REMEDIAL INVESTIGATION REPORT

for

1607 SURF AVENUE
BROOKLYN, NEW YORK

Prepared For:

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c/o BFC Partners
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LIST OF ACRONYMS

Acronym	Definition
AAI	All Appropriate Inquiries
AGV	Air Guidance Values
AOC	Area of Concern
AST	Aboveground Storage Tank
ASTM	ASTM International
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
bgs	Below Grade Surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CAMP	Community Air Monitoring Program
COC	Contaminants of Concern
CSM	Conceptual Site Model
CVOC	Chlorinated Volatile Organic Compound
DER	Division of Environmental Remediation
DOT	Department of Transportation
DUSR	Data Usability Summary Report
E-Designation	Environmental Designation
el	Elevation
ELAP	Environmental Laboratory Approval Program
USEPA	Environmental Protection Agency
EPH	Extractable Petroleum Hydrocarbons
ESA	Environmental Site Assessment
eV	Electron Volt
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FWRIA	Fish and Wildlife Resources Impact Analysis
GPR	Ground Penetrating Radar
GQS	Groundwater Quality Standards
HASP	Health and Safety Plan
ICP-AES	Inductively Coupled Plasma Atomic Emission Spectrometry
IDW	Investigation-Derived Waste
L/min	Liters per Minute
LNAPL	Light Non-Aqueous Phase Liquid
LTANK	Leaking Tanks
$\mu g/m^3$	Micrograms per Cubic Meter
µg/L	Micrograms per Liter
mg/kg	Milligrams per Kilogram
MS/MSD	Matrix Spike/Matrix Spike Duplicate

Acronym	Definition
NAPL	Non-Aqueous Phase Liquid
NAVD88	North American Vertical Datum of 1988
NTU	Nephelometric Turbidity Units
NYCRR	New York City Rules and Regulations
NYSDOH	New York State Department of Health
NYSDEC	New York State Department of Environmental Conservation
PAH	Polycyclic Aromatic Hydrocarbons
PBS	Petroleum Bulk Storage
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethene
PG	Restricted Protection of Groundwater
PFAS	Per- and Polyfluoroalkyl Substances
PFC	Perfluorinated Chemicals
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
PID	Photoionization Detector
PPE	Personal Protective Equipment
Ppb	Parts per billion
ppm	Parts per million
ppt	Parts per trillion
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act (RCRA)
REC	Recognized Environmental Concerns
RI	Remedial Investigation
RIR	Remedial Investigation Report
RIWP	Remedial Investigation Work Plan
RURR	Restricted Use – Restricted-Residential
RU	Restricted Use – Residential
SCO	Soil Cleanup Objective
SGVs	Ambient Water Quality Standards and Guidance Values for Class GA water
SVOC	Semivolatile Organic Compound
TAL	Target Analyte List
TCE	Trichloroethene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TOGS	Technical and Operational Guidance Series
USEPA	United Stated Environmental Protection Agency
USGS	United States Geological Survey

Acronym	Definition
UST	Underground Storage Tank
UU	Unrestricted Use
VOC	Volatile Organic Compound

CERTIFICATION

I, Michael D. Burke, 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).

Michael D. Burke

Michael D. Burke, PG, CHMM

1.0 INTRODUCTION

This Remedial Investigation Report (RIR) was prepared on behalf of Coney Island Phase 2 LLC (the Applicant) for the proposed development located at 1607 Surf Avenue (Block 7062, Lot 28) in the Coney Island neighborhood of Brooklyn, New York (the site). The Volunteer plans to remediate the site in conjunction with a new affordable housing development under the New York State Brownfield Cleanup Program (BCP), pursuant to Brownfield Cleanup Agreement (BCA) Index No. C224313-10-20 with the New York State Department of Environmental Conservation (NYSDEC), executed on November 11, 2020, for Site No. C224313. The site was assigned an E-Designation (E-229) for hazardous materials and noise as part of the Coney Island Rezoning (City Environmental Quality Review # 08DME007K). Sites with E-Designations are subject to environmental review by the New York City Mayor's Office of Environmental Remediation (NYCOER).

This RIR presents environmental data and findings from the Remedial Investigation (RI) conducted from February 5, 2020 to February 20, 2020 and supplemental soil vapor investigations conducted on December 3, 2020 and March 2, 2021. The RI was completed by Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, DPC (Langan) and was conducted in accordance with Title 6 of the Official Compilation of New York Codes, Rules and Regulations (6 NYCRR) Part 375-1, 3.8, 6.8, NYSDEC Division of Environmental Remediation (DER) Program Policy: Technical Guidance for Site Investigation and Remediation (DER-10), and applicable New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006, with updates. The objectives of this RI include:

- Define the nature and extent of contamination in soil, soil vapor and groundwater at or emanating from the site
- Generate sufficient data to evaluate the remedial action alternatives and prepare a Remedial Action Work Plan (RAWP) to be implemented concurrently with site redevelopment
- Generate sufficient data to evaluate the actual and potential threats to human health and the environment

The remainder of this report is organized as follows:

- Section 2.0 describes the site setting and physical characteristics
- Section 3.0 describes the site background including results of previous investigations and identified areas of concern (AOC)
- Section 4.0 presents the investigation field procedures
- Section 5.0 describes the field observations and analytical results

- Section 6.0 presents an assessment of the exposure risks of site contaminants to human, fish, and wildlife receptors
- Section 7.0 presents the nature and extent of contamination in all site media as determined through the field investigation and analysis of environmental samples
- Section 8.0 summarizes the results of the investigation and presents conclusions based on field observations and analytical results

2.0 SITE PHYSICAL CHARACTERISTICS

2.1 Site Description

The site is located at 1607 Surf Avenue in the Coney Island neighborhood of Brooklyn, New York and is identified as Block 7062, Lot 28[1] on the department of Finance Tax Map. A site location map is provided as Figure 1. The site encompasses an area of approximately 59,393 square-feet (1.36 acres), is improved with an asphalt-paved parking lot and is bound by Surf Avenue to the south followed by MCU Park, West 16th Street to the east followed by a vacant parcel and several parking lots, West 17th Street to the west followed by a commercial office building and a parking lot, and a parking lot to the north. A site plan is provided in Figure 2.

2.2 Surrounding Property Land Use

The site is located in a mixed-use area with commercial and residential uses, vacant properties, parking lots, and public parks. The following is a summary of surrounding property usage:

Direction	**Adjoining and Adjacent Properties**			**Surrounding Properties**
	Block No.	**Lot No.**	**Description**	
South	7073	101	Surf Avenue followed by MCU/Steeplechase Park	A public park followed by Coney Island Beach and the Lower New York Bay.
North	7062	14	Parking Lot	Residential, commercial, mixed-use residential and commercial properties followed by Mermaid Avenue. Coney Island Creek.
West	7061	16	West 17th Street followed by a one-story commercial office building	Residential, commercial, and mixed-use residential and commercial properties, public facilities and institutions, parking facilities, and vacant land.
		20	West 17th Street followed by a parking lot	
		21	West 17th street followed by a parking lot	
East	7063	12	West 16th Street followed by a parking lot	Residential, commercial, and mixed-use residential and commercial properties, vacant land, parking facilities, and an industrial property.
		41	West 16th Street followed by a parking lot	
		40	West 16th Street followed by a vacant lot	
		39	West 16th Street followed by a vacant lot	
		38	West 16th Street followed by a parking lot	
		35	West 16th Street followed by a vacant lot	

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[1] The site was formerly comprised of Block 7062, Lots 25, 28, and 34. All three lots are now merged into Block 7062, Lot 28.

Public infrastructure (storm drains, sewers, and underground utility lines) exists within the streets surrounding the site.

Land use within a half-mile radius is urban and includes residential, commercial, institutional, utility/transportation, light industrial buildings and public parks and beaches. The nearest ecological receptor is the Lower New York Bay, located about 1,400 feet south of the site. Adjacent properties and land uses are shown on Figure 3. Sensitive receptors, as defined in DER-10, located within a half mile of the site include those listed below:

Number	Name (Approximate distance from site)	Address
1	MCU/Steeplechase Park (about 100 feet south of the site)	Surf Avenue between West 16th Street and West 21st Street Brooklyn, NY 11224
2	Our Lady of Solace School Day Care Center (about 518 feet northwest of site)	2865 West 19th Street Brooklyn, NY 11224
3	Brooklyn Public Library, Coney Island Branch (about 666 feet northwest of the site)	1901 Mermaid Avenue Brooklyn, NY 11224
4	Abe Stark Skating Rink (about 0.17 miles south of the site)	Surf Avenue between West 19th Street and West 20th Street Brooklyn, NY 11224
5	Coney Island Museum (about 0.21 miles southeast of the site)	1208 Surf Avenue Brooklyn, NY 11224
6	Luna Park Neighborhood Senior Center (about 0.22 miles northeast of the site)	2880 West 12th Street Brooklyn, NY 11224
7	Santos White Garden (about 0.22 miles northwest of the site)	Surf Avenue and West 21st Street Brooklyn, NY 11224
8	PAL La Puerta Abierta Pre-K and Day Care Center (about 0.24 miles northwest of the site)	2864 West 21st Street Brooklyn, NY 11224
9	Neptune Playground (about 0.24 miles northeast of the site)	West 12th Street between Neptune Avenue and Surf Avenue Brooklyn, NY 11224
10	National Association of Family Development Centers, Inc. (about 0.24 miles northeast of the site)	2840 West 12th Street Brooklyn, NY 11224
11	PS 90 Edna Cohen School and Pre-K (about 0.24 miles northeast of the site)	2840 West 12th Street Brooklyn, NY 11224

Number	Name (Approximate distance from site)	Address
12	Luna Playground (about 0.30 miles east of the site)	Surf Avenue between West 12th Street and West 8th Street Brooklyn, NY 11224
13	Dvora, Inc. Day Care Center (about 0.35 miles northeast of the site)	2817 West 12th Street Brooklyn, NY 11224
14	PAL Carey Gardens Day Care Center (about 0.36 miles southwest of the site)	2964 West 23rd Street Brooklyn, NY 11224
15	Police Athletic League Day Care Center (about 0.36 miles west of the site)	2964 West 23rd Street Brooklyn, NY 11224
16	The Cyclone at Coney Island (about 0.37 miles southeast of the site)	Surf Avenue and West 10th Street Brooklyn, NY 11224
17	Carey Gardens Boys and Girls Club (about 0.38 miles southwest of the site)	2315 Surf Avenue Brooklyn, NY 11224
18	Harbour House Neighborhood Senior Center (about 0.43 miles southwest of the site)	3024 West 24th Street Brooklyn, NY 11224
19	Surf Playground (about 0.47 miles southwest of the site)	Surf Avenue between West 25th Street and West 27th Street Brooklyn, NY 11224
20	P.S. 288 The Shirley Tanyhill Universal Pre-K (about 0.47 miles southwest of the site)	2950 West 25th Street Brooklyn, NY 11224
21	Coney Island Beach and Boardwalk (about 0.48 miles west of the site)	Corbin Place to W 37th Street
22	I.S 239 Mark Twain School (about 0.48 miles northwest of the site)	2401 Neptune Avenue Brooklyn, NY 11224
24	Poseidon Playground (about 0.49 miles southwest of the site)	Surf Avenue between West 25th Street and West 27th Street Brooklyn, NY 11224

2.3 Site Physical Conditions

2.3.1 Topography

According to monitoring well survey measurements obtained by Langan on February 20, 2020, site surface elevations (el) range from about el 6.95 feet[2] (at the northeast corner of the site) to el 7.94 feet (on the southeast corner). The topography of the site and surrounding area is generally level.

2.3.2 Regional Geology

Soil and bedrock stratigraphy throughout Brooklyn typically consist of a layer of historic fill that overlies glacial till, decomposed unconsolidated bedrock, and bedrock. The glacial till deposits, also known as ground moraine, are a widespread dense layer of till material that typically consists of clay, silt, sand, gravel and boulders. According to the "Surficial Geologic Map of New York" by the New York State Museum State Geological Survey, the surficial geology at the site consists of proglacial fluvial deposits of outwash sand and gravel. 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 coastal plain deposits of silty clay, sandy clay, sand and gravel. Bedrock was not encountered during the RI. According to a geotechnical investigation completed by Langan in the vicinity of the site, the minimum depth of bedrock is expected to be at depths greater than 600 feet below grade surface (bgs).

2.3.3 Regional Hydrogeology

Groundwater flow is typically topographically influenced, as shallow groundwater tends to originate in areas of topographic highs and flows toward areas of topographic lows, such as rivers, stream valleys, ponds, and wetlands. A broader, interconnected hydrogeologic network often governs groundwater flow at depth or in the bedrock aquifer. Groundwater depth and flow direction are also subject to hydrogeologic and anthropogenic variables such as precipitation, evaporation, extent of vegetation cover, coverage by impervious surfaces, and subsurface structures. Other factors influencing groundwater include depth to bedrock, the presence of anthropogenic fill, and variability in local geology and groundwater sources or sinks. Groundwater flow within the regional overburden material is anticipated to be to the south, towards Coney Island Beach and the Lower New York Bay. Groundwater flow within overburden material located on the site flows in a southeasterly direction, according to groundwater elevation measurements obtained by Langan on February 20, 2020. Groundwater contours are shown on Figure 4.

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[2] Elevations in this RIR refer to North American Vertical Datum of 1988 (NAVD88), which is about 1.1 feet above mean sea level at Sandy Hook, NJ.

2.3.4 Wetlands

Wetlands on or near the site were evaluated by reviewing the National Wetlands Inventory and NYSDEC regulated wetlands map. There are no wetlands on or adjacent to the site.

3.0 SITE BACKGROUND

This section describes historical site use, the proposed redevelopment, and provides a summary of the findings from previous environmental investigations. Potential Areas of Concern (AOCs) were developed based on a review of the previous reports and are summarized in Section 3.4.

3.1 Historical Site Usage

Historical Sanborn Fire Insurance Maps indicate that the site was largely undeveloped with the southeastern part developed with residential dwellings, a shed, and a store in 1895. By 1906, the southern part of the site was developed with stores, sheds, and Johnstown Flood Auditorium. By 1930, the property was primarily developed with the Tilyou Theater, storefronts, and an automobile repair facility on the eastern part of the property. Site conditions appear generally the same by 1950 except a machine shop is identified on the eastern part of the property and a manufacturing facility is identified on the northwestern part of the property. By 1966, the manufacturing facility and the machine shop are no longer identified although the Tilyou Theater remains along with stores, a wholesale produce shop, and automobile parking. Site conditions in 1966 are similar to those depicted in 1968. By 1977, the Tilyou Theater is no longer seen and by 1981 the wholesale produce shop is no longer depicted. Following 2001, the site appears as a vacant lot with automobile parking. Site conditions appear generally the same to 2007. City Directory documents also provide additional prior site usage detail including a photo studio (1934-1970), a printing studio/business (1934-1970), an exterminator (1934-1945), and a machinist/machine works (1928-1970).

3.2 Proposed Redevelopment Plan

Current plans call for the development of a new ten-story, mixed-use residential and commercial building with a footprint of about 42,500 square feet and approximately 23,600 square feet of open-air parking. All of the new residential units will be designated as affordable housing. The proposed development will include a slab-on-grade ground level with about 12,000 square feet of tenant amenity space (i.e. package room, lounge area) and utilities, about 10,900 square feet of commercial space, and an approximately 9,000 square foot community day care. The first floor of the new development will include about 25,150 square feet of residential space as well as amenities (i.e., laundry, kids area, gym, courtyard) and utility room. The second through tenth floors of the new development will be occupied by residential units.

3.3 Summary of Previous Environmental Investigations

The following previous environmental reports and investigations were reviewed as part of this RIR and are summarized below. The reports are included in Appendix A.

- Phase I Environmental Site Assessment (ESA), prepared by Hillman Consulting, LLC (Hillman), Dated May 31, 2018

- Phase II Investigation Report prepared by Hillman, Dated June 13, 2018
- Geotechnical Memorandum, prepared by GeoDesign, Inc. (GeoDesign), Dated August 6, 2018

Phase I Environmental Site Assessment, prepared by Hillman, Dated June 13, 2018

The Phase I ESA was completed in accordance with ASTM International (ASTM) Standard E1527-13 and the United States Environmental Protection (USEPA) All Appropriate Inquiries (AAI) Rule. The following recognized environmental conditions (REC) were identified:

- <u>REC 1 - Historical On-Site Operations</u>: The site historically operated as an automobile repair facility in 1930, a manufacturing facility in 1950, and a machine shop between 1928 and 1970. Additionally, operations identified on the property from city directories include a photo studio, print and publishing business, exterminator, machinist, and iron/machine works. Two 1,000-gallon tanks associated with the Tilyou Theatre, operating from 1926 to 1973, were also identified; however, it should be noted that the tanks appear to be water tanks and not petroleum storage tanks. Hillman also identified the potential for buried petroleum tanks associated with former business operations on the property, though evidence of these tanks were not identified during the Phase I ESA. Leaks or spills of petroleum products, solvents, and/or other hazardous materials associated with former business operations may have adversely affected soil, groundwater and/or soil vapor at the site.

Adjacent and surrounding site uses of concern were also identified including dry cleaners to the north (1950-2007) and west (1965-2006) and a railroad (1895-1906) to the north.

Phase II Investigation Report, prepared by Hillman Consulting LLC, Dated May 31, 2018

Hillman completed a Phase II Investigation in May 2018 to determine if soil, groundwater, and soil vapor conditions were impacted as a result of the historical site use as an automobile repair facility, manufacturing facility, and machine shop. The Phase II was completed at the site and at the adjoining site to the west located at Block 7061 Lots 14, 20, and 27; however, only the investigation scope and results for the site are discussed herein. The investigation included advancement of five soil borings, installation of one temporary groundwater monitoring well, installation of two temporary soil vapor sample probes, and collection of soil, groundwater, and soil vapor samples. Field observations and laboratory analytical results are summarized below:

- <u>Geology/Hydrogeology:</u> Historic fill was encountered between 3 and 6 feet bgs. Fill was underlain by native sands to the termination depth of borings at 10 feet bgs. Groundwater was encountered between 6 and 8 feet bgs.
- <u>Soil</u>: Five soil borings were advanced up to 10 feet bgs using a track-mounted GeoProbe© rig in the northeastern (SB3), northwestern (SB1), southeastern (SB2), southwestern (SB5), and central (SB4) part of the site. SB1 was installed in the vicinity of the former

manufacturing building and SB3 was installed in the vicinity of the former automobile repair and machine shop. No evidence of petroleum impacts (e.g., staining, odors or photoionization detector [PID] readings above background) was observed during the soil boring investigation. Soil samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), and metals. No VOCs or PCBs were detected above NYSDEC Part 375 Soil Cleanup Objectives (SCOs). Polycyclic aromatic hydrocarbons (PAHs), a subset of SVOCs, and metals were identified in exceedance of the NYSDEC Part 375 Unrestricted Use (UU) SCOs and Restricted Use Restricted-Residential (RURR) SCOs. Pesticides were detected in exceedance of the UU SCOs but below the RURR SCOs. Hillman attributed the elevated concentrations of PAHs and metals with the presence of historic fill.

- Groundwater: The temporary groundwater monitoring well was installed in the northeastern corner of the site at the SB3 boring location in the vicinity of the former automobile repair and machine shop. The groundwater sample was analyzed for VOCs, SVOCs, pesticides, PCBs, and metals (total and dissolved). No VOCs, PCBs, or pesticides were detected in exceedance above NYCRR Part 703.5 and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA water (collectively known as NYSDEC SGVs). PAHs and one metal (sodium, both total and dissolved) were detected in exceedance of the SGVs. Hillman attributed the elevated concentrations of PAHs in groundwater to the presence of suspended solids (presumably, from the historic fill layer). Hillman also attributed the elevated concentrations of total and dissolved sodium to regional groundwater conditions as the site is located in close proximity to the Lower New York Bay.
- Soil Vapor: Two temporary soil vapor points were installed in the northwestern (SV1) and southeastern (SV2) part of the site. SV1 was installed in the vicinity of the former manufacturing building and contained tetrachloroethylene (PCE) at 27,000 µg/m³, trichloroethylene (TCE) at 620 µg/m³, and cis-1,2-dichloroethylene (cis-1,2DCE) at 32 µg/m³. As these compounds were not detected in exceedance of the regulatory criteria in soil or groundwater, Hillman attributed these elevated soil vapor concentrations to a non-sampled part of the site or an off-site source.

Geotechnical Memorandum, prepared by GeoDesign, Dated 6 August 2018

GeoDesign completed a geotechnical investigation to determine subsurface conditions and provide geotechnical recommendations. The investigation included advancement of 20 soil borings and installation of two temporary groundwater monitoring wells. The investigation revealed that the site stratigraphy generally consists of an approximately 3.5 to 13.5 feet thick historic fill layer underlain by loose to dense sands to a depth of at least 150 feet. Groundwater was measured at approximately 6.5 feet bgs. GeoDesign recommended either a shallow mat foundation or a pile-supported deep foundation.

3.4 Summary of Potential Areas of Concern

Based on site observations, the site development history, and the findings of the previous environmental reports, potential AOCs were identified and investigated during this RI and are described in detail below. A Potential AOC map is provided on Figure 5.

Potential AOC 1: Historic Fill

Material from unknown sources may have been used as backfill during various phases of the site development history. According to boring logs from the 2018 Geotechnical Memorandum prepared by GeoDesign, the fill layer extends between 3.5 and 13.5 feet bgs across the site. According to boring logs from the 2018 Phase II Investigation Report performed by Hillman, the fill layer extends between 3 and 6 feet bgs across the site. Soil samples collected during the investigation identified PAHs and metals, including lead and mercury, in fill exceeding the RURR SCOs.

Potential AOC 2: Historical Manufacturing Facility

The northwestern part of the site historically operated as a manufacturer (1950). During the 2018 Phase II Investigation by Hillman, chlorinated solvents, including PCE and TCE, were detected in soil vapor in the northwestern part of the site at concentrations that would typically warrant mitigation. Chlorinated solvents associated with this former use may also be present in soil and groundwater. In addition, releases of petroleum products and/or other hazardous materials associated with manufacturing during the on-site operations may have adversely affected soil, groundwater and/or soil vapor.

Potential AOC 3: Historical Automobile Repair Shop and Machine Shop

The eastern part of the site historically operated as an automobile repair facility (1930) and a machine shop (1928-1970). In advertent releases of petroleum products, solvents, and/or other hazardous materials associated with automobile repair and machinery during the on-site operations may have adversely affected soil, groundwater and/or soil vapor.

Potential AOC 4 Historical Use of Adjoining Properties

Historical uses of adjoining and surrounding properties included dry cleaners to the north (1950-2007) and west (1965-2006) of the site. Undocumented spills or releases of chlorinated solvents or hazardous substances associated with historical uses of these nearby properties may have adversely affected groundwater or soil vapor beneath the site.

4.0 REMEDIAL INVESTIGATION

The RI was primarily completed from February 5, 2020 to February 20, 2020; however, two supplemental soil vapor investigations were completed on December 3, 2020 and March 2, 2021 at the request of the NYSDEC and NYSDOH to determine if impacted soil vapor is potentially emanating beyond the site boundary and is impacting surrounding properties. The purpose of the RI was to investigate potential AOCs and to determine, to the extent practical, the nature and extent of contamination in soil, groundwater, and soil vapor. The scope of the RI included the field tasks listed below to supplement the data and findings of previous investigations. A summary of samples collected and rationale for each investigation point in relation to the potential AOCs is provided in Table 1. Sample locations are presented on Figure 5.

The RI consisted of the following:

- A geophysical survey to identify potential USTs, underground structures, and utilities
- Advancement of 20 soil borings to depths between 10 and 15 feet bgs, from which 62 soil samples (including 3 quality assurance/quality control [QA/QC] duplicate samples) were collected
- Installation of 12 groundwater monitoring wells and collection of 13 groundwater samples (including one QA/QC duplicate sample) from each well location
- Survey and gauging of monitoring wells to evaluate groundwater elevation and flow direction
- Installation of 25 temporary soil vapor probes and collection of 27 soil vapor samples (including two QA/QC duplicate samples) and 4 ambient air samples

The RI was conducted in accordance with NYCRR DER-10 Technical Guidance for Site Investigation and Remediation (May 2010) and the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006) with updates. The supplemental soil vapor investigations were completed on December 3, 2020 and March 2, 2021 in accordance with the NYSDEC-approved Supplemental Soil Vapor Investigation Work Plans dated November 17, 2020 and February 24, 2021, respectively.

4.1 Geophysical Survey and Utility Location

On February 5, 2020, NOVA Geophysical Services Inc. (NOVA) of Douglaston, New York completed a geophysical survey under the supervision of a Langan field geologist. NOVA used ground-penetrating radar (GPR) to identify potential USTs and locate buried utilities near each boring location. Borings were relocated as necessary to avoid subsurface utilities and anomalies (other subsurface impediments). A copy of the geophysical survey report presenting these findings is included in Appendix B.

4.2 Soil Investigation

4.2.1 Soil Boring Investigation Methodology

Twenty soil borings (SB-1 through SB-20) were completed during the RI by Aquifer Drilling & Testing (ADT) of Mineola, New York. Boring locations were selected to evaluate potential AOCs listed in Section 3.4 and to supplement the previous environmental investigations. All borings were advanced with direct push methodologies using a Geoprobe® 7822DT drill rig. A map showing the boring locations is presented on Figure 5. The following table indicates which borings are associated with each potential AOC.

Potential AOC	Associated Soil Borings
PAOC 1 – Historic Fill	SB-1 through SB-20
PAOC 2 – Historic Manufacturing Facility	SB-1, SB-4, SB-5
PAOC 3 – Historic Automobile Repair and Machine Shop	SB-7, SB-12, SB-13
PAOC 4 – Historical Use of Adjoining Properties	SB-2, SB-3, SB-4, SB-6, SB-8, SB-10, SB-14

The soil borings were advanced to between 10 and 15 feet bgs, as summarized below:

- Boring SB-1 and borings SB-3 through SB-16 were advanced to 15 feet bgs
- Borings SB-2 was advanced to 10 feet bgs due to refusal encountered
- Borings SB-17 through SB-20 were advanced to 12 feet bgs

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. Samples were collected in 4-foot long acetate liners from the direct push Geoprobe® 7822DT.

The soil was screened for visual, olfactory, and instrumental evidence of environmental impacts and was visually classified for soil type, grain size, texture, and moisture content. Instrument screening for the presence of VOCs was performed with a PID equipped with a 10.6-electron volt (eV) lamp. A Langan engineer documented the work, logged the soil type, screened the soil samples for environmental impacts, and collected environmental samples for laboratory analyses. Soil boring logs are presented in Appendix C. Following sample collection, twelve borings (SB-1, SB-3, SB-5, SB-7, SB-8, SB-9, SB-10, SB-13, SB-15, SB-17, SB-18, and SB-20) were converted to groundwater monitoring wells. Soil cuttings were backfilled into the original boring locations that were not converted into permanent monitoring wells or used to reach appropriate depth for installation of groundwater monitoring wells.

4.2.3 Soil Sampling Methodology

During implementation of the RI, 59 grab soil samples were collected for laboratory analysis. A minimum of three grab soil samples were collected for laboratory analysis from each boring location to investigate potential AOCs and to provide vertical and horizontal delineation of identified impacts, with the exception of SB-2 where refusal was encountered at a shallower depth (10 feet bgs) than the bottom of the fill layer; as such, a native layer sample was not collected. In addition, nine QA/QC samples (including three duplicates, three matrix spike/matrix spike duplicate [MS/MSD] samples, and three field blanks) were collected. For AOC 1, samples were collected within the historic fill material. For AOCs 2, 3 and 4, samples were collected from historic fill, from native and/or fill material at the groundwater interface, and/or from native material below the groundwater interface.

Samples submitted for VOC analysis were collected directly from the acetate liner via laboratory-supplied Terra Core soil samplers. The remaining sample volume was homogenized and placed in appropriate laboratory-supplied containers for all additional analyses. A dedicated pair of nitrile gloves were donned to collect each per- and polyfluoroalkyl substances (PFAS) sample in order to limit cross-contamination. 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 Alpha Analytical Laboratories, Inc. (Alpha) in Westborough, Massachusetts, a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory (ELAP ID No. 11148).

Soil samples from all of the borings were analyzed for Part 375/Target Compound List (TCL) VOCs and SVOCs, PCBs, pesticides, herbicides, Part 375/Target Analyte List (TAL) metals including hexavalent chromium, trivalent chromium, and total cyanide, as well as emerging contaminants (including 1,4-dioxane and PFAS). A sample summary is provided as Table 1.

4.3 Groundwater Investigation

A Langan field engineer documented conversion of 12 soil borings into permanent groundwater monitoring wells by ADT. One groundwater sample was collected from each monitoring well to characterize groundwater conditions and to investigate potential groundwater impacts associated with the AOCs. One duplicate groundwater sample was also collected. Groundwater monitoring wells were installed to investigate potential impacts to groundwater associated with the identified AOCs and to characterize groundwater conditions.

Twelve of the borings (SB-1, SB-3, SB-5, SB-7, SB-8, SB-9, SB-10, SB-13, SB-15, SB-17, SB-18, and SB-20) were converted into groundwater monitoring wells: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW10, MW-11, and MW-12, respectively.

4.3.1 Monitoring Well Installation and Development Methodology

Following completion of soil borings, the monitoring wells were constructed using 2-inch diameter polyvinyl chloride (PVC) riser pipes attached to 10 foot-long 0.01-inch slotted screens. Monitoring wells were constructed so that the well screen straddled the observed groundwater table. The well annulus around the screen of each well was backfilled with No. 2 sand up to six-inches above the screen. Approximately six-inches of hydrated bentonite seal was installed above the sand pack, and the borehole annulus was backfilled with soil cuttings to the surface. The monitoring wells were finished with flush-mount metal manhole covers encased in concrete.

Following installation, each well was surged and developed with a submersible pump until the water became clear (having turbidity less than 50 Nephelometric Turbidity Units [NTU]). Purged groundwater was stored in labeled 55-gallon drums and staged on-site for future disposal.

Monitoring well locations are presented on Figure 5, construction details are included in Table 2, and construction logs are found in Appendix D.

The top of casing elevations of the groundwater monitoring wells were surveyed by Langan on February 20, 2020. A Langan field engineer also completed synoptic groundwater gauging on February 20, 2020 using a Solinst 122 oil/water interface probe. Groundwater elevations ranged from el 0.04 to el 0.81 NAVD88 and are presented in Table 3. A groundwater contour map based on the synoptic groundwater levels of the wells is presented as Figure 4.

4.3.2 Groundwater Sampling

Groundwater samples were collected at least one week following well development on February 14, 2020 and between February 18, 2020 and February 20, 2020. Samples were collected in accordance with the procedures in the USEPA's low-flow groundwater sampling procedure ("Low Stress [low flow] Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells", EQASOP-GW 001, January 19, 2010) to allow for collection of a representative sample. Monitoring wells were purged and physical and chemical parameters (e.g., temperature, dissolved oxygen, oxygen reduction potential, and turbidity) were allowed to stabilize to ranges specified in the USEPA guidance before they were sampled. Monitoring wells were not gauged for static water levels or drawdown during purging due to PFAS sample collection.

Wells were sampled using a peristaltic pump with dedicated high density polyethylene (HDPE) tubing. VOC samples were collected using dedicated Teflon bailers after all other analytes were collected, including PFAS, to prevent cross contamination. Purge water was containerized into labeled 55-gallon drums for off-site disposal. Groundwater sampling logs are included in Appendix E.

Twelve groundwater samples (one sample from each well) were collected into laboratory-supplied glassware, packed with ice to maintain a temperature of 4°C, and transported via courier service to Alpha Analytical Laboratories under chain-of-custody protocol. In addition, three QA/QC samples (including one duplicates, one MS/MSD sample, and one field blank) were collected. Groundwater samples were analyzed for Part 375/TCL VOCs, SVOCs, and PCBs, Part 375/TAL total and dissolved metals, pesticides, and herbicides, and for emerging contaminants (including 1,4-dioxane and PFAS). A dedicated pair of nitrile gloves were donned to collect each PFAS sample in order to limit cross-contamination.

In addition, groundwater testing was performed during the RI to support the identification and evaluation of remedial alternatives. The results of the additional analyses were used to inform the remedial alternatives analysis section of the RAWP.

