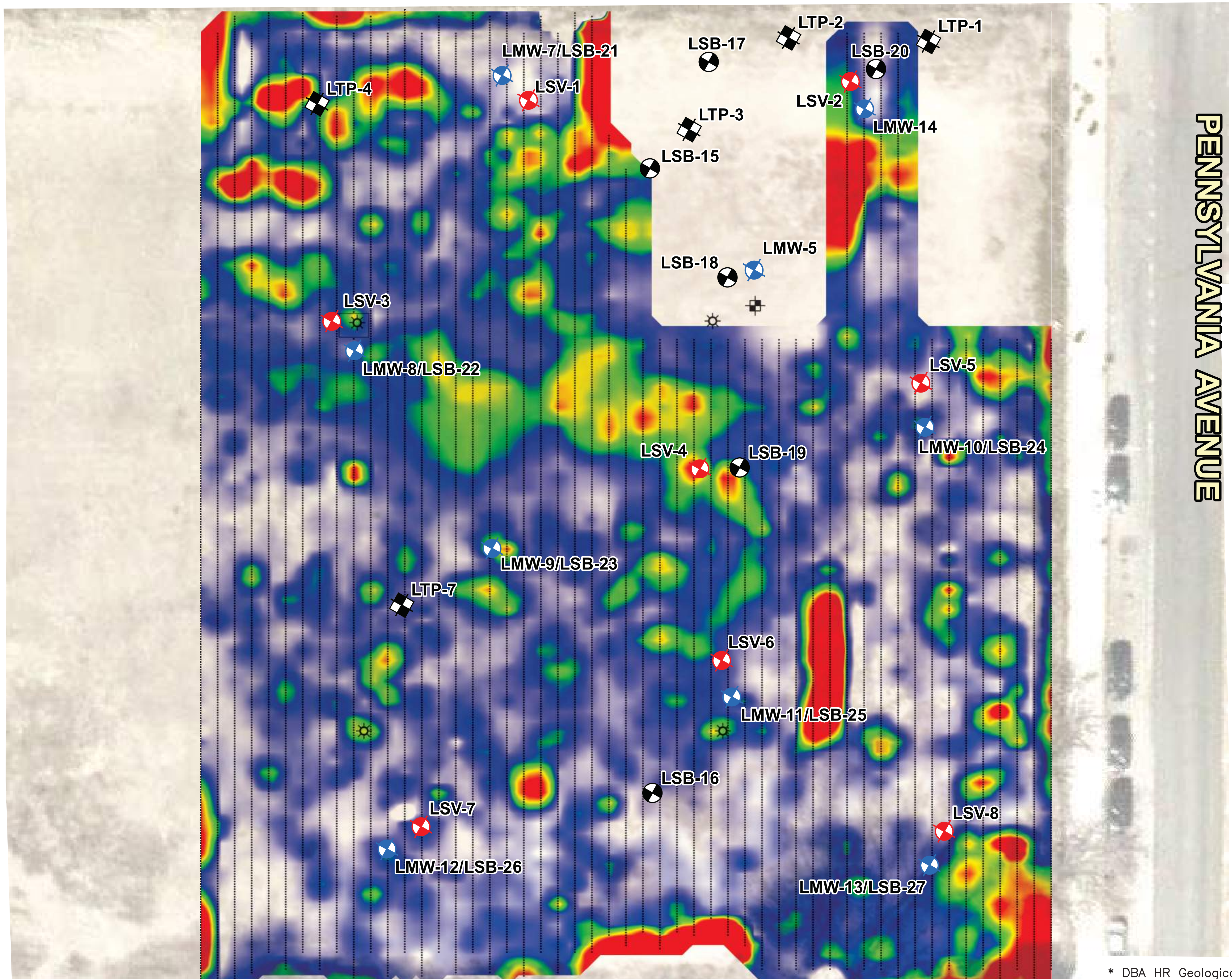
* DBA HR Geological Services in New York

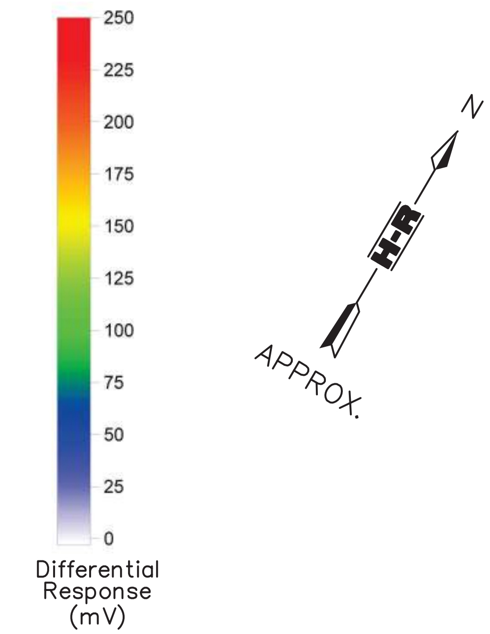
Figure 1
General Site Location
12096 Flatlands Avenue
Brooklyn, New York

File 19JCC89	April, 2021

HAGER–RICHTER*

Salem, NH | Fords, NJ





LEGEND

DATA STATIONS

LIGHT POLE

MONITORING WELL

PROPOSED BORING

HISTORIC BORING

SCALE (feet)

0 30 60

NOTES:

1. Modified from site plan provided by Langan, identified as Site Plan – Figure 4 – Proposed Sample Locations.pdf.
2. Data were acquired with Geonics EM61-MK2. Differential response shown.
3. Differential response equals top coil response – bottom coil response.

* DBA HR Geological Services in New York

Figure 2
EM Survey
12096 Flatlands Avenue
Brooklyn, New York

File 19JCC89 | April, 2021

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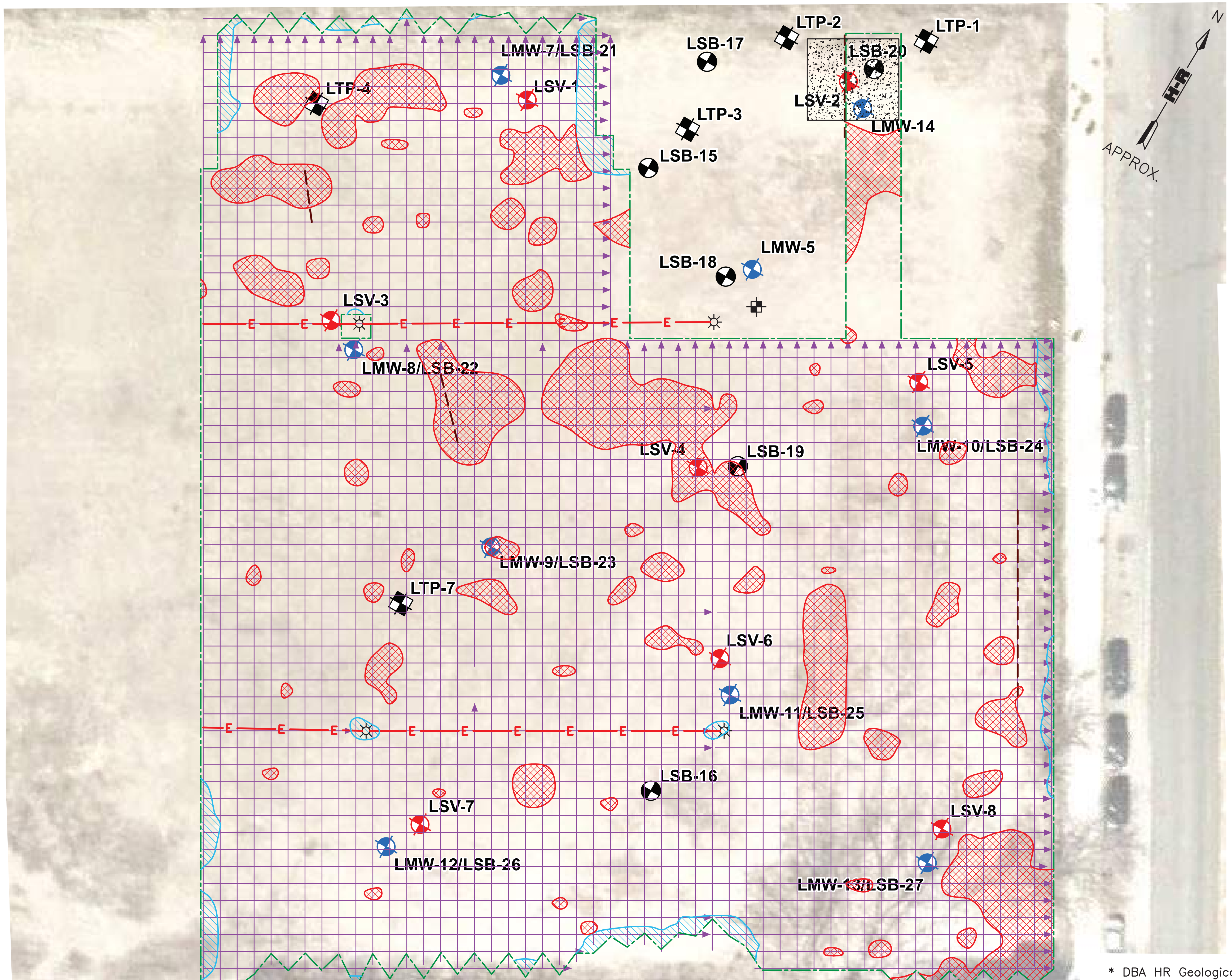

LEGEND

- APPROXIMATE LIMITS OF EM SURVEY AREA
- GPR TRAVERSE
- AREA OF POSSIBLE BURIED METAL
- ELECTRIC LINE
- POSSIBLE UTILITY
- AREA OF BURIED CONCRETE PAD
- EM ANOMALY ATTRIBUTED TO EFFECTS OF SURFACE OBJECTS. THE PRESENCE OR ABSENCE OF BURIED METAL WITHIN THIS AREA CANNOT BE DETERMINED ON THE BASIS OF THE EM61 DATA ALONE.
- PROPOSED BORING
- HISTORIC BORING
- LIGHT POLE
- MONITORING WELL

SCALE (feet)

0 30 60

NOTE:

Modified from site plan provided by Langan, identified as Site Plan – Figure 4 – Proposed Sample Locations.pdf.

* DBA HR Geological Services in New York

Figure 3
GPR Survey &
Integrated Interpretation
12096 Flatlands Avenue
Brooklyn, New York

File 19JCC89	April, 2021

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Salem, NH | Fords, NJ

APPENDIX B

Boring and Well Logs

LANGAN

Log of Boring **LMW-14** Sheet 1 of 2

Project: 12096 Flatlands Avenue		Project No.: 100688801	
Location: Brooklyn, New York		Elevation and Datum: 14.52-ft NAVD88	
Drilling Company: AARCO Environmental Services Corp.		Date Started: 4/14/21	Date Finished: 4/14/21
Drilling Equipment: AMS Power Probe		Completion Depth: 25 ft	Rock Depth: ---
Size and Type of Bit: 2in Direct Push		Number of Samples: Disturbed 5; Undisturbed ---; Core ---	
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.): First ▽ 13.5; Completion ▼ ---; 24 HR. ▼ ---	
Casing Hammer: ---	Weight (lbs): --- / Drop (in): ---	Drilling Foreman: Sergio Magana	
Sampler: 1.75" x 5' Long Acetate Lined Macrocore		Field Engineer: Brandon Reiner	
Sampler Hammer: ---	Weight (lbs): --- / Drop (in): ---		

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+14.5	Brown fine-medium SAND, trace brick, trace fine gravel (dry)[FILL]	0	M-1	Macrocore	30		0.0	Started Drilling on 4/14/2021
		0.5					0.0	
		1					0.0	
		1.5					0.0	
		2					0.0	
		2.5					0.0	
		3					0.0	
		3.5					0.0	
		4					0.0	
		4.5					0.0	
		5	M-2	Macrocore	30		0.0	
		5.5					0.0	
		6					0.0	
		6.5					0.0	
	[ASPHALT]	7					0.0	
	Brown to orangish brown medium-coarse SAND and medium GRAVEL (dry)[FILL]	7.5					0.0	
		8					0.0	
		8.5					0.0	
		9					0.0	
		9.5					0.0	
		10	M-3	Macrocore	36		0.0	
		10.5					0.0	
		11					0.0	
		11.5					0.0	
		12					0.0	
		12.5					0.0	
		13					0.0	
	Brown to orangish brown medium-coarse SAND and medium GRAVEL (wet)[FILL]	13.5 ▽					0.0	
+0.5		14					0.0	
	Dark brown fine-medium SAND, trace clay (wet) [NATIVE]	14.5					0.0	
	Brown fine-medium SAND (wet) [NATIVE]	15	M-4	Macrocore	36		0.0	
		15.5					0.0	
		16					0.0	
		16.5					0.0	
		17					0.0	
		17.5					0.0	
		18					0.0	
		18.5					0.0	
		19					0.0	
		19.5					0.0	
		20						

LANGAN

Log of Boring **LMW-14** Sheet 2 of 2

Project	Project No.
12096 Flatlands Avenue	100688801
Location	Elevation and Datum
Brooklyn, New York	14.52-ft NAVD88

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-5.5	Light brown fine-medium SAND (wet) [NATIVE]	20	M-5	Macrocore	60		0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	
	-10.5		25						Bottom of boring at 25' bgs
			26–45						

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Log of Boring **LSB-21/LMW-7** Sheet 1 of 1

Project: 12096 Flatlands Avenue		Project No.: 100688801	
Location: Brooklyn, New York		Elevation and Datum: 14.25-ft NAVD88	
Drilling Company: AARCO Environmental Services Corp.		Date Started: 4/13/21	Date Finished: 4/13/21
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 20 ft	Rock Depth: ---
Size and Type of Bit: 2in Direct Push		Number of Samples: Disturbed 4; Undisturbed ---; Core ---	
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.): First 14; Completion ---; 24 HR. ---	
Casing Hammer: ---	Weight (lbs): ---; Drop (in): ---	Drilling Foreman: Sergio Magana	
Sampler: 1.75" x 5' Long Acetate Lined Macrocore		Field Engineer: Brandon Reiner	
Sampler Hammer: ---	Weight (lbs): ---; Drop (in): ---		

Elev. (ft)	Sample Description	Depth Scale (ft)	Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+14.3	Dark brown fine-medium SAND, trace brick, trace f-c gravel (dry)[FILL]	0	M-1	Macrocore	42		Started Drilling on 4/13/2021 Collect sample LSB-21A from 0-2' (0-0.5') bgs at 10:30 AM
	Orangish brown fine-medium SAND (dry)[FILL]	~3.5					
	Light brown SAND, trace fine gravel (dry)[FILL]	5	M-2	Macrocore	42		Collect sample LSB-21B 5-7' (5.5-6') bgs at 10:40 AM
	Dark gray coarse SAND, trace coal (dry)[FILL]	~5.5					Trace coal encountered at 5.5-6' bgs
	Gray to light gray fine-coarse SAND, trace silt, trace gravel (dry)[FILL]	~6					
	Dark gray to brown fine-medium SAND, trace glass, trace gravel (dry)[FILL]	10	M-3	Macrocore	18		Collect sample LSB-21C 12-14' (12.5-13') bgs at 10:45 AM
	Gray medium-coarse SAND, trace wood, trace gravel (wet)[FILL]	~14					
-0.8	Brown fine-medium SAND (wet)[NATIVE]	15	M-4	Macrocore	60		
-5.8		20					Bottom of boring at 20' bgs

PID Reading (ppm): 0.0 at all readings from 0 to 20 ft.

\\LANGAN.COM\DATA\PAR\DATA8\100688801\PROJECT DATA_DISCIPLINE\ENVIRONMENTAL\GINTLOGS\100688801_ENTERPRISE.GPJ ... 6/28/2021 5:53:09 PM ... Report: Log - LANGAN

LANGAN

Log of Boring **LSB-22/LMW-8** Sheet 1 of 2

Project: 12096 Flatlands Avenue		Project No.: 100688801	
Location: Brooklyn, New York		Elevation and Datum: 18.45-ft NAVD88	
Drilling Company: AARCO Environmental Services Corp.		Date Started: 4/13/21	Date Finished: 4/13/21
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 25 ft	Rock Depth: ---
Size and Type of Bit: 2in Direct Push		Number of Samples: Disturbed 5; Undisturbed ---; Core ---	
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.): First ▽ 15; Completion ▼ ---; 24 HR. ▼ ---	
Casing Hammer: ---	Weight (lbs): ---; Drop (in): ---	Drilling Foreman: Sergio Magana	
Sampler: 1.75" x 5' Long Acetate Lined Macrocore		Field Engineer: Brandon Reiner	
Sampler Hammer: ---	Weight (lbs): ---; Drop (in): ---		

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
FILL	+18.5	Dark brownish brown to light fine-medium SAND, trace brick, trace clay, trace f-m gravel (dry)[FILL]	0	M-1	Macrocore	42		0.0, 0.0	Started Drilling at 4/14/2021
			1					0.0, 0.0	Collect sample LSB-22A at 0-2' (0.5-1') bgs at 9:40 AM
			2					0.0, 0.0	
			3					0.0, 0.0	
		Black fine SAND, trace gravel (dry)[ASH] [FILL]	4					0.0, 0.0	Collect sample LSB-22B at 4-6' (4.5-5') bgs at 9:45 AM
		Black fine SAND, trace gravel (dry) [ASH] [FILL]	5	M-2	Macrocore	36		0.0, 0.0	
		Dark brown to light brown fine-medium SAND, trace fine gravel (dry)[FILL]	6					0.0, 0.0	
			7					0.0, 0.0	
			8					0.0, 0.0	
			9					0.0, 0.0	
		Light gray to brown medium-coarse SAND, trace glass, trace fine gravel (dry)[FILL]	10	M-3	Macrocore	26		0.0, 0.0	
			11					0.0, 0.0	
			12					0.0, 0.0	
			13					0.0, 0.0	Collect sample LSB-22C at 13-15' (13.5-14') at 9:50 AM
			14					0.0, 0.0	
SAND	+3.5	▽ Dark brown to brown fine-medium SAND (wet)[NATIVE]	15	M-4	Macrocore	30		0.0, 0.0	
			16					0.0, 0.0	
			17					0.0, 0.0	
			18					0.0, 0.0	
			19					0.0, 0.0	
			20						

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Log of Boring **LSB-22/LMW-8** Sheet 2 of 2

Project	Project No.
12096 Flatlands Avenue	100688801
Location	Elevation and Datum
Brooklyn, New York	18.45-ft NAVD88

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-1.6	Brown to light brown fine-medium SAND (wet)[NATIVE]	20	M-5	Macrocore	60		0.0	
								0.0	
			21					0.0	
								0.0	
			22					0.0	
								0.0	
			23					0.0	
								0.0	
			24					0.0	
								0.0	
	-6.6		25						Bottom of boring at 25' bgs
			26						
			27						
			28						
			29						
			30						
			31						
			32						
			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

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Log of Boring **LSB-23/LMW-9** Sheet 1 of 2