4.4 Soil Vapor Investigation

NYSDEC DER-10 requires an assessment of soil vapor for contaminated sites to evaluate the health risk associated with potential exposure to VOCs through vapor intrusion into occupied spaces. Fifteen soil vapor points (SV-1 through SV-15) were installed throughout the property to identify impacts potentially associated with historic site use or adjacent site use on February 12 and 13, 2020. AOC 2 was investigated by the installation of soil vapor point SV-2. AOC 3 was investigated by the installation of soil vapor points SV-5 and SV-9. AOC 5 was investigated by the installation of soil vapor points SV-1, SV-2, SV-4, SV-6, and SV-10. At the request of the NYSDEC and NYSDOH, ten additional soil vapor points were installed along the site boundaries on December 3, 2020 (SV-16 through SV-22) and March 2, 2021 (SV-23 through SV-25) to assess the potential for impacted soil vapor emanating from the site to impact surrounding properties. Two ambient air samples were collected in February 2020 and two ambient air samples and two duplicate samples were collected in December 2020 and March 2021 for QA/QC purposes. Soil vapor sample locations are presented on Figure 5.

4.4.1 Soil Vapor Point Installation

All soil vapor points were installed at about 5 feet bgs or refusal using either a Geoprobe® 7822DT drill rig by ADT (February 2020), a Geoprobe® 6610DT drill rig by AARCO Environmental Services (December 2020), or hand auger by Lakewood Environmental Services Corporation (March 2021). A polyethylene vapor implant (2 inches in diameter, and approximately 6 inches in length) was threaded to Teflon-lined, polyethylene tubing (1/4-inch diameter) and lowered to the bottom of the hole in accordance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York. A sand filter pack was installed around the screen implant by pouring No. 2 sand into the annulus. The remainder of the annulus was filled to grade surface with a hydrated bentonite seal. Soil vapor construction/sampling logs are provided in Appendix F.

4.4.2 Soil Vapor Sampling and Analysis

As a QA/QC measure, an inert tracer gas (helium) was introduced into an above-grade sampling chamber to ensure that the soil vapor and sub-slab vapor sampling points were properly sealed above the target sampling depth, thereby preventing subsurface infiltration of ambient air. Direct readings of less than 10 percent helium in the sampling tube were considered sufficient to verify a tight seal at each sample point.

Each soil vapor point was purged using a MultiRAE meter at a rate less than 0.2 liters per minute (L/min) to evacuate a minimum of three sample tubing volumes prior to sample collection. The purged soil vapor was also monitored for VOCs and the values were recorded. After purging was completed, the soil vapor samples were collected into laboratory-supplied, batch-certified Summa® canisters. Soil vapor samples were collected into 2.7-liter or 6-liter Summa® canisters that were calibrated for a sampling rate between about 0.023 L/min and 0.05 L/min for 2 to 4 hours of sampling. Soil vapor construction/sampling logs are provided in Appendix F.

Summa® canisters were labeled and transported via courier to Alpha in Westborough, Massachusetts, a NYSDOH ELAP-certified laboratory (ELAP ID #11148), under standard chain-of-custody protocol. Soil vapor air samples were analyzed for VOCs by USEPA Method TO-15.

4.4.3 Ambient Air Sampling and Analysis

Ambient air samples were collected concurrently with soil vapor sampling at about 40 inches above ground to evaluate external influences on soil vapor quality.

Ambient air sampling was conducted in general accordance with the NYSDOH October 2006 Final Guidance for Evaluating Soil Vapor Intrusion in New York. Prior to sample collection, the areas were screened using a MultiRAE meter to identify potential sources of organic vapors that may interfere with sampling. The ambient air samples collected in February 2020 were collected into laboratory-supplied, batch-certified, 6-liter Summa® canisters calibrated for a rate of 0.0125 L/min over an 8-hour sampling period. The ambient air sample collected in December 2020 was collected into a laboratory-supplied, batch-certified, 2.7-liter Summa® canister calibrated for a rate of 0.023 L/min over a 2-hour sampling period. The ambient air sample collected in March 2021 was collected into a laboratory-supplied, batch-certified, 6-liter Summa® canister calibrated for a rate of 0.05 L/min over a 2-hour sampling period.

Summa® canisters were labeled and transported via courier to Alpha in Westborough, Massachusetts, a NYSDOH ELAP-certified laboratory (ELAP ID #11148), under standard chain-of-custody protocol. Ambient air samples were analyzed for VOCs by USEPA Method TO-15.

4.5 Quality Control Sampling

Field blanks, trip blanks, field duplicate samples, and MS/MSD samples were collected and submitted for laboratory analysis for QA/QC purposes. QA/QC samples are detailed in Table 1 and are summarized below:

4.5.1 Soil QA/QC Samples

- Three field duplicate samples
- Three MS/MSD samples
- Three field rinsate blanks
- Three trip blanks

4.5.2 Groundwater QA/QC Samples

- One field duplicate samples
- One MS/MSD samples
- One field rinsate blanks
- Three trip blanks

4.5.3 Soil Vapor QA/QC Samples

- Four ambient air samples
- Two field duplicate sample

Field rinsate blanks were collected to determine the effectiveness of the decontamination procedures for the groundwater sampling equipment and the cleanliness of unused neoprene gloves and acetate liners used to collect soil samples. Field rinsate blank samples consisted of deionized, distilled water provided by the laboratory that has passed through the sampling apparatus. Field rinsate blank samples were analyzed for the same list of analytes as the corresponding sampling event and sample matrix.

MS/MSD samples were collected to assess the effect of the sample matrix on the recovery of target compounds or target analytes. MS/MSD samples were collected from the same material as the primary sample by splitting the volume of the homogenized sample collected in the field into three sample containers.

The field duplicates were collected to assess the precision of the analytical methods relative to the sample matrix. The duplicates were collected from the same material as the primary sample by splitting the volume of homogenized sample collected in the field into two sample containers.

The trip blank samples were collected to assess the potential for contamination of the sample containers and samples during the trip from the laboratory, to the field, and back to the laboratory for analysis. Trip blanks contain about 40 milliliters of acidic water (doped with hydrochloric acid) that is sealed by the laboratory when the empty sample containers are shipped to the field, and unsealed and analyzed by the laboratory when the sample shipment is received from the field. The trip blank samples were analyzed for VOCs.

4.6 Data Validation

Analytical data was submitted to a Langan validator for review in accordance with USEPA and NYSDEC validation protocols. Data usability summary reports (DUSR) and the data validator's credentials are provided in Appendix G.

4.6.1 Data Usability Summary Report Preparation

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

For each of the inorganic compounds, the following was assessed:

- Holding times
- Calibrations
- Blank results
- Interference check sample
- Laboratory check samples
- Duplicates
- Matrix Spike
- Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES) QC
- ICP serial dilutions
- Results verification and reported detection limits

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.

4.7 Field Equipment Decontamination

A peristaltic pump with dedicated tubing was used to sample each groundwater monitoring well. The groundwater sampling equipment, including a water quality meter, were cleaned with Alconox and rinsed with deionized water between sampling locations during groundwater sample collection. Decontamination occurred at the sampling locations and all liquids were temporarily contained in 5 gallon. Decontamination wastewater was placed in 55-gallon DOT-approved drums for future off-site disposal at a permitted facility.

4.8 Investigation-Derived Waste Management

Groundwater investigation-derived wastes (IDW) were containerized in 55-gallon, DOT-approved drums. Decontamination and well development/purging fluids were placed in DOT-approved fluid drums with closed tops. All drums were properly labeled, sealed, and waste characterized as necessary. Drums were removed on November 12, 2020 and disposed of off-site at Dale Transfer Corporation, in West Babylon, NY.

5.0 FIELD OBSERVATIONS AND ANALYTICAL RESULTS

5.1 Geophysical Investigation Findings

Geophysical anomalies consistent with utilities (i.e., gas and electric lines) were identified throughout the site. No anomalies resembling USTs were identified. A copy of the February 12, 2020 Geophysical Engineering Survey Report is included in Appendix B.

5.2 Geology and Hydrogeology

Provided below is a description of the geological and hydrogeological observations made during the RI. A groundwater contour map is provided as Figure 4, and cross-sectional diagrams showing inferred soil profiles are shown on Figure 6. Boring logs are provided in Appendix C.

5.2.1 Historic Fill

The asphalt-paved surfaces are underlain by a historic fill layer that extends from surface grade to between about 2 to 10 feet bgs. The fill layer was most shallow in the southeastern part of the site (SB-15 and SB-16) and deepest in the northern part of the site (SB-2). The historic fill predominantly consists of brown and black, fine-grained sand with varying amounts of gravel, silt, asphalt, brick, coal, slag, glass, ceramics and/or concrete.

5.2.2 Native Soil Layers

Fill material is underlain by a native tan or gray, fine-grained sand layer observed to the bottom of each boring location (approximately el -4.1 to el -8.1 NAVD88), with varying amounts of gravel, silt, and clay. Native material was not observed in soil boring SB-2 located in the northern-central part of the site, where refusal was encountered at 10 feet bgs.

5.2.3 Bedrock

Bedrock was not encountered during this RI. According to a geotechnical investigation completed by Langan in the vicinity of the site, the minimum depth of bedrock is expected to be at depths greater than 600 feet bgs.

5.2.4 Hydrogeology

Synoptic groundwater level measurements were collected on February 20, 2020. Depth to groundwater was measured between about 5.98 to 6.85 feet bgs, with corresponding groundwater elevations ranging from about el 0.04 to el 0.81 NAVD88. The groundwater elevation is highest in the western region of the site and appears to flow southeast towards Coney Island Beach and the Lower New York Bay. The relative progression of the contours demonstrates a horizontal flow pattern across the site, with a downward vertical gradient toward the southeast. Groundwater elevations are summarized in Table 3, and a groundwater contour map is presented as Figure 4.

5.2.5 Surface Water and Drainage

The site is primarily improved with asphalt-paved surfaces that are impervious to rainwater. Areas of discontinuous asphalt were observed throughout the site which are subject to rainwater infiltration during storm events. Runoff from the surrounding area typically drains through catch basins into city sewers.

5.3 Soil Findings

5.3.1 Soil Boring Field Observations

Petroleum-like impacts, as evidenced by odors, staining, and/or PID readings above background, were not encountered during this RI.

5.3.2 Analytical Results

Sixty-two grab soil samples, including three field duplicates, 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 4 (VOCs, SVOCs, pesticides, herbicides, PCBs and inorganics) with comparisons to NYSDEC Part 375 UU SCOs, RURR SCOs, and Restricted Protection of Groundwater (PG) SCOs and Table 5 (emerging contaminants including 1,4-dioxane and PFAS). Full laboratory reports for the RI are included in Appendix H. Soil sample results that exceed SCOs for samples collected during the RI are shown on Figure 7.

The following contaminants were detected at concentrations exceeding NYSDEC Part 375 UU (normal text), RURR (bolded) and/or PG SCOs (underlined text):

VOCs

Acetone was detected at a concentration exceeding the UU and PG SCOs in the soil sample from SB-16 between 5 and 7 feet bgs. Acetone is a common laboratory contaminant and its presence is not likely indicative of a release. PCE was detected at a concentration exceeding the UU, RURR, and PG SCOs in one soil sample from soil boring SB-1 collected at a depth of 2 to 4 feet bgs. The following table provides a summary of VOCs that were detected above UU, RURR, and/or PG SCOs:

Parameter	Minimum Detected Concentration above SCO	Maximum Detected Concentration above SCO	UU, RURR, and PG SCOs	Frequency of Detection above SCO
Acetone	0.062 mg/kg in SB-16_5-7		UU: 0.05 mg/kg RURR: 100 mg/kg PG: 0.05 mg/kg	1 of 62
PCE	**75 mg/kg** in SB-1_2-4		UU: 1.3 mg/kg RURR: 19 mg/kg PG: 1.3 mg/kg	1 of 62

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

SVOCs

Eight PAHs and one additional SVOC (3 & 4 methylphenol) were detected at concentrations exceeding the UU, RURR, and/or PG SCOs in thirteen samples from soil borings SB-1, SB-2, SB-7, SB-10, SB-11, SB-12, SB-16, SB-17, SB-18, SB-19, and SB-20 collected at depths ranging from 0 to 12 feet bgs. PAH impacted material is confined within the historic fill layer with the exception of samples collected from SB-10 from 5 to 7 feet bgs and SB-11 from 6 to 8 feet bgs, which straddle the historic fill and native interface, and SB-17 from 5 to 7 feet bgs and SB-18 from 10 to 12 feet bgs, which were collected from the native layer. The compound 3 & 4 methylphenol was only detected in the sample collected in SB-7 from 0 to 2 feet bgs. The following table provides a summary of PAHs that were detected above UU, RURR, and/or PG SCOs:

Parameter	Minimum Detected Concentration above SCO	Maximum Detected Concentration above SCO	UU, RURR, and PG SCOs	Frequency of Detection above SCO
3 & 4 Methylphenol (m&p Cresol)	0.6 mg/kg in SB-7_0-2		UU: 0.33 mg/kg RURR: 100 mg/kg PG: 0.33 mg/kg	1 of 62
Benzo(a)anthracene	**1.2 mg/kg** in SB-12_0-2 and SB-18_10-12	**36 mg/kg** in SB-2_6-8	UU: 1 mg/kg RURR: 1 mg/kg PG: 1 mg/kg	12 of 62
Benzo(a)pyrene	**1.2 mg/kg** in SB-11_6-8	**34 mg/kg** in SB-2_6-8	UU: 1 mg/kg RURR: 1 mg/kg PG: 22 mg/kg	11 of 62
Benzo(b)fluoranthene	**1.2 mg/kg** in SB-18_10-12	**43 mg/kg** in SB-2_6-8	UU: 1 mg/kg RURR: 1 mg/kg PG: 1.7 mg/kg	13 of 62
Benzo(k)fluoranthene	0.88 mg/kg in SB-10_5-7	**15 mg/kg** in SB-2_6-8	UU: 0.8 mg/kg RURR: 3.9 mg/kg PG: 1.7 mg/kg	8 of 62

Parameter	Minimum Detected Concentration above SCO	Maximum Detected Concentration above SCO	UU, RURR, and PG SCOs	Frequency of Detection above SCO
Chrysene	1.1 mg/kg in SB-12_0-2	**32 mg/kg** in SB-2_6-8	UU: 1 mg/kg RURR: 3.9 mg/kg PG: 1 mg/kg	12 of 62
Dibenzo(a,h)anthracene	**0.88 mg/kg** in SB-1_2-4	**4.3 mg/kg** in SB-2_6-8	UU: 0.33 mg/kg RURR: 0.33 mg/kg PG: 1,000 mg/kg	6 of 62
Indeno(1,2,3-cd)pyrene	**0.57 mg/kg** in SB18_10-12	**21 mg/kg** in SB-2_6-8	UU: 0.5 mg/kg RURR: 0.5 mg/kg PG: 8.2 mg/kg	13 of 62
Naphthalene	15 mg/kg in SB-7_0-2		UU: 12 mg/kg RURR: 100 mg/kg PG: 12 mg/kg	1 of 62

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

Pesticides

Three pesticides were detected at concentrations exceeding the UU SCO in thirteen samples from soil borings SB-1, SB-2, SB-6, SB-7, SB-9, SB-10, SB-11, SB-12, SB-16, SB-18, SB-19, and SB-20 collected at depths ranging from 0 to 8 feet bgs. No pesticides were detected above RURR or PG SCOs. The following table provides a summary of the pesticides that were detected above the UU SCO:

Parameter	Minimum Detected Concentration above SCO	Maximum Detected Concentration above SCO	UU, RURR, and PG SCOs	Frequency of Detection above SCO
4,4'-DDD	0.0035 mg/kg in SB-18_2-4	0.0286 mg/kg in SB-7_0-2	UU: 0.0033 mg/kg RURR: 13 mg/kg PG: 14 mg/kg	7 of 62
4,4'-DDE	0.00398 mg/kg in SB-1_0-2	0.163 mg/kg in SB-7_0-2	UU: 0.0033 mg/kg RURR: 8.9 mg/kg PG: 17 mg/kg	9 of 62
4,4'-DDT	0.00374 mg/kg in SB-6_5-7	0.242 mg/kg in SB-7_0-2	UU: 0.0033 mg/kg RURR: 7.9 mg/kg PG: 136 mg/kg	12 of 62

1. Concentrations in regular face exceed Unrestricted Use SCOs.

Herbicides

No herbicides were detected at concentrations exceeding the UU, RURR and/or PG SCOs.

PCBs

No PCBs were detected at concentrations exceeding the UU, RURR and/or PG SCOs.

Inorganics

Six metals were detected at concentrations exceeding the UU, RURR, and/or PG SCOs in thirteen samples from soil borings SB-1, SB-2, SB-6, SB-11, SB-12, SB-13, SB-16, SB-17, SB-18, SB-19, and SB-20 collected at depths ranging from 0 to 11 feet bgs. The following table provides a summary of metals that were detected above UU, RURR, and/or PG SCOs:

Parameter	Minimum Detected Concentration above SCO	Maximum Detected Concentration above SCO	UU, RURR, and PG SCOs	Frequency of Detection above SCO
Barium	356 mg/kg in SB-2_6-8	**730 mg/kg** in SB-1_2-4	UU: 350 mg/kg RURR: 400 mg/kg PG: 820 mg/kg	2 of 62
Cadmium	**10.4 mg/kg** in SB-1_2-4		UU: 2.5 mg/kg RURR: 4.3 mg/kg PG: 7.5 mg/kg	1 of 62
Copper	51.5 mg/kg in SB-19_2-4	55.7 mg/kg in SB-18_2-4	UU: 50 mg/kg RURR: 270 mg/kg PG: 1,720 mg/kg	2 of 62
Lead	64.2 mg/kg in SB-11_6-8	**3,110 mg/kg** in SB-1_2-4	UU: 63 mg/kg RURR: 400 mg/kg PG: 450 mg/kg	12 of 62
Mercury	0.262 mg/kg in SB-1_2-4	0.54 mg/kg in SB-20_0-2	UU: 0.18 mg/kg RURR: 0.81 mg/kg PG: 0.73 mg/kg	5 of 62
Zinc	113 mg/kg in SB-17_5-7	932 mg/kg in SB-19_2-4	UU: 109 mg/kg RURR: 10,000 mg/kg PG: 2,480 mg/kg	8 of 62

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

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

Sixty-two soil samples (including three duplicates) were sampled for emerging contaminants polyfluoroalkyl substances (PFAS) and 1,4-dioxane per NYSDEC's initiative to understand the presence of these constituents in the environment across New York State. There are currently no NYSDEC SCOs for these compounds in soil, however, analytical results for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were compared to the NYSDEC Part 375 January 2021 Remedial Programs Guidelines for Sampling and Analysis of PFAS UU, RURR, and

PG Guidance Values. PFOS was detected above the UU Guidance Value in eight soil samples collected from seven soil borings (SB-1, SB-2, SB-3, SB-12, SB-17, SB-19 and SB-20) between surface grade and 8 feet bgs. PFOS concentrations above the UU Guidance Value ranged between 1 part per billion (ppb) in SB-1 from 2 to 4 feet bgs and 2.66 ppb in SB-20 from 2 to 4 feet bgs. PFOA was detected above the UU Guidance Value at 0.679 ppb in SB-20 between 2 and 4 feet bgs, only. The compound 1,4-dioxane was not detected in soil samples. Analytical results are shown in Table 5.

5.4 Groundwater Findings

5.4.1 Field Observations

Monitoring wells were gauged for non-aqueous phase liquid (NAPL) with an oil-water interface probe. NAPL was not encountered in monitoring wells. PID headspace readings ranged from 0.0 ppm to 1.6 ppm (highest reading in monitoring well MW-1) during groundwater sampling. Depth to groundwater was measured between about 5.98 to 6.85 feet bgs, with corresponding groundwater elevations ranging from about el 0.04 to el 0.81 NAVD88. Groundwater generally flows to the southeast.

5.4.2 Analytical Data

Thirteen groundwater samples, including one QA/QC duplicate, 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). A summary of the groundwater sample laboratory detections compared to 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) is presented in Table 6. Emerging contaminant data including 1,4-dioxane and PFAS results are presented in Table 7. Groundwater contours, sample locations, and results that exceed the NYSDEC SGVs are presented on Figure 8.

The following contaminants were detected at concentrations exceeding the NYSDEC SGVs:

VOCs

A groundwater sample collected from MW-1 contained concentrations of one VOC above NYSDEC SGVs, as shown in the following table:

Parameter	Minimum Detected Concentration above SGVs	Maximum Detected Concentration above SGVs	SGVs	Frequency of Detection above SGVs
PCE	10 µg/L in MW-1_021820		5 µg/L	1 of 13

SVOCs

Groundwater samples collected from the MW-3, MW-4, MW-6, MW-7, MW-10, and MW-11 contained concentrations of up to six PAHs above the NYSDEC SGVs, as shown in the following table:

Parameter	Minimum Detected Concentration above SGVs	Maximum Detected Concentration above SGVs	SGVs	Frequency of Detection above SGVs
Benzo(a)anthracene	0.02 µg/L in MW-10_021920	0.07 µg/L in MW-11_021920	0.002 µg/L	4 of 13
Benzo(a)pyrene	0.02 µg/L in MW-7_021820	0.05 µg/L in MW-6_021420	0 µg/L	3 of 13
Benzo(b)fluoranthene	0.02 µg/L n MW-3_021820, MW-4_021420, and MW-7_021820	0.07 µg/L in MW-6_021420	0.002 µg/L	5 of 13
Benzo(k)fluoranthene	0.01 µg/L in MW-3_021820	0.02 µg/L in MW-6_021420 and MW-11_021920	0.002 µg/L	3 of 13
Chrysene	0.04 µg/L in MW-6_021420	0.06 µg/L in MW-11_021920	0.002 µg/L	2 of 13
Indeno(1,2,3-cd)pyrene	0.02 µg/L in MW-3_021820 and MW-7_021820	0.03 µg/L in MW-6_021420 and MW-11_021920	0.002 µg/L	4 of 13

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 two or more of four total metals that exceeded the NYSDEC SGVs in groundwater samples as shown in the following table:

Parameter	Minimum Detected Concentration above NYSDEC SGVs	Maximum Detected Concentration above NYSDEC SGVs	NYSDEC SGVs	Frequency of Detection above NYSDEC SGVs
Antimony	36.4 µg/L in MW-1_02182		3 µg/L	1 of 13
Iron	449 µg/L in MW-11_021920	14,300 µg/L in MW-5_021820	300 µg/L	13 of 13
Manganese	441.9 µg/L in MW-3_021820	1,668 µg/L in MW-7_021820	300 µg/L	4 of 13
Sodium	22,500 µg/L in MW-11_021920	323,000 µg/L in MW-4_021420	20,000 µg/L	13 of 13

Dissolved Metals

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

Parameter	Minimum Detected Concentration above NYSDEC SGVs	Maximum Detected Concentration above NYSDEC SGVs	NYSDEC SGVs	Frequency of Detection above NYSDEC SGVs
Antimony	3.24 µg/L in MW-7_021820	34.73 µg/L in MW-1_021820	3 µg/L	2 of 13
Iron	397 µg/L in MW-11_021920	14,200 µg/L in MW-5_021820	300 µg/L	13 of 13
Manganese	470.3 µg/L in MW-3_021820	1,599 µg/L in MW-7_021820	300 µg/L	4 of 13
Sodium	26,100 µg/L in MW-11_021920	303,000 µg/L in MW-3_021820	20,000 µg/L	13 of 13

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 per NYSDEC's initiative to understand the presence of these constituents in the environment across New York State. There are no NYSDEC TOGS SGVs for these compounds, however, 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 all monitoring wells, except MW-4, between 21.8 nanograms per liter (ng/L), or parts per trillion (ppt), in MW-9 and 67.1 ppt in MW-8. PFOA was detected above the Guidance Value in all monitoring wells between 11.6 ppt in MW-11 and 42.6 ppt in MW-4. 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 7.

5.5 Soil Vapor Findings

Twenty-five soil vapor samples, four outdoor ambient air samples, and two duplicate samples were collected and submitted for laboratory analysis for USEPA TO-15 VOCs. No standard currently exists for soil vapor samples in New York State. Soil vapor sample results are summarized in Table 8. The soil vapor sample results are shown on Figure 9, and the laboratory analytical reports can be found in Appendix H.

5.5.1 Soil Vapor Analytical Data

Total VOCs in soil vapor samples ranged from 51.02 µg/m^3 in SV-9 to 27,490 µg/m^3 in SV-2. Total VOCs in the outdoor ambient air samples were detected at between 1.07 µg/m^3 and 10.85 µg/m^3. VOCs detected in soil vapor samples include:

- 1,1,1-Trichloroethane (1,1,1-TCA)
- 1,2,4-Trimethylbenzene
- 2,2,4-Trimethylpentane
- Acetone
- Chloroform
- Dichlorodifluoromethane
- M,P-Xylene
- n-Hexane
- PCE
- Styrene
- Trans-1,2-Dichloroethene
- TCE
- 1,1-Dichloroethane
- 1,3,5-Trimethylbenzene (Mesitylene)
- 2-Hexanone
- Benzene
- Cis-1,2-DCE
- Ethylbenzene
- Ethanol
- Methyl Ethyl Ketone (2-Butanone)
- o-Xylene (1,2-Dimethylbenzene)
- Toluene
- Tetrahydrofuran
- 1,1-DCE
- 1,3-Butadiene
- 4-Ethyltoluene
- Carbon Disulfide
- Cyclohexane
- Isopropanol
- Ethyl Acetate
- Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)
- n-Heptane
- Tert-Butyl Alcohol
- Total Xylenes
- Trichlorofluoromethane
- Vinyl Chloride

The VOC chloromethane was detected in all four ambient air samples, although this analyte was not detected in any soil vapor samples collected. Methylene chloride was detected in the ambient air sample collected in December 2020, but in no other soil vapor or ambient air samples collected. Of the VOCs listed above, acetone, dichlorodifluoromethane, isopropanol, n-hexane, and/or trichlorofluoromethane were also detected in the ambient air samples collected in December 2020 and March 2021. No other VOCs were detected in the ambient air samples.

PCE was detected in all soil vapor samples. PCE concentrations ranged from 2.76 µg/m^3 in SV-11 to 23,200 µg/m^3 at SV-2. PCE's daughter products were also detected in select locations: TCE from 3.65 µg/m^3 in SV-6 to 1,900 µg/m^3 in SV-2; cis-1,2-DCE from 2 µg/m^3 in SV-24 to 2,390 µg/m^3 in SV-2; 1,1-DCE from 1.35 µg/m^3 in SV-22 to 1.37 µg/m^3 in SV-6; and vinyl chloride at 22.2 µg/m^3 in SV-6. PCE, TCE, cis-1,2-DCE, 1,1-DCE, and vinyl chloride were not detected in the ambient air samples. 1,1,1-TCA was detected in twelve soil vapor samples at concentrations ranging from 1.36 µg/m^3 in SV-3 to 8.51 µg/m^3 in SV-12.

Petroleum-related compounds including benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected in soil vapor at concentrations ranging from about 3.11 µg/m^3 in SV-14 to 146.7 µg/m^3 in SV-21.

5.6 Quality Control Results

Duplicates, MS/MSDs, field rinsate blanks, and trip blanks were collected during the RI and are detailed in Table 1. The duplicates, field blanks, and MS/MSD sample pairs for soil and groundwater were collected at a frequency of 1 per 20 primary samples. Quality control sample results were evaluated during data validation, and the laboratory analytical reports are provided in Appendix H.

5.7 Data Usability

Category B laboratory reports for soil, groundwater, soil vapor, and air samples were provided by Alpha and were forwarded to Langan's data validator. DUSRs are provided in Appendix G. The results of the data validation review are summarized below.

The data were determined to be acceptable. Completeness, defined as the percentage of analytical results that are judged to be valid, is 100 percent. No major deficiencies were identified. All data is considered useable as qualified.

5.8 Evaluation of Potential Areas of Concern

This section discusses the results of the RI with respect to the potential AOCs described in detail in Section 3.4. AOC locations are shown on Figure 5.

5.8.1 AOC 1: Historic Fill

Historic fill material located throughout the site contains VOCs, SVOCs (including PAHs), metals, and pesticides at concentrations above the Part 375 UU, RURR, and/or PG SCOs. The historic fill layer, which was identified during the RI to depths ranging from about 2 to 10 feet bgs, was most shallow in the southeastern part of the site (SB-15 and SB-16) and deepest in the northern part of the site (SB-2). Additionally, historic fill was identified to depths of up to 13.5 feet during the Geotechnical Investigation completed by GeoDesign. The historic fill predominantly consists of brown and black, fine-grained sand with varying amounts of gravel, silt, asphalt, brick, coal, slag, glass, ceramics and/or concrete. A summary of the analytical results from historic fill for AOC 1 is summarized as follows:

AOC 1 - Soil

- One VOC (PCE) was detected above the Part 375 UU, PG, and RURR SCOs in historic fill in SB-1 located in the northwestern part of the site. Although within the historic fill layer, this contaminant is more likely associated with AOC 2, and is not a constituent of historic fill material.
- Nine SVOCs (3 & 4 methylphenol, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and naphthalene) were detected above the Part 375 UU, RURR and/or PG SCOs in samples collected from the historic fill layer in soil borings SB-1, SB-2, SB-7, SB-10, SB-11, SB-12, SB-16, SB-18, SB-19, and SB-20.
- Metals, including barium, cadmium, copper, lead, mercury, and zinc were detected above the UU, RURR and/or PG SCOs in samples collected from the historic fill layer in soil borings SB-1, SB-2, SB-11, SB-12, SB-13, SB-16, SB-18, SB-19 and SB-20.
- Pesticides, including 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT, were detected above UU SCOs in samples collected from the historic fill layer in soil borings SB-1, SB-2, SB-7, SB-10, SB-11, SB-12, SB-16, SB-18, SB-19, and SB-20.
- Total PCBs and herbicides were not detected above UU SCOs in soil samples collected from historic fill.

AOC 1 - Groundwater

- Six PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene) were detected above the SGVs in groundwater samples.
- Metals (including antimony, iron, manganese, and sodium) were detected at concentrations above the NYSDEC SGVs in groundwater samples. Antimony, iron, manganese, and sodium were detected in dissolved groundwater samples above SGVs and are characteristic of naturally-occurring groundwater conditions.

AOC 1 – Soil Vapor

- Historic fill does not appear to have impacted soil vapor.

AOC 1 - Conclusions

Historic fill, which is ubiquitous across the site footprint, was encountered to depths ranging from 2 to 10 feet bgs during the RI. VOCs, SVOCs, metals, and pesticides were detected at concentrations above the Part 375 UU, PG and/or RURR SCOs in samples within and below the historic fill layer, with the deepest exceedance identified at 12 feet bgs. Concentrations of PAHs and metals are likely associated with the general quality of the fill placed at the site or historical industrial uses of the site.

Similar compounds detected in soil were also identified in groundwater at concentrations above NYSDEC SGVs. The source of SVOCs in groundwater is historic fill material. Antimony, iron, manganese, and sodium is likely associated with brackish conditions, due to the site's proximity to the Lower New York Bay. The analytical data indicate that the contaminants associated with historic fill have not impacted soil vapor.

5.8.2 AOC 2: Historical Manufacturing Facility

Releases of petroleum products, solvents, and/or other hazardous materials associated with the historical manufacturing operations may have adversely affected soil, groundwater and/or soil vapor. A summary of the findings for AOC 2 is provided below:

AOC 2 - Soil

- Petroleum-related VOCs were not detected at concentrations above the UU SCOs. Petroleum impacts, including PID readings above background, odors, or staining, were not encountered during the RI.
- VOCs were not detected above the UU, PG, or RURR SCOs in SB-4 or SB-5 located along the southern perimeter of the former manufacturing building. PCE was detected above the UU, PG, and RURR SCOs in SB-1 located within the extents of the former manufacturing building. PCE has historically been used as a metal degreaser in manufacturing operations.
- SVOCs, pesticides, and metals in soil were detected at concentrations exceeding the UU, RURR and/or PG SCOs at SB-1, only; but at concentrations generally more representative of historic fill material than at concentrations representative of a release associated with historical operations.

AOC 2 - Groundwater

- Petroleum-related VOCs were not detected at concentrations above the SGVs.
- VOCs were not detected above the SGVs in MW-3, which is collocated with SB-5. PCE was detected above the SGVs in MW-1, which is collocated with SB-1.
- SVOCs and/or metals (including antimony, iron, manganese, and sodium) were detected at concentrations above the SGVs in MW-1 and/or MW-3. Antimony, iron, manganese, and sodium were also detected in dissolved groundwater samples above the SGVs and are characteristic of naturally-occurring groundwater conditions.