Project: 12096 Flatlands Avenue		Project No.: 100688801	
Location: Brooklyn, New York		Elevation and Datum: 18.91-ft NAVD88	
Drilling Company: AARCO Environmental Services Corp.		Date Started: 4/13/21	Date Finished: 4/13/21
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 25 ft	Rock Depth: ---
Size and Type of Bit: 2in Direct Push		Number of Samples: Disturbed 4; Undisturbed ---; Core ---	
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.): First ▽ 20; Completion ▼ ---; 24 HR. ▼ ---	
Casing Hammer: ---	Weight (lbs): --- ; Drop (in): ---	Drilling Foreman: Sergio Magana	
Sampler: 1.75" x 5' Long Acetate Lined Macrocore		Field Engineer: Brandon Reiner	
Sampler Hammer: ---	Weight (lbs): --- ; Drop (in): ---		

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+18.9	Brown to dark brown fine-medium SAND, trace brick, trace f-m gravel (dry)[FILL]	0					0.0	Started Drilling at 4/13/2021
							0.0	Collect LSB-23A from 0-2' (1-1.5') bgs at 11:35 AM
		1					0.0	
							0.0	
		2	M-1	Macrocore	42		0.0	
							0.0	
		3					0.0	
							0.0	
		4					0.0	
							0.0	
		5					0.0	Trace coal at 5' bgs
							0.0	
		6					0.0	
							0.0	
		7	M-2	Macrocore	60		0.0	
							0.0	
		8					0.0	Collect LSB-23B from 8-10' (8.5-9') bgs at 11:50 AM
	Dark gray dense fine SAND (dry) [ASH][FILL]						0.0	
		9					0.0	
							0.0	
	Dark brown to brown fine-medium SAND, trace brick, trace gravel (dry)[FILL]	10					0.0	
							0.0	
		11					0.0	
							0.0	
		12	M-3	Macrocore	30		0.0	
							0.0	
		13					0.0	
							0.0	
		14					0.0	
							0.0	
		15					0.0	
							0.0	
		16					0.0	
							0.0	
		17	M-4	Macrocore	30		0.0	
							0.0	
		18					0.0	Collect sample LSB-23C from 18-20' (19-19.5') bgs at 11:55 AM
							0.0	
		19					0.0	
							0.0	
-1.1	Dark brown to brown fine-medium SAND, trace brick, trace	▽ 20						

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Log of Boring **LSB-23/LMW-9** Sheet 2 of 2

Project	Project No.
12096 Flatlands Avenue	100688801
Location	Elevation and Datum
Brooklyn, New York	18.91-ft NAVD88

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-1.1	coal, trace wood, trace gravel (moist)[FILL]	20	M-5	Macrocore	54		0.0	
		Dark brown to brown fine-medium SAND (wet)[NATIVE]						0.0	
			21					0.0	
								0.0	
			22					0.0	
								0.0	
			23					0.0	
								0.0	
			24					0.0	
								0.0	
	-6.1		25						Bottom of boring at 25' bgs

Depth scale continues: 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45

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Log of Boring **LSB-24/LMW-10** Sheet 1 of 2

Project: 12096 Flatlands Avenue		Project No.: 100688801	
Location: Brooklyn, New York		Elevation and Datum: 15.08-ft NAVD88	
Drilling Company: AARCO Environmental Services Corp.		Date Started: 4/15/21	Date Finished: 4/15/21
Drilling Equipment: AMS Power Probe		Completion Depth: 25 ft	Rock Depth: ---
Size and Type of Bit: 2in Direct Push		Number of Samples: Disturbed 5	Undisturbed --- / Core ---
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.): First 15	Completion --- / 24 HR. ---
Casing Hammer: ---	Weight (lbs): --- / Drop (in): ---	Drilling Foreman: Sergio Magana	
Sampler: 1.75" x 5' Long Acetate Lined Macrocore		Field Engineer: Brandon Reiner	
Sampler Hammer: ---	Weight (lbs): --- / Drop (in): ---		

Elev. (ft)	Sample Description
+15.1	Brown to orangish brown fine-coarse SAND, trace brick, trace glass, trace f-c gravel (dry)[FILL]
	Black fine dense SAND (dry) [ASH][FILL]
	Brown fine-medium SAND, trace brick, trace gravel (dry)[FILL]
	Gray to tan medium-coarse SAND and fine-coarse GRAVEL, trace coal, trace brick, trace glass (dry)[FILL]
	Dark gray clayey SAND, trace glass, trace silt (moist)[FILL]
	Brown silty SAND (wet)[FILL]
-0.9	Dark brown organic CLAY, trace organics (moist)[NATIVE]
-1.9	Light brown clayey SAND, trace organics (wet)[NATIVE]
-2.9	Light brown fine-medium SAND (wet)[NATIVE]

Depth Scale: 0 – 20

Sample Data

Number	Type	Recov. (in)	Penetr. resist BL/6in
M-1	Macrocore	36	
M-2	Macrocore	44	
M-3	Macrocore	26	
M-4	Macrocore	41	

PID Reading (ppm): 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0

Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)

Started Drilling on 4/15/2021

Collect sample LSB-24A from 0-2' (0-0.5') at 8:15 AM

Collect sample LSB-24B from 3-5' (4-4.5') at 8:25 AM

Collect sample LSB-24C from 13-15' (13-13.5') at 8:45 AM

Project	Project No.
12096 Flatlands Avenue	100688801
Location	**Elevation and Datum**
Brooklyn, New York	15.08-ft NAVD88

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-4.9	Light brown fine-medium SAND (wet)[NATIVE]	20	M-5	Macrocore	60		0.0	
								0.0	
			21					0.0	
								0.0	
			22					0.0	
	-7.4	Dark brown silty SAND (wet)[NATIVE]						0.0	
			23					0.0	
								0.0	
			24					0.0	
								0.0	
	-9.9		25						Bottom of boring at 25' bgs
			26						
			27						
			28						
			29						
			30						
			31						
			32						
			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

LANGAN

Log of Boring **LSB-25/LMW-11** Sheet 1 of 2

Project: 12096 Flatlands Avenue		Project No.: 100688801	
Location: Brooklyn, New York		Elevation and Datum: 17.70-ft NAVD88	
Drilling Company: AARCO Environmental Services Corp.		Date Started: 4/13/21	Date Finished: 4/13/21
Drilling Equipment: Geoprobe 7822 DT		Completion Depth: 25 ft	Rock Depth: ---
Size and Type of Bit: 2in Direct Push		Number of Samples: Disturbed 5; Undisturbed ---; Core ---	
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.): First ▽ 19; Completion ▼ ---; 24 HR. ▼ ---	
Casing Hammer: --- Weight (lbs): ---	Drop (in): ---	Drilling Foreman: Sergio Magana	
Sampler: 1.75" x 5' Long Acetate Lined Macrocore		Field Engineer: Brandon Reiner	
Sampler Hammer: --- Weight (lbs): ---	Drop (in): ---		

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
FILL	+17.7	Dark brown to brown fine-medium SAND, trace brick, trace gravel (dry)[FILL]	0–5	M-1	Macrocore	48		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	Started Drilling on 4/13/2021 Collect sample LSB-25A from 0-2' (1-1.5') at 2:40 PM
FILL		Dark brown to brown fine-medium SAND, trace brick, trace gravel (dry)[FILL]	5–10	M-2	Macrocore	48		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	
FILL		Dark brown to brown fine-medium SAND, trace gravel (dry)[FILL]	10–15	M-3	Macrocore	24		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	Collect sample LSB-25B from 12-14' (13-13.5') bgs at 2:50 PM
FILL		(▽ 19) Dark brown to brown fine-coarse SAND, trace gravel (wet)[FILL]	15–20	M-4	Macrocore	42		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	Collect sample LSB-25C from 17-19' (17-17.5') bgs at 2:55 PM
	-2.3		20						

LANGAN

Log of Boring **LSB-25/LMW-11**

Project	Project No.
12096 Flatlands Avenue	100688801
Location	**Elevation and Datum**
Brooklyn, New York	17.70-ft NAVD88

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Sample Data: Type	Sample Data: Recov. (in)	Sample Data: Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-2.3	Brown fine-medium SAND (wet)[NATIVE]	20	M-5	Macrocore	32		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	
	-7.3		25						Bottom of boring at 25' bgs

Depth Scale: 20 – 45

LANGAN

Project: 12096 Flatlands Avenue		Project No.: 100688801	
Location: Brooklyn, New York		Elevation and Datum: 19.68-ft NAVD88	
Drilling Company: AARCO Environmental Services Corp.		Date Started: 4/13/21	Date Finished: 4/14/21
Drilling Equipment: Geoprobe 7822 DT/AMS Power Probe		Completion Depth: 30 ft	Rock Depth: ---
Size and Type of Bit: 2in Direct Push		Number of Samples: Disturbed 6; Undisturbed ---; Core ---	
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.): First 22.5; Completion ---; 24 HR. ---	
Casing Hammer: ---	Weight (lbs): --- ; Drop (in): ---	Drilling Foreman: Sergio Magana	
Sampler: 1.75" x 5' Long Acetate Lined Macrocore		Field Engineer: Brandon Reiner	
Sampler Hammer: ---	Weight (lbs): --- ; Drop (in): ---		

Elev. (ft)	Sample Description	Depth Scale	Sample Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
+19.7	Brown to dark brown fine-medium SAND, trace brick, trace concrete, trace gravel (dry)[FILL]	0					0.0, 0.0	Started Drilling at 4/13/2021
		1					0.0, 0.0	Collect sample LSB-26A from 0-2' (0-0.5') at 1:45 PM
		2	M-1	Macrocore	54		0.0, 0.0	
		3					0.0, 0.0	
	Dark gray fine dense SAND, trace gravel (dry) [ASH][FILL]	4					0.0, 0.0	
	Brown to dark brown fine-medium SAND, some concrete, trace brick, trace gravel (dry)[FILL]	5					0.0, 0.0	
		6					0.0, 0.0	
		7	M-2	Macrocore	36		0.0, 0.0	
		8					0.0, 0.0	
		9					0.0, 0.0	
		10					0.0, 0.0	Collect sample LSB-26B from 10-12' (11-11.5') bgs at 2:00 PM
		11					0.0, 0.0	
		12	M-3	Macrocore	40		0.0, 0.0	
		13					0.0, 0.0	
		14					0.0, 0.0	
		15					0.0, 0.0	
		16					0.0, 0.0	
		17	M-4	Macrocore	24		0.0, 0.0	
		18					0.0, 0.0	
	[WOOD]	19	M-5	Macrocore	3		0.0, 0.0	
		20						

LANGAN

Log of Boring **LSB-26/LMW-12** Sheet 2 of 2

Project	Project No.
12096 Flatlands Avenue	100688801
Location	Elevation and Datum
Brooklyn, New York	19.68-ft NAVD88

Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
-0.3	Dark brown fine-medium SAND, trace gravel (moist)[FILL]	20	M-6	Macrocore	12		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	Resumed drilling at 20' bgs on 4/14/2021 with the AMS Power Probe. Collect sample LSB-26C from 20.5-22.5' (22-22.5') bgs at 10:10 AM
	Dark brown medium-coarse SAND and medium GRAVEL (wet)[FILL]	22–23						
	Dark brown medium-coarse SAND, trace brick, trace glass, trace fine gravel (wet)[FILL]	25	M-7	Macrocore	24		0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	
-10.3		30						Bottom of boring at 30' bgs on 4/14/2021

Depth scale: 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45

\\LANGAN.COM\DATA\PAR\DATA8\100688801\PROJECT DATA_DISCIPLINE\ENVIRONMENTAL\GINTLOGS\100688801_ENTERPRISE.GPJ ... 6/28/2021 5:53:28 PM ... Report: Log - LANGAN

LANGAN

Log of Boring **LSB-27/LMW-13** Sheet 1 of 1

Project: 12096 Flatlands Avenue		Project No.: 100688801	
Location: Brooklyn, New York		Elevation and Datum: 16.28-ft NAVD88	
Drilling Company: AARCO Environmental Services Corp.		Date Started: 4/15/21	Date Finished: 4/15/21
Drilling Equipment: AMS Power Probe		Completion Depth: 20 ft	Rock Depth: ---
Size and Type of Bit: 2in Direct Push		Number of Samples: Disturbed 4; Undisturbed ---; Core ---	
Casing Diameter (in): ---	Casing Depth (ft): ---	Water Level (ft.): First ▽ 15; Completion ▼ ---; 24 HR. ▼ ---	
Casing Hammer: ---	Weight (lbs): --- ; Drop (in): ---	Drilling Foreman: Robert Randazzo	
Sampler: 1.75" x 5' Long Acetate Lined Macrocore		Field Engineer: Brandon Reiner	
Sampler Hammer: ---	Weight (lbs): --- ; Drop (in): ---		

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Number	Type	Recov. (in)	Penetr. resist BL/6in	PID Reading (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
FILL	+16.3	Dark brown to grayish fine-medium SAND, trace brick, trace concrete, trace glass (dry)[FILL]	0	M-1	Macrocore	39		0.0	Started Drilling on 4/15/2021
								0.0	Collected LSB-27A and duplicate sample DUP-4 (Parent LSB-27A) from 0-2' (0.5-1') at 8:55 AM and 9:00 AM
			1					0.0	
								0.0	
			2					0.0	
								0.0	
			3					0.0	
								0.0	
			4					0.0	
								0.0	
			5	M-2	Macrocore	40		0.0	
								0.0	
			6					0.0	
								0.0	
			7					0.0	Collected LSB-27B from 7-9' (7.5-8') at 9:45 AM
								0.0	
			8					0.0	
								0.0	
			9					0.0	
								0.0	
		Brown medium-coarse SAND and coarse GRAVEL, trace brick, trace glass, trace metal, trace wood (dry)[FILL]	10	M-4	Macrocore	12		0.0	
								0.0	
			11					0.0	
								0.0	
			12					0.0	
								0.0	
			13					0.0	Collected LSB-27C from 13-15' (14-14.5') at 10:00 AM
								0.0	
			14					0.0	
								0.0	Voids encountered and poor recovery observed while drilling from 10-15' bgs. Wood encountered at 14.5' bgs.
NATIVE	+1.3	▽ Brown fine-medium SAND, trace medium gravel (wet)[NATIVE]	15	M-3	Macrocore	30		0.0	
								0.0	
			16					0.0	
								0.0	
			17					0.0	
								0.0	
			18					0.0	
								0.0	
			19					0.0	
								0.0	Bottom of boring at 20' bgs
	-3.7		20						

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. LMW-5

Project: 12096 Flatlands Avenue	Project No.: 100688801
Location: Brooklyn, New York	Elevation And Datum: 16.18 NAVD88
Drilling Agency: AARCO Environmental Services Corp.	Date Started: 5/8/2018 / Date Finished: 5/8/2018
Drilling Equipment: Geoprobe 7822 DT	Driller: Tim Kelly
Size And Type of Bit: 2in Direct Push	Inspector: Allyson Kritzer

Method of Installation

AARCO installed a 20-slot Schedule 40 PVC screen from 10 to 20 feet bgs and Schedule 40 PVC riser to the surface. The annulus of the borehole was backfilled to 3-feet bgs with No. 1 Sand and a hydrated bentonite seal from 1 to 3 feet bgs. A manhole was installed and encased in concrete at grade.

Method of Well Development

LMW-5 was developed with a whale pump using surge pumping techniques across the well screen in two- to three-foot increments. After surging, the well was purged via pumping until the water became clear; approximately 5 gallons purged during the 2018 Phase II EI on 5/8/2018 and approximately 15 gallons purged during the Remedial Investigation on 4/16/2021.

Type of Casing	Diameter	Type of Backfill Material
---	---	Non-Impacted Soil and Bentonite Grout

Type of Screen	Diameter	Type of Seal Material
Schedule 40 PVC	2-inch	Bentonite

Borehole Diameter	Type of Filter Material
3-inch	No. 1 Sand

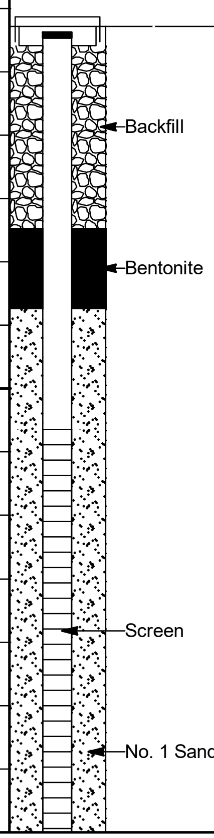
	Elevation	Depth
Top of Casing	16.20'	0.02' ags
Top of Seal	11.18'	5' bgs
Top of Filter	9.18'	7' bgs
Top of Screen	6.18'	10' bgs
Bottom of Filter	-3.82'	20' bgs
Bottom of Well	-3.80'	20' bgs

Screen Length	Slot Size
10.0'	0.020-slot

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
2.82'	13.38'	4/19/2021
2.60'	13.60'	4/26/2021

Well Details	Soil / Rock Classification	Depth (ft)
	HISTORIC FILL	
		5
		7
		10
		18
		20



LANGAN

WELL CONSTRUCTION SUMMARY

Well No. LMW-7

Project: 12096 Flatlands Avenue	Project No.: 100688801
Location: Brooklyn, New York	Elevation And Datum: 14.25 NAVD88
Drilling Agency: AARCO Environmental Services Corp.	Date Started: 4/13/2021 — Date Finished: 4/13/2021
Drilling Equipment: Geoprobe 7822 DT	Driller: Sergio Magana
Size And Type of Bit: 2in Direct Push	Inspector: Brandon Reiner

Method of Installation

AARCO installed a 20-slot Schedule 40 PVC screen from 10 to 20 feet bgs and Schedule 40 PVC riser to the surface. The annulus of the borehole was backfilled to 8-feet bgs with No. 1 Sand and a hydrated bentonite seal from 6 to 8 feet bgs. A manhole was installed and encased in concrete at grade.

Method of Well Development

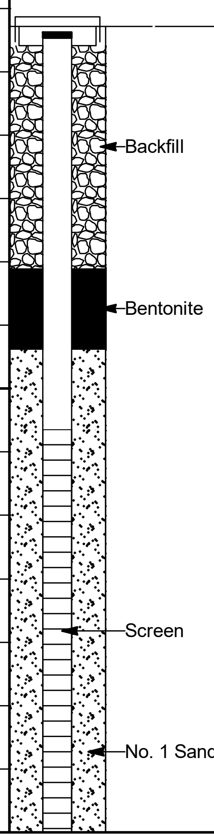
LMW-7 was developed with a whale pump using surge pumping techniques across the well screen in two- to three-foot increments. After surging, the well was purged via pumping until the water became clear; approximately 15 gallons purged.

Type of Casing: ---	Diameter: ---	Type of Backfill Material: Non-Impacted Soil and Bentonite Grout
Type of Screen: Schedule 40 PVC	Diameter: 2-inch	Type of Seal Material: Bentonite
Borehole Diameter: 3-inch		Type of Filter Material: No. 1 Sand

	Elevation	Depth
Top of Casing	14.27'	0.02' ags
Top of Seal	8.25'	6' bgs
Top of Filter	6.25'	8' bgs
Top of Screen	4.25'	10' bgs
Bottom of Filter	-5.75'	20' bgs
Bottom of Well	-5.75'	20' bgs
Screen Length	10.0'	Slot Size: 0.020-slot

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
2.27'	12.00'	4/26/2021

Well Details	Soil / Rock Classification	Depth (ft)
	HISTORIC FILL; NATIVE SAND	6, 8, 10, 18, 20

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. LMW-8

Project	Project No.	
12096 Flatlands Avenue	100688801	
Location	**Elevation And Datum**	
Brooklyn, New York	18.45 NAVD88	
Drilling Agency	**Date Started**	**Date Finished**
AARCO Environmental Services Corp.	4/13/2021	4/13/2021
Drilling Equipment	**Driller**	
Geoprobe 7822 DT	Sergio Magana	
Size And Type of Bit	**Inspector**	
2in Direct Push	Brandon Reiner	

Method of Installation

AARCO installed a 20-slot Schedule 40 PVC screen from 10 to 20 feet bgs and Schedule 40 PVC riser to the surface. The annulus of the borehole was backfilled to 8-feet bgs with No. 1 Sand and a hydrated bentonite seal from 6 to 8 feet bgs. A manhole was installed and encased in concrete at grade.