AOC 2 – Soil Vapor

- BTEX was detected between 4 µg/m^3 in SV-24 and 110 µg/m^3 in SV-16. BTEX was not detected in SV-2; however, this may have been the result of a 63x dilution factor that was required due to elevated concentrations of CVOCs (discussed below), resulting in elevated reporting limits for BTEX.
- PCE was detected in SV-3 at 4.52 µg/m^3 and SV-25 at 50.7 µg/m^3, respectively. Elevated concentrations of PCE were detected in SV-2 (23,200 µg/m^3), SV-16 (1,970 µg/m^3), SV-23 (161 µg/m^3), and SV-24 (2,010 µg/m^3). Elevated concentrations of TCE were detected in SV-2 (1,900 µg/m^3), SV-16 (56.4 µg/m^3), SV-23 (20.6 µg/m^3), and SV-24 (49.3 µg/m^3). Elevated concentrations of cis-1,2-DCE were detected in SV-2 (2,390 µg/m^3) and in SV-23 (48 µg/m^3), only.

AOC 2 Conclusions

Concentrations of several PAHs, pesticides, and metals in soil and/or groundwater are likely associated with the general quality of the historic fill material and not the historical site uses.

Petroleum-like impacts were not observed in soil or groundwater, and petroleum-related VOCs were not detected above the UU, PG, or RURR SCOs in soil or SGVs in groundwater within AOC 2. Based on these results, a petroleum release associated with the historical manufacturing operations has not been identified.

PCE was detected in soil and groundwater samples collected within the extents of the former manufacturing building at concentrations above the UU, PG, and RURR SCOs and SGVs, respectively. Elevated concentrations of PCE and daughter products were also detected in soil vapor. As such, the former manufacturing building is likely a source of CVOCs in soil, groundwater, and soil vapor.

5.8.3 AOC 3: Historical Automobile Repair Shop and Machine Shop

Releases of petroleum products, solvents, and/or other hazardous materials associated with the historical manufacturing and automobile repair operations may have adversely affected soil, groundwater and/or soil vapor. A summary of the findings for AOC 3 is provided below:

AOC 3 - Soil

- VOCs were not detected at concentrations above the UU SCOs. Apparent impacts, including PID readings above background, odors, or staining, were not encountered during the RI.
- Concentrations of SVOCs identified in the shallow sample collected from SB-7 were significantly greater than other samples in this AOC and may be the result of a release related to the former use. SVOC concentrations in the remaining samples are more likely associated with historic fill.
- Pesticides and metals in soil were detected at concentrations exceeding the UU, RURR and/or PG SCOs at locations completed within the extents of the former automobile repair shop and machine shop (SB-7, SB-12, SB-13); but at concentrations generally more representative of historic fill material than at concentrations representative of a release associated with historical operations.

AOC 3 - Groundwater

- Petroleum-related VOCs were not detected at concentrations above the SGVs.
- The PAH benzo(b)fluoranthene was detected at a concentration exceeding the NYSDEC SGVs in MW-4, which is collocated with SB-7. Benzo(b)fluoranthene was also detected in soil at this location, which may be the source of this SVOC in groundwater.
- Metals (including iron and sodium) were detected at concentrations above the SGVs in groundwater samples collected across AOC 3. Iron and sodium were also detected in dissolved groundwater samples above the SGVs and are characteristic of naturally-occurring groundwater conditions.

AOC 3 – Soil Vapor

- BTEX was detected in SV-5, SV-9, and SV-18 at concentrations ranging from 7.66 $\mu g/m^3$ to 124.4 $\mu g/m^3$.
- PCE was detected in SV-5, SV-9, and SV-18 at concentrations ranging from 4.69 $\mu g/m^3$ to 25.4 $\mu g/m^3$.

AOC 3 Conclusions

Concentrations of SVOCs, pesticides, and metals are likely associated with the general quality of the historic fill material, with the exception of SVOCs SB-7, which may be related to historical site uses.

Petroleum-like impacts were not observed in soil or groundwater, and VOCs were not detected above the UU, PG, or RURR SCOs in soil or SGVs in groundwater within AOC 3.

Detections of BTEX and CVOCs have been identified in soil vapor that are not indicative of a release from the former automobile repair shop and machine shop.

Therefore, impacts have not been detected in soil, groundwater, or soil vapor that could be attributed to AOC 3.

5.8.4 AOC 4: Historical Use of Adjoining Properties

Dry cleaners occupied the adjoining property to the west (1965-2006) and surrounding property to the north (1950-2007). A summary of the findings for AOC 4 is provided below:

AOC 4 - Soil

- CVOCs were not detected at concentrations above the UU SCOs in SB-4, SB-8, SB-10, or SB-14 (nearest to the dry cleaners to the west) or SB-2, SB-3, or SB-6 (nearest to the dry cleaners to the north).

AOC 4 - Groundwater

- Based on the groundwater flow direction determined during the RI, the only upgradient site that represents a potential source for groundwater impacts is the former dry cleaners to the west of the site. CVOCs were not detected at concentrations above the SGVs at the monitoring well locations down-gradient of this dry cleaners (e.g. MW-5, MW-7).

AOC 4 – Soil Vapor

- PCE was detected in all soil vapor samples, with the maximum concentration detected at SV-2, which is collocated with SB-4.

AOC 4 Conclusions

Neither soil, soil vapor nor groundwater have been impacted by the adjoining and surrounding dry cleaner sites. Off-site dry cleaners may have impacted subsurface conditions at the site.

6.0 QUALITATIVE HUMAN AND FISH/WILDLIFE EXPOSURE ASSESSMENT

Human health exposure risk was evaluated 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. Based on the requirements stipulated in Section 3.10 and Appendix 3C of DER-10, there was no need to prepare an FWRIA for the site.

6.1 Current Conditions

The site is located at 1607 Surf Avenue in the Coney Island neighborhood of Brooklyn, New York and is identified as Block 7062, Lot 28 on the department of Finance Tax Map. A site location map is provided as Figure 1. The site is currently an asphalt-paved parking lot and encompasses an area of about 59,393 square-feet (1.36 acres). The site is bound by Surf Avenue to the south followed by MCU Park, West 16th Street to the east followed by a vacant parcel and several parking lots, West 17th Street to the west followed by a commercial office building and a parking lot, and a parking lot to the north.

6.2 Proposed Conditions

Current plans call for the development a new ten-story, mixed-use residential and commercial building with a footprint of 42,500 square feet and approximately 23,600 square feet of open-air parking. All of the new residential units will be designated as affordable housing. The new development will include a slab-on-grade ground level with about 12,000 square feet of tenant amenity space (i.e. package room, lounge area) and utilities, about 10,900 square feet of commercial space, and an approximately 9,000 square foot community day care. The first floor of the new development will include about 25,150 square feet of residential space as well as amenities (i.e., laundry, kids area, gym, courtyard) and a utility room. The second through tenth floors of the new development will be occupied by residential units.

6.3 Summary of Environmental Conditions

AOCs include historic fill as well as CVOC impacts in soil, groundwater, and soil vapor associated with historical site use. COCs associated with the AOCs include VOCs, SVOCs, pesticides, and metals.

VOCs, SVOCs, metals and pesticides were detected at concentrations above the Part 375 UU, RURR and/or PG SCOs in samples collected from historic fill. PAHs and metals were detected at concentrations that are typical of historic fill material in New York City, with the exception of SVOCs in SB-7, which may be associated with a release from the former auto repair.

CVOCs were detected in soil and groundwater at concentrations above the applicable soil and groundwater standards in the northwestern part of the site. CVOCs were also detected in soil vapor samples across the site, with a concentration four orders of magnitude greater in the northwestern part of the site, relative to other parts of the site. These impacts are likely indicative of an on-site release from the former manufacturing building.

6.4 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.

6.4.1 Potential Sources of Contamination

Potential sources of contamination have been identified and include historic fill and historical site manufacturing and automobile repair/machine shop usage.

Historic fill material encountered beneath surface cover to depths ranging from about 2 to 10 feet bgs originated from unidentified source areas and was placed as backfill at an unknown time, prior to the current site use as a parking lot. SVOCs and metals detected at concentrations above the Part 375 UU, PG and RURR SCOs are related to the nature of the historic fill.

CVOCs were detected in soil vapor, and PCE was detected in soil and groundwater above the applicable soil and groundwater standards. In addition, PAHs were detected in soil and groundwater above applicable soil and groundwater standards near the eastern portion of the site. These impacts are likely related to an on-site release from the former manufacturing building in the northwestern part of the site and the historical automobile repair/machine shop within the eastern portion of the site.

6.4.2 Exposure Media

Impacted media include soil, groundwater, and soil vapor. Analytical data suggests that historic fill and native soil contains SVOCs, metals and pesticides up to about 12 feet bgs in exceedance of UU SCOs. Historic fill-related PAHs and metals were detected across the site. Groundwater was observed at depths ranging from 5.98 to 6.85 feet bgs, and impacts include VOCs, SVOCs, and metals. Soil vapor is impacted with CVOCs including PCE and daughter products, with the highest concentrations detected in the northwestern part of the site.

6.4.3 Receptor Populations

The site is currently an asphalt-paved parking lot. Under future conditions, human receptors may include construction and remediation workers, authorized guests visiting the site, and the public adjacent to the site, as well as potential future building occupants.

6.5 Potential Exposure Pathways – On-Site

6.5.1 Current Conditions

Human exposure to contaminated soil is limited as an impermeable asphalt cover is present throughout the site. In places where asphalt may be compromised due to cracks in the surface cover, human exposure is limited to site owners, operators (car parking attendants), and guests who are parking their cars. Cars are parked on site by an attendant and access is restricted by a metal fence and/or locked gates; therefore, human exposure to contaminated soil is limited. The potential pathway is through dermal absorption, inhalation and ingestion.

Groundwater in this area of New York City is not used as a potable water source. There is a potential exposure pathway during groundwater sampling associated with site investigation. The potential pathway for site investigation workers is through dermal absorption and ingestion.

Soil vapor is impacted by CVOCs. The site is an open-air parking lot, 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.

6.5.2 Construction/Remediation Conditions

Construction and remediation may result in potential exposures to site contaminants in the absence of a Health and Safety Plan (HASP) and a Community Air Monitoring Plan (CAMP). Construction and remedial activities will likely include excavation and off-site disposal of impacted soil, and construction of foundation components. In the absence of a HASP and CAMP, this scenario presents the potential for exposure of soil contaminants to construction and remediation workers via dermal absorption, ingestion, and inhalation of vapors and particulate matter. This exposure pathway will be marginalized through the implementation of the HASP, CAMP, and vapor and dust suppression techniques.

6.5.3 Proposed Future Conditions

Currently, the contemplated project includes a mixed-use residential and commercial development. Although the site is anticipated to undergo a Track 1 cleanup, new development will incorporate a cover system across the site and vapor mitigation measures. These measures will prevent human exposure to impacted soil and groundwater and potential soil vapor intrusion.

There is no pathway for ingesting groundwater COCs, since the site and surrounding areas obtain their drinking water supply from surface water reservoirs located upstate and not from groundwater. If a Track 1 cleanup is not achieved an environmental easement will be placed on the site and groundwater use will be restricted to prevent exposure to residual contamination.

If necessary, institutional controls will require maintenance of engineering controls and will serve to further mitigate exposure under future conditions.

6.6 Potential Exposure Pathways – Off-Site

Soil vapor may migrate off-site vertically through the subsurface and dissipate and dilute with ambient air in instances where the site surface is compromised or during site construction/remediation. It is unknown if a complete exposure pathway exists for off-site soil vapor intrusion.

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 continuous relatively impervious surface covering.
- During site remediation and construction, the following protective measures will be implemented:
    - A site-specific HASP including a CAMP 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.
    - 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.

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

6.7 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.

6.7.1 Current Conditions

Contaminant sources include historic fill with varying concentrations of SVOCs, metals, and pesticides, PAH-impacted groundwater and CVOC-impacted soil, groundwater, and soil vapor.

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 employees, ownership and authorized visitors; 2) impermeable asphalt-paved surfaces cover the site; 3) the site is an open-air parking 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.

6.7.2 Construction/Remediation Activities

During development and remediation, the contaminant sources are the same as for current conditions. Points of exposure include disturbed and exposed soil during excavation, dust and organic vapors generated during excavation, and contaminated groundwater that will be encountered during excavation. Routes of exposure include ingestion and dermal absorption of contaminated soil and groundwater, inhalation of organic vapors arising from contaminated soil and groundwater, and inhalation of dust arising from contaminated soil. The receptor population includes construction and remediation workers and, to a lesser extent, the public adjacent to the site.

The potential for completed exposure pathways is present since all five elements exist; however, the risk will be minimized by the implementation of appropriate health and safety measures, such as monitoring the air for organic vapors and dust, using vapor and dust suppression measures, cleaning truck undercarriages before they leave the site to prevent off-site soil tracking, maintaining site security, and wearing the appropriate personal protective equipment (PPE).

6.7.3 Proposed Future Conditions

For the proposed future conditions a Track 1 cleanup is anticipated. If a Track 1 cleanup is not feasible, residual contaminants may remain on-site and would, to a lesser extent include those listed under current conditions. In this scenario, if institutional and/or engineering controls are not implemented, points of exposure include potential cracks in the foundation or slab of the proposed development, and exposure during any future soil-disturbing activities. Routes of exposure would be limited to inhalation of vapors entering the buildings. The receptor population includes potential building tenants and/or employees, visitors and maintenance workers. The possible routes of exposure can be avoided or mitigated by the installation of engineering controls, such as soil vapor mitigation measures and/or a site capping system, and the implementation of institutional controls, such as a Site Management Plan (SMP).

6.7.4 Human Health Exposure Assessment Conclusions

1. Under current conditions, there is a marginal risk for exposure. The primary exposure pathways are dermal contact, ingestion and inhalation of soil, soil vapor, or groundwater by authorized site visitors in instances where the integrity of the impermeable site cover is compromised or during site investigation. The exposure risks can be avoided or minimized by following the appropriate HASP and vapor and dust suppression measures, and by implementing a CAMP during intrusive activities.
2. In the absence of engineering controls, 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 construction 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 can be avoided or minimized by performing community air monitoring and by following the appropriate health and safety, vapor and dust suppression, and site security measures outlined in a site-specific HASP.
3. The existence of a complete exposure pathway for site contaminants to human receptors under future conditions is unlikely, as contaminant sources will likely be removed during site development, and if any residual soil remains, the impermeable foundation cover would serve as a cap. Regional groundwater is not used as a potable water source in New York City, so exposure to regional groundwater contaminants is unlikely. The potential pathway for soil vapor intrusion into the building would be eliminated or addressed through the use of soil vapor mitigation measures (e.g., vapor barrier, sub-membrane depressurization system, or ventilated parking garage) if a Track 1 is not achieved, thereby minimizing the risk of exposure to any residual contaminated sub-slab soil vapor.
4. It is unknown if a complete exposure pathway exists for off-site soil vapor intrusion. However, it is unlikely that a complete exposure pathway exists for the migration of site contaminants to off-site human receptors for current, construction phase, or future

conditions. Monitoring and control measures would be used during remediation and construction to prevent completion of this pathway. Under future conditions, the site will be remediated and, if necessary, engineering controls may be implemented (e.g., site-wide cap and a waterproofing/ vapor barrier) to prevent completion of this pathway.

7.0 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 and analytical data that were discussed in Section 5.0.

7.1 Soil Contamination

Historic fill predominantly consisting of brown and black, fine-grained sand with varying amounts of gravel, brick, coal, slag, glass, ceramics and/or concrete was encountered at depths ranging from about 2 to 10 feet bgs. SVOCs, metals, and pesticides detected at concentrations above the Part 375 UU, PG, and/or RURR SCOs are likely related to the quality of historic fill, with the exception of SVOCs in SB-7, which may be related to the former use as an auto repair facility.

PCE was detected above the Part 375 UU, PG, and RURR SCOs in SB-1 located within the extents of the former manufacturing building in the northwestern part of the site. PCE impacts in soil have been attributed to potential degreasing operations associated with this historical site use.

7.2 Groundwater Contamination

Evaluation of the groundwater analytical results identified VOCs, SVOCs, and naturally occurring metals above the SGVs. SVOCs were detected across the site at concentrations above TOGS SGVs; the source of SVOCs is historic fill and/or historical uses of the site. Metals, including antimony, iron, manganese, and sodium were also detected across the site but are naturally occurring and present in groundwater throughout New York City.

PCE was detected above the NYSDEC SGV in the groundwater sample collected from SB-1/MW-1 in the former manufacturing building. Similar to soil, the presence of PCE in groundwater at this location is attributed to historical degreasing operations associated with historical manufacturing use.

7.3 Soil Vapor Contamination

PCE and daughter products (including TCE, cis-1,2-DCE, and vinyl chloride) were identified in soil vapor, primarily in the northwestern part of the site. The corresponding elevated concentrations of PCE in soil and groundwater in this area are the source of CVOCs in soil vapor.

8.0 CONCLUSIONS

1. Stratigraphy: The stratigraphy observed during the RI consists of a historic fill layer that extends from surface grade to depths ranging from 2 to 10 feet bgs, although observations of fill extending down to 13.5 feet were documented during a previous geotechnical investigation. The historic fill predominantly consists of brown and black, fine-grained sand with varying amounts of gravel, brick, coal, slag, glass, ceramics and/or concrete. Fill material is underlain by a native tan or gray, fine-grained sand layer observed to the bottom of each boring location (approximately el -4.1 to el -8.1 NAVD88), with varying amounts of gravel, silt, and clay. Native material was not observed in the soil boring located in the western-central part of the site, where refusal was encountered at 10 feet bgs. Bedrock was not encountered in any of the soil borings.
2. Hydrogeology: Depth to groundwater was measured between about 5.98 to 6.85 feet bgs, with corresponding groundwater elevations ranging from about el 0.04 to el 0.81 NAVD88. The groundwater elevation is highest in the western part of the site and appears to flow southeast towards Coney Island Beach and the Lower New York Bay.
3. Historic Fill: Historic fill material was identified below surface cover to depths ranging from 2 to 10 feet bgs. Contaminants related to historic fill material were identified up to 12 feet bgs and include SVOCs, metals, and pesticides, which were detected at concentrations above UU, RURR and/or PG SCOs within this layer. The detected concentrations are generally typical of historic fill material in New York City, with the exception of SVOCs in SB-7, which may be related to the former site use in this location.
4. Groundwater: Concentrations of SVOCs identified above the SGVs are attributed to historic fill material. Dissolved metals in groundwater samples above SGVs and are characteristic of regional groundwater conditions. PAHs in groundwater may also be attributed to historical site use as an automobile repair/machine shop facility.
5. CVOC-Impacted Soil, Groundwater, and Soil Vapor: PCE impacts in soil and groundwater have been identified in the northwestern part of the site, and are attributed to potential on-site degreasing operations associated with the former manufacturing building in this area. PCE and its daughter products were also identified in soil vapor at higher concentrations in this area.
6. Sufficient analytical data were gathered during the RI, together with previous studies, to establish soil cleanup levels and 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 historic fill

impacted with metals, SVOCs, and pesticides and CVOC-impacted soil, groundwater, and soil vapor.

9.0 REFERENCES

1. Phase I ESA, prepared by Hillman Consulting LLC, dated 31 May 2018
2. Phase II Investigation Report prepared by Hillman Consulting LLC, dated 13 June 2018
3. Supplemental Soil Vapor Investigation Work Plan, prepared by Langan, dated November 17, 2020
4. Supplemental Soil Vapor Investigation Work Plan, prepared by Langan, dated February 24, 2021
5. New York State Department of Health, Final Guidance for the Evaluation of Soil Vapor Intrusion in the State of New York, dated October 2006, revised May 2017
6. New York State Department of Environmental Conservation, Division of Environmental Remediation, Draft Brownfield Cleanup Program Guide, dated May 2004
7. New York State Department of Environmental Conservation, DER-10 Technical Guidance for Site Investigation and Remediation, issued May 3, 2010; effective June 18, 2010
8. New York State Division of Water Technical and Operational Guidance Series (TOGS) (1.1.1) dated June 1998
9. United States Environmental Protection Agency, Low Flow Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, EQASOP-GW 001, January 19, 2010
10. New York State Department of Environmental Conservation, Part 375 of Title 6 of the New York Compilation of Codes, Rules, and Regulations, Effective December 14, 2006
11. Baskerville, Charles A. United States Geological Survey. “Bedrock and Engineering Geologic Maps of Bronx County and Parts of New York and Queens Counties, New York.” 1992
12. Federal Emergency Management Agency Flood Insurance Rate Map, (Map Number 3604970093, Panel 93, Suffix G), effective November 16, 1983 and revised December 5, 2013

TABLES

Table 1
Proposed Sample Summary
Remedial Investigation Work Plan

1607 Surf Avenue
Brooklyn, New York
Langan Project No. 170599501

SOIL									
No.	**Sample Name**	**Sample Type**	**Boring Location**	**Target Sample Depth**	**Date**	**Time**	**Sample Depth (feet bgs)**	**Rationale**	**Analysis**
1	SB-1_0-2_020620	Grab	SB-1	Upper 2 feet of historic fill	2/6/2020	9:55:00 AM	0 to 2	Site Wide Assessment Investigate AOC 1 and AOC 2	Part 375-list^2 of VOCs, SVOCs, PCBs, Pesticides/Herbicides*, Metals, 1,4-dioxane, and PFAS
2	SB-1_2-4_020620			Historic fill layer		10:05:00 AM	2 to 4		
3	SB-1_6-8_020620			Native soil layer and groundwater Interface		10:15:00 AM	6 to 8	Site Wide Assessment Investigate AOC 2	
4	SB-2_0-2_021120		SB-2	Upper 2 feet of historic fill	2/11/2020	2:50:00 PM	0 to 2	Site Wide Assessment Investigate AOC 1 and AOC 5	
5	SB-2_6-8_021120			Historic fill layer and groundwater interface		3:00:00 PM	6 to 8		
6	SB-3_0-2_020720		SB-3	Upper 2 feet of historic fill	2/7/2020	8:50:00 AM	0 to 2		
7	SB-3_6-8_020720			Native soil layer and groundwater Interface		9:00:00 AM	6 to 8	Site Wide Assessment Investigate AOC 5	
8	SB-3_9-11_020720			Saturated native soil layer		9:10:00 AM	9 to 11		
9	SB-4_0-2_020620		SB-4	Upper 2 feet of historic fill	2/6/2020	11:25:00 AM	0 to 2	Site Wide Assessment Investigate AOC 1, AOC 2, AOC 4, and AOC 5	
10	SB-4_6-8_020620			Native soil layer and groundwater Interface		11:35:00 AM	6 to 8	Site Wide Assessment Investigate AOC 2, AOC 4, and AOC 5	
11	SB-4_10-12_020620			Saturated native soil layer		11:45:00 AM	10 to 12		
12	SB-5_0-2_020620		SB-5	Upper 2 feet of historic fill		8:00:00 AM	0 to 2	Site Wide Assessment Investigate AOC 1 and AOC 2	
13	SB-5_5-7_020620			Native soil layer and groundwater Interface		8:10:00 AM	5 to 7	Site Wide Assessment Investigate AOC 2	
14	SB-5_10-12_020620			Saturated native soil layer		8:20:00 AM	10 to 12		
15	SB-6_0-2_021120		SB-6	Upper 2 feet of historic fill	2/11/2020	8:20:00 AM	0 to 2	Site Wide Assessment Investigate AOC 1 and AOC 5	
16	SB-6_5-7_021120			Native soil layer and groundwater Interface		8:30:00 AM	5 to 7	Site Wide Assessment Investigate AOC 5	
17	SB-6_9-11_021120			Saturated native soil layer		8:40:00 AM	9 to 11		
18	SB-7_0-2_020720		SB-7	Upper 2 feet of historic fill	2/7/2020	11:30:00 AM	0 to 2	Site Wide Assessment Investigate AOC 1 and AOC 3	
19	SB-7_5-7_020720			Native soil layer and groundwater Interface		11:40:00 AM	5 to 7	Site Wide Assessment Investigate AOC 3	
20	SB-7_9-11_020720			Saturated native soil layer		11:50:00 AM	9 to 11		
21	SB-8_0-2_020620		SB-8	Upper 2 feet of historic fill	2/6/2020	12:40:00 PM	0 to 2	Site Wide Assessment Investigate AOC 1 and AOC 5	
22	SB-8_2-4_020620			Native soil layer and groundwater Interface		12:40:00 PM	2 to 4	Site Wide Assessment Investigate AOC 5	
23	SB-8_10-12_020620			Saturated native soil layer		12:50:00 PM	10 to 12		
24	SB-9_0-2_021120		SB-9	Upper 2 feet of historic fill	2/11/2020	2:05:00 PM	0 to 2	Site Wide Assessment Investigate AOC 1	
25	SB-9_6-8_021120			Native soil layer and groundwater Interface		2:15:00 PM	6 to 8	Site Wide Assessment	
26	SB-9_9-11_021120			Saturated native soil layer		2:25:00 PM	9 to 11		
27	SB-10_0-2_020620		SB-10	Upper 2 feet of historic fill	2/6/2020	2:40:00 PM	0 to 2	Site Wide Assessment Investigate AOC 1 and AOC 5	
28	SB-10_5-7_020620			Historic fill layer, native soil layer, and groundwater interface		2:50:00 PM	5 to 7		
29	SB-10_10-12_020620			Saturated native soil layer		3:00:00 PM	10 to 12	Site Wide Assessment Investigate AOC 5	
30	SB-11_0-2_021120		SB-11	Upper 2 feet of historic fill	2/11/2020	11:10:00 AM	0 to 2	Site Wide Assessment Investigate AOC 1	
31	SB-11_6-8_021120			Historic fill layer, native soil layer, and groundwater interface		11:20:00 AM	6 to 8		
32	SB-11_9-11_021120			Saturated native soil layer		11:30:00 AM	9 to 11	Site Wide Assessment	
33	SB-12_0-2_020720		SB-12	Upper 2 feet of historic fill	2/7/2020	1:10:00 PM	0 to 2	Site Wide Assessment Investigate AOC 1 and AOC 3	
34	SB-12_5-7_020720			Native soil layer and groundwater Interface		1:20:00 PM	5 to 7	Site Wide Assessment Investigate AOC 3	
35	SB-12_10-12_020720			Saturated native soil layer		1:30:00 PM	10 to 12		
36	SB-13_0-2_021020		SB-13	Upper 2 feet of historic fill	2/10/2020	8:20:00 AM	0 to 2	Site Wide Assessment Investigate AOC 1 and AOC 3	
37	SB-13_4-6_021020			Historic fill layer, native soil layer, and groundwater interface		8:30:00 AM	4 to 6		
38	SB-13_9-11_021020			Saturated native soil layer		8:40:00 AM	9 to 11	Site Wide Assessment Investigate AOC 3	
39	SB-14_0-2_021120		SB-14	Upper 2 feet of historic fill	2/11/2020	1:00:00 PM	0 to 2	Site Wide Assessment Investigate AOC 1 and AOC 5	
40	SB-14_6-8_021120			Native soil layer and groundwater Interface		1:10:00 PM	6 to 8	Site Wide Assessment Investigate AOC 5	
41	SB-14_9-11_021120			Saturated native soil layer		1:20:00 PM	9 to 11		
42	SB-15_0-2_021020		SB-15	Upper 2 feet of historic fill	2/10/2020	1:20:00 PM	0 to 2	Site Wide Assessment Investigate AOC 1	
43	SB-15_6-8_021020			Native soil layer and groundwater Interface		1:30:00 PM	6 to 8	Site Wide Assessment	
44	SB-15_10-12_021020			Saturated native soil layer		1:40:00 PM	10 to 12		
45	SB-16_0-2_021120		SB-16	Upper 2 feet of historic fill	2/11/2020	9:25:00 AM	0 to 2	Site Wide Assessment Investigate AOC 1	
46	SB-16_5-7_021120			Native soil layer and groundwater Interface		9:35:00 AM	5 to 7	Site Wide Assessment	
47	SB-16_9-11_021120			Saturated native soil layer		9:45:00 AM	9 to 11		
48	SB-17_0-2_020520		SB-17	Upper 2 feet of historic fill	2/5/2020	2:05:00 PM	0 to 2	Site Wide Assessment Investigate AOC 1	
49	SB-17_5-7_020520			Native soil layer and groundwater Interface		2:10:00 PM	5 to 7	Site Wide Assessment	
50	SB-17_9-11_020520			Saturated native soil layer		2:15:00 PM	9 to 11		
51	SB-18_0-2_020520		SB-18	Upper 2 feet of historic fill		12:05:00 PM	0 to 2	Site Wide Assessment Investigate AOC 1	
52	SB-18_2-4_020520			Historic fill layer		12:10:00 PM	2 to 4		
53	SB-18_10-12_020520			Saturated native soil layer		12:15:00 PM	10 to 12	Site Wide Assessment	
54	SB-19_0-2_020520		SB-19	Upper 2 feet of historic fill		11:00:00 AM	0 to 2	Site Wide Assessment Investigate AOC 1	
55	SB-19_2-4_020520			Historic fill layer		11:10:00 AM	2 to 4		
56	SB-19_6-8_020520			Native soil layer and groundwater Interface		11:15:00 AM	6 to 8	Site Wide Assessment	
57	SB-20_0-2_-2-520		SB-20	Upper 2 feet of historic fill		9:00:00 AM	0 to 2	Site Wide Assessment Investigate AOC 1	
58	SB20_2-4_020520			Historic fill layer		9:05:00 AM	2 to 4		
59	SB-20_6-8_020520			Native soil layer and groundwater Interface		9:10:00 AM	6 to 8	Site Wide Assessment	
60	SODUP01_020620	Duplicate	SB-1	Native soil layer and groundwater Interface	2/6/2020	10:15:00 AM	6 to 8	QA/QC	
61	SODUP02_021020		SB-15	Saturated native soil layer	2/10/2020	1:40:00 PM	10 to 12		
62	SODUP03_021120		SB-6		2/11/2020	8:40:00 AM	9 to 11		
63	SB-4_10-12_020620	MS/MSD	SB-4		2/6/2020	11:45:00 AM	10 to 12		
64	SB-11_9-11_021120		SB-11		2/11/2020	11:30:00 AM	9 to 11		
65	SB-16_9-11_021120		SB-16		2/11/2020	9:45:00 AM	9 to 11		
NA	FB01_020620	Field Blank	NA	NA	2/6/2020	3:30:00 PM	NA		
	FB02_021020				2/10/2020	3:05:00 PM	NA		
	FB03_021120				2/11/2020	3:30:00 PM	NA		
	TB01_020620	Trip Blank			2/6/2020	NA	NA		Part 375 VOCs
	TB02_021020				2/10/2020	NA	NA		
	TB03_021120				2/11/2020	NA	NA		

Table 1
Proposed Sample Summary
Remedial Investigation Work Plan

1607 Surf Avenue
Brooklyn, New York
Langan Project No. 170599501

GROUNDWATER

No.	Sample Name	Sample Type	Boring Location	Target Sample Depth	Date	Time	Well Screen Interval (feet bgs)	Rationale	Analysis
1	MW-1_021820	Grab	SB-1	Center of water column	2/18/2020	9:45:00 AM	2 to 12	Site Wide Assessment Investigate AOC 2	TCL VOCs and SVOCs, PCBs, TAL Metals (Total and Dissolved), Pesticides, Herbicides,1,4-dioxane, and PFAS
2	MW-2_021420		SB-3		2/14/2020	10:25:00 AM		Site Wide Assessment Investigate AOC 5	
3	MW-3_021820		SB-5		2/18/2020	12:20:00 PM		Site Wide Assessment Investigate AOC 2	
4	MW-4_021420		SB-7		2/14/2020	11:25:00 AM		Site Wide Assessment Investigate AOC 3	
5	MW-5_021820		SB-8		2/18/2020	1:45:00 PM		Site Wide Assessment Investigate AOC 5	
6	MW-6_021420		SB-9		2/14/2020	1:30:00 PM		Site Wide Assessment	
7	MW-7_021820		SB-10		2/18/2020	3:10:00 PM		Site Wide Assessment Investigate AOC 5	
8	MW-8_021920		SB-13		2/19/2020	9:30:00 AM		Site Wide Assessment Investigate AOC 3	
9	MW-9_021420		SB-15		2/14/2020	2:50:00 PM		Site Wide Assessment	
10	MW-10_021920		SB-17		2/19/2020	2:25:00 PM			
11	MW-11_021920		SB-18		2/19/2020	1:00:00 PM			
12	MW-12_021920		SB-20		2/19/2020	11:05:00 AM			
13	GWDUP01_021920	Duplicate	SB-13		2/19/2020	9:30:00 AM		QA/QC	
14	MW-1_021820	MS/MSD	SB-1		2/18/2020	9:45:00 AM			
15	GWFB01_021920	Field Blank	NA	NA	2/19/2020	2:55:00 PM	NA		
NA	GWTB01_021420	Trip Blank	NA		2/14/2020	NA			TCL VOCs
	GWTB02_021820	Trip Blank	NA		2/18/2020	NA			
	GWTB03_021920	Trip Blank	NA		2/19/2020	NA			