Method of Well Development

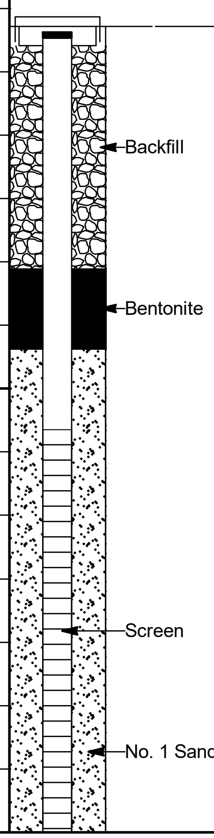
LMW-8 was developed with a whale pump using surge pumping techniques across the well screen in two- to three-foot increments. After surging, the well was purged via pumping until the water became clear; approximately 15 gallons purged.

Type of Casing	Diameter	Type of Backfill Material
---	---	Non-Impacted Soil and Bentonite Grout
Type of Screen	**Diameter**	**Type of Seal Material**
Schedule 40 PVC	2-inch	Bentonite
Borehole Diameter		**Type of Filter Material**
3-inch		No. 1 Sand

	Elevation	Depth
Top of Casing	18.44'	0.01' bgs
Top of Seal	12.45'	6' bgs
Top of Filter	10.45'	8' bgs
Top of Screen	8.45'	10' bgs
Bottom of Filter	-1.55'	20' bgs
Bottom of Well	-1.55'	20' bgs
Screen Length	10.0'	Slot Size: 0.020-slot

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
2.36'	16.08'	4/19/2021
2.04'	16.40'	4/26/2021

Well Details	Soil / Rock Classification	Depth (ft)
	HISTORIC FILL	0.01
		6
		8
		10
	NATIVE SAND	
		18
		20

WELL CONSTRUCTION SUMMARY

LANGAN

Well No. LMW-9

Project: 12096 Flatlands Avenue	Project No.: 100688801
Location: Brooklyn, New York	Elevation And Datum: 18.91 NAVD88
Drilling Agency: AARCO Environmental Services Corp.	Date Started: 4/13/2021 / Date Finished: 4/13/2021
Drilling Equipment: Geoprobe 7822 DT	Driller: Sergio Magana
Size And Type of Bit: 2in Direct Push	Inspector: Brandon Reiner

Method of Installation

AARCO installed a 20-slot Schedule 40 PVC screen from 15 to 25 feet bgs and Schedule 40 PVC riser to the surface. The annulus of the borehole was backfilled to 13-feet bgs with No. 1 Sand and a hydrated bentonite seal from 11 to 13 feet bgs. A manhole was installed and encased in concrete at grade.

Method of Well Development

LMW-9 was developed with a whale pump using surge pumping techniques across the well screen in two- to three-foot increments. After surging, the well was purged via pumping until the water became clear; approximately 15 gallons purged.

Type of Casing	Diameter	Type of Backfill Material
---	---	Non-Impacted Soil and Bentonite Grout

Type of Screen	Diameter	Type of Seal Material
Schedule 40 PVC	2-inch	Bentonite

Borehole Diameter	Type of Filter Material
3-inch	No. 1 Sand

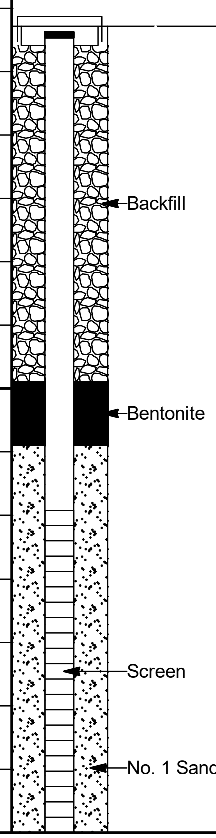
	Elevation	Depth
Top of Casing	18.91'	0' bgs
Top of Seal	7.91'	11' bgs
Top of Filter	5.91'	13' bgs
Top of Screen	3.91'	15' bgs
Bottom of Filter	-6.09'	25' bgs
Bottom of Well	-6.09'	25' bgs

Screen Length	Slot Size
10.0'	0.020-slot

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
2.45'	16.46'	4/19/2021
2.14'	16.77'	4/26/2021

Well Details



Soil / Rock Classification	Depth (ft)
HISTORIC FILL	
	11
	13
	15
NATIVE SAND	
	23
	25

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. LMW-10

Project 12096 Flatlands Avenue	Project No. 100688801
Location Brooklyn, New York	Elevation And Datum 15.08 NAVD88
Drilling Agency AARCO Environmental Services Corp.	Date Started 4/15/2021 / Date Finished 4/15/2021
Drilling Equipment AMS Power Probe	Driller Sergio Magana
Size And Type of Bit 2in Direct Push	Inspector Brandon Reiner

Method of Installation

AARCO installed a 20-slot Schedule 40 PVC screen from 12.5 to 22.5 feet bgs and Schedule 40 PVC riser to the surface. The annulus of the borehole was backfilled to 10.5-feet bgs with No. 1 Sand and a hydrated bentonite seal from 8.5 feet bgs. A manhole was installed and encased in concrete at grade.

Method of Well Development

LMW-10 was developed with a whale pump using surge pumping techniques across the well screen in two- to three-foot increments. After surging, the well was purged via pumping until the water became clear; approximately 15 gallons purged.

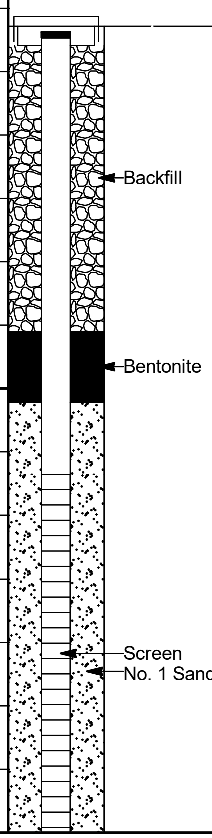
Type of Casing ---	Diameter ---	Type of Backfill Material Non-Impacted Soil and Bentonite Grout
Type of Screen Schedule 40 PVC	Diameter 2-inch	Type of Seal Material Bentonite
Borehole Diameter 3-inch		Type of Filter Material No. 1 Sand

	Elevation	Depth
Top of Casing	15.10'	0.02' ags
Top of Seal	6.58'	8.5' bgs
Top of Filter	4.58'	10.5' bgs
Top of Screen	2.58'	12.5' bgs
Bottom of Filter	-4.92'	20' bgs
Bottom of Well	-7.42'	22.5' bgs
Screen Length	10.0'	Slot Size 0.020-slot

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
2.51'	12.59'	4/19/2021
2.16'	12.94'	4/26/2021

Well Details



Soil / Rock Classification	Depth (ft)
HISTORIC FILL	
	8.5
	10.5
	12.5
NATIVE CLAY	
NATIVE SAND	18
	20
	22.5

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. LMW-11

Project: 12096 Flatlands Avenue	Project No.: 100688801
Location: Brooklyn, New York	Elevation And Datum: 17.70 NAVD88
Drilling Agency: AARCO Environmental Services Corp.	Date Started: 4/13/2021 / Date Finished: 4/13/2021
Drilling Equipment: Geoprobe 7822 DT	Driller: Sergio Magana
Size And Type of Bit: 2in Direct Push	Inspector: Brandon Reiner

Method of Installation

AARCO installed a 20-slot Schedule 40 PVC screen from 15 to 25 feet bgs and Schedule 40 PVC riser to the surface. The annulus of the borehole was backfilled to 13-feet bgs with No. 1 Sand and a hydrated bentonite seal from 11 to 13 feet bgs. A manhole was installed and encased in concrete at grade.

Method of Well Development

LMW-11 was developed with a whale pump using surge pumping techniques across the well screen in two- to three-foot increments. After surging, the well was purged via pumping until the water became clear; approximately 15 gallons purged.

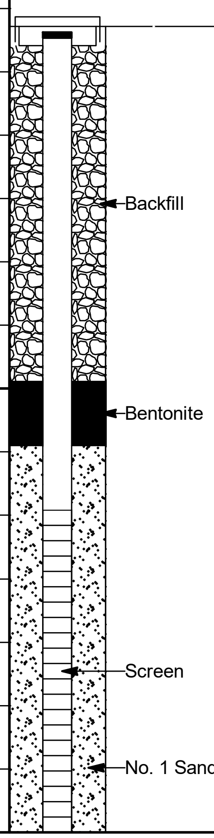
Type of Casing	Diameter	Type of Backfill Material
---	---	Non-Impacted Soil and Bentonite Grout
Type of Screen	**Diameter**	**Type of Seal Material**
Schedule 40 PVC	2-inch	Bentonite
Borehole Diameter		**Type of Filter Material**
	3-inch	No. 1 Sand

	Elevation	Depth
Top of Casing	17.71'	0.01' ags
Top of Seal	6.70'	11' bgs
Top of Filter	4.70'	13' bgs
Top of Screen	2.70'	15' bgs
Bottom of Filter	-7.30'	25' bgs
Bottom of Well	-7.30'	25' bgs
Screen Length	10.0'	Slot Size: 0.020-slot

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
2.59'	15.12'	4/19/2021
2.34'	15.37'	4/26/2021

Well Details



Soil / Rock Classification	Depth (ft)
HISTORIC FILL	
	11
	13
	15
NATIVE SAND	
	23
	25

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. LMW-12

Project 12096 Flatlands Avenue	Project No. 100688801
Location Brooklyn, New York	Elevation And Datum 19.68 NAVD88
Drilling Agency AARCO Environmental Services Corp.	Date Started: 4/13/2021 / Date Finished: 4/14/2021
Drilling Equipment Geoprobe 7822 DT/AMS Power Probe	Driller Sergio Magana
Size And Type of Bit 2in Direct Push	Inspector Brandon Reiner

Method of Installation

AARCO installed a 20-slot Schedule 40 PVC screen from 15 to 30 feet bgs and Schedule 40 PVC riser to the surface. The annulus of the borehole was backfilled to 13-feet bgs with No. 1 Sand and a hydrated bentonite seal from 11 to 13 feet bgs. A manhole was installed and encased in concrete at grade.

Method of Well Development

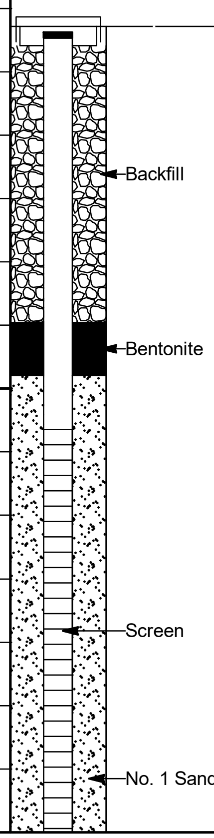
LMW-12 was developed with a whale pump using surge pumping techniques across the well screen in two- to three-foot increments. After surging, the well was purged via pumping until the water became clear; approximately gallons 15 purged.

Type of Casing	Diameter	Type of Backfill Material
---	---	Non-Impacted Soil and Bentonite Grout
Type of Screen	**Diameter**	**Type of Seal Material**
Schedule 40 PVC	2-inch	Bentonite
Borehole Diameter		**Type of Filter Material**
	3-inch	No. 1 Sand

	Elevation	Depth
Top of Casing	19.68'	0' bgs
Top of Seal	8.68'	11' bgs
Top of Filter	6.68'	13' bgs
Top of Screen	4.68'	15' bgs
Bottom of Filter	-10.32'	30' bgs
Bottom of Well	-10.32'	30' bgs
Screen Length	15.0'	Slot Size: 0.020-slot

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
2.54'	17.14'	4/19/2021
2.24'	17.44'	4/26/2021

Well Details	Soil / Rock Classification	Depth (ft)
	HISTORIC FILL	11 13 15 28 30

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. LMW-13

Project 12096 Flatlands Avenue	Project No. 100688801
Location Brooklyn, New York	Elevation And Datum 16.28 NAVD88
Drilling Agency AARCO Environmental Services Corp.	Date Started: 4/15/2021 Date Finished: 4/15/2021
Drilling Equipment AMS Power Probe	Driller Robert Randazzo
Size And Type of Bit 2in Direct Push	Inspector Brandon Reiner

Method of Installation

AARCO installed a 20-slot Schedule 40 PVC screen from 12 to 22 feet bgs and Schedule 40 PVC riser to the surface. The annulus of the borehole was backfilled to 10-feet bgs with No. 1 Sand and a hydrated bentonite seal from 8 to 10 feet bgs. A manhole was installed and encased in concrete at grade.

Method of Well Development

LMW-13 was developed with a whale pump using surge pumping techniques across the well screen in two- to three-foot increments. After surging, the well was purged via pumping until the water became clear; approximately 20 gallons purged.

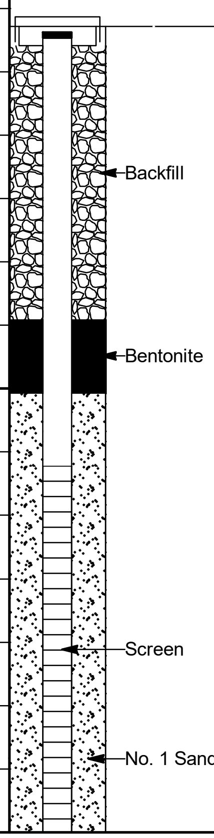
Type of Casing	Diameter	Type of Backfill Material
---	---	Non-Impacted Soil and Bentonite Grout
Type of Screen	**Diameter**	**Type of Seal Material**
Schedule 40 PVC	2-inch	Bentonite
Borehole Diameter		**Type of Filter Material**
	3-inch	No. 1 Sand

	Elevation	Depth
Top of Casing	16.27'	0.01' bgs
Top of Seal	8.28'	8' bgs
Top of Filter	6.28'	10' bgs
Top of Screen	4.28'	12' bgs
Bottom of Filter	-5.72'	22' bgs
Bottom of Well	-5.72'	22' bgs
Screen Length	10.0'	Slot Size: 0.020-slot

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
2.49'	13.78'	4/19/2021
2.17'	14.10'	4/26/2021

Well Details



Soil / Rock Classification	Depth (ft)
HISTORIC FILL	0.01
	8
	10
	12
NATIVE SAND	
	20
	22

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. LMW-14

Project: 12096 Flatlands Avenue	Project No.: 100688801
Location: Brooklyn, New York	Elevation And Datum: 14.52 NAVD88
Drilling Agency: AARCO Environmental Services Corp.	Date Started: 4/14/2021 / Date Finished: 4/14/2021
Drilling Equipment: AMS Power Probe	Driller: Sergio Magana
Size And Type of Bit: 2in Direct Push	Inspector: Brandon Reiner

Method of Installation

AARCO installed a 20-slot Schedule 40 PVC screen from 10 to 25 feet bgs and Schedule 40 PVC riser to the surface. The annulus of the borehole was backfilled to 8-feet bgs with No. 1 Sand and a hydrated bentonite seal from 6 to 8 feet bgs. A manhole was installed and encased in concrete at grade.

Method of Well Development

LMW-14 was developed with a whale pump using surge pumping techniques across the well screen in two- to three-foot increments. After surging, the well was purged via pumping until the water became clear; approximately 30 gallons purged.

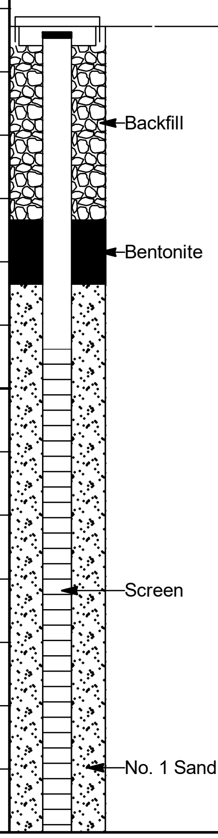
Type of Casing	Diameter	Type of Backfill Material
---	---	Non-Impacted Soil and Bentonite Grout
Type of Screen	**Diameter**	**Type of Seal Material**
Schedule 40 PVC	2-inch	Bentonite
Borehole Diameter		**Type of Filter Material**
3-inch		No. 1 Sand

	Elevation	Depth
Top of Casing	14.52'	0' bgs
Top of Seal	8.52'	6' bgs
Top of Filter	6.52'	8' bgs
Top of Screen	4.52'	10' bgs
Bottom of Filter	-10.48'	25' bgs
Bottom of Well	-10.48'	25' bgs
Screen Length	15.0'	Slot Size: 0.020-slot

GROUNDWATER ELEVATIONS (ft)
(Measured from the Top of Casing)

Elevation	DTW	Date
2.67'	11.85'	4/19/2021
2.39'	12.13'	4/26/2021

Well Details



Soil / Rock Classification	Depth (ft)
HISTORIC FILL	
	6
	8
	10
NATIVE SAND	
	23
	25

APPENDIX C

Groundwater Sampling Field Logs

LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	12096 Flatlands Ave	**Site Location:**	Brooklyn, NY	**Well No:**	LMW-5	**Date:**	4/26/2021
Job Number:	100688801	**Weather:**	50, sunny	**Sampler(s):**	DA		
Initial DTW (ft):	13.60	**Well Depth (ft):**	20	**Pump Depth (ft):**	18		
Background PID (ppm):	0.00	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	10-20		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	POF-NAF36	**Well Diameter (in):**	2		

TIME	**TEMP. °C**	**pH (std. Units)**	**ORP (mV)**	**COND. (mS/cm)**	**Turbidity (NTU)**	**DO (mg/L)**	**DTW (ft)**	**Q (mL/m)**	**COLOR?**	**ODOR?**	**NOTES**	**STABILIZED?**
10:20	—	—	—	—	—	—	13.63	200	—	—	Begin Purging	—
10:25	13.83	6.72	-31.0	1.030	2.8	0.00	13.63	200	clear	no odor		—
10:30	13.83	6.73	-38.0	1.030	0.0	0.00	13.64	200	clear	no odor		—
10:35	13.87	6.73	-42.0	1.040	0.0	0.00	13.64	200	clear	no odor		N
10:40	13.89	6.73	-43.0	1.030	0.2	0.00	13.65	200	clear	no odor		N
10:45	13.94	6.74	-45.0	1.030	0.2	0.00	13.65	200	clear	no odor		N
10:50	13.92	6.74	-46.0	1.030	0.0	0.00	13.67	200	clear	no odor		Y
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown					

Notes:

Sample Number:	105_LMW-5	Sample Time:	10:55	Sample Analyses:	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Total & Dissolved Metals, Hexavalent/Trivalent Chromium, Cyanide, PFAS, 1,4-dioxane
QA/QC Sample Number:	—	QA/QC Sample Time:	—	QA/QC Sample Analyses:	—

LANGAN

LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	12096 Flatlands Ave	**Site Location:**	Brooklyn, NY	**Well No:**	LMW-7	**Date:**	4/26/2021
Job Number:	100688801	**Weather:**	50, sunny	**Sampler(s):**	DA		
Initial DTW (ft):	12.00	**Well Depth (ft):**	20	**Pump Depth (ft):**	18		
Background PID (ppm):	0.00	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	10-20		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	POF-NAF36	**Well Diameter (in):**	2		