SOIL VAPOR AND AMBIENT AIR

No.	Sample Name	Sample Type	Boring Location	Target Sample Depth	Date	Time	Sample Depth (feet bgs)	Rationale	Analysis
1	SV-1_021220	Grab	SB-2	One to two feet above the groundwater interface	2/12/2020	11:27:00 AM	5	Site Wide Assessment Investigate AOC 5	TO-15 VOCs
2	SV-2_021320		SB-4		2/13/2020	10:43:00 AM		Site Wide Assessment Investigate AOC 2, AOC 4, and AOC 5	
3	SV-3_021220		SB-5		2/12/2020	2:17:00 PM		Site Wide Assessment Investigate AOC 2	
4	SV-4_021220		SB-6			11:55:00 AM		Site Wide Assessment Investigate AOC 5	
5	SV-5_021220		SB-7			12:53:00 PM		Site Wide Assessment Investigate AOC 3	
6	SV-6_021320		SB-8		2/13/2020	11:36:00 AM		Site Wide Assessment Investigate AOC 5	
7	SV-7_021220		SB-9		2/12/2020	10:46:00 AM		Site Wide Assessment	
8	SV-8_021220		SB-11			10:41:00 AM			
9	SV-9_021220		SB-12			11:15:00 AM		Site Wide Assessment Investigate AOC 3	
10	SV-10_021320		SB-14		2/13/2020	12:27:00 PM		Site Wide Assessment Investigate AOC 5	
11	SV-11_021220		SB-15		2/12/2020	1:36:00 PM		Site Wide Assessment	
12	SV-12_021220		SB-16			1:14:00 PM			
13	SV-13_021320		SB-17		2/13/2020	10:26:00 AM			
14	SV-14_021320		SB-18			1:00:00 PM			
15	SV-15_021320		SB-19			10:14:00 AM			
16	SV-16_120320		NA		12/3/2020	1:43:00 PM		Site Wide Assessment Potential for Off-Site Soil Vapor Impacts Assessment	
17	SV-17_120320		NA			12:34:00 PM			
18	SV-18_120320		NA			12:12:00 PM			
19	SV-19_120320		NA			12:01:00 PM			
20	SV-20_120320		NA			11:57:00 PM			
21	SV-21_120320		NA			2:01:00 PM			
22	SV-22_120320		NA			1:33:00 PM			
23	DUP01_120320	Duplicate	NA			12:34:00 PM			
24	SV-23_030221		NA		3/2/2021	1:38:00 PM			
25	SV-24_030221		NA			1:36:00 PM			
26	DUP-01_030221	Duplicate	NA			1:36:00 PM			
27	SV-25_030221		NA			1:49:00 PM			
28	AA01_021220	Grab	AA01	NA	2/12/2020	1:07:00 PM	NA	Ambient Air Quality	
29	AA02_021320		AA02		2/13/2020	11:45:00 AM			
30	AA01_120320		AA01		12/3/2020	1:27:00 PM			
31	AA-01_030221		AA01		3/2/2021	1:39:00 PM			

Areas of Concern (AOCs):

AOC-1	Historic Fill
AOC-2	Historical Manufacturing Facility
AOC-3	Historical Automobile Repair and Machine Shop
AOC-4	PCE and TCE Impacted Soil Vapor
AOC-5	Historical Site Use of Adjoining Properties

Notes:

1. AOC 1 encompasses the entire site footprint
2. Soil samples to be analyzed for New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules and Regulations (6 NYCRR) Part 375-list compounds.
5. VOC = volatile organic compound
6. SVOC = semivolatile organic compound
7. PCB = polychlorinated biphenyl
8. TCL = Target Compound List
9. TAL = Target Analyte List
10. QA/QC = quality assurance/quality control
11. NA = not applicable
12. PFAS = perfluorinated chemicals

Table 2
Monitoring Well Construction Summary

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Well ID	Date Installed	Equipment Used	Associated Soil Boring	Inner Well Diameter (inches)	Total Well Depth (feet bgs)	Screened Interval (feet bgs)	Screen Length (feet)	Screen Material	Riser Interval (feet bgs)	Riser Material	Sand Pack Interval (feet bgs)	Bentonite Seal Interval (feet bgs)	Top of Riser Elevation (NAVD88)
MW-1	2/6/2020	Geoprobe 7822 DT with 4-inch Hollow Stem Auger	SB-1	2	12	2 to 12	10	0.01-inch slotted PVC	0.25 to 2	PVC	1.5 to 12	1 to 1.5	6.70
MW-2	2/7/2020	Geoprobe 7822 DT with 4-inch Hollow Stem Auger	SB-3	2	12	2 to 12	10	0.01-inch slotted PVC	0.22 to 2	PVC	1.5 to 12	1 to 1.5	6.80
MW-3	2/6/2020	Geoprobe 7822 DT with 4-inch Hollow Stem Auger	SB-5	2	12	2 to 12	10	0.01-inch slotted PVC	0.27 to 2	PVC	1.5 to 12	1 to 1.5	7.44
MW-4	2/7/2020	Geoprobe 7822 DT with 4-inch Hollow Stem Auger	SB-7	2	12	2 to 12	10	0.01-inch slotted PVC	0.23 to 2	PVC	1.5 to 12	1 to 1.5	6.92
MW-5	2/6/2020	Geoprobe 7822 DT with 4-inch Hollow Stem Auger	SB-8	2	12	2 to 12	10	0.01-inch slotted PVC	0.5 to 2	PVC	1.5 to 12	1 to 1.5	7.10
MW-6	2/11/2020	Geoprobe 7822 DT with 4-inch Hollow Stem Auger	SB-9	2	12	2 to 12	10	0.01-inch slotted PVC	0.35 to 2	PVC	1.5 to 12	1 to 1.5	7.36
MW-7	2/6/2020	Geoprobe 7822 DT with 4-inch Hollow Stem Auger	SB-10	2	12	2 to 12	10	0.01-inch slotted PVC	0.26 to 2	PVC	1.5 to 12	1 to 1.5	7.05
MW-8	2/10/2020	Geoprobe 7822 DT with 4-inch Hollow Stem Auger	SB-13	2	12	2 to 12	10	0.01-inch slotted PVC	0.45 to 2	PVC	1.5 to 12	1 to 1.5	6.87
MW-9	2/10/2020	Geoprobe 7822 DT with 4-inch Hollow Stem Auger	SB-15	2	12	2 to 12	10	0.01-inch slotted PVC	0.33 to 2	PVC	1.5 to 12	1 to 1.5	7.22
MW-10	2/5/2020	Geoprobe 7822 DT with 4-inch Hollow Stem Auger	SB-17	2	12	2 to 12	10	0.01-inch slotted PVC	0.32 to 2	PVC	1.5 to 12	1 to 1.5	7.62
MW-11	2/5/2020	Geoprobe 7822 DT with 4-inch Hollow Stem Auger	SB-18	2	12	2 to 12	10	0.01-inch slotted PVC	0.26 to 2	PVC	1.5 to 12	1 to 1.5	7.02
MW-12	2/5/2020	Geoprobe 7822 DT with 4-inch Hollow Stem Auger	SB-20	2	12	2 to 12	10	0.01-inch slotted PVC	0.22 to 2	PVC	1.5 to 12	1 to 1.5	6.89

Notes:
1. PVC = Polyvinyl Chloride
2. bgs = below ground surface
3. NAVD88 = North American Vertical Datum of 1988
4. Well elevations are based on a survey performed by Langan on 20 February 2020.
5. All elevations are in reference to the North American Vertical Datum of 1988 (NAVD88).

Table 3
Groundwater Elevation Data

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Well ID	Well Elevation	Depth to Water	Groundwater Elevation	PID reading (ppm)
MW-1	6.70	5.98	0.72	1.6
MW-2	6.80	6.54	0.26	0.0
MW-3	7.44	6.74	0.70	0.0
MW-4	6.92	6.65	0.27	0.2
MW-5	7.10	6.29	0.81	0.8
MW-6	7.36	6.78	0.58	0.0
MW-7	7.05	6.28	0.77	0.3
MW-8	6.87	6.63	0.24	0.0
MW-9	7.22	6.72	0.50	0.0
MW-10	7.62	6.83	0.79	0.0
MW-11	7.02	6.39	0.63	0.0
MW-12	6.89	6.85	0.04	0.0

Notes:

1. PID = Photoionization Detection
2. Well elevations are based on a survey performed by Langan on 20 February 2020.
3. All elevations are referenced to the North American Vertical Datum of 1988 (NAVD88).
4. Well elevations and depth to water readings were measured to a marked location at the top of each well casing.
5. Depth to water readings are measured in feet below top of the well casing.
6. Depth to water readings were taken on 20 February 2020.
7. PID readings were taken during groundwater sample collection between 14 February 2020 and 19 February 2020.

Table 4
Soil Summary Report
Soil Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	**NYSDEC Part 375 Unrestricted Use SCOs**	**NYSDEC Part 375 Restricted Use Residential SCOs**	**NYSDEC Part 375 Protection of Groundwater**	**SB-1**		**SB-1**		**SB-1**		**SB-1**		**SB-2**		**SB-2**		**SB-3**		**SB-3**		**SB-3**		**SB-4**		**SB-4**		**SB-4**	
Sample ID				**SB-1_0-2_020620**		**SB-1_2-4_020620**		**SB-1_6-8_020620**		**SODUP01_020620**		**SB-2_0-2_021120**		**SB-2_6-8_021120**		**SB-3_0-2_020720**		**SB-3_6-8_020720**		**SB-3_9-11_020720**		**SB-4_0-2_020620**		**SB-4_6-8_020620**		**SB-4_10-12_020620**	
Laboratory ID				**L2005543-16**		**L2005543-17**		**L2005543-18**		**L2005543-28**		**L2006176-16**		**L2006176-17**		**L2005791-01**		**L2005791-02**		**L2005791-03**		**L2005543-19**		**L2005543-20**		**L2005543-21**	
Sample Date				**2/6/2020**		**2/6/2020**		**2/6/2020**		**2/6/2020**		**2/11/2020**		**2/11/2020**		**2/7/2020**		**2/7/2020**		**2/7/2020**		**2/6/2020**		**2/6/2020**		**2/6/2020**	
Sample Depth (feet bgs)				**0-2**		**2-4**		**6-8**		**6-8**		**0-2**		**6-8**		**0-2**		**6-8**		**9-11**		**0-2**		**6-8**		**10-12**	
Volatile Organic Compounds (mg/kg)																											
1,2,4,5-Tetramethylbenzene	~	~	~	0.0022	UJ	0.66	U	0.0024	U	0.0022	U	0.0023	U	0.016	J	0.0021	UJ	0.0023	U	0.0022	U	0.11	UJ	0.0022	U	0.002	U
1,2-Dichlorobenzene	1.1	100	1.1	0.0022	UJ	0.66	U	0.0024	U	0.0022	U	0.0023	U	0.047	J	0.0021	UJ	0.0023	U	0.0022	U	0.11	UJ	0.0022	U	0.002	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	52	8.4	0.0022	UJ	0.66	U	0.0024	UJ	0.0022	U	0.0023	U	0.17	U	0.0021	UJ	0.0023	U	0.0022	U	0.11	UJ	0.0022	UJ	0.002	UJ
1,4-Dichlorobenzene	1.8	13	1.8	0.0022	UJ	0.66	U	0.0024	U	0.0022	U	0.0023	U	0.071	J	0.0021	UJ	0.0023	U	0.0022	U	0.11	UJ	0.0022	U	0.002	U
1,4-Diethyl Benzene	~	~	~	0.0022	U	0.66	U	0.0024	U	0.0022	U	0.0023	U	0.024	J	0.0021	U	0.0023	U	0.0022	U	0.11	U	0.0022	U	0.002	U
2-Hexanone	~	~	~	0.011	U	3.3	U	0.012	U	0.011	U	0.012	U	0.85	U	0.01	U	0.011	U	0.011	U	0.53	U	0.011	U	0.01	U
Acetone	0.05	100	0.05	0.011	U	*3.3*	U	0.012	U	0.011	U	0.011	J	*0.85*	U	0.01	UJ	0.011	UJ	0.011	UJ	*0.53*	U	0.011	U	0.025	
Benzene	0.06	4.8	0.06	0.00056	U	*0.16*	U	0.00059	U	0.00055	U	0.00058	U	0.042	U	0.00052	U	0.00057	U	0.00055	U	0.026	U	0.00055	U	0.0005	U
Carbon Disulfide	~	~	~	0.011	UJ	3.3	U	0.012	UJ	0.011	U	0.012	U	0.85	U	0.01	UJ	0.011	UJ	0.011	UJ	0.53	UJ	0.011	UJ	0.01	UJ
Chloroform	0.37	49	0.37	0.00019	J	*0.49*	U	0.0018	U	0.0016	U	0.0017	U	0.13	U	0.00089	J	0.0017	U	0.0016	U	0.08	U	0.0016	U	0.0015	U
Cis-1,2-Dichloroethene	0.25	100	0.25	0.0011	U	*0.33*	U	0.0012	U	0.0011	U	0.0012	U	0.085	U	0.001	U	0.0011	U	0.0011	U	0.16	J	0.0023		0.0016	
Cymene	~	~	~	0.0011	UJ	0.33	U	0.0012	U	0.0011	U	0.0012	U	0.085	U	0.001	UJ	0.0011	U	0.0011	U	0.053	UJ	0.0011	U	0.001	U
Ethylbenzene	1	41	1	0.0011	UJ	0.33	U	0.0012	UJ	0.0011	U	0.0012	U	0.085	U	0.001	U	0.0011	U	0.0011	U	0.053	UJ	0.0011	UJ	0.001	UJ
M,P-Xylene	~	~	~	0.0022	U	0.66	U	0.0024	U	0.0022	U	0.0023	U	0.17	U	0.0021	U	0.0023	U	0.0022	U	0.11	U	0.0022	U	0.002	U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	0.011	U	*3.3*	U	0.012	U	0.011	U	0.012	U	*0.85*	U	0.01	U	0.011	U	0.011	U	*0.53*	U	0.011	U	0.01	U
Naphthalene	12	100	12	0.0045	UJ	1.3	U	0.0048	U	0.0044	U	0.0046	U	2.3		0.0042	UJ	0.0045	U	0.0044	U	0.21	UJ	0.0044	U	0.004	U
o-Xylene (1,2-Dimethylbenzene)	~	~	~	0.0011	U	0.33	U	0.0012	U	0.0011	U	0.0012	U	0.085	U	0.001	U	0.0011	U	0.0011	U	0.053	U	0.0011	U	0.001	U
Tetrachloroethene (PCE)	1.3	19	1.3	0.0013	J	**75**		0.0058	J	0.012	J	0.00073	J	0.042	UJ	0.0012	J	0.00057	U	0.00055	U	0.24	J	0.017		0.0025	
Toluene	0.7	100	0.7	0.002	J	0.33	U	0.0012	UJ	0.0011	U	0.0012	U	0.085	U	0.001	U	0.0011	U	0.0011	U	0.053	UJ	0.0011	UJ	0.001	UJ
Total 1,2-Dichloroethene (Cis and Trans)	~	~	~	0.0011	U	0.33	U	0.0012	U	0.0011	U	0.0012	U	0.085	U	0.001	U	0.0011	U	0.0011	U	0.16	J	0.0023		0.0016	
Total Xylenes	0.26	100	1.6	0.0011	U	*0.33*	U	0.0012	U	0.0011	U	0.0012	U	0.085	U	0.001	U	0.0011	U	0.0011	U	0.053	U	0.0011	U	0.001	U
Trans-1,2-Dichloroethene	0.19	100	0.19	0.0017	U	*0.49*	U	0.0018	U	0.0016	U	0.0017	U	0.13	U	0.0016	U	0.0017	U	0.0016	U	0.08	U	0.0016	U	0.0015	U
Trichloroethene (TCE)	0.47	21	0.47	0.00056	U	0.29		0.00059	U	0.00036	J	0.00058	U	0.042	U	0.00052	U	0.00057	U	0.00055	U	0.026	U	0.0018		0.00028	J
Semivolatile Organic Compounds (mg/kg)																											
2-Methylnaphthalene	~	~	~	4.1	U	0.32	J	0.22	U	0.23	U	2.1	U	1.2	J	2.1	U	0.24	U	0.25	U	6.1	U	0.23	U	0.25	U
3 & 4 Methylphenol (m&p Cresol)	0.33	100	0.33	*5*	U	*2.7*	U	0.27	U	0.28	U	*2.6*	U	*3*	U	*2.6*	U	0.28	U	0.3	U	*7.3*	U	0.28	U	0.3	U
Acenaphthene	20	100	98	2.8	U	0.8	J	0.15	U	0.16	U	1.4	U	5.6		1.4	U	0.16	U	0.17	U	4.1	U	0.16	U	0.16	U
Acenaphthylene	100	100	107	2.8	U	0.51	J	0.15	U	0.16	U	1.4	U	4.1		1.4	U	0.16	U	0.17	U	4.1	U	0.16	U	0.16	U
Anthracene	100	100	1000	2.1	U	2.3		0.11	U	0.12	U	1.1	U	14		1.1	U	0.12	U	0.13	U	3	U	0.12	U	0.12	U
Benzo(a)Anthracene	1	1	1	*2.1*	U	**5.8**		0.065	J	0.1	J	*1.1*	U	**36**		0.4	J	0.12	U	0.13	U	*3*	U	0.12	U	0.12	U
Benzo(a)Pyrene	1	1	22	*2.8*	U	**5.4**		0.075	J	0.099	J	*1.4*	U	**34**		0.49	J	0.16	U	0.17	U	*4.1*	U	0.16	U	0.16	U
Benzo(b)Fluoranthene	1	1	1.7	*2.1*	U	**7**		0.1	J	0.12		*1.1*	U	**43**		0.62	J	0.12	U	0.13	U	*3*	U	0.12	U	0.12	U
Benzo(g,h,i)Perylene	100	100	1000	2.8	U	3.4		0.057	J	0.07	J	1.4	U	19		0.46	J	0.16	U	0.17	U	4.1	U	0.16	U	0.16	U
Benzo(k)Fluoranthene	0.8	3.9	1.7	*2.1*	U	**2.6**		0.033	J	0.053	J	*1.1*	U	**15**		*1.1*	U	0.12	U	0.13	U	*3*	U	0.12	U	0.12	U
Benzyl Butyl Phthalate	~	~	~	3.4	U	1.9	U	0.19	U	0.19	U	1.8	U	2.1	U	1.8	U	0.2	U	0.21	U	5.1	U	0.2	U	0.2	U
Biphenyl (Diphenyl)	~	~	~	7.9	U	4.3	U	0.42	U	0.44	U	4.1	U	4.8	U	4	U	0.45	U	0.48	U	12	U	0.44	U	0.47	U
Bis(2-Ethylhexyl) Phthalate	~	~	~	3.4	U	1.9	U	0.19	U	0.19	U	1.8	U	2.1	U	1.8	U	0.2	U	0.21	U	5.1	U	0.2	U	0.2	U
Carbazole	~	~	~	3.4	U	1.5	J	0.19	U	0.19	U	1.8	U	3.9		1.8	U	0.2	U	0.21	U	5.1	U	0.2	U	0.2	U
Chrysene	1	3.9	1	*2.1*	U	**5.3**		0.07	J	0.11	J	*1.1*	U	**32**		0.45	J	0.12	U	0.13	U	*3*	U	0.12	U	0.12	U
Dibenz(a,h)Anthracene	0.33	0.33	1000	*2.1*	U	**0.88**	J	0.11	U	0.12	U	*1.1*	U	**4.3**		*1.1*	U	0.12	U	0.13	U	*3*	U	0.12	U	0.12	U
Dibenzofuran	7	59	210	3.4	U	0.69	J	0.19	U	0.19	U	1.8	U	2.8		1.8	U	0.2	U	0.21	U	5.1	U	0.2	U	0.2	U
Di-N-Butyl Phthalate	~	~	~	3.4	U	0.62	J	0.19	U	0.19	U	1.8	U	2.1	U	1.8	U	0.2	U	0.21	U	5.1	U	0.2	U	0.2	U
Fluoranthene	100	100	1000	2.1	U	12		0.13		0.2		1.1	U	74		0.73	J	0.12	U	0.13	U	3	U	0.12	U	0.12	U
Fluorene	30	100	386	3.4	U	0.87	J	0.19	U	0.19	U	1.8	U	5.9		1.8	U	0.2	U	0.21	U	5.1	U	0.2	U	0.2	U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	8.2	*2.8*	U	**3.7**		0.054	J	0.07	J	*1.4*	U	**21**		0.37	J	0.16	U	0.17	U	*4.1*	U	0.16	U	0.16	U
Naphthalene	12	100	12	3.4	U	0.72	J	0.19	U	0.19	U	1.8	U	3.4		1.8	U	0.2	U	0.21	U	5.1	U	0.2	U	0.2	U
Pentachlorophenol	0.8	6.7	0.8	*2.8*	U	*1.5*	U	0.15	U	0.16		*1.4*	U	*1.7*	U	*1.4*	U	0.16	UJ	0.17	UJ	*4.1*	U	0.16	U	0.16	U
Phenanthrene	100	100	1000	2.1	U	9.5		0.084	J	0.14		1.1	U	45		0.5	J	0.12	U	0.13	U	3	U	0.12	U	0.12	U
Phenol	0.33	100	0.33	*3.4*	U	*1.9*	U	0.19	U	0.19	U	*1.8*	U	*2.1*	U	*1.8*	U	0.2	U	0.21	U	*5.1*	U	0.2	U	0.2	U
Pyrene	100	100	1000	2.1	U	9.8		0.12	J	0.22	J	1.1	U	61		0.69	J	0.12	U	0.13	U	3	U	0.12	U	0.12	U

Notes provided on Page 11.

Table 4
Soil Summary Report
Soil Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Residential SCOs	NYSDEC Part 375 Protection of Groundwater	SB-1 SB-1_0-2_020620 L2005543-16 2/6/2020 0-2	SB-1 SB-1_2-4_020620 L2005543-17 2/6/2020 2-4	SB-1 SB-1_6-8_020620 L2005543-18 2/6/2020 6-8	SB-1 SODUP01_020620 L2005543-28 2/6/2020 6-8	SB-2 SB-2_0-2_021120 L2006176-16 2/11/2020 0-2	SB-2 SB-2_6-8_021120 L2006176-17 2/11/2020 6-8	SB-3 SB-3_0-2_020720 L2005791-01 2/7/2020 0-2	SB-3 SB-3_6-8_020720 L2005791-02 2/7/2020 6-8	SB-3 SB-3_9-11_020720 L2005791-03 2/7/2020 9-11	SB-4 SB-4_0-2_020620 L2005543-19 2/6/2020 0-2	SB-4 SB-4_6-8_020620 L2005543-20 2/6/2020 6-8	SB-4 SB-4_10-12_020620 L2005543-21 2/6/2020 10-12
Pesticides (mg/kg)															
4,4'-DDD	0.0033	13	14	*0.0163* U	**0.00494**	0.00174 U	0.00182 U	*0.0168* U	**0.00748** J	*0.00823* UJ	0.00183 UJ	0.00198 UJ	*0.0158* U	0.00179 U	0.0019 U
4,4'-DDE	0.0033	8.9	17	*0.0163* U	**0.00398**	0.00174 U	0.00182 U	*0.0168* U	**0.0116** J	0.00268 J	0.00183 UJ	0.00198 UJ	*0.0158* U	0.00179 U	0.0019 U
4,4'-DDT	0.0033	7.9	136	*0.0306* U	**0.0112**	0.00327 U	*0.00341* U	*0.0314* U	**0.00799** J	*0.0154* UJ	*0.00343* UJ	*0.0037* UJ	*0.0297* U	*0.00336* U	*0.00356* U
Alpha Chlordane	0.094	4.2	2.9	0.0204 U	0.00103 J	0.00218 U	0.00227 U	0.0209 U	0.00252 U	0.0103 U	0.00229 U	0.00247 U	0.0198 U	0.00224 U	0.00237 U
Chlordane (alpha and gamma)	~	~	~	0.136 U	0.0151 U	0.0145 U	0.0151 U	0.14 U	0.0168 U	0.0686 U	0.0152 U	0.0165 U	0.132 U	0.0149 U	0.0158 U
Dieldrin	0.005	0.2	0.1	*0.0102* U	0.00113 U	0.00109 U	0.00114 U	*0.0105* U	0.00126 U	*0.00514* UJ	0.00114 UJ	0.00124 UJ	*0.00991* U	0.00112 U	0.00119 U
Gamma Chlordane	~	~	~	0.0204 U	0.00145 J	0.00218 U	0.00227 U	0.0209 U	0.00252 U	0.0103 UJ	0.00229 UJ	0.00247 UJ	0.0198 U	0.00224 U	0.00237 U
Heptachlor	0.042	2.1	0.38	0.00815 U	0.000905 U	0.000871 U	0.000909 U	0.00838 U	0.00101 U	0.00411 UJ	0.000916 UJ	0.000988 UJ	0.00793 U	0.000896 U	0.00095 U
Heptachlor Epoxide	~	~	~	0.0306 U	0.00339 U	0.00327 U	0.00341 U	0.0314 U	0.00378 U	0.0154 U	0.00343 U	0.0037 U	0.0297 U	0.00336 U	0.00356 U
Toxaphene	~	~	~	0.306 U	0.0339 U	0.0327 U	0.0341 U	0.314 UJ	0.0378 UJ	0.154 U	0.0343 U	0.037 U	0.297 U	0.0336 U	0.0356 U
Herbicides (mg/kg)				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls (mg/kg)															
PCB-1242 (Aroclor 1242)	~	~	~	0.0348 U	0.038 U	0.0364 U	0.0376 U	0.0343 U	0.04 U	0.0339 U	0.0375 U	0.0409 U	0.0328 U	0.0384 U	0.0396 U
PCB-1254 (Aroclor 1254)	~	~	~	0.00586 J	0.0277 J	0.0364 U	0.0376 U	0.0343 U	0.0193 J	0.0339 U	0.0375 U	0.0409 U	0.0328 U	0.0384 U	0.0396 U
PCB-1260 (Aroclor 1260)	~	~	~	0.0348 U	0.0366 J	0.0364 U	0.0376 U	0.0343 U	0.0174 J	0.0181 J	0.0375 U	0.0409 U	0.0328 U	0.0384 U	0.0396 U
PCB-1268 (Aroclor 1268)	~	~	~	0.0348 U	0.038 U	0.0364 U	0.0376 U	0.0343 U	0.04 U	0.0339 U	0.0375 U	0.0409 U	0.0328 U	0.0384 U	0.0396 U
Total PCBs	0.1	1	3.2	0.00586 J	0.0643 J	0.0364 U	0.0376 U	0.0343 U	0.0367 J	0.0181 J	0.0375 U	0.0409 U	0.0328 U	0.0384 U	0.0396 U
Inorganics (mg/kg)															
Aluminum	~	~	~	1,830	3,430	549	550	997	6,260	1,750	602	918	1,140	620	887
Antimony	~	~	~	0.606 J	3.47 J	2.91 J	2.5 J	4.28 U	0.916 J	0.632 J	4.54 U	5.05 U	0.553 J	4.7 U	4.66 U
Arsenic	13	16	16	2.19	5.11	0.361 J	0.907 UJ	1.34	4.9	1.52	0.717 J	0.788 J	1.88	0.357 J	0.55 J
Barium	350	400	820	9.07	**730**	5.96 J	7.61 J	9.21	**356**	17.2	6.18	2.4	7.9	3.71	3.54
Beryllium	7.2	72	47	0.083 J	0.281 J	0.035 J	0.454 UJ	0.094 J	0.376 J	0.186 J	0.045 J	0.061 J	0.087 J	0.038 J	0.466 U
Cadmium	2.5	4.3	7.5	0.158 J	**10.4**	0.088 J	0.907 UJ	0.855 U	0.224 J	0.186 J	0.908 U	1.01 U	0.134 J	0.103 J	0.932 U
Calcium	~	~	~	90,800	28,300	414 J	404 J	94,200	36,400	17,000	444	233	106,000	369	719 J
Chromium, Hexavalent	1	110	19	0.843 U	0.926 U	0.901 U	0.938 U	0.87 U	0.394 J	0.857 U	0.394 J	*1.02* U	0.833 U	0.944 U	0.991 UJ
Chromium, Total	~	~	~	5.33	11.9	4.51 J	3.34 J	2.65	18.1	6.44	4.27	2.55	3.4 U	3.64 U	5.94
Chromium, Trivalent	~	~	~	5.3	12	4.5 J	3.3 J	2.6	18 J	6.4	3.9 J	2.6	3.4	3.6	5.9
Cobalt	~	~	~	2.67	3.68	0.563 J	0.517 J	1.51 J	3.51	3.62	0.608 J	0.889 J	2.13	0.648 J	0.997 J
Copper	50	270	1720	12.9	39.6	2.07 J	3.93 J	6.83	42.8	17.9	1.71	1.82	6.51	0.705 J	1.78
Cyanide	27	27	40	0.96 U	0.48 J	1.1 U	1.1 U	1 UJ	0.43 J	1 UJ	1.1 UJ	1.2 UJ	1 U	1.1 U	1.2 U
Iron	~	~	~	5,790	10,100	1,100 J	1,080 J	3,760	8,850	10,600	1,380	1,830	4,640	1,200	2,010
Lead	63	400	450	7.7	**3,110**	28.6 J	38.1 J	11.5	**193**	22.3	5.29	0.92 J	6.2	1.9 J	1.4 J
Magnesium	~	~	~	41,500	10,000	230 J	245 J	50,300	3,460	9,620	259	436	47,400	267	492
Manganese	1600	2000	2000	109	181	12.8 J	11.8 J	93.3	156	55.8	15.7	13.8	107	15.4	19
Mercury	0.18	0.81	0.73	0.086 U	**0.262**	0.081 U	0.094 U	0.069 U	0.113	0.077 U	0.096 U	0.101 U	0.07 U	0.097 U	0.1 U
Nickel	30	310	130	4.99	15.1	2.2 UJ	1.26 J	3.12	16.9	6.38	1.1 J	3.71	3.98	2.35 U	4.07
Potassium	~	~	~	281	457	105 J	114 J	298	612	501	110 J	137 J	280	112 J	167 J
Selenium	3.9	180	4	0.614 J	0.416 J	1.76 UJ	0.272 J	1.71 U	2.04 U	1.62 U	1.82 U	2.02 U	0.435 J	1.88 U	1.86 U
Silver	2	180	8.3	0.83 U	0.462 J	0.88 U	0.907 U	0.855 U	1.02 U	0.81 U	0.908 U	1.01 U	0.79 U	0.94 U	0.932 U
Sodium	~	~	~	220	181 U	176 UJ	33.8 J	81.9 J	505	102 J	27.2 J	47.3 J	252	188 U	66.8 J
Vanadium	~	~	~	36.3	20.8	2.69	2.55	19.4	19.8	29.9	3.63	3.76	25.8	3.06	3.67
Zinc	109	10000	2480	30.1	**619**	52.8	57.2	13.7	**361**	78.8	56.6	16	14.9	42.6	28.9
General Chemistry (%)															
Solids, Percent	~	~	~	94.9	86.4	88.8	85.3	91.9	78.6	93.3	83.8	78.1	96	84.7	80.7
Total Solids	~	~	~	94.9	86.4	88.8	85.3	91.9	78.6	93.3	83.8	78.1	96	84.7	80.7

Notes provided on Page 11.