TIME	TEMP. °C	pH (std. Units)	ORP (mV)	COND. (mS/cm)	Turbidity (NTU)	DO (mg/L)	DTW (ft)	Q (mL/m)	COLOR?	ODOR?	NOTES	STABILIZED?
8:20	—	—	—	—	—	—	12.00	150	—	—	Begin Purging	—
8:25	11.95	6.28	41.0	0.840	35.2	1.96	12.10	150	clear	none		—
8:30	11.98	6.42	-5.0	0.829	16.3	0.64	12.13	150	clear	none		—
8:35	12.12	6.47	-20.0	0.826	9.4	0.47	12.15	150	clear	none		N
8:40	12.30	6.49	-30.0	0.825	4.9	0.28	12.18	150	clear	none		N
8:45	12.43	6.59	-42.0	0.824	3.1	0.08	12.20	150	clear	none		N
8:50	12.56	6.51	-42.0	0.822	0.0	0.00	12.20	150	clear	none		N
	12.58	6.54	-45.0	0.821	0.0	0.00	12.21	150	clear	none		Y
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown					

Notes:

Sample Number:	102_LMW-7	Sample Time:	9:00	Sample Analyses:	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Total & Dissolved Metals, Hexavalent/Trivalent Chromium, Cyanide, PFAS, 1,4-dioxane
QA/QC Sample Number:	103_DUP-1	QA/QC Sample Time:	9:30	QA/QC Sample Analyses:	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Total & Dissolved Metals, Hexavalent/Trivalent Chromium, Cyanide, PFAS, 1,4-dioxane

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LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	12096 Flatlands Ave	**Site Location:**	Brooklyn, NY	**Well No:**	LMW-8	**Date:**	4/26/2021
Job Number:	100688801	**Weather:**	50, sunny	**Sampler(s):**	MM		
Initial DTW (ft):	16.40	**Well Depth (ft):**	20	**Pump Depth (ft):**	18		
Background PID (ppm):	0.00	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	10-20		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	98KXXTKM	**Well Diameter (in):**	2		

TIME	TEMP. °C	pH (std. Units)	ORP (mV)	COND. (mS/cm)	Turbidity (NTU)	DO (mg/L)	DTW (ft)	Q (mL/m)	COLOR?	ODOR?	NOTES	STABILIZED?
8:10	—	—	—	—	—	—	16.40	200	—	—	Begin Purging	—
8:15	12.36	6.06	254.0	2.160	0.0	1.09	16.85	200	clear	none		—
8:20	13.12	6.40	94.0	2.100	0.0	0.50	16.98	200	clear	none		—
8:25	13.36	6.55	13.0	2.070	0.0	0.44	17.04	200	clear	none		N
8:30	13.45	6.58	-8.0	2.058	0.0	0.38	17.08	200	clear	none		N
8:35	13.52	6.61	-30.0	2.040	0.0	0.30	17.12	200	clear	none		N
8:40	13.72	6.63	-36.0	2.030	0.0	0.21	17.15	200	clear	none		N
	13.84	6.64	-42.0	2.000	0.0	0.19	17.17	200	clear	none		N
8:50	13.83	6.65	-45	2.00	0.0	0.18	17.18	200	clear	none		Y
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown					

Notes:
Volume collected for MS/MSD

Sample Number:	101_LMW-8	Sample Time:	8:55	Sample Analyses:	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Total & Dissolved Metals, Hexavalent/Trivalent Chromium, Cyanide, PFAS, 1,4-dioxane
QA/QC Sample Number:	—	QA/QC Sample Time:	—	QA/QC Sample Analyses:	—

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LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	12096 Flatlands Ave	**Site Location:**	Brooklyn, NY	**Well No:**	LMW-9	**Date:**	4/26/2021
Job Number:	100688801	**Weather:**	50, sunny	**Sampler(s):**	MM		
Initial DTW (ft):	16.77	**Well Depth (ft):**	25	**Pump Depth (ft):**	21		
Background PID (ppm):	0.0	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	15-25		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	98KXXTKM	**Well Diameter (in):**	2		

TIME	TEMP. °C	pH (std. Units)	ORP (mV)	COND. (mS/cm)	Turbidity (NTU)	DO (mg/L)	DTW (ft)	Q (mL/m)	COLOR?	ODOR?	NOTES	STABILIZED?
10:35	—	—	—	—	—	—	16.77	300	—	—	Begin Purging	—
10:40	15.96	6.95	116.0	1.060	0.0	1.30	16.77	300	clear	none		—
10:45	15.87	6.87	16.0	1.060	0.0	0.80	16.77	300	clear	none		—
10:50	15.78	6.82	-43.0	1.070	0.0	0.75	16.77	300	clear	none		N
10:55	15.72	6.82	-55.0	1.070	0.0	0.80	16.77	300	clear	none		N
11:00	15.75	6.82	-68.0	1.070	0.0	0.85	16.77	300	clear	none		N
11:05	15.82	6.79	-74.0	1.080	0.0	0.88	16.77	300	clear	none		N
	15.84	6.78	-77.0	1.080	0.0	0.91	16.77	300	clear	none		Y
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown					

Notes:

Sample Number:	106_LMW-9	Sample Time:	11:15	Sample Analyses:	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Total & Dissolved Metals, Hexavalent/Trivalent Chromium, Cyanide, PFAS, 1,4-dioxane
QA/QC Sample Number:	—	QA/QC Sample Time:	—	QA/QC Sample Analyses:	—

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LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	12096 Flatlands Ave	**Site Location:**	Brooklyn, NY	**Well No:**	LMW-10	**Date:**	4/26/2021
Job Number:	100688801	**Weather:**	50, sunny	**Sampler(s):**	DA		
Initial DTW (ft):	12.94	**Well Depth (ft):**	22.5	**Pump Depth (ft):**	18		
Background PID (ppm):	0.00	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	12.5-22.5		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	POF-NAF36	**Well Diameter (in):**	2		

TIME	TEMP. °C	pH (std. Units)	ORP (mV)	COND. (mS/cm)	Turbidity (NTU)	DO (mg/L)	DTW (ft)	Q (mL/m)	COLOR?	ODOR?	NOTES	STABILIZED?
13:00	—	—	—	—	—	—	12.90	200	—	—	Begin Purging	—
13:05	14.42	6.84	-80.0	1.080	0.0	1.74	12.95	200	light yellow	none		—
13:10	14.45	6.84	-87.0	1.070	0.0	2.05	13.10	200	light yellow	none		—
13:15	14.60	6.83	-87.0	1.050	0.0	2.17	13.20	200	light yellow	none		N
13:20	14.37	6.84	-89.0	1.060	0.0	2.25	13.30	200	light yellow	none		N
13:25	14.32	6.83	-88.0	1.040	0.0	2.10	13.20	200	light yellow	none		N
13:30	14.29	6.83	-88.0	1.040	0.0	2.02	13.10	200	light yellow	none		N
	14.32	6.83	-88.0	1.040	0.0	2.10	13.10	200	light yellow	none		Y
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown					

Notes:

Sample Number:	110_LMW-10	Sample Time:	13:35	Sample Analyses:	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Total & Dissolved Metals, Hexavalent/Trivalent Chromium, Cyanide, PFAS, 1,4-dioxane
QA/QC Sample Number:	—	QA/QC Sample Time:	—	QA/QC Sample Analyses:	—

LANGAN

LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	12096 Flatlands Ave	**Site Location:**	Brooklyn, NY	**Well No:**	LMW-11	**Date:**	4/26/2021
Job Number:	100688801	**Weather:**	50, sunny	**Sampler(s):**	MM		
Initial DTW (ft):	15.37	**Well Depth (ft):**	25	**Pump Depth (ft):**	20		
Background PID (ppm):	0.00	**Well PID (ppm):**	0	**Screen Interval (ft):**	15-25		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	98KXXTKM	**Well Diameter (in):**	2		

TIME	TEMP. °C	pH (std. Units)	ORP (mV)	COND. (mS/cm)	Turbidity (NTU)	DO (mg/L)	DTW (ft)	Q (mL/m)	COLOR?	ODOR?	NOTES	STABILIZED?
12:55	—	—	—	—	—	—	15.37	300	—	—	Begin Purging	—
13:00	15.88	6.67	30.0	0.886	0.0	1.85	15.37	300	clear	none		—
13:05	15.61	6.53	-36.0	0.890	0.0	0.76	15.37	300	clear	none		—
13:10	15.37	6.48	-58.0	0.895	0.0	0.66	15.37	300	clear	none		N
13:15	15.09	6.45	-74.0	0.903	0.0	0.68	15.37	300	clear	none		N
13:20	15.04	6.45	-81.0	0.904	0.0	0.73	15.37	300	clear	none		N
13:25	15.00	6.45	-86.0	0.906	0.0	0.75	15.37	300	clear	none		N
	14.99	6.45	-88.0	0.907	0.0	0.77	15.37	300	clear	none		Y
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown					

Notes:

Sample Number:	109_LMW-11	Sample Time:	13:35	Sample Analyses:	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Total & Dissolved Metals, Hexavalent/Trivalent Chromium, Cyanide, PFAS, 1,4-dioxane
QA/QC Sample Number:	—	QA/QC Sample Time:	—	QA/QC Sample Analyses:	—

LANGAN

LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	12096 Flatlands Ave	**Site Location:**	Brooklyn, NY	**Well No:**	LMW-12	**Date:**	4/26/2021
Job Number:	100688801	**Weather:**	50, sunny	**Sampler(s):**	MM		
Initial DTW (ft):	17.44	**Well Depth (ft):**	30	**Pump Depth (ft):**	24		
Background PID (ppm):	0.00	**Well PID (ppm):**	0	**Screen Interval (ft):**	15-30		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	98KXXTKM	**Well Diameter (in):**	2		

TIME	TEMP. °C	pH (std. Units)	ORP (mV)	COND. (mS/cm)	Turbidity (NTU)	DO (mg/L)	DTW (ft)	Q (mL/m)	COLOR?	ODOR?	NOTES	STABILIZED?
11:45	—	—	—	—	—	—	17.44	300	—	—	Begin Purging	—
11:50	16.58	7.08	30.0	0.936	0.0	1.83	17.44	300	clear	none		—
11:55	16.22	6.98	-95.0	0.947	0.0	1.22	17.44	300	clear	none		—
12:00	15.90	6.95	-116.0	0.952	0.0	1.47	17.44	300	clear	none		N
12:05	15.68	6.94	-124.0	0.952	0.0	1.56	17.44	300	clear	none		N
12:10	15.71	6.94	-130.0	0.952	0.0	1.73	17.44	300	clear	none		N
12:15	15.57	6.93	-135.0	0.954	0.0	1.82	17.44	300	clear	none		N
	15.52	6.94	-136.0	0.956	0.0	1.88	17.44	300	clear	none		Y
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown					

Notes:

Sample Number:	108_LMW-12	Sample Time:	12:25	Sample Analyses:	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Total & Dissolved Metals, Hexavalent/Trivalent Chromium, Cyanide, PFAS, 1,4-dioxane
QA/QC Sample Number:	—	QA/QC Sample Time:	—	QA/QC Sample Analyses:	—

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LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	12096 Flatlands Ave	**Site Location:**	Brooklyn, NY	**Well No:**	LMW-13	**Date:**	4/26/2021
Job Number:	100688801	**Weather:**	50, sunny	**Sampler(s):**	DA		
Initial DTW (ft):	14.10	**Well Depth (ft):**	22	**Pump Depth (ft):**	21.5		
Background PID (ppm):	0.00	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	12-22		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	POF-NAF36	**Well Diameter (in):**	2		

TIME	TEMP. °C	pH (std. Units)	ORP (mV)	COND. (mS/cm)	Turbidity (NTU)	DO (mg/L)	DTW (ft)	Q (mL/m)	COLOR?	ODOR?	NOTES	STABILIZED?
14:25	—	—	—	—	—	—	14.17	200	—	—	Begin Purging	—
14:30	14.53	6.98	-71.0	0.935	13.0	2.67	14.20	200	light yellow	no odor		—
14:35	14.16	7.10	-111.0	0.935	10.0	2.62	14.20	200	clear	no odor		—
14:40	14.08	7.11	-116.0	0.924	7.0	3.03	14.20	200	clear	no odor		N
14:45	14.00	7.10	-118.0	0.920	3.3	3.23	14.20	200	clear	no odor		N
14:50	13.97	7.11	-120.0	0.918	2.7	3.37	14.20	200	clear	no odor		N
14:55	13.91	7.11	-119.0	0.908	0.0	3.41	14.20	200	clear	no odor		N
	13.85	7.11	-119.0	0.903	0.0	3.38	14.20	200	clear	no odor		Y
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown					

Notes:

Sample Number:	111_LMW-13	Sample Time:	15:00	Sample Analyses:	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Total & Dissolved Metals, Hexavalent/Trivalent Chromium, Cyanide, PFAS, 1,4-dioxane
QA/QC Sample Number:	—	QA/QC Sample Time:	—	QA/QC Sample Analyses:	—

LANGAN

LOW FLOW SAMPLING FIELD PARAMETER MEASUREMENTS

Project:	12096 Flatlands Ave	**Site Location:**	Brooklyn, NY	**Well No:**	LMW-14	**Date:**	4/26/2021
Job Number:	100688801	**Weather:**	50, sunny	**Sampler(s):**	DA		
Initial DTW (ft):	12.13	**Well Depth (ft):**	25	**Pump Depth (ft):**	18		
Background PID (ppm):	0.00	**Well PID (ppm):**	0.0	**Screen Interval (ft):**	10-25		
Water Quality Meter:	Horiba U-52	**Water Quality Meter ID:**	POF-NAF36	**Well Diameter (in):**	2		

TIME	TEMP. °C	pH (std. Units)	ORP (mV)	COND. (mS/cm)	Turbidity (NTU)	DO (mg/L)	DTW (ft)	Q (mL/m)	COLOR?	ODOR?	NOTES	STABILIZED?
11:30	—	—	—	—	—	—	12.30	200	—	—	Begin Purging	—
11:35	13.17	6.78	20.0	1.020	130.0	3.52	12.30	200	clear	none	light brown silt	—
11:40	13.03	6.76	14.0	1.030	145.0	2.15	12.31	200	clear	none		—
11:45	12.95	6.75	12.0	1.030	16.7	1.66	12.31	200	clear	none		N
11:50	12.91	6.74	12.0	1.030	82.2	1.57	12.33	200	clear	none		N
11:55	12.89	6.77	8.0	1.040	79.0	1.53	12.33	200	clear	none		N
12:00	12.89	6.77	9.0	1.040	76.8	1.52	12.33	200	clear	none		Y
12:05	12.86	6.76	11.0	1.040	75.3	1.57	12.33	200	clear	none		Y
	+/- 3%	+/- 0.1 pH	+/- 10 mV	+/- 3%	+/- 10 NTU	+/- 10%	<0.3' drawdown					

Notes:

Sample Number:	107_LMW-14	Sample Time:	12:05	Sample Analyses:	VOCs, SVOCs, PCBs, Pesticides, Herbicides, Total & Dissolved Metals, Hexavalent/Trivalent Chromium, Cyanide, PFAS, 1,4-dioxane
QA/QC Sample Number:	—	QA/QC Sample Time:	—	QA/QC Sample Analyses:	—

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APPENDIX D

Soil Vapor Sampling Field Logs

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SUMMA CANISTER SAMPLING FIELD DATA SHEET

Site: 12096 Flatlands Avenue

Samplers: MM & BR

Date: 19 April 2021

Sample #	091_LSV-1	092_LSV-2	100_DUP-1	093_LSV-3	094_LSV-4
Summa Canister ID	23156	28312	20944	34498	37807
Flow Controller ID	7094	5123	12189	5706	T-1
Sample Depth (b.g.s.)	10.5'	10.5'	10.5'	14'	12.5'
Additional Tubing Added	NO/ YES - How much 2'	NO/ YES - How much 2'	NO/ YES - How much 2'	NO/ YES - How much 2'	NO/ YES - How much 2'
Purge Time (Start)	7:42	7:30	7:30	7:52	8:10
Purge Time (Stop)	7:47	7:35	7:35	7:57	8:15
Total Purge Time (min)	5	5	5	5	5
Purge Volume	1 L	1L	1L	1 L	1L
PID Test of Purge Air	587 ppb	243 ppb	243 ppb	2025 ppb	1155 ppb
Initial Tracer Gas Results in sampling line	0%	0%	0%	0%	0%
Initial Tracer Gas Results in shroud	93.7%	94.5%	94.5%	92.9%	94.2%
Pressure Gauge - before sampling	-30	-30	-30	-28	-29
Sample Time (Start)	8:42	8:47	8:47	8:40	8:37
Sample Time (Stop)	10:50	10:53	10:53	10:33	10:37
Total Sample Time (min)	128	126	126	113	120
Pressure Gauge - after sampling	-5	-4	-4	-3	-4
Sample Volume	6 L	6 L	6 L	6 L	6 L
Canister Pressure Went to Ambient Pressure?	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO
Final Tracer Gas Results in sampling line	---	---	---	---	---
Final Tracer Gas Results in shroud	---	---	---	---	---
Associated Ambient Air Sample Number	099_AMBIENT-1				
Weather 24 hours before and during sampling	50s-60s, Sunny to partly cloudy				
General Comments					

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SUMMA CANISTER SAMPLING FIELD DATA SHEET

Site: 12096 Flatlands Avenue

Samplers: MM & BR

Date: 19 April 2021

Sample #	095_LSV-5	096_LSV-6	099_AMBIENT-1	097_LSV-7	092_LSV-8
Summa Canister ID	24121	16953	17352	23157	29246
Flow Controller ID	5610	13562	5627	7090	5704
Sample Depth (b.g.s.)	11.5'	14'	NA	16'	12.5'
Additional Tubing Added	NO/ YES - How much 2'	NO/ YES - How much 2'	NO/ YES - How much	NO/ YES - How much 2'	NO/ YES - How much 2'
Purge Time (Start)	8:20	9:05	NA	8:37	9:15
Purge Time (Stop)	8:25	9:10	NA	8:42	9:20
Total Purge Time (min)	5	5	NA	5	5
Purge Volume	1L	1 L	NA	1L	1L
PID Test of Purge Air	1283 ppb	744 ppb	NA	170 ppb	370 ppb
Initial Tracer Gas Results in sampling line	0%	0%	NA	0%	0%
Initial Tracer Gas Results in shroud	93.7%	93.1%	NA	95.20%	96.60%
Pressure Gauge - before sampling	-29	-30	27.5	30	30
Sample Time (Start)	8:32	9:20	8:10	9:04	9:34
Sample Time (Stop)	10:30	11:30	14:48	10:51	11:36
Total Sample Time (min)	118	130	398	107	122
Pressure Gauge - after sampling	-4	-5	-9.5	-5	-5
Sample Volume	6 L	6 L	6 L	6 L	6 L
Canister Pressure Went to Ambient Pressure?	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO
Final Tracer Gas Results in sampling line	---	---	---	---	---
Final Tracer Gas Results in shroud	---	---	---	---	---
Associated Ambient Air Sample Number	099_AMBIENT-1				
Weather 24 hours before and during sampling	50s-60s, Sunny to partly cloudy				
General Comments					

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