Table 4
Soil Summary Report
Soil Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Residential SCOs	NYSDEC Part 375 Protection of Groundwater	SB-5		SB-5		SB-5		SB-6		SB-6		SB-6		SB-6		SB-7		SB-7		SB-7		SB-8		SB-8		SB-8	
Sample ID				SB-5_0-2_020620		SB-5_5-7_020620		SB-5_10-12_020620		SB-6_0-2_021120		SB-6_5-7_021120		SB-6_9-11_021120		SODUP03_021120		SB-7_0-2_020720		SB-7_5-7_020720		SB-7_9-11_020720		SB-8_0-2_020620		SB-8_5-7_020620		SB-8_10-12_020620	
Laboratory ID				L2005543-13		L2005543-14		L2005543-15		L2006176-01		L2006176-02		L2006176-03		L2006176-20		L2005791-04		L2005791-05		L2005791-06		L2005543-22		L2005543-23		L2005543-24	
Sample Date				2/6/2020		2/6/2020		2/6/2020		2/11/2020		2/11/2020		2/11/2020		2/11/2020		2/7/2020		2/7/2020		2/7/2020		2/6/2020		2/6/2020		2/6/2020	
Sample Depth (feet bgs)				0-2		5-7		10-12		0-2		5-7		9-11		9-11		0-2		5-7		9-11		0-2		5-7		10-12	
Volatile Organic Compounds (mg/kg)																													
1,2,4,5-Tetramethylbenzene	~	~	~	0.0023	UJ	0.0025	U	0.002	U	0.0021	U	0.0019	U	0.002	U	0.0022	U	0.0028	UJ	0.0024	U	0.0024	U	0.0021	UJ	0.0024	U	0.002	U
1,2-Dichlorobenzene	1.1	100	1.1	0.0023	UJ	0.0025	U	0.002	U	0.0021	U	0.0019	U	0.002	U	0.0022	U	0.0028	UJ	0.0024	U	0.0024	U	0.0021	UJ	0.0024	U	0.002	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	52	8.4	0.0023	UJ	0.0025	UJ	0.002	UJ	0.0021	U	0.0019	U	0.002	U	0.0022	U	0.0028	UJ	0.0024	U	0.0024	U	0.0021	UJ	0.0024	U	0.002	U
1,4-Dichlorobenzene	1.8	13	1.8	0.0023	UJ	0.0025	U	0.002	U	0.0021	U	0.0019	U	0.002	U	0.0022	U	0.0028	UJ	0.0024	U	0.0024	U	0.0021	UJ	0.0024	U	0.002	U
1,4-Diethyl Benzene	~	~	~	0.0023	U	0.0025	U	0.002	U	0.0021	U	0.0019	U	0.002	U	0.0022	U	0.0028	U	0.0024	U	0.0024	U	0.0021	U	0.0024	U	0.002	U
2-Hexanone	~	~	~	0.012	U	0.012	U	0.01	U	0.011	U	0.0097	U	0.0099	U	0.011	U	0.014	U	0.012	U	0.012	U	0.0019	J	0.012	U	0.01	U
Acetone	0.05	100	0.05	0.022		0.012	U	0.011		0.025	J	0.0097	U	0.014	J	0.04	J	0.014	UJ	0.012	UJ	0.012	UJ	0.044	J	0.012	U	0.019	
Benzene	0.06	4.8	0.06	0.00058	U	0.00062	U	0.00051	U	0.00026	J	0.00048	U	0.00049	U	0.00055	U	0.0007	U	0.00059	U	0.00059	U	0.00052	U	0.00061	U	0.00051	U
Carbon Disulfide	~	~	~	0.012	UJ	0.012	UJ	0.01	UJ	0.011	U	0.0097	U	0.0099	UJ	0.024	J	0.014	UJ	0.012	UJ	0.012	UJ	0.01	U	0.012	U	0.0055	J
Chloroform	0.37	49	0.37	0.0018	U	0.0018	U	0.00039	J	0.0016	U	0.0014	U	0.0015	U	0.0016	U	0.0021	U	0.0018	U	0.0018	U	0.0016	U	0.0018	U	0.0015	U
Cis-1,2-Dichloroethene	0.25	100	0.25	0.0012	U	0.0012	U	0.001	U	0.0011	U	0.00097	U	0.00099	U	0.0011	U	0.0014	U	0.0012	U	0.0012	U	0.001	U	0.0012	U	0.001	U
Cymene	~	~	~	0.0012	UJ	0.0012	U	0.001	U	0.0011	U	0.00097	U	0.00099	U	0.0011	U	0.0014	UJ	0.0012	U	0.0012	U	0.001	UJ	0.0012	U	0.001	U
Ethylbenzene	1	41	1	0.0012	UJ	0.0012	UJ	0.001	UJ	0.0011	U	0.00097	U	0.00099	U	0.0011	U	0.0014	U	0.0012	U	0.0012	U	0.001	U	0.0012	U	0.001	U
M,P-Xylene	~	~	~	0.0023	U	0.0025	U	0.002	U	0.0021	U	0.0019	U	0.002	U	0.0022	U	0.0028	U	0.0024	U	0.0024	U	0.0021	U	0.0024	U	0.002	U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	0.012	U	0.012	U	0.01	U	0.011	U	0.0097	U	0.0099	UJ	0.0059	J	0.014	U	0.012	U	0.012	U	0.012	J	0.012	U	0.0038	J
Naphthalene	12	100	12	0.0047	UJ	0.0049	U	0.0041	U	0.0042	U	0.0039	U	0.004	U	0.0044	U	0.0014	J	0.0047	U	0.0047	U	0.0042	UJ	0.0049	U	0.0041	U
o-Xylene (1,2-Dimethylbenzene)	~	~	~	0.0012	U	0.0012	U	0.001	U	0.0011	U	0.00097	U	0.00099	U	0.0011	U	0.0014	U	0.0012	U	0.0012	U	0.001	U	0.0012	U	0.001	U
Tetrachloroethene (PCE)	1.3	19	1.3	0.00058	U	0.00062	U	0.00051	U	0.00053	UJ	0.00048	UJ	0.00049	UJ	0.00055	UJ	0.0007	U	0.00059	U	0.00059	U	0.00052	U	0.00061	U	0.00051	U
Toluene	0.7	100	0.7	0.0012	UJ	0.0012	UJ	0.001	UJ	0.0011	U	0.00097	U	0.00099	U	0.0011	U	0.0014	U	0.0012	U	0.0012	U	0.001	U	0.0012	U	0.001	U
Total 1,2-Dichloroethene (Cis and Trans)	~	~	~	0.0012	U	0.0012	U	0.001	U	0.0011	U	0.00097	U	0.00099	U	0.0011	U	0.0014	U	0.0012	U	0.0012	U	0.001	U	0.0012	U	0.001	U
Total Xylenes	0.26	100	1.6	0.0012	U	0.0012	U	0.001	U	0.0011	U	0.00097	U	0.00099	U	0.0011	U	0.0014	U	0.0012	U	0.0012	U	0.001	U	0.0012	U	0.001	U
Trans-1,2-Dichloroethene	0.19	100	0.19	0.0018	U	0.0018	U	0.0015	U	0.0016	U	0.0014	U	0.0015	U	0.0016	U	0.0021	U	0.0018	U	0.0018	U	0.0016	U	0.0018	U	0.0015	U
Trichloroethene (TCE)	0.47	21	0.47	0.00058	U	0.00062	U	0.00051	U	0.00053	U	0.00048	U	0.00049	U	0.00055	U	0.0007	U	0.00059	U	0.00059	U	0.00052	U	0.00061	U	0.00051	U
Semivolatile Organic Compounds (mg/kg)																													
2-Methylnaphthalene	~	~	~	2	U	0.22	U	0.24	U	2.2	U	0.024	J	0.24	U	0.25	U	3.7		0.21	U	0.24	U	6.1	U	0.22	U	0.24	U
3 & 4 Methylphenol (m&p Cresol)	0.33	100	0.33	*2.4*	U	0.27	U	0.29	U	*2.6*	U	0.27	U	0.28	U	0.3	U	**0.6**	J	0.26	U	0.29	U	*7.3*	U	0.27	U	0.29	U
Acenaphthene	20	100	98	1.4	U	0.15	U	0.022	J	1.4	U	0.06	J	0.16	U	0.16	U	10		0.14	U	0.037	J	4.1	U	0.15	U	0.16	U
Acenaphthylene	100	100	107	1.4	U	0.15	U	0.16	U	1.4	U	0.15	U	0.16	U	0.16	U	0.3	J	0.14	U	0.16	U	4.1	U	0.15	U	0.16	U
Anthracene	100	100	1000	1	U	0.11	U	0.046	J	1.1	U	0.16		0.12	U	0.12	U	14		0.11	U	0.055	J	3	U	0.11	U	0.12	U
Benzo(a)Anthracene	1	1	1	1	U	0.095	J	0.14		0.24	J	0.51		0.065	J	0.072	J	**22**		0.023	J	0.09	J	*3*	U	0.11	U	0.023	J
Benzo(a)Pyrene	1	1	22	*1.4*	U	0.086	J	0.12	J	*1.4*	U	0.54		0.073	J	0.076	J	**21**		0.14	U	0.083	J	*4.1*	U	0.15	U	0.16	U
Benzo(b)Fluoranthene	1	1	1.7	1	U	0.12		0.15		0.34	J	0.66		0.09	J	0.16	J	**26**		0.11	U	0.098	J	*3*	U	0.11	U	0.12	U
Benzo(g,h,i)Perylene	100	100	1000	1.4	U	0.054	J	0.057	J	0.25	J	0.32		0.046	J	0.054	J	12		0.14	U	0.046	J	4.1	U	0.15	U	0.16	U
Benzo(k)Fluoranthene	0.8	3.9	1.7	*1*	U	0.046	J	0.058	J	*1.1*	U	0.22		0.033	J	0.049	J	**8.2**		0.11	U	0.041	J	*3*	U	0.11	U	0.12	U
Benzyl Butyl Phthalate	~	~	~	1.7	U	0.19	U	0.2	U	1.8	U	0.19	U	0.2	U	0.2	U	1.9	U	0.18	U	0.2	U	5.1	U	0.19	U	0.2	U
Biphenyl (Diphenyl)	~	~	~	3.9	U	0.43	U	0.46	U	4.2	U	0.43	U	0.45	U	0.47	U	0.9	J	0.4	U	0.47	U	12	U	0.42	U	0.46	U
Bis(2-Ethylhexyl) Phthalate	~	~	~	1.7	U	0.19	U	0.2	U	1.8	U	0.19	U	0.2	U	0.2	U	1.9	U	0.18	U	0.2	U	5.1	U	0.19	U	0.2	U
Carbazole	~	~	~	1.7	U	0.19	U	0.2	U	1.8	U	0.11	J	0.2	U	0.2	U	7.3		0.18	U	0.028	J	5.1	U	0.19	U	0.2	U
Chrysene	1	3.9	1	1	U	0.1	J	0.12		0.28	J	0.53		0.076	J	0.22	J	**19**		0.018	J	0.08	J	*3*	U	0.11	U	0.12	U
Dibenz(a,h)Anthracene	0.33	0.33	1000	*1*	U	0.11	U	0.12	U	*1.1*	U	0.077	J	0.12	UJ	0.044	J	**3.2**		0.11	U	0.12	U	*3*	U	0.11	U	0.12	U
Dibenzofuran	7	59	210	1.7	U	0.19	U	0.022	J	1.8	U	0.06	J	0.2	U	0.2	U	5.4		0.18	U	0.02	J	5.1	U	0.19	U	0.2	U
Di-N-Butyl Phthalate	~	~	~	1.7	U	0.19	U	0.2	U	1.8	U	0.19	U	0.2	U	0.2	U	1.9	U	0.18	U	0.2	U	5.1	U	0.19	U	0.2	U
Fluoranthene	100	100	1000	1	U	0.21		0.28		0.46	J	1.3		0.14		0.11	J	48		0.044	J	0.2		3	U	0.11	U	0.041	J
Fluorene	30	100	386	1.7	U	0.19	U	0.2	U	1.8	U	0.081	J	0.2	U	0.2	U	8.7		0.18	U	0.033	J	5.1	U	0.19	U	0.2	U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	8.2	*1.4*	U	0.056	J	0.056	J	*1.4*	U	0.35		0.048	J	0.049	J	**13**		0.14	U	0.053	J	*4.1*	U	0.15	U	0.16	U
Naphthalene	12	100	12	1.7	U	0.19	U	0.028	J	1.8	U	0.037	J	0.2	U	0.2	U	**15**		0.18	U	0.049	J	5.1	U	0.19	U	0.2	U
Pentachlorophenol	0.8	6.7	0.8	*1.4*	U	0.15	U	0.16	U	*1.4*	U	0.15	U	0.16	U	0.16	U	*1.5*	UJ	0.14	UJ	0.16	UJ	*4.1*	U	0.15	U	0.16	U
Phenanthrene	100	100	1000	1	U	0.13		0.14		0.22	J	1		0.072	J	0.062	J	47		0.044	J	0.19		3	U	0.11	U	0.024	J
Phenol	0.33	100	0.33	*1.7*	U	0.19	U	0.2	U	*1.8*	U	0.19	U	0.2	U	0.2	U	0.29	J	0.18	U	0.2	U	*5.1*	U	0.19	U	0.2	U
Pyrene	100	100	1000	1	U	0.17		0.26		0.42	J	1		0.14		0.16		37		0.034	J	0.15		3	U	0.11	U	0.036	J

Notes provided on Page 11.

Table 4
Soil Summary Report
Soil Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	**NYSDEC Part 375 Unrestricted Use SCOs**	**NYSDEC Part 375 Restricted Use Residential SCOs**	**NYSDEC Part 375 Protection of Groundwater**	**SB-5 SB-5_0-2_020620 L2005543-13 2/6/2020 0-2**		**SB-5 SB-5_5-7_020620 L2005543-14 2/6/2020 5-7**		**SB-5 SB-5_10-12_020620 L2005543-15 2/6/2020 10-12**		**SB-6 SB-6_0-2_021120 L2006176-01 2/11/2020 0-2**		**SB-6 SB-6_5-7_021120 L2006176-02 2/11/2020 5-7**		**SB-6 SB-6_9-11_021120 L2006176-03 2/11/2020 9-11**		**SB-6 SODUP03_021120 L2006176-20 2/11/2020 9-11**		**SB-7 SB-7_0-2_020720 L2005791-04 2/7/2020 0-2**		**SB-7 SB-7_5-7_020720 L2005791-05 2/7/2020 5-7**		**SB-7 SB-7_9-11_020720 L2005791-06 2/7/2020 9-11**		**SB-8 SB-8_0-2_020620 L2005543-22 2/6/2020 0-2**		**SB-8 SB-8_5-7_020620 L2005543-23 2/6/2020 5-7**		**SB-8 SB-8_10-12_020620 L2005543-24 2/6/2020 10-12**	
Pesticides (mg/kg)																													
4,4'-DDD	0.0033	13	14	*0.0157*	U	0.00179	U	0.00197	U	*0.0174*	U	0.00175	U	0.00188	U	0.00194	U	**0.0286**	J	0.00164	UJ	0.00187	UJ	*0.0158*	U	0.0017	U	0.00186	UJ
4,4'-DDE	0.0033	8.9	17	*0.0157*	U	0.00179	U	0.00197	U	*0.0174*	U	0.00215		0.00188	U	0.00194	U	**0.163**	J	0.00164	UJ	0.00105	J	*0.0158*	U	0.0017	U	0.00186	UJ
4,4'-DDT	0.0033	7.9	136	*0.0294*	U	*0.00336*	U	*0.0037*	U	*0.0326*	U	**0.00374**		*0.00353*	U	*0.00364*	U	**0.242**	J	0.00308	UJ	*0.0035*	UJ	*0.0297*	U	0.00318	U	*0.00349*	U
Alpha Chlordane	0.094	4.2	2.9	0.0196	U	0.00224	U	0.00247	U	0.0218	U	0.00219	U	0.00235	U	0.00243	U	0.0116	U	0.00205	U	0.00233	U	0.0198	U	0.00212	U	0.00233	U
Chlordane (alpha and gamma)	~	~	~	0.131	U	0.015	U	0.0164	U	0.145	U	0.0146	U	0.0157	U	0.0162	U	0.0771	U	0.0137	U	0.0156	U	0.132	U	0.0141	U	0.0155	U
Dieldrin	0.005	0.2	0.1	*0.0098*	U	0.00112	U	0.00123	U	*0.0109*	U	0.0011	U	0.00118	U	0.00121	U	*0.00578*	UJ	0.00102	UJ	0.00117	UJ	*0.00989*	U	0.00106	U	0.00116	UJ
Gamma Chlordane	~	~	~	0.0196	U	0.00224	U	0.00247	U	0.0218	U	0.00219	U	0.00235	U	0.00243	U	0.0116	UJ	0.00205	UJ	0.00233	UJ	0.0198	U	0.00212	U	0.00233	U
Heptachlor	0.042	2.1	0.38	0.00784	U	0.000897	U	0.000987	U	0.0087	U	0.000877	U	0.000941	U	0.000971	U	0.00462	UJ	0.00082	UJ	0.000933	UJ	0.00791	U	0.000848	U	0.000931	U
Heptachlor Epoxide	~	~	~	0.0294	U	0.00336	U	0.0037	U	0.0326	U	0.00329	U	0.00353	U	0.00364	U	0.0173	U	0.00308	U	0.0035	U	0.0297	U	0.00318	U	0.00349	U
Toxaphene	~	~	~	0.294	U	0.135	P	0.037	U	0.326	UJ	0.0329	UJ	0.0353	UJ	0.0364	U	0.173	U	0.0308	U	0.035	U	0.297	U	0.0318	U	0.0349	U
Herbicides (mg/kg)				ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Polychlorinated Biphenyls (mg/kg)																													
PCB-1242 (Aroclor 1242)	~	~	~	0.0329	U	0.0376	U	0.0408	U	0.0363	U	0.0366	U	0.04	U	0.0409	U	0.0381	U	0.0343	U	0.0405	U	0.0337	U	0.0362	U	0.0388	U
PCB-1254 (Aroclor 1254)	~	~	~	0.0036	J	0.0376	U	0.0408	U	0.0363	U	0.0366	U	0.04	U	0.0409	U	0.0381	U	0.0343	U	0.0405	U	0.0337	U	0.0362	U	0.0388	U
PCB-1260 (Aroclor 1260)	~	~	~	0.0329	U	0.0376	U	0.0408	U	0.0623		0.0366	U	0.04	U	0.0409	U	0.00917	J	0.0343	U	0.0405	U	0.0337	U	0.0362	U	0.0388	U
PCB-1268 (Aroclor 1268)	~	~	~	0.0329	U	0.0376	U	0.0408	U	0.0363	U	0.0366	U	0.04	U	0.0409	U	0.0381	U	0.0343	U	0.0405	U	0.0337	U	0.0362	U	0.0388	U
Total PCBs	0.1	1	3.2	0.0036	J	0.0376	U	0.0408	U	0.0623		0.0366	U	0.04	U	0.0409	U	0.00917	J	0.0343	U	0.0405	U	0.0337	U	0.0362	U	0.0388	U
Inorganics (mg/kg)																													
Aluminum	~	~	~	1,330		1,460		1,580		1,740		2,720		918	J	1,050	J	1,880		470		911		1,830		448		1,100	
Antimony	~	~	~	0.669	J	4.5	U	0.598	J	4.48	U	4.43	U	4.79	U	4.99	U	0.556	J	4.18	U	4.73	U	3.94	U	4.43	U	4.68	U
Arsenic	13	16	16	2.28		1.33		1.46		1.85		2.13		0.738	J	0.838	J	2.89		0.669	J	0.7	J	2.93		0.248	J	0.804	J
Barium	350	400	820	9		8.01		5.62		16.2		27.1		6.82	J	8.59	J	19.7		2.07		2.59		9.94		5.51		3.66	
Beryllium	7.2	72	47	0.074	J	0.072	J	0.08	J	0.143	J	0.097	J	0.479	UJ	0.04	J	0.188	J	0.034	J	0.038	J	0.095	J	0.443	U	0.468	U
Cadmium	2.5	4.3	7.5	0.149	J	0.135	J	0.997	U	0.895	U	0.886	U	0.959	U	0.998	U	0.17	J	0.837	U	0.946	U	0.789	U	0.886	U	0.935	U
Calcium	~	~	~	101,000		1,200		1,410		104,000		8,780		1,030	J	3,020	J	28,700		318		347		89,400		331		488	
Chromium, Hexavalent	1	110	19	0.826	U	0.913	U	1	U	0.902	U	0.915	U	0.368	J	0.468	J	0.942	U	0.865	U	0.989	U	0.838	U	0.901	U	0.966	U
Chromium, Total	~	~	~	2.45	U	4.64		4.4		4.53		7.44		6.71	J	5.26	J	4.88		2.85		2.9		4.27		3.18		5.58	
Chromium, Trivalent	~	~	~	2.4		4.6		4.4		4.5		7.4		6.3	J	4.8	J	4.9		2.8		2.9		4.3		3.2		5.6	
Cobalt	~	~	~	2.77		1.4	J	1.52	J	2.44		1.93		0.92	J	1.06	J	3.24		0.536	J	0.871	J	2.86		0.425	J	1.19	J
Copper	50	270	1720	25		3.65		3.54		20.1		10.7		3.81	J	5.06	J	12		0.477	J	1.08		23.6		0.496	J	1.76	
Cyanide	27	27	40	0.95	U	1	U	1.2	U	1.1	UJ	1.1	UJ	1.2	UJ	1.2	UJ	1.2	UJ	1.1	UJ	1.2	UJ	1	U	1.1	U	1.2	U
Iron	~	~	~	6,570		3,740		3,890		5,890		5,100		2,010	J	2,380	J	9,460		1,160		1,930		6,550		889		2,640	
Lead	63	400	450	6.25		14.1		16.6		18.9		27.5		22		25.6		22.2		1.66	J	1.6	J	8.75		1.9	J	1.91	J
Magnesium	~	~	~	44,300		672		849		46,400		2,020		503	J	714	J	14,300		208		431		44,000		210		610	
Manganese	1600	2000	2000	117		55.2		42.5		120		68.5		22.5	J	31.2	J	64.9		15.6		17		96.4		13.7		33.1	
Mercury	0.18	0.81	0.73	0.081	U	0.089	U	0.092	U	0.071	U	0.059	J	0.077	UJ	**0.366**	J	0.075	U	0.075	U	0.091	U	0.083	U	0.076	U	0.087	U
Nickel	30	310	130	3.98		4.82		5.26		5.23		7.05		3.28		3		6.16		0.82	J	3.34		5.08		1.02	J	3.84	
Potassium	~	~	~	374		340		339		353		484		190	J	208	J	535		90.4	J	165	J	353		90.2	J	236	
Selenium	3.9	180	4	0.487	J	1.8	U	1.99	U	0.242	J	1.77	U	1.92	U	2	U	1.79	U	1.67	U	0.274	J	0.26	J	1.77	U	1.87	U
Silver	2	180	8.3	0.826	U	0.9	U	0.997	U	0.895	U	0.886	U	0.959	U	0.998	U	0.896	U	0.837	U	0.946	U	0.789	U	0.886	U	0.935	U
Sodium	~	~	~	229		180	U	222		124	J	70.2	J	102	J	109	J	97.7	J	27.1	J	99.7	J	262		34.4	J	195	
Vanadium	~	~	~	25.4		5.38		5.82		19.8		8.72		5.38		5.65		29.4		3		3.6		35.2		2.86		4.2	
Zinc	109	10000	2480	15.6		14.2		18.1		88.7		34		15.5		19.3		32		8.78		7.22		15.2		11.5		11.3	
General Chemistry (%)																													
Solids, Percent	~	~	~	96.8		87.6		79.8		88.7		87.4		81.6		79.1		84.9		92.5		80.9		95.4		88.8		82.8	
Total Solids	~	~	~	96.8		87.6		79.8		88.7		87.4		81.6		79.1		84.9		92.5		80.9		95.4		88.8		82.8	

Notes provided on Page 11.

Table 4
Soil Summary Report
Soil Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	**NYSDEC Part 375 Unrestricted Use SCOs**	**NYSDEC Part 375 Restricted Use Residential SCOs**	**NYSDEC Part 375 Protection of Groundwater**	**SB-9**		**SB-9**		**SB-9**		**SB-10**		**SB-10**		**SB-10**		**SB-11**		**SB-11**		**SB-11**		**SB-12**		**SB-12**		**SB-12**	
Sample ID				**SB-9_0-2_021120**		**SB-9_6-8_021120**		**SB-9_9-11_021120**		**SB-10_0-2_020620**		**SB-10_5-7_020620**		**SB-10_10-12_020620**		**SB-11_0-2_021120**		**SB-11_6-8_021120**		**SB-11_9-11_021120**		**SB-12_0-2_020720**		**SB-12_5-7_020720**		**SB-12_10-12_020720**	
Laboratory ID				**L2006176-13**		**L2006176-14**		**L2006176-15**		**L2005543-25**		**L2005543-26**		**L2005543-27**		**L2006176-07**		**L2006176-08**		**L2006176-09**		**L2005791-07**		**L2005791-08**		**L2005791-09**	
Sample Date				**2/11/2020**		**2/11/2020**		**2/11/2020**		**2/6/2020**		**2/6/2020**		**2/6/2020**		**2/11/2020**		**2/11/2020**		**2/11/2020**		**2/7/2020**		**2/7/2020**		**2/7/2020**	
Sample Depth (feet bgs)				**0-2**		**6-8**		**9-11**		**0-2**		**5-7**		**10-12**		**0-2**		**6-8**		**9-11**		**0-2**		**5-7**		**10-12**	
Volatile Organic Compounds (mg/kg)																											
1,2,4,5-Tetramethylbenzene	~	~	~	0.0022	U	0.0021	U	0.0023	U	0.0024	U	0.0021	U	0.0024	U	0.002	U	0.0022	U	0.0023	U	0.0021	UJ	0.0022	U	0.0022	U
1,2-Dichlorobenzene	1.1	100	1.1	0.0022	U	0.0021	U	0.0023	U	0.0024	U	0.0021	U	0.0024	U	0.002	U	0.0022	U	0.0023	U	0.0021	UJ	0.0022	U	0.0022	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	52	8.4	0.0022	U	0.0021	U	0.0023	U	0.0024	U	0.0021	U	0.0024	U	0.002	U	0.0022	U	0.0023	U	0.0021	UJ	0.0022	U	0.0022	U
1,4-Dichlorobenzene	1.8	13	1.8	0.0022	U	0.0021	U	0.0023	U	0.0024	U	0.0021	U	0.0024	U	0.002	U	0.0022	U	0.0023	U	0.0021	UJ	0.0022	U	0.0022	U
1,4-Diethyl Benzene	~	~	~	0.0022	U	0.0021	U	0.0023	U	0.0024	U	0.0021	U	0.0024	U	0.002	U	0.0022	U	0.0023	U	0.0021	U	0.0022	U	0.0022	U
2-Hexanone	~	~	~	0.011	U	0.011	U	0.011	U	0.012	U	0.011	U	0.012	U	0.0098	U	0.011	U	0.012	U	0.011	U	0.011	U	0.011	U
Acetone	0.05	100	0.05	0.014	J	0.011	U	0.011	U	0.036		0.011	U	0.013		0.0098	U	0.025		0.0079	J	0.011	UJ	0.011	UJ	0.011	UJ
Benzene	0.06	4.8	0.06	0.00055	U	0.00054	U	0.00056	U	0.00061	U	0.00054	U	0.00061	U	0.00049	U	0.00056	U	0.00058	U	0.00053	U	0.00056	U	0.00055	U
Carbon Disulfide	~	~	~	0.011	U	0.011	U	0.011	U	0.012	U	0.011	U	0.012	U	0.0098	U	0.011	U	0.012	U	0.011	UJ	0.011	UJ	0.011	UJ
Chloroform	0.37	49	0.37	0.0002	J	0.0016	U	0.0017	U	0.0018	U	0.0016	U	0.0018	U	0.0015	U	0.0017	U	0.0017	U	0.0002	J	0.0017	U	0.0016	U
Cis-1,2-Dichloroethene	0.25	100	0.25	0.0011	U	0.0011	U	0.0011	U	0.0012	U	0.0011	U	0.0012	U	0.00098	U	0.0011	U	0.0012	U	0.0011	U	0.0011	U	0.0011	U
Cymene	~	~	~	0.0011	U	0.0011	U	0.0011	U	0.0012	U	0.0011	U	0.0012	U	0.00098	U	0.0011	U	0.0012	U	0.0011	UJ	0.0011	U	0.0011	U
Ethylbenzene	1	41	1	0.0011	U	0.0011	U	0.0011	U	0.0012	U	0.0011	U	0.0012	U	0.00098	U	0.0011	U	0.0012	U	0.0011	U	0.0011	U	0.0011	U
M,P-Xylene	~	~	~	0.0022	U	0.0021	U	0.0023	U	0.0024	U	0.0021	U	0.0024	U	0.002	U	0.0022	U	0.0023	U	0.0021	U	0.0022	U	0.0022	U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	0.011	U	0.011	U	0.011	U	0.0077	J	0.011	U	0.012	U	0.0098	U	0.0037	J	0.012	U	0.011	U	0.011	U	0.011	U
Naphthalene	12	100	12	0.0044	U	0.0011	J	0.0045	U	0.0049	U	0.0043	U	0.0049	U	0.0039	U	0.0045	U	0.0046	U	0.0043	UJ	0.0044	U	0.0044	U
o-Xylene (1,2-Dimethylbenzene)	~	~	~	0.0011	U	0.0011	U	0.0011	U	0.0012	U	0.0011	U	0.0012	U	0.00098	U	0.0011	U	0.0012	U	0.0011	U	0.0011	U	0.0011	U
Tetrachloroethene (PCE)	1.3	19	1.3	0.00055	UJ	0.00054	UJ	0.00056	UJ	0.00061	U	0.00054	U	0.00061	U	0.00049	UJ	0.00056	UJ	0.00058	UJ	0.00053	U	0.00056	U	0.00055	U
Toluene	0.7	100	0.7	0.0011	U	0.0011	U	0.0011	U	0.00066	J	0.0011	U	0.0012	U	0.00098	U	0.0011	U	0.0012	U	0.0011	U	0.0011	U	0.0011	U
Total 1,2-Dichloroethene (Cis and Trans)	~	~	~	0.0011	U	0.0011	U	0.0011	U	0.0012	U	0.0011	U	0.0012	U	0.00098	U	0.0011	U	0.0012	U	0.0011	U	0.0011	U	0.0011	U
Total Xylenes	0.26	100	1.6	0.0011	U	0.0011	U	0.0011	U	0.0012	U	0.0011	U	0.0012	U	0.00098	U	0.0011	U	0.0012	U	0.0011	U	0.0011	U	0.0011	U
Trans-1,2-Dichloroethene	0.19	100	0.19	0.0016	U	0.0016	U	0.0017	U	0.0018	U	0.0016	U	0.0018	U	0.0015	U	0.0017	U	0.0017	U	0.0016	U	0.0017	U	0.0016	U
Trichloroethene (TCE)	0.47	21	0.47	0.00055	U	0.00054	U	0.00056	U	0.00061	U	0.00054	U	0.00061	U	0.00049	U	0.00056	U	0.00058	U	0.00053	U	0.00056	U	0.00055	U
Semivolatile Organic Compounds (mg/kg)																											
2-Methylnaphthalene	~	~	~	2.1	U	0.24	U	0.24	U	6.2	U	0.065	J	0.25	U	2.1	U	0.07	J	0.24	U	2.1	U	0.21	U	0.24	U
3 & 4 Methylphenol (m&p Cresol)	0.33	100	0.33	*2.5*	U	0.28	U	0.29	U	*7.4*	U	0.25	U	0.3	U	*2.6*	U	0.28	U	0.28	U	*2.6*	U	0.25	U	0.29	U
Acenaphthene	20	100	98	1.4	U	0.16	U	0.16	U	4.1	U	0.22		0.17	U	1.4	U	0.13	J	0.16	U	1.4	U	0.14	U	0.16	U
Acenaphthylene	100	100	107	1.4	U	0.16		0.16	U	4.1	U	0.17		0.17	U	1.4	U	0.18		0.16	U	1.4	U	0.14	U	0.16	U
Anthracene	100	100	1000	1	U	0.073	J	0.12	U	3.1	U	0.87		0.13	U	1.1	U	0.35		0.12	U	1.1	U	0.1	U	0.12	U
Benzo(a)Anthracene	1	1	1	1	U	0.33		0.025	J	*3.1*	U	**2.1**		0.13	U	0.58	J	**1.3**		0.12	U	**1.2**		0.1	U	0.12	U
Benzo(a)Pyrene	1	1	22	*1.4*	U	0.32		0.16	U	*4.1*	U	**1.9**		0.17	U	0.52	J	**1.2**		0.16	U	**1.3**	J	0.14	U	0.16	U
Benzo(b)Fluoranthene	1	1	1.7	1	U	0.48		0.12	U	*3.1*	U	**2.4**		0.13	U	0.68	J	**1.6**		0.12	U	**1.5**		0.1	U	0.12	U
Benzo(g,h,i)Perylene	100	100	1000	1.4	U	0.2		0.16	U	4.1	U	1.3		0.17	U	0.39	J	0.71		0.16	U	0.85	J	0.14	U	0.16	U
Benzo(k)Fluoranthene	0.8	3.9	1.7	*1*	U	0.17		0.12	U	*3.1*	U	**0.88**		0.13	U	*1.1*	U	0.47		0.12	U	0.54	J	0.1	U	0.12	U
Benzyl Butyl Phthalate	~	~	~	1.7	U	0.2	U	0.2	U	5.1	U	0.044	J	0.21	U	1.8	U	0.2	U	0.2	U	1.8	U	0.17	U	0.2	U
Biphenyl (Diphenyl)	~	~	~	3.9	U	0.45	U	0.46	U	12	U	0.4	U	0.48	U	4	U	0.45	U	0.45	U	4.1	U	0.39	U	0.46	U
Bis(2-Ethylhexyl) Phthalate	~	~	~	1.7	U	0.2	U	0.2	U	5.1	U	0.18	U	0.21	U	1.8	U	0.2	U	0.2	U	1.8	U	0.17	U	0.2	U
Carbazole	~	~	~	1.7	U	0.041	J	0.2	U	5.1	U	0.32		0.21	U	1.8	U	0.18	J	0.2	U	1.8	U	0.17	U	0.2	U
Chrysene	1	3.9	1	1	U	0.34		0.021	J	*3.1*	U	**2**		0.13	U	0.52	J	**1.2**		0.12	U	**1.1**		0.1	U	0.12	U
Dibenz(a,h)Anthracene	0.33	0.33	1000	*1*	U	0.06	J	0.12	U	*3.1*	U	0.29		0.13	U	*1.1*	U	0.19		0.12	U	*1.1*	U	0.1	U	0.12	U
Dibenzofuran	7	59	210	1.7	U	0.036	J	0.2	U	5.1	U	0.18		0.21	U	1.8	U	0.17	J	0.2	U	1.8	U	0.17	U	0.2	U
Di-N-Butyl Phthalate	~	~	~	1.7	U	0.2	U	0.2	U	5.1	U	0.052	J	0.21	U	1.8	U	0.2	U	0.2	U	1.8	U	0.17	U	0.2	U
Fluoranthene	100	100	1000	1	U	0.75		0.051	J	3.1	U	4.2		0.13	U	0.88	J	2.7		0.12	U	2.3		0.1	U	0.12	U
Fluorene	30	100	386	1.7	U	0.04	J	0.2	U	5.1	U	0.23		0.21	U	1.8	U	0.29		0.2	U	1.8	U	0.17	U	0.2	U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	8.2	*1.4*	U	0.24		0.16	U	*4.1*	U	**1.2**		0.17	U	0.39	J	**0.76**		0.16	U	**0.82**	J	0.14	U	0.16	U
Naphthalene	12	100	12	1.7	U	0.034	J	0.2	U	5.1	U	0.13	J	0.21	U	1.8	U	0.29		0.2	U	1.8	U	0.17	U	0.2	U
Pentachlorophenol	0.8	6.7	0.8	*1.4*	U	0.16	U	0.16	U	*4.1*	U	0.14	U	0.17	U	*1.4*	U	0.16	U	0.16	U	*1.4*	U	0.14	UJ	0.16	U
Phenanthrene	100	100	1000	1	U	0.43		0.028	J	3.1	U	3.4		0.13	U	0.3	J	1.5		0.12	U	1.1		0.1	U	0.12	U
Phenol	0.33	100	0.33	*1.7*	U	0.2	U	0.2	U	*5.1*	U	0.18	U	0.21	U	*1.8*	U	0.2	U	0.2	U	*1.8*	U	0.17	U	0.2	U
Pyrene	100	100	1000	1	U	0.53		0.038	J	3.1	U	3.7		0.13	U	0.79	J	2.5		0.12	U	2.2		0.1	U	0.12	U

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Brooklyn, New York
Langan Project No.: 170599501

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	**NYSDEC Part 375 Unrestricted Use SCOs**	**NYSDEC Part 375 Restricted Use Residential SCOs**	**NYSDEC Part 375 Protection of Groundwater**	**SB-9 SB-9_0-2_021120 L2006176-13 2/11/2020 0-2**		**SB-9 SB-9_6-8_021120 L2006176-14 2/11/2020 6-8**		**SB-9 SB-9_9-11_021120 L2006176-15 2/11/2020 9-11**		**SB-10 SB-10_0-2_020620 L2005543-25 2/6/2020 0-2**		**SB-10 SB-10_5-7_020620 L2005543-26 2/6/2020 5-7**		**SB-10 SB-10_10-12_020620 L2005543-27 2/6/2020 10-12**		**SB-11 SB-11_0-2_021120 L2006176-07 2/11/2020 0-2**		**SB-11 SB-11_6-8_021120 L2006176-08 2/11/2020 6-8**		**SB-11 SB-11_9-11_021120 L2006176-09 2/11/2020 9-11**		**SB-12 SB-12_0-2_020720 L2005791-07 2/7/2020 0-2**		**SB-12 SB-12_5-7_020720 L2005791-08 2/7/2020 5-7**		**SB-12 SB-12_10-12_020720 L2005791-09 2/7/2020 10-12**	
Pesticides (mg/kg)																											
4,4'-DDD	0.0033	13	14	*0.0161*	U	**0.0067**		0.00192	U	*0.016*	U	0.00126	J	0.00196	UJ	*0.017*	U	**0.0127**		0.00186	U	*0.00849*	UJ	0.00156	UJ	0.00193	UJ
4,4'-DDE	0.0033	8.9	17	*0.0161*	U	**0.00794**		0.00192	U	*0.016*	U	**0.00598**		0.00131	J	*0.017*	U	**0.00609**		0.00186	U	*0.00849*	UJ	0.00156	UJ	0.00193	UJ
4,4'-DDT	0.0033	7.9	136	*0.0303*	U	**0.0118**		*0.00361*	U	*0.0301*	UJ	**0.00579**		*0.00368*	U	*0.0318*	U	0.00263	J	*0.00348*	U	**0.00785**	J	0.00293	UJ	*0.00362*	UJ
Alpha Chlordane	0.094	4.2	2.9	0.0202	U	0.00238	U	0.00241	U	0.0201	U	0.00202	U	0.00245	U	0.0212	U	0.00238	U	0.00232	U	0.0106	U	0.00196	U	0.00241	U
Chlordane (alpha and gamma)	~	~	~	0.134	U	0.0159	U	0.016	U	0.134	U	0.0134	U	0.0164	U	0.141	U	0.0159	U	0.0155	U	0.0707	U	0.013	U	0.0161	U
Dieldrin	0.005	0.2	0.1	*0.0101*	U	0.00119	U	0.0012	U	*0.01*	U	0.00101	U	0.00123	UJ	*0.0106*	U	0.00119	U	0.00116	U	0.00351	J	0.000978	UJ	0.00121	UJ
Gamma Chlordane	~	~	~	0.0202	U	0.00238	U	0.00241	U	0.0201	U	0.00152	J	0.00245	U	0.0212	U	0.00238	U	0.00232	U	0.0106	UJ	0.00196	UJ	0.00241	UJ
Heptachlor	0.042	2.1	0.38	0.00807	U	0.000953	U	0.000963	U	0.00802	U	0.000807	U	0.000982	U	0.00849	U	0.000954	U	0.000928	U	0.00424	UJ	0.000782	UJ	0.000966	UJ
Heptachlor Epoxide	~	~	~	0.0303	U	0.00357	U	0.00361	U	0.0301	U	0.00303	U	0.00368	U	0.0318	U	0.00358	U	0.00348	U	0.0159	U	0.00293	U	0.00362	U
Toxaphene	~	~	~	0.303	UJ	0.0357	UJ	0.0361	UJ	0.301	U	0.0303	U	0.0368	U	0.318	UJ	0.0358	UJ	0.0348	U	0.159	U	0.0293	U	0.0362	U
Herbicides (mg/kg)				ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Polychlorinated Biphenyls (mg/kg)																											
PCB-1242 (Aroclor 1242)	~	~	~	0.0339	U	0.0382	U	0.0406	U	0.033	UJ	0.034	U	0.0408	U	0.0347	U	0.0194	J	0.0383	U	0.0339	U	0.0334	U	0.0397	U
PCB-1254 (Aroclor 1254)	~	~	~	0.0339	U	0.0382	U	0.0406	U	0.033	UJ	0.034	U	0.0408	U	0.0347	U	0.0395	U	0.0383	U	0.0339	U	0.0334	U	0.0397	U
PCB-1260 (Aroclor 1260)	~	~	~	0.0142	J	0.0382	U	0.0406	U	0.033	UJ	0.034	U	0.0408	U	0.0314	J	0.00823	J	0.0383	U	0.032	J	0.0334	U	0.0397	U
PCB-1268 (Aroclor 1268)	~	~	~	0.0339	U	0.0382	U	0.0406	U	0.033	UJ	0.034	U	0.0408	U	0.0347	U	0.0395	U	0.0383	U	0.0128	J	0.0334	U	0.0397	U
Total PCBs	0.1	1	3.2	0.0142	J	0.0382	U	0.0406	U	0.033	UJ	0.034	U	0.0408	U	0.0314	J	0.0276	J	0.0383	U	0.0448	J	0.0334	U	0.0397	U
Inorganics (mg/kg)																											
Aluminum	~	~	~	1,910		831		1,200		1,790		1,010		748		1,170		807		1,200		1,420		422		1,200	
Antimony	~	~	~	4	U	4.66	U	4.7	U	3.94	U	4.16	U	4.81	U	0.326	J	4.74	U	4.76	U	1.14	J	4.12	U	4.69	U
Arsenic	13	16	16	1.51		0.55	J	0.507	J	1.64		0.458	J	0.26	J	2.11		0.834	J	1.11		2.28		0.601	J	1.24	
Barium	350	400	820	16.7		12.8		4.17		8.79		7.41		2.97		16.5		19.2		4.28		36.9		2.2		3.24	
Beryllium	7.2	72	47	0.08	J	0.037	J	0.056	J	0.063	J	0.033	J	0.481	U	0.114	J	0.038	J	0.048	J	0.112	J	0.033	J	0.066	J
Cadmium	2.5	4.3	7.5	0.799	U	0.933	U	0.94	U	0.787	U	0.832	U	0.963	U	0.816	U	0.948	U	0.952	U	0.241	J	0.823	U	0.939	U
Calcium	~	~	~	91,000		2,740		321		93,600		5,490		282		93,200		2,240		428		33,000		325		367	
Chromium, Hexavalent	1	110	19	0.375	J	0.509	J	0.994	U	0.832	U	0.849	U	*1.02*	U	0.398	J	0.316	J	0.959	U	0.346	J	0.832	U	0.988	U
Chromium, Total	~	~	~	3.21		4.15		4.39		3.47		3.3		3.2		3.48		4.77		5.03		6.34		2.88		4.19	
Chromium, Trivalent	~	~	~	2.8	J	3.6	J	4.4		3.5		3.3		3.2		3.1	J	4.4	J	5		6	J	2.9		4.2	
Cobalt	~	~	~	2.86		0.737	J	1.15	J	3.4		1.6	J	0.684	J	2.47		0.73	J	0.771	J	2.08		0.518	J	1.34	J
Copper	50	270	1720	25		3		1.74		22.4		23.6		1.66		16.2		5.9		2.54		16.3		0.346	J	2.36	
Cyanide	27	27	40	1	UJ	1.1	UJ	1.2	UJ	1	U	1	U	1.2	U	1	UJ	1.2	UJ	1.1	UJ	1.1	UJ	1	UJ	1.1	UJ
Iron	~	~	~	6,660		1,730		2,320		7,170		3,780		1,480		5,650		1,870		2,180		6,680		1,150		2,690	
Lead	63	400	450	20.7		10.4		1.28	J	6.11		16.6		1.14	J	25		**64.2**		7.34		**102**		1.65	J	1.43	J
Magnesium	~	~	~	45,600		456		610		39,700		1,530		373		43,000		647		574		18,800		192		565	
Manganese	1600	2000	2000	140		24.8		18.3		120		67.6		14.7		113		19.7		17.3		101		18.7		21.5	
Mercury	0.18	0.81	0.73	0.066	U	0.077	U	0.078	U	0.078	U	0.073	U	0.099	U	0.067	U	0.076	U	0.075	U	0.163		0.073	U	0.097	U
Nickel	30	310	130	4.52		1.6	J	5.24		4.34		3.28		2.72		4.66		2.25	J	3.27		5.94		0.642	J	5.34	
Potassium	~	~	~	330		148	J	231	J	286		134	J	149	J	365		143	J	236	J	232		69	J	228	J
Selenium	3.9	180	4	1.6	U	1.87	U	1.88	U	1.57	U	0.516	J	1.92	U	0.286	J	1.9	U	1.9	U	1.72	U	1.65	U	1.88	U
Silver	2	180	8.3	0.799	U	0.933	U	0.94	U	0.787	U	0.832	U	0.963	U	0.816	U	0.948	U	0.952	U	0.86	U	0.823	U	0.939	U
Sodium	~	~	~	209		55.9	J	46.3	J	140	J	32.5	J	25.6	J	102	J	66.7	J	56	J	56.7	J	17.8	J	50.1	J
Vanadium	~	~	~	32.8		4.87		4.95		28.7		4.29		2.89		22.7		4.3		4.37		18.2		2.91		5.21	
Zinc	109	10000	2480	27.6		48.7		18.8		23.4		35.4		8.11		30.6		41.8		9.19		69.4		7.14		17.1	
General Chemistry (%)																											
Solids, Percent	~	~	~	95.9		82.5		80.5		96.1		94.2		78.1		93		82.4		83.4		92.6		96.2		81	
Total Solids	~	~	~	95.9		82.5		80.5		96.1		94.2		78.1		93		82.4		83.4		92.6		96.2		81	

Notes provided on Page 11.

Table 4
Soil Summary Report
Soil Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	**NYSDEC Part 375 Unrestricted Use SCOs**	**NYSDEC Part 375 Restricted Use Residential SCOs**	**NYSDEC Part 375 Protection of Groundwater**	**SB-13**		**SB-13**		**SB-13**		**SB-14**		**SB-14**		**SB-14**		**SB-15**		**SB-15**		**SB-15**		**SB-15**		**SB-16**		**SB-16**		**SB-16**	
Sample ID				**SB-13_0-2_021020**		**SB-13_4-6_021020**		**SB-13_9-11_021020**		**SB-14_0-2_021120**		**SB-14_6-8_021120**		**SB-14_9-11_021120**		**SB-15_0-2_021020**		**SB-15_6-8_021020**		**SB-15_10-12_021020**		**SODUP02_021020**		**SB-16_0-2_021120**		**SB-16_5-7_021120**		**SB-16_9-11_021120**	
Laboratory ID				**L2005961-01**		**L2005961-02**		**L2005961-03**		**L2006176-10**		**L2006176-11**		**L2006176-12**		**L2005961-04**		**L2005961-05**		**L2005961-06**		**L2005961-09**		**L2006176-04**		**L2006176-05**		**L2006176-06**	
Sample Date				**2/10/2020**		**2/10/2020**		**2/10/2020**		**2/11/2020**		**2/11/2020**		**2/11/2020**		**2/10/2020**		**2/10/2020**		**2/10/2020**		**2/10/2020**		**2/11/2020**		**2/11/2020**		**2/11/2020**	
Sample Depth (feet bgs)				**0-2**		**4-6**		**9-11**		**0-2**		**6-8**		**9-11**		**0-2**		**6-8**		**10-12**		**10-12**		**0-2**		**5-7**		**9-11**	
Volatile Organic Compounds (mg/kg)																													
1,2,4,5-Tetramethylbenzene	~	~	~	0.002	U	0.0022	U	0.0021	U	0.002	U	0.0022	U	0.0024	U	0.0023	U	0.002	U	0.0021	U	0.002	U	0.0024	U	0.0023	U	0.0024	U
1,2-Dichlorobenzene	1.1	100	1.1	0.002	U	0.0022	U	0.0021	U	0.002	U	0.0022	U	0.0024	U	0.0023	U	0.002	U	0.0021	U	0.002	U	0.0024	U	0.0023	U	0.0024	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	52	8.4	0.002	U	0.0022	U	0.0021	U	0.002	U	0.0022	U	0.0024	U	0.0023	U	0.002	U	0.0021	U	0.002	U	0.0024	U	0.0023	U	0.0024	U
1,4-Dichlorobenzene	1.8	13	1.8	0.002	U	0.0022	U	0.0021	U	0.002	U	0.0022	U	0.0024	U	0.0023	U	0.002	U	0.0021	U	0.002	U	0.0024	U	0.0023	U	0.0024	U
1,4-Diethyl Benzene	~	~	~	0.002	U	0.0022	U	0.0021	U	0.002	U	0.0022	U	0.0024	U	0.0023	U	0.002	U	0.0021	U	0.002	U	0.0024	U	0.0023	U	0.0024	U
2-Hexanone	~	~	~	0.01	UJ	0.011	UJ	0.01	UJ	0.01	U	0.011	U	0.012	U	0.012	UJ	0.0099	UJ	0.011	UJ	0.01	U	0.012	U	0.011	U	0.012	U
Acetone	0.05	100	0.05	0.01	UJ	0.011	UJ	0.01	UJ	0.03	J	0.0072	J	0.0088	J	0.009	J	0.0099	UJ	0.011	UJ	0.01	U	0.008	J	**0.062**		0.018	
Benzene	0.06	4.8	0.06	0.00051	U	0.00054	U	0.00053	U	0.00051	U	0.00055	U	0.00059	U	0.00058	U	0.00049	U	0.00053	U	0.0005	U	0.00061	U	0.00057	U	0.00059	U
Carbon Disulfide	~	~	~	0.01	U	0.011	U	0.01	U	0.01	U	0.011	U	0.012	U	0.012	U	0.0099	U	0.011	U	0.01	U	0.012	U	0.011	U	0.012	
Chloroform	0.37	49	0.37	0.0015	U	0.0016	U	0.0016	U	0.0015	U	0.0017	U	0.0018	U	0.0017	U	0.0015	U	0.0016	U	0.0015	U	0.0018	U	0.00016	J	0.00016	J
Cis-1,2-Dichloroethene	0.25	100	0.25	0.001	U	0.0011	U	0.001	U	0.001	U	0.0011	U	0.0012	U	0.0012	U	0.00099	U	0.0011	U	0.001	U	0.0012	U	0.0011	U	0.0012	U
Cymene	~	~	~	0.001	U	0.0011	U	0.001	U	0.001	U	0.0011	U	0.0012	U	0.0012	U	0.00099	U	0.0011	U	0.001	U	0.0012	U	0.0011	U	0.0012	U
Ethylbenzene	1	41	1	0.001	U	0.0011	U	0.001	U	0.001	U	0.0011	U	0.0012	U	0.0012	U	0.00099	U	0.0011	U	0.001	U	0.0012	U	0.0011	U	0.0012	U
M,P-Xylene	~	~	~	0.002	U	0.0022	U	0.0021	U	0.002	U	0.0022	U	0.0024	U	0.0023	U	0.002	U	0.0021	U	0.002	U	0.0024	U	0.0023	U	0.0024	U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	0.01	UJ	0.011	UJ	0.01	UJ	0.01	U	0.011	U	0.012	U	0.012	UJ	0.0099	UJ	0.011	UJ	0.01	U	0.012	U	0.011	U	0.012	U
Naphthalene	12	100	12	0.004	U	0.0044	U	0.0042	U	0.0041	U	0.0044	U	0.0047	U	0.0046	U	0.004	U	0.0042	U	0.004	U	0.0049	U	0.0046	U	0.0047	U
o-Xylene (1,2-Dimethylbenzene)	~	~	~	0.001	U	0.0011	U	0.001	U	0.001	U	0.0011	U	0.0012	U	0.0012	U	0.00099	U	0.0011	U	0.001	U	0.0012	U	0.0011	U	0.0012	U
Tetrachloroethene (PCE)	1.3	19	1.3	0.00051	U	0.00054	U	0.00053	U	0.00051	UJ	0.00055	UJ	0.00059	UJ	0.00058	U	0.00049	U	0.00053	U	0.0005	U	0.00061	UJ	0.00057	UJ	0.00059	UJ
Toluene	0.7	100	0.7	0.001	U	0.0011	U	0.001	U	0.001	U	0.0011	U	0.0012	U	0.0012	U	0.00099	U	0.0011	U	0.001	U	0.0012	U	0.0011	U	0.0012	U
Total 1,2-Dichloroethene (Cis and Trans)	~	~	~	0.001	U	0.0011	U	0.001	U	0.001	U	0.0011	U	0.0012	U	0.0012	U	0.00099	U	0.0011	U	0.001	U	0.0012	U	0.0011	U	0.0012	U
Total Xylenes	0.26	100	1.6	0.001	U	0.0011	U	0.001	U	0.001	U	0.0011	U	0.0012	U	0.0012	U	0.00099	U	0.0011	U	0.001	U	0.0012	U	0.0011	U	0.0012	U
Trans-1,2-Dichloroethene	0.19	100	0.19	0.0015	U	0.0016	U	0.0016	U	0.0015	U	0.0017	U	0.0018	U	0.0017	U	0.0015	U	0.0016	U	0.0015	U	0.0018	U	0.0017	U	0.0018	U
Trichloroethene (TCE)	0.47	21	0.47	0.00051	U	0.00054	U	0.00053	U	0.00051	U	0.00055	U	0.00059	U	0.00058	U	0.00049	U	0.00053	U	0.0005	U	0.00061	U	0.00057	U	0.00059	U
Semivolatile Organic Compounds (mg/kg)																													
2-Methylnaphthalene	~	~	~	2.1	U	0.21	U	0.24	U	2.2	U	0.24	U	0.25	U	0.63	U	0.22	U	0.24	U	0.23	U	2.2	U	0.21	U	0.26	U
3 & 4 Methylphenol (m&p Cresol)	0.33	100	0.33	*2.5*	U	0.25	U	0.29	U	*2.6*	U	0.28	U	0.3	U	*0.75*	U	0.27	U	0.29	U	0.28	U	*2.7*	U	0.25	U	0.31	U
Acenaphthene	20	100	98	1.4	U	0.14	U	0.16	U	1.4	U	0.16	U	0.16	U	0.42	U	0.15	U	0.16	U	0.15	U	1.5	U	0.14	U	0.17	U
Acenaphthylene	100	100	107	1.4	U	0.14	U	0.16	U	1.4	U	0.16	U	0.16	U	0.42	U	0.15	U	0.16	U	0.15	U	1.5	U	0.14	U	0.17	U
Anthracene	100	100	1000	1	U	0.1	U	0.12	U	1.1	U	0.12	U	0.12	U	0.31	U	0.11	U	0.12	U	0.12	U	1.1	U	0.1	U	0.13	U
Benzo(a)Anthracene	1	1	1	0.34	J	0.039	J	0.12	U	*1.1*	U	0.12	U	0.12	U	0.31	U	0.11	U	0.12	U	0.12	U	**1.7**		0.1	U	0.13	U
Benzo(a)Pyrene	1	1	22	*1.4*	U	0.042	J	0.16	U	*1.4*	U	0.16	U	0.16	U	0.42	U	0.15	U	0.16	U	0.15	U	**1.9**		0.14	U	0.17	U
Benzo(b)Fluoranthene	1	1	1.7	0.48	J	0.051	J	0.12	U	*1.1*	U	0.12	U	0.12	U	0.31	U	0.11	U	0.12	U	0.12	U	**2.3**		0.1	U	0.13	U
Benzo(g,h,i)Perylene	100	100	1000	0.27	J	0.039	J	0.16	U	1.4	U	0.16	U	0.16	U	0.42	U	0.15	U	0.16	U	0.15	U	1.1	J	0.14	U	0.17	U
Benzo(k)Fluoranthene	0.8	3.9	1.7	*1*	U	0.1	U	0.12	U	*1.1*	U	0.12	U	0.12	U	0.31	U	0.11	U	0.12	U	0.12	U	0.73	J	0.1	U	0.13	U
Benzyl Butyl Phthalate	~	~	~	1.7	U	0.17	U	0.2	U	1.8	U	0.2	U	0.2	U	0.52	U	0.19	U	0.2	U	0.19	U	1.9	U	0.17	U	0.22	U
Biphenyl (Diphenyl)	~	~	~	4	U	0.4	U	0.46	U	4.2	U	0.45	U	0.47	U	1.2	U	0.43	U	0.46	U	0.44	U	4.2	U	0.39	U	0.49	U
Bis(2-Ethylhexyl) Phthalate	~	~	~	1.7	U	0.17	U	0.2	U	1.8	U	0.2	U	0.2	U	0.36	J	0.19	U	0.2	U	0.19	U	1.9	U	0.17	U	0.22	U
Carbazole	~	~	~	1.7	U	0.17	U	0.2	U	1.8	U	0.2	U	0.2	U	0.52	U	0.19	U	0.2	U	0.19	U	1.9	U	0.17	U	0.22	U
Chrysene	1	3.9	1	0.33	J	0.047	J	0.12	U	0.19	J	0.12	U	0.12	U	0.13	J	0.11	U	0.12	U	0.12	U	**1.6**		0.1	U	0.13	U
Dibenz(a,h)Anthracene	0.33	0.33	1000	*1*	U	0.1	U	0.12	U	*1.1*	U	0.12	U	0.12	U	0.31	U	0.11	U	0.12	U	0.12	U	0.28	J	0.1	U	0.13	U
Dibenzofuran	7	59	210	1.7	U	0.17	U	0.2	U	1.8	U	0.2	U	0.2	U	0.52	U	0.19	U	0.2	U	0.19	U	1.9	U	0.17	U	0.22	U
Di-N-Butyl Phthalate	~	~	~	1.7	U	0.17	U	0.2	U	1.8	U	0.2	U	0.2	U	0.52	U	0.19	U	0.2	U	0.19	U	1.9	U	0.17	U	0.22	U
Fluoranthene	100	100	1000	0.61	J	0.073	J	0.12	U	1.1	U	0.12	U	0.12	U	0.31	U	0.11	U	0.12	U	0.12	U	3.5		0.1	U	0.13	U
Fluorene	30	100	386	1.7	U	0.17	U	0.2	U	1.8	U	0.2	U	0.2	U	0.52	U	0.19	U	0.2	U	0.19	U	1.9	U	0.17	U	0.22	U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	8.2	0.26	J	0.024	J	0.16	U	*1.4*	U	0.16	U	0.16	U	0.42	U	0.15	U	0.16	U	0.15	U	**1.2**	J	0.14	U	0.17	U
Naphthalene	12	100	12	1.7	U	0.17	U	0.2	U	1.8	U	0.2	U	0.2	U	0.52	U	0.19	U	0.2	U	0.19	U	1.9	U	0.17	U	0.22	U
Pentachlorophenol	0.8	6.7	0.8	*1.4*	U	0.14	U	0.16	U	*1.4*	U	0.16	U	0.16	U	0.42	U	0.15	U	0.16	U	0.15	U	*1.5*	U	0.14	U	0.17	U
Phenanthrene	100	100	1000	0.29	J	0.043	J	0.12	U	1.1	U	0.12	U	0.12	U	0.31	U	0.11	U	0.12	U	0.12	U	1.8		0.1	U	0.13	U
Phenol	0.33	100	0.33	*1.7*	U	0.17	U	0.2	U	*1.8*	U	0.2	U	0.2	U	*0.52*	U	0.19	U	0.2	U	0.19	U	*1.9*	U	0.17	U	0.22	U
Pyrene	100	100	1000	0.57	J	0.074	J	0.12	U	0.21	J	0.12	U	0.12	U	0.072	J	0.11	U	0.12	U	0.12	U	3.2		0.1	U	0.13	U

Notes provided on Page 11.

Table 4
Soil Summary Report
Soil Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	**NYSDEC Part 375 Unrestricted Use SCOs**	**NYSDEC Part 375 Restricted Use Residential SCOs**	**NYSDEC Part 375 Protection of Groundwater**	**SB-13**	**SB-13**	**SB-13**	**SB-14**	**SB-14**	**SB-14**	**SB-15**	**SB-15**	**SB-15**	**SB-15**	**SB-16**	**SB-16**	**SB-16**
Sample ID				**SB-13_0-2_021020**	**SB-13_4-6_021020**	**SB-13_9-11_021020**	**SB-14_0-2_021120**	**SB-14_6-8_021120**	**SB-14_9-11_021120**	**SB-15_0-2_021020**	**SB-15_6-8_021020**	**SB-15_10-12_021020**	**SODUP02_021020**	**SB-16_0-2_021120**	**SB-16_5-7_021120**	**SB-16_9-11_021120**
Laboratory ID				**L2005961-01**	**L2005961-02**	**L2005961-03**	**L2006176-10**	**L2006176-11**	**L2006176-12**	**L2005961-04**	**L2005961-05**	**L2005961-06**	**L2005961-09**	**L2006176-04**	**L2006176-05**	**L2006176-06**
Sample Date				**2/10/2020**	**2/10/2020**	**2/10/2020**	**2/11/2020**	**2/11/2020**	**2/11/2020**	**2/10/2020**	**2/10/2020**	**2/10/2020**	**2/10/2020**	**2/11/2020**	**2/11/2020**	**2/11/2020**
Sample Depth (feet bgs)				**0-2**	**4-6**	**9-11**	**0-2**	**6-8**	**9-11**	**0-2**	**6-8**	**10-12**	**10-12**	**0-2**	**5-7**	**9-11**
Pesticides (mg/kg)																
4,4'-DDD	0.0033	13	14	0.00167 U	0.00161 U	0.00186 U	*0.0174* U	0.00181 U	0.00198 U	*0.0161* U	0.00177 U	0.00188 U	0.00179 U	0.00171 U	0.00161 U	0.00204 U
4,4'-DDE	0.0033	8.9	17	0.00142 J	0.00161 U	0.00186 U	*0.0174* U	0.00181 U	0.00198 U	*0.0161* U	0.00177 U	0.00188 U	0.00179 U	0.00229	0.00161 U	0.00204 U
4,4'-DDT	0.0033	7.9	136	0.00312 U	0.00302 U	*0.00348* U	*0.0325* U	*0.00339* U	*0.00371* U	*0.0302* U	*0.00331* U	*0.00352* U	*0.00336* U	**0.00625**	0.00302 U	*0.00383* U
Alpha Chlordane	0.094	4.2	2.9	0.00208 U	0.00201 U	0.00232 U	0.0217 U	0.00226 U	0.00247 U	0.0201 U	0.00221 U	0.00235 U	0.00224 U	0.0129	0.00201 U	0.00256 U
Chlordane (alpha and gamma)	~	~	~	0.0139 U	0.0134 U	0.0155 U	0.145 U	0.0151 U	0.0165 U	0.134 U	0.0147 U	0.0157 U	0.0149 U	0.0802	0.0134 U	0.017 U
Dieldrin	0.005	0.2	0.1	0.00104 U	0.00101 U	0.00116 U	*0.0108* U	0.00113 U	0.00124 U	*0.01* U	0.0011 U	0.00117 U	0.00112 U	0.00107 U	0.00101 U	0.00128 U
Gamma Chlordane	~	~	~	0.00208 U	0.00201 U	0.00232 U	0.0217 U	0.00226 U	0.00247 U	0.0201 U	0.00221 U	0.00235 U	0.00224 U	0.00846 J	0.00201 U	0.00256 U
Heptachlor	0.042	2.1	0.38	0.000834 U	0.000806 U	0.000929 U	0.00868 U	0.000904 U	0.000989 U	0.00804 U	0.000884 U	0.00094 U	0.000896 U	0.000857 U	0.000806 U	0.00102 U
Heptachlor Epoxide	~	~	~	0.00312 U	0.00302 U	0.00348 U	0.0325 U	0.00339 U	0.00371 U	0.0302 U	0.00331 U	0.00352 U	0.00336 U	0.00321 U	0.00302 U	0.00383 U
Toxaphene	~	~	~	0.0312 U	0.0302 U	0.0348 U	0.325 UJ	0.0339 UJ	0.0371 UJ	0.302 U	0.0331 U	0.0352 U	0.0336 U	0.0321 UJ	0.0302 UJ	0.0383 U
Herbicides (mg/kg)				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls (mg/kg)																
PCB-1242 (Aroclor 1242)	~	~	~	0.0337 U	0.0339 U	0.0398 U	0.0364 U	0.0386 U	0.0417 U	0.0346 U	0.0372 U	0.0399 U	0.0379 U	0.0357 U	0.0334 U	0.0429 U
PCB-1254 (Aroclor 1254)	~	~	~	0.0337 U	0.0339 U	0.0398 U	0.0364 U	0.0386 U	0.0417 U	0.0346 U	0.0372 U	0.0399 U	0.0379 U	0.0357 U	0.0334 U	0.0429 U
PCB-1260 (Aroclor 1260)	~	~	~	0.0176 J	0.0339 U	0.0398 U	0.00978 J	0.0386 U	0.0417 U	0.0346 U	0.0372 U	0.0399 U	0.0379 U	0.0357 U	0.0334 U	0.0429 U
PCB-1268 (Aroclor 1268)	~	~	~	0.0337 U	0.0339 U	0.0398 U	0.0364 U	0.0386 U	0.0417 U	0.0346 U	0.0372 U	0.0399 U	0.0379 U	0.0357 U	0.0334 U	0.0429 U
Total PCBs	0.1	1	3.2	0.0176 J	0.0339 U	0.0398 U	0.00978 J	0.0386 U	0.0417 U	0.0346 U	0.0372 U	0.0399 U	0.0379 U	0.0357 U	0.0334 U	0.0429 U
Inorganics (mg/kg)																
Aluminum	~	~	~	2,430	588	932	1,090	552	958	910	433	1,700 J	447 J	3,210	406	1,200
Antimony	~	~	~	0.766 J	4.07 U	4.58 U	4.26 U	4.55 U	4.92 U	1.02 J	0.489 J	4.86 U	4.51 U	4.26 U	4 U	5.04 U
Arsenic	13	16	16	2.48	1.19	1.12	1.3	0.309 J	0.541 J	1.88	0.908	1.34	0.866 J	1.92	0.799 U	0.937 J
Barium	350	400	820	58.8	7.69	2.94	14.4	4.17	2.43	6.1	2.37	4.19 J	2.47 J	157	2.08	3.52
Beryllium	7.2	72	47	0.421 U	0.407 U	0.458 U	0.094 J	0.455 U	0.492 U	0.409 U	0.436 U	0.486 U	0.451 U	0.153 J	0.4 U	0.05 J
Cadmium	2.5	4.3	7.5	0.497 J	0.098 J	0.917 U	0.852 U	0.909 U	0.984 U	0.147 J	0.873 U	0.116 J	0.902 U	0.852 U	0.799 U	1.01 U
Calcium	~	~	~	22,300	2,480	1,050	72,300	398	227	95,500	304	479 J	327 J	23,300	304	361
Chromium, Hexavalent	1	110	19	0.847 U	0.838 U	0.976 U	0.346 J	0.443 J	*1.01* U	0.847 U	0.914 U	0.978 U	0.934 U	0.292 J	0.272 J	*1.06* UJ
Chromium, Total	~	~	~	7.2	8.98	4.24	4.26	4.1	3.8	2.73	3.11	5.2 J	3.01 J	6.85	3	4.58
Chromium, Trivalent	~	~	~	7.2	8.8 J	4.2	3.9 J	3.6 J	3.8	2.5 J	3.1	4.9 J	2.8 J	6.6 J	2.7 J	4.6
Cobalt	~	~	~	3.17	1.06 J	1.13 J	1.41 J	0.564 J	0.886 J	2.28	0.515 J	1.86 J	0.55 J	3.99	0.392 J	1.05 J
Copper	50	270	1720	23.4	2.55	1.63	9.68	0.391 J	1.23	10.7	0.471 J	1.8 J	0.505 J	23.8	0.559 J	1.35
Cyanide	27	27	40	1 UJ	0.96 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ	1 UJ	1.1 UJ	1.2 UJ	1.1 UJ	1.1 UJ	0.96 UJ	1.3 UJ
Iron	~	~	~	6,810	2,640	2,210	3,440	1,310	1,770	4,970	1,100	3,970 J	1,150 J	7,700	945	2,530
Lead	63	400	450	**124**	11.9	2.71 J	25.2	2.14 J	1.08 J	6.77	1.79 J	2.27 J	1.65 J	**77.4**	1.42 J	1.51 J
Magnesium	~	~	~	11,300	1,120	861	43,200	251	475	48,900	210	810 J	214 J	10,600	184	588
Manganese	1600	2000	2000	136	39	18.2	94.1	21	17.2	113	13.4	33 J	14.9 J	115	11.1	26.8
Mercury	0.18	0.81	0.73	0.138	0.067 U	0.085 U	0.07 U	0.075 U	0.079 U	0.074 U	0.093 U	0.092 U	0.089 U	0.116	0.066 U	0.083 U
Nickel	30	310	130	8.36	1.54 J	3.91	3.74	1.01 J	4.14	2.98	0.76 J	5.92 J	0.857 J	8.87	0.767 J	4.09
Potassium	~	~	~	286	101 J	155 J	254	120 J	185 J	225	94.3 J	323 J	91.7 J	461	84.7 J	250 J
Selenium	3.9	180	4	0.362 J	1.63 U	0.376 J	0.247 J	1.82 U	1.97 U	0.564 J	0.279 J	1.94 U	0.262 J	1.7 U	1.6 U	2.02 U
Silver	2	180	8.3	0.842 U	0.813 U	0.917 U	0.852 U	0.909 U	0.984 U	0.817 U	0.873 U	0.971 U	0.902 U	0.852 U	0.799 U	1.01 U
Sodium	~	~	~	168 U	163 U	183 U	92.4 J	28.7 J	41.4 J	163 U	175 U	194 U	180 U	222	21.6 J	117 J
Vanadium	~	~	~	18	7.77	5.2	14.5	3.92	3.62	28.6	2.85	6.56 J	2.9 J	23.9	2.63	3.95
Zinc	109	10000	2480	**120**	16.6	10.1	26.2	13.5	6.23	13.2	13.2	16.1	13.3	72.3	13.9	10
General Chemistry (%)																
Solids, Percent	~	~	~	94.4	95.4	82	89.6	83.5	79.2	94.4	87.5	81.8	85.6	89	95.6	75.8
Total Solids	~	~	~	94.4	95.4	82	89.6	83.5	79.2	94.4	87.5	81.8	85.6	89	95.6	75.8

Notes provided on Page 11.

Table 4
Soil Summary Report
Soil Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Residential SCOs	NYSDEC Part 375 Protection of Groundwater	SB-17		SB-17		SB-17		SB-18		SB-18		SB-18		SB-19		SB-19		SB-19		SB-20		SB-20		SB-20	
Sample ID				SB-17_0-2_020520		SB-17_5-7_020520		SB-17_9-11_020520		SB-18_0-2_020520		SB-18_2-4_020520		SB-18_10-12_020520		SB-19_0-2_020520		SB-19_2-4_020520		SB-19_6-8_020520		SB-20_0-2_020520		SB-20_2-4_020520		SB-20_6-8_020520	
Laboratory ID				L2005543-10		L2005543-11		L2005543-12		L2005543-07		L2005543-08		L2005543-09		L2005543-04		L2005543-05		L2005543-06		L2005543-01		L2005543-02		L2005543-03	
Sample Date				2/5/2020		2/5/2020		2/5/2020		2/5/2020		2/5/2020		2/5/2020		2/5/2020		2/5/2020		2/5/2020		2/5/2020		2/5/2020		2/5/2020	
Sample Depth (feet bgs)				0-2		5-7		9-11		0-2		2-4		10-12		0-2		2-4		6-8		0-2		2-4		6-8	
Volatile Organic Compounds (mg/kg)																											
1,2,4,5-Tetramethylbenzene	~	~	~	0.0003	J	0.0022	U	0.0023	U	0.0026	UJ	0.0023	U	0.0026	U	0.0035	U	0.0028	U	0.0024	U	0.002	U	0.0032	U	0.0026	U
1,2-Dichlorobenzene	1.1	100	1.1	0.0023	U	0.0022	U	0.0023	U	0.0026	UJ	0.0023	U	0.0026	U	0.0035	U	0.0028	U	0.0024	U	0.002	U	0.0032	U	0.0026	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	52	8.4	0.0012	J	0.0022	UJ	0.0023	UJ	0.0026	UJ	0.0023	UJ	0.0026	UJ	0.0035	UJ	0.0028	UJ	0.0024	UJ	0.002	UJ	0.0032	UJ	0.0026	UJ
1,4-Dichlorobenzene	1.8	13	1.8	0.0023	U	0.0022	U	0.0023	U	0.0026	UJ	0.0023	U	0.0026	U	0.0035	U	0.0028	U	0.0024	U	0.002	U	0.0032	U	0.0026	U
1,4-Diethyl Benzene	~	~	~	0.001	J	0.0022	U	0.0023	U	0.0026	U	0.0023	U	0.0026	U	0.0035	U	0.0028	U	0.0024	U	0.002	U	0.0032	U	0.0026	U
2-Hexanone	~	~	~	0.011	U	0.011	U	0.012	U	0.013	U	0.012	U	0.013	U	0.018	U	0.014	U	0.012	U	0.01	U	0.016	U	0.013	U
Acetone	0.05	100	0.05	0.009	J	0.011	U	0.012	U	0.0064	J	0.012	U	0.013	U	0.021		0.0072	J	0.012	U	0.01	U	0.016	U	0.013	U
Benzene	0.06	4.8	0.06	0.00023	J	0.00056	U	0.00058	U	0.00064	U	0.00058	U	0.00064	U	0.00088	U	0.0007	U	0.0006	U	0.00054		0.00081	U	0.00064	U
Carbon Disulfide	~	~	~	0.011	UJ	0.011	UJ	0.012	UJ	0.013	UJ	0.012	UJ	0.013	UJ	0.018	UJ	0.014	UJ	0.012	UJ	0.01	UJ	0.016	UJ	0.013	UJ
Chloroform	0.37	49	0.37	0.0017	U	0.00016	J	0.0018	U	0.0019	U	0.0018	U	0.0019	U	0.0026	U	0.0021	U	0.0018	U	0.0015	U	0.0024	U	0.0019	U
Cis-1,2-Dichloroethene	0.25	100	0.25	0.0011	U	0.0011	U	0.0012	U	0.0013	U	0.0012	U	0.0013	U	0.0018	U	0.0014	U	0.0012	U	0.001	U	0.0016	U	0.0013	U
Cymene	~	~	~	0.00021	J	0.0011	U	0.0012	U	0.0013	UJ	0.0012	U	0.0013	U	0.0018	U	0.0014	U	0.0012	U	0.001	U	0.0016	U	0.0013	U
Ethylbenzene	1	41	1	0.00018	J	0.0011	UJ	0.0012	UJ	0.0013	UJ	0.0012	UJ	0.0013	UJ	0.0018	UJ	0.0014	UJ	0.0012	UJ	0.00075	J	0.0016	UJ	0.0013	UJ
M,P-Xylene	~	~	~	0.0023	U	0.0022	U	0.0023	U	0.0026	U	0.0023	U	0.0026	U	0.0035	U	0.0028	U	0.0024	U	0.0036		0.0032	U	0.0026	U
Methyl Ethyl Ketone (2-Butanone)	0.12	100	0.12	0.011	U	0.011	U	0.012	U	0.013	U	0.012	U	0.013	U	0.018	U	0.014	U	0.012	U	0.01	U	0.016	U	0.013	U
Naphthalene	12	100	12	0.0046	U	0.026		0.0047	U	0.0051	UJ	0.00091	J	0.0052	U	0.007	U	0.0027	J	0.0048	U	0.004	U	0.0016	J	0.0051	U
o-Xylene (1,2-Dimethylbenzene)	~	~	~	0.0011	U	0.0011	U	0.0012	U	0.0013	U	0.0012	U	0.0013	U	0.0018	U	0.0014	U	0.0012	U	0.0015		0.0016	U	0.0013	U
Tetrachloroethene (PCE)	1.3	19	1.3	0.0018		0.00054	J	0.00058	U	0.00064	U	0.00058	U	0.00064	U	0.00088	U	0.0007	U	0.0006	U	0.0005	U	0.00081	U	0.00064	U
Toluene	0.7	100	0.7	0.0011	UJ	0.0011	UJ	0.0012	UJ	0.0013	UJ	0.0012	UJ	0.0013	UJ	0.0018	UJ	0.0014	UJ	0.0012	UJ	0.001	UJ	0.002	J	0.0013	UJ
Total 1,2-Dichloroethene (Cis and Trans)	~	~	~	0.0011	U	0.0011	U	0.0012	U	0.0013	U	0.0012	U	0.0013	U	0.00071	J	0.00045	J	0.0012	U	0.001	U	0.0016	U	0.0004	J
Total Xylenes	0.26	100	1.6	0.0011	U	0.0011	U	0.0012	U	0.0013	U	0.0012	U	0.0013	U	0.0018	U	0.0014	U	0.0012	U	0.0051		0.0016	U	0.0013	U
Trans-1,2-Dichloroethene	0.19	100	0.19	0.0017	U	0.0017	U	0.0018	U	0.0019	U	0.0018	U	0.0019	U	0.00071	J	0.00045	J	0.0018	U	0.0015	U	0.0024	U	0.0004	J
Trichloroethene (TCE)	0.47	21	0.47	0.00057	U	0.00056	U	0.00058	U	0.00064	U	0.00058	U	0.00064	U	0.00088	U	0.0007	U	0.0006	U	0.0005	U	0.00081	U	0.00064	U
Semivolatile Organic Compounds (mg/kg)																											
2-Methylnaphthalene	~	~	~	3.3	U	0.49	J	0.24	U	2.1	U	0.23	J	0.026	J	2	U	0.27	J	0.22	U	1.1	U	0.026	J	0.24	U
3 & 4 Methylphenol (m&p Cresol)	0.33	100	0.33	*3.9*	U	*2.5*	U	0.29	U	*2.5*	U	*1*	U	0.28	U	*2.4*	U	*2.5*	U	0.27	U	*1.3*	U	0.26	U	0.28	U
Acenaphthene	20	100	98	2.2	U	2.6		0.16	U	1.4	U	0.6		0.1	J	1.3	U	1.9		0.15	U	0.18	J	0.063	J	0.16	U
Acenaphthylene	100	100	107	2.2	U	0.5	J	0.16	U	1.4	U	0.93		0.093	J	1.3	U	1.8		0.15	U	0.48	J	0.095	J	0.16	U
Anthracene	100	100	1000	1.6	U	7.2		0.12	U	1	U	1.7		0.35		1	U	4.7		0.11	U	0.56		0.2		0.12	U
Benzo(a)Anthracene	1	1	1	0.31	J	**22**		0.12	U	0.97	J	**6.7**		**1.2**		0.32	J	**18**		0.11	U	**2.1**		0.65		0.12	U
Benzo(a)Pyrene	1	1	22	*2.2*	U	**20**		0.16	U	1	J	**6.7**		1		*1.3*	U	**17**		0.15	U	**2.1**		0.59		0.16	U
Benzo(b)Fluoranthene	1	1	1.7	*1.6*	U	**28**		0.12	U	**1.4**		**9.3**		**1.2**		0.38	J	**22**		0.11	U	**2.5**		0.78		0.12	U
Benzo(g,h,i)Perylene	100	100	1000	2.2	U	13		0.16	U	0.72	J	4.5		0.54		0.22	J	10		0.15	U	1.2		0.38		0.16	U
Benzo(k)Fluoranthene	0.8	3.9	1.7	*1.6*	U	**10**		0.12	U	0.44	J	**2.7**		0.4		*1*	U	**7.6**		0.11	U	**1.1**		0.29		0.12	U
Benzyl Butyl Phthalate	~	~	~	2.7	U	1.8	U	0.2	U	1.8	U	0.71	U	0.2	U	1.7	U	1.8	U	0.19	U	7.1		0.18	U	0.2	U
Biphenyl (Diphenyl)	~	~	~	6.2	U	4	U	0.45	U	4	U	1.6	U	0.45	U	3.8	U	4	U	0.42	U	2	U	0.41	U	0.45	U
Bis(2-Ethylhexyl) Phthalate	~	~	~	2.7	U	1.8	U	0.2	U	1.8	U	0.71	U	0.2	U	1.7	U	1.8	U	0.19	U	74		0.17	J	0.2	U
Carbazole	~	~	~	2.7	U	4.7		0.2	U	1.8	U	0.99		0.12	J	1.7	U	1.6	J	0.19	U	0.3	J	0.098	J	0.2	U
Chrysene	1	3.9	1	0.33	J	**21**		0.12	U	0.91	J	**6.9**		**1.2**		0.4	J	**15**		0.11	U	**2.2**		0.63		0.12	U
Dibenz(a,h)Anthracene	0.33	0.33	1000	*1.6*	U	**3.5**		0.12	U	*1*	U	**1.1**		0.13		*1*	U	**2.2**		0.11	U	0.33	J	0.087	J	0.12	U
Dibenzofuran	7	59	210	2.7	U	1.8		0.2	U	1.8	U	0.49	J	0.072	J	1.7	U	0.74	J	0.19	U	0.11	J	0.042	J	0.2	U
Di-N-Butyl Phthalate	~	~	~	2.7	U	1.8	U	0.2	U	1.8	U	0.71	U	0.2	U	1.7	U	1.8	U	0.19	U	0.89	U	0.18	U	0.2	U
Fluoranthene	100	100	1000	0.59	J	41		0.12	U	1.4		14		2.1		0.6	J	34		0.11	U	4.4		1.3		0.12	U
Fluorene	30	100	386	2.7	U	2.9		0.2	U	1.8	U	0.6	J	0.13	J	1.7	U	1.6	J	0.19	U	0.2	J	0.07	J	0.2	U
Indeno(1,2,3-c,d)Pyrene	0.5	0.5	8.2	*2.2*	U	**14**		0.16	U	**0.68**	J	**4.8**		**0.57**		*1.3*	U	**11**		0.15	U	**1.3**		0.39		0.16	U
Naphthalene	12	100	12	2.7	U	1.1	J	0.2	U	1.8	U	0.65	J	0.052	J	1.7	U	0.72	J	0.19	U	0.11	J	0.047	J	0.2	U
Pentachlorophenol	0.8	6.7	0.8	*2.2*	U	*1.4*	U	0.16	U	*1.4*	U	0.57	U	0.16	U	*1.3*	U	*1.4*	U	0.15	U	0.71	U	0.14	U	0.16	U
Phenanthrene	100	100	1000	0.38	J	30		0.12	U	0.44	J	9		1.3		0.3	J	17		0.11	U	2.8		0.87		0.12	U
Phenol	0.33	100	0.33	*2.7*	U	*1.8*	U	0.2	U	*1.8*	U	*0.71*	U	0.2	U	*1.7*	U	*1.8*	U	0.19	U	*0.89*	U	0.18	U	0.2	U
Pyrene	100	100	1000	0.61	J	35		0.12	U	1.3		12		2.4		0.53	J	28		0.11	U	4		1.2		0.12	U

Notes provided on Page 11.

Table 4
Soil Summary Report
Soil Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	**NYSDEC Part 375 Unrestricted Use SCOs**	**NYSDEC Part 375 Restricted Use Residential SCOs**	**NYSDEC Part 375 Protection of Groundwater**	**SB-17 SB-17_0-2_020520 L2005543-10 2/5/2020 0-2**	**SB-17 SB-17_5-7_020520 L2005543-11 2/5/2020 5-7**	**SB-17 SB-17_9-11_020520 L2005543-12 2/5/2020 9-11**	**SB-18 SB-18_0-2_020520 L2005543-07 2/5/2020 0-2**	**SB-18 SB-18_2-4_020520 L2005543-08 2/5/2020 2-4**	**SB-18 SB-18_10-12_020520 L2005543-09 2/5/2020 10-12**	**SB-19 SB-19_0-2_020520 L2005543-04 2/5/2020 0-2**	**SB-19 SB-19_2-4_020520 L2005543-05 2/5/2020 2-4**	**SB-19 SB-19_6-8_020520 L2005543-06 2/5/2020 6-8**	**SB-20 SB-20_0-2_020520 L2005543-01 2/5/2020 0-2**	**SB-20 SB-20_2-4_020520 L2005543-02 2/5/2020 2-4**	**SB-20 SB-20_6-8_020520 L2005543-03 2/5/2020 6-8**
Pesticides (mg/kg)															
4,4'-DDD	0.0033	13	14	0.00166 U	0.00166 U	0.00187 U	*0.016* U	**0.0035** J	0.00183 U	*0.0155* U	*0.00847* U	0.0018 U	0.00195	**0.00945**	0.00184 U
4,4'-DDE	0.0033	8.9	17	0.00227 J	0.00166 U	0.00187 U	*0.016* U	**0.0127** J	0.00183 U	*0.0155* U	**0.0183**	0.0018 U	0.00266 J	**0.0252**	0.00184 U
4,4'-DDT	0.0033	7.9	136	0.00312 U	0.00312 U	*0.00351* U	*0.03* U	**0.0152** J	*0.00343* U	*0.0291* U	**0.0382**	*0.00337* U	**0.0159**	**0.0294**	*0.00345* U
Alpha Chlordane	0.094	4.2	2.9	0.0106 J	0.00208 U	0.00234 U	0.02 U	0.00211 U	0.00228 U	0.0194 U	0.0106 U	0.00224 U	0.00462 J	0.0129 J	0.0023 U
Chlordane (alpha and gamma)	~	~	~	0.158	0.0139 U	0.0156 U	0.133 U	0.0141 U	0.0152 U	0.129 U	0.0706 U	0.015 U	0.0482	0.104	0.0153 U
Dieldrin	0.005	0.2	0.1	0.00104 U	0.00104 U	0.00117 U	*0.00999* U	0.00105 U	0.00114 U	*0.0097* U	*0.00529* U	0.00112 U	0.00198 J	0.00106 U	0.00115 U
Gamma Chlordane	~	~	~	0.0165 J	0.00208 U	0.00234 U	0.02 U	0.00211 U	0.00228 U	0.0194 U	0.00331 J	0.00224 U	0.00432 J	0.0118 J	0.0023 U
Heptachlor	0.042	2.1	0.38	0.000832 U	0.000833 U	0.000936 U	0.00799 U	0.000844 U	0.000914 U	0.00776 U	0.00423 U	0.000898 U	0.000844 U	0.000555 J	0.000919 U
Heptachlor Epoxide	~	~	~	0.00312 U	0.00312 U	0.00351 U	0.03 U	0.00316 U	0.00343 U	0.0291 U	0.0159 U	0.00337 U	0.00128 J	0.00319 U	0.00345 U
Toxaphene	~	~	~	0.0312 U	0.0312 U	0.0351 U	0.3 U	0.0316 U	0.0343 U	0.291 U	0.159 U	0.0337 U	0.0316 U	0.0319 U	0.0345 U
Herbicides (mg/kg)				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls (mg/kg)															
PCB-1242 (Aroclor 1242)	~	~	~	0.0354 U	0.0342 U	0.0394 U	0.0344 U	0.0361 U	0.0395 U	0.032 U	0.0344 U	0.0359 U	0.0354 U	0.0352 U	0.0392 U
PCB-1254 (Aroclor 1254)	~	~	~	0.0352 J	0.0342 U	0.0394 U	0.0344 U	0.00901 J	0.0395 U	0.032 U	0.0166 J	0.0359 U	0.0416	0.0352 U	0.0392 U
PCB-1260 (Aroclor 1260)	~	~	~	0.0354 U	0.0129 J	0.0394 U	0.011 J	0.0361 U	0.0395 U	0.032 U	0.0175 J	0.0359 U	0.0448	0.0352 U	0.0392 U
PCB-1268 (Aroclor 1268)	~	~	~	0.0354 U	0.0342 U	0.0394 U	0.0344 U	0.0361 U	0.0395 U	0.032 U	0.0344 U	0.0359 U	0.0354 U	0.0352 U	0.0392 U
Total PCBs	0.1	1	3.2	0.0352 J	0.0129 J	0.0394 U	0.011 J	0.00901 J	0.0395 U	0.032 U	0.0341 J	0.0359 U	0.0864	0.0352 U	0.0392 U
Inorganics (mg/kg)															
Aluminum	~	~	~	3,730	2,360	410	2,180	3,630	654	901	7,780	378	4,970	2,950	493
Antimony	~	~	~	0.569 J	0.64 J	4.68 U	0.758 J	1.17 J	4.82 U	0.654 J	1.71 J	4.4 U	1.8 J	1.29 J	4.65 U
Arsenic	13	16	16	4.1	2.22	0.936 U	2.29	4.29	0.801 J	2.42	5.01	0.326 J	5.43 J	2.56	0.53 J
Barium	350	400	820	29	71.8	2.16	18.4	203	10.2	13.1	304	3.32	198 J	113	5.8
Beryllium	7.2	72	47	0.175 J	0.168 J	0.468 U	0.112 J	0.222 J	0.039 J	0.1 J	0.306 J	0.44 U	0.279 J	0.144 J	0.465 U
Cadmium	2.5	4.3	7.5	0.166 J	0.345 J	0.936 U	0.192 J	0.393 J	0.106 J	0.108 J	0.719 J	0.88 U	0.671 J	1.03	0.158 J
Calcium	~	~	~	44,700	17,600	239	66,300	24,500	992	103,000	51,000	248	38,700	22,100	514
Chromium, Hexavalent	1	110	19	0.881 U	0.864 U	0.983 U	0.848 U	0.882 U	0.966 U	0.815 U	0.234 J	0.917 U	0.879 U	0.887 U	0.957 U
Chromium, Total	~	~	~	12.9	14.1	2.12 U	4.56	10.6	3.3 U	3.61 U	17.3	3.45 U	14.3	7.53	4.47
Chromium, Trivalent	~	~	~	13	14	2.1	4.6	11	3.3	3.6	17 J	3.4	14	7.5	4.5
Cobalt	~	~	~	3.09	2.03	0.384 J	3.69	2.54	0.694 J	1.95	2.53	0.405 J	5.17	2.47	0.577 J
Copper	50	270	1720	16.5	22	0.477 J	43	**55.7**	14.3	18.1	**51.5**	0.598 J	37	40.8	17
Cyanide	27	27	40	1 U	1 U	1.1 U	0.39 J	0.44 J	1.2 U	0.99 UJ	0.38 J	1 U	1 U	1 U	1.1 U
Iron	~	~	~	8,240	6,350	818	8,620	8,830	1,680	4,920	12,300	960	15,100 J	10,900	1,450
Lead	63	400	450	23.5	**149**	1 J	29.4	**443**	47.5	20.8	**209**	1.3 J	**325** J	**366**	**136**
Magnesium	~	~	~	15,200	3,960	187	31,700	1,810	377	51,700	12,000	180	14,300	1,460	178
Manganese	1600	2000	2000	127	101	8.66	106	98.6	14.7	123	146	10.3	195 J	126	18.2
Mercury	0.18	0.81	0.73	0.086 U	0.127	0.086 U	0.075 U	**0.364**	0.106	0.066 U	0.112	0.078 U	**0.54**	**0.443**	0.095 U
Nickel	30	310	130	8.59	6.44	2.34 U	4.8	8.11	2.41 U	4.5	15.4	2.2 U	14.8	8.81	2.33 U
Potassium	~	~	~	657	288	89.8 J	397	592	116 J	257	521	80 J	895	496	94.7 J
Selenium	3.9	180	4	1.75 U	1.68 U	1.87 U	0.311 J	0.478 J	1.93 U	0.639 J	0.471 J	1.76 U	0.314 J	0.391 J	1.86 U
Silver	2	180	8.3	0.875 U	0.842 U	0.936 U	0.798 U	0.854 U	0.965 U	0.77 U	0.355 J	0.88 U	0.871 U	1.63	0.419 J
Sodium	~	~	~	259	186	187 U	160 U	177	193 U	154 U	657	176 U	247	170 U	186 U
Vanadium	~	~	~	15.3	11.6	2.09	28.2	11	3.73	21.6	20.3	2.19	19.4	8.04	4.96
Zinc	109	10000	2480	33.6	**113**	19.9	37.9	**213**	54.4	20.9	**932**	9.7	**251** J	**497**	33.2
General Chemistry (%)															
Solids, Percent	~	~	~	90.8	92.6	81.4	94.3	90.7	82.8	98.2	93.8	87.2	91	90.2	83.6
Total Solids	~	~	~	90.8	92.6	81.4	94.3	90.7	82.8	98.2	93.8	87.2	91	90.2	83.6

Notes provided on Page 11.

Table 4
Soil Summary Report
Soil Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

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.
2. Criterion comparisons for 3- & 4-methylphenol (m&p cresol) are provided for reference. Promulgated SCOs are for 3-methylphenol (m-cresol) and 4-methylphenol (p-cresol).
3. Only detected analytes are shown in the table.
4. Detected analytical results above Unrestricted Use SCOs are bolded.
5. Detected analytical results above Restricted Use Residential SCOs are shaded.
6. Detected analytical results above Protection of Groundwater are underlined.
7. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
8. Sample SODUP01_020620, SODUP02_021020, and SODUP03_021120 are duplicate samples of SB-1_6-8_020620, SB-15_10-12_021020, and SB-6_9-11_021120, respectively.
9. ~ = Regulatory limit for this analyte does not exist
10. bgs = below grade surface
11. % = percent
12. ND = Not detected

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 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.

Table 5
Soil Summary Report
Soil Sample Emerging Contaminant Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	NYSDEC Part 375 Unrestricted Use Guidance Values	NYSDEC Part 375 Restricted Use Residential Guidance Values	NYSDEC Part 375 Protection of Groundwater Guidance Values	SB-1 SB-1_0-2_020620 L2005543-16 2/6/2020 0-2		SB-1 SB-1_2-4_020620 L2005543-17 2/6/2020 2-4		SB-1 SB-1_6-8_020620 L2005543-18 2/6/2020 6-8		SB-1 SODUP01_020620 L2005543-28 2/6/2020 6-8		SB-2 SB-2_0-2_021120 L2006176-16 2/11/2020 0-2		SB-2 SB-2_6-8_021120 L2006176-17 2/11/2020 6-8		SB-3 SB-3_0-2_020720 L2005791-01 2/7/2020 0-2		SB-3 SB-3_6-8_020720 L2005791-02 2/7/2020 6-8		SB-3 SB-3_9-11_020720 L2005791-03 2/7/2020 9-11	
Per and Polyfluoroalkyl Substances (ppb)																					
N-ethyl perfluorooctane- sulfonamidoacetic Acid (NEtFOSAA)	~	~	~	0.105	J	0.116	J	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
N-methyl perfluorooctane- sulfonamidoacetic Acid (NMeFOSAA)	~	~	~	0.994	U	1.03	U	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Perfluorobutanesulfonic Acid (PFBS)	~	~	~	0.994	U	1.03	U	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Perfluorobutanoic acid (PFBA)	~	~	~	0.994	U	1.03	U	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Perfluorodecanesulfonic Acid (PFDS)	~	~	~	0.994	U	1.03	U	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Perfluorodecanoic Acid (PFDA)	~	~	~	0.994	U	0.163	J	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Perfluorododecanoic Acid (PFDoA)	~	~	~	0.994	U	1.03	U	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Perfluoroheptanesulfonic Acid (PFHpS)	~	~	~	0.994	U	1.03	U	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	0.994	U	0.064	J	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Perfluorohexanesulfonic Acid (PFHxS)	~	~	~	0.994	U	1.03	U	0.994	U	1.07	U	1.04	U	1.19	U	1.04	UJ	1.1	UJ	1.15	UJ
Perfluorohexanoic Acid (PFHxA)	~	~	~	0.135	J	0.301	J	0.053	J	0.058	J	0.063	J	0.067	J	0.067	J	1.1	U	1.15	U
Perfluorononanoic Acid (PFNA)	~	~	~	0.994	U	1.03	U	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Perfluorooctanesulfonamide (FOSA)	~	~	~	0.994	U	1.03	U	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Perfluorooctanesulfonic Acid (PFOS)	0.88	8.8	3.7	0.168	J	**1**	J	0.239	J	0.306	J	0.361	J	**1.03**	J	**1.16**	J	0.208	J	*1.15*	U
Perfluorooctanoic Acid (PFOA)	0.66	6.6	1.1	0.05	J	0.086	J	*0.994*	U	*1.07*	U	*1.04*	U	0.116	J	0.078	J	0.049	J	*1.15*	U
Perfluoropentanoic Acid (PFPeA)	~	~	~	0.116	J	0.349	J	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Perfluorotetradecanoic Acid (PFTA)	~	~	~	0.994	U	1.03	U	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Perfluorotridecanoic Acid (PFTrDA)	~	~	~	0.994	U	1.03	U	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Perfluoroundecanoic Acid (PFUnA)	~	~	~	0.994	U	0.107	J	0.994	U	1.07	U	1.04	U	1.19	U	0.064	J	1.1	U	1.15	U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	~	~	~	0.994	U	1.03	U	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	~	~	~	0.994	U	1.03	U	0.994	U	1.07	U	1.04	U	1.19	U	1.04	U	1.1	U	1.15	U
Total PFOA and PFOS	~	~	~	0.218	J	1.09	J	0.239	J	0.306	J	0.361	J	1.15	J	1.24	J	0.257	J	1.15	U

Notes provided on Page 8.
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 5
Soil Summary Report
Soil Sample Emerging Contaminant Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	**NYSDEC Part 375 Unrestricted Use Guidance Values**	**NYSDEC Part 375 Restricted Use Residential Guidance Values**	**NYSDEC Part 375 Protection of Groundwater Guidance Values**	**SB-4**	**SB-4**	**SB-4**	**SB-5**	**SB-5**	**SB-5**	**SB-6**	**SB-6**	**SB-6**
Sample ID				**SB-4_0-2_020620**	**SB-4_6-8_020620**	**SB-4_10-12_020620**	**SB-5_0-2_020620**	**SB-5_5-7_020620**	**SB-5_10-12_020620**	**SB-6_0-2_021120**	**SB-6_5-7_021120**	**SB-6_9-11_021120**
Laboratory ID				**L2005543-19**	**L2005543-20**	**L2005543-21**	**L2005543-13**	**L2005543-14**	**L2005543-15**	**L2006176-01**	**L2006176-02**	**L2006176-03**
Sample Date				**2/6/2020**	**2/6/2020**	**2/6/2020**	**2/6/2020**	**2/6/2020**	**2/6/2020**	**2/11/2020**	**2/11/2020**	**2/11/2020**
Sample Depth (feet bgs)				**0-2**	**6-8**	**10-12**	**0-2**	**5-7**	**10-12**	**0-2**	**5-7**	**9-11**
Per and Polyfluoroalkyl Substances (ppb)												
N-ethyl perfluorooctane- sulfonamidoacetic Acid (NEtFOSAA)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
N-methyl perfluorooctane- sulfonamidoacetic Acid (NMeFOSAA)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Perfluorobutanesulfonic Acid (PFBS)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Perfluorobutanoic acid (PFBA)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Perfluorodecanesulfonic Acid (PFDS)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Perfluorodecanoic Acid (PFDA)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Perfluorododecanoic Acid (PFDoA)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Perfluoroheptanesulfonic Acid (PFHpS)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Perfluoroheptanoic acid (PFHpA)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Perfluorohexanesulfonic Acid (PFHxS)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 UJ	1.05 UJ	1.12 U	1.07 UJ	1.08 UJ	1.08 UJ
Perfluorohexanoic Acid (PFHxA)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	0.092 J	1.08 U	1.08 U
Perfluorononanoic Acid (PFNA)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Perfluorooctanesulfonamide (FOSA)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Perfluorooctanesulfonic Acid (PFOS)	0.88	8.8	3.7	0.317 J	*1.08* U	*1.12* U	0.432 J	0.18 J	*1.12* U	0.399 J	0.415 J	*1.08* U
Perfluorooctanoic Acid (PFOA)	0.66	6.6	1.1	0.062 J	*1.08* U	*1.12* U	0.058 J	0.077 J	*1.12* U	0.094 J	0.056 J	*1.08* U
Perfluoropentanoic Acid (PFPeA)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	0.074 J	1.08 U	1.08 U
Perfluorotetradecanoic Acid (PFTA)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Perfluorotridecanoic Acid (PFTrDA)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Perfluoroundecanoic Acid (PFUnA)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	~	~	~	0.964 U	1.08 U	1.12 U	0.974 U	1.05 U	1.12 U	1.07 U	1.08 U	1.08 U
Total PFOA and PFOS	~	~	~	0.379 J	1.08 U	1.12 U	0.49 J	0.257 J	1.12 U	0.493 J	0.471 J	1.08 U

Notes provided on Page 8.
Concentrations above Unrestricted Use Guidance Values are bolded.
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Concentrations above PGW Guidance Values are underlined.

Table 5
Soil Summary Report
Soil Sample Emerging Contaminant Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	**NYSDEC Part 375 Unrestricted Use Guidance Values**	**NYSDEC Part 375 Restricted Use Residential Guidance Values**	**NYSDEC Part 375 Protection of Groundwater Guidance Values**	**SB-6**		**SB-7**		**SB-7**		**SB-7**		**SB-8**		**SB-8**		**SB-8**		**SB-9**		**SB-9**	
Sample ID				**SODUP03_021120**		**SB-7_0-2_020720**		**SB-7_5-7_020720**		**SB-7_9-11_020720**		**SB-8_0-2_020620**		**SB-8_5-7_020620**		**SB-8_10-12_020620**		**SB-9_0-2_021120**		**SB-9_6-8_021120**	
Laboratory ID				**L2006176-20**		**L2005791-04**		**L2005791-05**		**L2005791-06**		**L2005543-22**		**L2005543-23**		**L2005543-24**		**L2006176-13**		**L2006176-14**	
Sample Date				**2/11/2020**		**2/7/2020**		**2/7/2020**		**2/7/2020**		**2/6/2020**		**2/6/2020**		**2/6/2020**		**2/11/2020**		**2/11/2020**	
Sample Depth (feet bgs)				**9-11**		**0-2**		**5-7**		**9-11**		**0-2**		**5-7**		**10-12**		**0-2**		**6-8**	
Per and Polyfluoroalkyl Substances (ppb)																					
N-ethyl perfluorooctane- sulfonamidoacetic Acid (NEtFOSAA)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
N-methyl perfluorooctane- sulfonamidoacetic Acid (NMeFOSAA)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Perfluorobutanesulfonic Acid (PFBS)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Perfluorobutanoic acid (PFBA)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Perfluorodecanesulfonic Acid (PFDS)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Perfluorodecanoic Acid (PFDA)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Perfluorododecanoic Acid (PFDoA)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Perfluoroheptanesulfonic Acid (PFHpS)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Perfluorohexanesulfonic Acid (PFHxS)	~	~	~	1.22	U	1.11	UJ	0.98	UJ	1.13	UJ	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Perfluorohexanoic Acid (PFHxA)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	0.055	J	1.04	U	1.18	U	0.988	U	1.1	U
Perfluorononanoic Acid (PFNA)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Perfluorooctanesulfonamide (FOSA)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Perfluorooctanesulfonic Acid (PFOS)	0.88	8.8	3.7	*1.22*	U	0.24	J	0.253	J	*1.13*	U	0.214	J	0.376	J	*1.18*	U	0.426	J	*1.1*	U
Perfluorooctanoic Acid (PFOA)	0.66	6.6	1.1	*1.22*	U	*1.11*	U	0.071	J	*1.13*	U	*1.02*	U	0.044	J	*1.18*	U	*0.988*	U	0.046	J
Perfluoropentanoic Acid (PFPeA)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Perfluorotetradecanoic Acid (PFTA)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Perfluorotridecanoic Acid (PFTrDA)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Perfluoroundecanoic Acid (PFUnA)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	~	~	~	1.22	U	1.11	U	0.98	U	1.13	U	1.02	U	1.04	U	1.18	U	0.988	U	1.1	U
Total PFOA and PFOS	~	~	~	1.22	U	0.24	J	0.324	J	1.13	U	0.214	J	0.42	J	1.18	U	0.426	J	0.046	J

Notes provided on Page 8.
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 5
Soil Summary Report
Soil Sample Emerging Contaminant Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	**NYSDEC Part 375 Unrestricted Use Guidance Values**	**NYSDEC Part 375 Restricted Use Residential Guidance Values**	**NYSDEC Part 375 Protection of Groundwater Guidance Values**	**SB-9**		**SB-10**		**SB-10**		**SB-10**		**SB-11**		**SB-11**		**SB-11**		**SB-12**		**SB-12**	
Sample ID				**SB-9_9-11_021120**		**SB-10_0-2_020620**		**SB-10_5-7_020620**		**SB-10_10-12_020620**		**SB-11_0-2_021120**		**SB-11_6-8_021120**		**SB-11_9-11_021120**		**SB-12_0-2_020720**		**SB-12_5-7_020720**	
Laboratory ID				**L2006176-15**		**L2005543-25**		**L2005543-26**		**L2005543-27**		**L2006176-07**		**L2006176-08**		**L2006176-09**		**L2005791-07**		**L2005791-08**	
Sample Date				**2/11/2020**		**2/6/2020**		**2/6/2020**		**2/6/2020**		**2/11/2020**		**2/11/2020**		**2/11/2020**		**2/7/2020**		**2/7/2020**	
Sample Depth (feet bgs)				**9-11**		**0-2**		**5-7**		**10-12**		**0-2**		**6-8**		**9-11**		**0-2**		**5-7**	
Per and Polyfluoroalkyl Substances (ppb)																					
N-ethyl perfluorooctane- sulfonamidoacetic Acid (NEtFOSAA)	~	~	~	1.15	U	0.982	U	1	U	0.105	J	0.966	U	1.18	U	1.16	U	1.06	U	0.936	U
N-methyl perfluorooctane- sulfonamidoacetic Acid (NMeFOSAA)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	U	1.18	U	1.16	U	1.06	U	0.936	U
Perfluorobutanesulfonic Acid (PFBS)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	U	1.18	U	1.16	U	1.06	U	0.936	U
Perfluorobutanoic acid (PFBA)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	U	1.18	U	1.16	U	1.06	U	0.936	U
Perfluorodecanesulfonic Acid (PFDS)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	U	1.18	U	1.16	U	1.06	U	0.936	U
Perfluorodecanoic Acid (PFDA)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	U	1.18	U	1.16	U	0.132	J	0.936	U
Perfluorododecanoic Acid (PFDoA)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	U	1.18	U	1.16	U	0.086	J	0.936	U
Perfluoroheptanesulfonic Acid (PFHpS)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	U	1.18	U	1.16	U	1.06	U	0.936	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	U	1.18	U	1.16	U	1.06	U	0.936	U
Perfluorohexanesulfonic Acid (PFHxS)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	UJ	1.18	UJ	1.16	UJ	1.06	UJ	0.936	UJ
Perfluorohexanoic Acid (PFHxA)	~	~	~	1.15	U	0.065	J	1	U	1.16	U	0.078	J	1.18	U	1.16	U	0.064	J	0.936	U
Perfluorononanoic Acid (PFNA)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	U	1.18	U	1.16	U	1.06	U	0.936	U
Perfluorooctanesulfonamide (FOSA)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	U	1.18	U	1.16	U	1.06	U	0.936	U
Perfluorooctanesulfonic Acid (PFOS)	0.88	8.8	3.7	*1.15*	U	*0.982*	U	0.196	J	*1.16*	U	0.781	J	*1.18*	U	*1.16*	U	**1.06**		0.16	J
Perfluorooctanoic Acid (PFOA)	0.66	6.6	1.1	*1.15*	U	*0.982*	U	*1*	U	*1.16*	U	0.064	J	*1.18*	U	*1.16*	U	0.089	J	0.084	J
Perfluoropentanoic Acid (PFPeA)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.047	J	1.18	U	1.16	U	1.06	U	0.936	U
Perfluorotetradecanoic Acid (PFTA)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	U	1.18	U	1.16	U	1.06	U	0.936	U
Perfluorotridecanoic Acid (PFTrDA)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	U	1.18	U	1.16	U	1.06	U	0.936	U
Perfluoroundecanoic Acid (PFUnA)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.095	J	1.18	U	1.16	U	0.104	J	0.936	U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	U	1.18	U	1.16	U	1.06	U	0.936	U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	~	~	~	1.15	U	0.982	U	1	U	1.16	U	0.966	U	1.18	U	1.16	U	1.06	U	0.936	U
Total PFOA and PFOS	~	~	~	1.15	U	0.982	U	0.196	J	1.16	U	0.845	J	1.18	U	1.16	U	1.15	J	0.244	J

Notes provided on Page 8.
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Table 5
Soil Summary Report
Soil Sample Emerging Contaminant Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location Sample ID Laboratory ID Sample Date Sample Depth (feet bgs)	**NYSDEC Part 375 Unrestricted Use Guidance Values**	**NYSDEC Part 375 Restricted Use Residential Guidance Values**	**NYSDEC Part 375 Protection of Groundwater Guidance Values**	**SB-12 SB-12_10-12_020720 L2005791-09 2/7/2020 10-12**		**SB-13 SB-13_0-2_021020 L2005961-01 2/10/2020 0-2**		**SB-13 SB-13_4-6_021020 L2005961-02 2/10/2020 4-6**		**SB-13 SB-13_9-11_021020 L2005961-03 2/10/2020 9-11**		**SB-14 SB-14_0-2_021120 L2006176-10 2/11/2020 0-2**		**SB-14 SB-14_6-8_021120 L2006176-11 2/11/2020 6-8**		**SB-14 SB-14_9-11_021120 L2006176-12 2/11/2020 9-11**		**SB-15 SB-15_0-2_021020 L2005961-04 2/10/2020 0-2**		**SB-15 SB-15_6-8_021020 L2005961-05 2/10/2020 6-8**	
Per and Polyfluoroalkyl Substances (ppb)																					
N-ethyl perfluorooctane- sulfonamidoacetic Acid (NEtFOSAA)	~	~	~	1.09	U	0.105	J	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
N-methyl perfluorooctane- sulfonamidoacetic Acid (NMeFOSAA)	~	~	~	1.09	U	0.999	U	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
Perfluorobutanesulfonic Acid (PFBS)	~	~	~	1.09	U	0.999	U	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
Perfluorobutanoic acid (PFBA)	~	~	~	1.09	U	0.999	U	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.096	J	1.06	U
Perfluorodecanesulfonic Acid (PFDS)	~	~	~	1.09	U	0.999	U	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
Perfluorodecanoic Acid (PFDA)	~	~	~	1.09	U	0.093	J	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
Perfluorododecanoic Acid (PFDoA)	~	~	~	1.09	U	0.072	J	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
Perfluoroheptanesulfonic Acid (PFHpS)	~	~	~	1.09	U	0.999	U	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	1.09	U	0.999	U	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
Perfluorohexanesulfonic Acid (PFHxS)	~	~	~	1.09	UJ	0.999	U	1	U	1.11	U	0.99	UJ	1.11	U	1.1	U	0.959	U	1.06	U
Perfluorohexanoic Acid (PFHxA)	~	~	~	1.09	U	0.999	U	1	U	1.11	U	0.99	U	0.06	J	1.1	U	0.959	U	1.06	U
Perfluorononanoic Acid (PFNA)	~	~	~	1.09	U	0.999	U	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
Perfluorooctanesulfonamide (FOSA)	~	~	~	1.09	U	0.999	U	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
Perfluorooctanesulfonic Acid (PFOS)	0.88	8.8	3.7	*1.09*	U	0.865	J	0.564	J	*1.11*	U	0.558	J	0.368	J	*1.1*	U	0.346	J	*1.06*	U
Perfluorooctanoic Acid (PFOA)	0.66	6.6	1.1	*1.09*	U	*0.999*	U	*1*	U	*1.11*	U	*0.99*	U	*1.11*	U	*1.1*	U	*0.959*	U	0.132	J
Perfluoropentanoic Acid (PFPeA)	~	~	~	1.09	U	0.999	U	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
Perfluorotetradecanoic Acid (PFTA)	~	~	~	1.09	U	0.999	U	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
Perfluorotridecanoic Acid (PFTrDA)	~	~	~	1.09	U	0.999	U	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
Perfluoroundecanoic Acid (PFUnA)	~	~	~	1.09	U	0.126	J	1	U	1.11	U	0.083	J	1.11	U	1.1	U	0.959	U	1.06	U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	~	~	~	1.09	U	0.999	U	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	~	~	~	1.09	U	0.999	U	1	U	1.11	U	0.99	U	1.11	U	1.1	U	0.959	U	1.06	U
Total PFOA and PFOS	~	~	~	1.09	U	0.865	J	0.564	J	1.11	U	0.558	J	0.368	J	1.1	U	0.346	J	0.132	J

Notes provided on Page 8.
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 5
Soil Summary Report
Soil Sample Emerging Contaminant Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location **Sample ID** **Laboratory ID** **Sample Date** **Sample Depth (feet bgs)**	**NYSDEC Part 375 Unrestricted Use Guidance Values**	**NYSDEC Part 375 Restricted Use Residential Guidance Values**	**NYSDEC Part 375 Protection of Groundwater Guidance Values**	**SB-15** **SB-15_10-12_021020** **L2005961-06** **2/10/2020** **10-12**		**SB-15** **SODUP02_021020** **L2005961-09** **2/10/2020** **10-12**		**SB-16** **SB-16_0-2_021120** **L2006176-04** **2/11/2020** **0-2**		**SB-16** **SB-16_5-7_021120** **L2006176-05** **2/11/2020** **5-7**		**SB-16** **SB-16_9-11_021120** **L2006176-06** **2/11/2020** **9-11**		**SB-17** **SB-17_0-2_020520** **L2005543-10** **2/5/2020** **0-2**		**SB-17** **SB-17_5-7_020520** **L2005543-11** **2/5/2020** **5-7**		**SB-17** **SB-17_9-11_020520** **L2005543-12** **2/5/2020** **9-11**		**SB-18** **SB-18_0-2_020520** **L2005543-07** **2/5/2020** **0-2**	
Per and Polyfluoroalkyl Substances (ppb)																					
N-ethyl perfluorooctane- sulfonamidoacetic Acid (NEtFOSAA)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.088	J	1.02	U	1.11	U	1.02	U
N-methyl perfluorooctane- sulfonamidoacetic Acid (NMeFOSAA)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.997	UJ	1.02	U	1.11	U	1.02	U
Perfluorobutanesulfonic Acid (PFBS)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.997	U	1.02	U	1.11	U	1.02	U
Perfluorobutanoic acid (PFBA)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.997	U	1.02	U	1.11	U	NA	
Perfluorodecanesulfonic Acid (PFDS)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.997	U	1.02	U	1.11	U	1.02	U
Perfluorodecanoic Acid (PFDA)	~	~	~	1.1	U	1.04	U	0.082	J	0.96	U	1.24	U	0.997	U	0.089	J	1.11	U	1.02	U
Perfluorododecanoic Acid (PFDoA)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.997	U	1.02	U	1.11	U	1.02	U
Perfluoroheptanesulfonic Acid (PFHpS)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.997	U	1.02	U	1.11	U	1.02	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.997	U	0.056	J	1.11	U	1.02	U
Perfluorohexanesulfonic Acid (PFHxS)	~	~	~	1.1	U	1.04	U	1.01	UJ	0.96	UJ	1.24	UJ	0.997	UJ	1.02	UJ	1.11	UJ	1.02	U
Perfluorohexanoic Acid (PFHxA)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.068	J	0.101	J	1.11	U	0.061	J
Perfluorononanoic Acid (PFNA)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.997	U	1.02	U	1.11	U	1.02	U
Perfluorooctanesulfonamide (FOSA)	~	~	~	1.1	U	1.04	U	1.01	U	0.15	J	1.24	U	0.997	U	1.02	U	1.11	U	1.02	U
Perfluorooctanesulfonic Acid (PFOS)	0.88	8.8	3.7	*1.1*	U	*1.04*	U	0.648	J	0.69	J	*1.24*	U	0.201	J	**1.05**		*1.11*	U	0.146	J
Perfluorooctanoic Acid (PFOA)	0.66	6.6	1.1	*1.1*	U	0.127	J	*1.01*	U	0.152	J	*1.24*	U	0.164	J	0.407	J	*1.11*	U	*1.02*	U
Perfluoropentanoic Acid (PFPeA)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.997	U	0.058	J	1.11	U	1.02	U
Perfluorotetradecanoic Acid (PFTA)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.997	U	1.02	U	1.11	U	1.02	U
Perfluorotridecanoic Acid (PFTrDA)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.997	U	1.02	U	1.11	U	1.02	U
Perfluoroundecanoic Acid (PFUnA)	~	~	~	1.1	U	1.04	U	0.069	J	0.96	U	1.24	U	0.997	U	0.066	J	1.11	U	0.058	J
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.997	U	1.02	U	1.11	U	1.02	U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	~	~	~	1.1	U	1.04	U	1.01	U	0.96	U	1.24	U	0.997	U	1.02	U	1.11	U	1.02	U
Total PFOA and PFOS	~	~	~	1.1	U	0.127	J	0.648	J	0.842	J	1.24	U	0.365	J	1.46	J	1.11	U	0.146	J

Notes provided on Page 8.
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 5
Soil Summary Report
Soil Sample Emerging Contaminant Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	NYSDEC Part 375 Unrestricted Use Guidance Values	NYSDEC Part 375 Restricted Use Residential Guidance Values	NYSDEC Part 375 Protection of Groundwater Guidance Values	SB-18		SB-18		SB-19		SB-19		SB-19		SB-20		SB-20		SB-20	
Sample ID				**SB-18_2-4_020520**		**SB-18_10-12_020520**		**SB-19_0-2_020520**		**SB-19_2-4_020520**		**SB-19_6-8_020520**		**SB-20_0-2_020520**		**SB-20_2-4_020520**		**SB-20_6-8_020520**	
Laboratory ID				**L2005543-08**		**L2005543-09**		**L2005543-04**		**L2005543-05**		**L2005543-06**		**L2005543-01**		**L2005543-02**		**L2005543-03**	
Sample Date				**2/5/2020**		**2/5/2020**		**2/5/2020**		**2/5/2020**		**2/5/2020**		**2/5/2020**		**2/5/2020**		**2/5/2020**	
Sample Depth (feet bgs)				**2-4**		**10-12**		**0-2**		**2-4**		**6-8**		**0-2**		**2-4**		**6-8**	
Per and Polyfluoroalkyl Substances (ppb)																			
N-ethyl perfluorooctane- sulfonamidoacetic Acid (NEtFOSAA)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	0.149	J	1.13	U
N-methyl perfluorooctane- sulfonamidoacetic Acid (NMeFOSAA)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	1.05	U	1.13	U
Perfluorobutanesulfonic Acid (PFBS)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	1.05	U	1.13	U
Perfluorobutanoic acid (PFBA)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	1.05	U	1.13	U
Perfluorodecanesulfonic Acid (PFDS)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	1.05	U	1.13	U
Perfluorodecanoic Acid (PFDA)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	0.111	J	1.05	U	1.13	U
Perfluorododecanoic Acid (PFDoA)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	1.05	U	1.13	U
Perfluoroheptanesulfonic Acid (PFHpS)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	1.05	U	1.13	U
Perfluoroheptanoic acid (PFHpA)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	0.052	J	1.13	U
Perfluorohexanesulfonic Acid (PFHxS)	~	~	~	0.974	UJ	1.16	UJ	0.934	UJ	1.02	UJ	1.09	UJ	1.03	UJ	0.066	J	1.13	UJ
Perfluorohexanoic Acid (PFHxA)	~	~	~	0.053	J	1.16	U	0.934	U	0.075	J	1.09	U	0.064	J	0.062	J	1.13	U
Perfluorononanoic Acid (PFNA)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	1.05	U	1.13	U
Perfluorooctanesulfonamide (FOSA)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	1.05	U	1.13	U
Perfluorooctanesulfonic Acid (PFOS)	0.88	8.8	3.7	0.486	J	*1.16*	U	0.246	J	**0.98**	J	*1.09*	U	**1.08**		**2.66**		0.216	J
Perfluorooctanoic Acid (PFOA)	0.66	6.6	1.1	0.162	J	*1.16*	U	0.06	J	0.322	J	*1.09*	U	0.07	J	**0.679**	J	0.098	J
Perfluoropentanoic Acid (PFPeA)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	1.05	U	1.13	U
Perfluorotetradecanoic Acid (PFTA)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	1.05	U	1.13	U
Perfluorotridecanoic Acid (PFTrDA)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	1.05	U	1.13	U
Perfluoroundecanoic Acid (PFUnA)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	0.058	J	1.05	U	1.13	U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	1.05	U	1.13	U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	~	~	~	0.974	U	1.16	U	0.934	U	1.02	U	1.09	U	1.03	U	1.05	U	1.13	U
Total PFOA and PFOS	~	~	~	0.648	J	1.16	U	0.306	J	1.3	J	1.09	U	1.15	J	3.34	J	0.314	J

Notes provided on Page 8.
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 5
Soil Summary Report
Soil Sample Emerging Contaminant Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

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, Restricted Use Residential and Protection of Groundwater Guidance Values (Janurary 2021).
2. Detected analytical results above Unrestricted Use Guidance Values are bolded.
3. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
4. Sample SODUP01_020620 is a duplicate sample of SB-1_6-8_020620; sample SODUP02_021020 is a duplicate sample of SB-15_10-12_021020; and sample SODUP03_021120 is a duplicate sample of SB-6_9-11_021120.
5. ~ = Regulatory limit for this analyte does not exist
6. bgs = below grade surface
7. ppb = parts per billion

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 6
Groundwater Summary Report
Groundwater Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	NYSDEC SGVs	MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-8		MW-9		MW-10		MW-11		MW-12	
Sample ID		MW-1_021820		MW-2_021420		MW-3_021820		MW-4_021420		MW-5_021820		MW-6_021420		MW-7_021820		MW-8_021920		GWDUP01_021920		MW-9_021420		MW-10_021920		MW-11_021920		MW-12_021920	
Laboratory ID		L2007256-01		L2006934-01		L2007256-02		L2006934-02		L2007256-03		L2006934-03		L2007256-04		L2007457-01		L2007457-05		L2006934-04		L2007457-04		L2007457-03		L2007457-02	
Sample Date		2/18/2020		2/14/2020		2/18/2020		2/14/2020		2/18/2020		2/14/2020		2/18/2020		2/19/2020		2/19/2020		2/14/2020		2/19/2020		2/19/2020		2/19/2020	
Volatile Organic Compounds (µg/L)																											
1,2-Dichlorobenzene	3	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Cis-1,2-Dichloroethene	5	2.6		2.5	U	2.5	U	2.5	U	0.82	J	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Cymene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	1.1	J	2.5	U
Naphthalene	10	2.5	U	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
Tert-Butyl Methyl Ether	10	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.3	J	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Tetrachloroethene (PCE)	5	**10**		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
Total 1,2-Dichloroethene (Cis and Trans)	~	2.6		2.5	U	2.5	U	2.5	U	0.82	J	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Trichloroethene (TCE)	5	1.6		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
Vinyl Chloride	2	0.21	J	1	UJ	1	U	1	UJ	1	U	1	UJ	1	U	1	U	1	U	1	UJ	1	U	1	U	1	U
Semivolatile Organic Compounds (µg/L)																											
1,2,4,5-Tetrachlorobenzene	5	*10*	U	*10*	U	*10*	U	*10*	U	*10*	U	*10*	U	*10*	U	*10*	UJ	*10*	U	*10*	U	*10*	UJ	*10*	UJ	*10*	UJ
1,2,4-Trichlorobenzene	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichlorobenzene	3	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,3-Dichlorobenzene	3	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,4-Dichlorobenzene	3	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,4-Dioxane (P-Dioxane)	~	0.144	U	0.15	U	0.144	U	0.156	U	0.15	U	0.163	U	0.144	U	0.156	U	0.144	U	0.156	U	0.144	U	0.144	U	0.15	U
2,3,4,6-Tetrachlorophenol	~	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
2,4,5-Trichlorophenol	~	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2,4,6-Trichlorophenol	~	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2,4-Dichlorophenol	1	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U	*5*	U
2,4-Dimethylphenol	1	*5*	U	*5*	UJ	*5*	U	*5*	UJ	*5*	U	*5*	UJ	*5*	U	*5*	U	*5*	U	*5*	UJ	*5*	U	*5*	U	*5*	U
2,4-Dinitrophenol	1	*20*	U	*20*	U	*20*	U	*20*	U	*20*	U	*20*	U	*20*	U	*20*	U	*20*	U	*20*	U	*20*	U	*20*	U	*20*	U
2,4-Dinitrotoluene	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2,6-Dinitrotoluene	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2-Chloronaphthalene	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	0.2	U	0.2	U	0.2	U	0.2	U
2-Chlorophenol	~	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
2-Methylnaphthalene	~	0.1	U	0.02	J	0.1	U	0.11		0.1	U	0.04	J	0.03	J	0.1	U	0.1	U	0.03	J	0.1	U	0.04	J	0.1	U
Acenaphthene	20	0.1	U	0.02	J	0.04	J	0.15		0.1	U	0.1	U	0.02	J	0.1	U	0.1	U	0.1	U	0.1	U	0.19		0.1	U
Acenaphthylene	~	0.1	U	0.1	U	0.1	U	0.02	J	0.1	U	0.04	J	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Anthracene	50	0.1	U	0.03	J	0.06	J	0.09	J	0.05	J	0.04	J	0.05	J	0.02	J	0.02	J	0.03	J	0.02	J	0.11		0.1	U
Benzo(a)Anthracene	0.002	*0.1*	U	*0.1*	U	*0.1*	U	*0.1*	U	*0.1*	U	**0.06**	J	**0.03**	J	*0.1*	U	*0.1*	U	*0.1*	U	**0.02**	J	**0.07**	J	*0.1*	U
Benzo(a)Pyrene	0	*0.1*	U	*0.1*	U	*0.1*	U	*0.1*	U	*0.1*	U	**0.05**	J	**0.02**	J	*0.1*	U	*0.1*	U	*0.1*	U	*0.1*	U	**0.03**	J	*0.1*	U
Benzo(b)Fluoranthene	0.002	*0.1*	U	*0.1*	U	**0.02**	J	**0.02**	J	*0.1*	U	**0.07**	J	**0.02**	J	*0.1*	U	*0.1*	U	*0.1*	U	*0.1*	U	**0.05**	J	*0.1*	U
Benzo(g,h,i)Perylene	~	0.1	U	0.1	U	0.02	J	0.1	U	0.1	U	0.03	J	0.01	J	0.1	U	0.1	U	0.1	U	0.1	U	0.03	J	0.1	U
Benzo(k)Fluoranthene	0.002	*0.1*	U	*0.1*	U	**0.01**	J	*0.1*	U	*0.1*	U	**0.02**	J	*0.1*	U	*0.1*	U	*0.1*	U	*0.1*	U	*0.1*	U	**0.02**	J	*0.1*	U
Benzoic Acid	~	50	UJ	50	U	50	UJ	50	U	50	UJ	50	U	50	UJ	50	U	50	U	50	U	50	U	50	U	50	U
Bis(2-Ethylhexyl) Phthalate	5	1.8	J	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Caprolactam	~	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chrysene	0.002	*0.1*	U	*0.1*	U	*0.1*	U	*0.1*	U	*0.1*	U	**0.04**	J	*0.1*	U	*0.1*	U	*0.1*	U	*0.1*	U	*0.1*	U	**0.06**	J	*0.1*	U
Dibenz(a,h)Anthracene	~	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.01	J	0.1	U
Fluoranthene	50	0.1	U	0.03	J	0.03	J	0.08	J	0.1	U	0.12		0.06	J	0.1	U	0.1	U	0.1	U	0.11		0.3		0.1	U
Fluorene	50	0.1	U	0.1	U	0.1	U	0.11		0.1	U	0.04	J	0.04	J	0.1	U	0.1	U	0.1	U	0.1	U	0.14		0.1	U
Indeno(1,2,3-c,d)Pyrene	0.002	*0.1*	U	*0.1*	U	**0.02**	J	*0.1*	U	*0.1*	U	**0.03**	J	**0.02**	J	*0.1*	U	*0.1*	U	*0.1*	U	*0.1*	U	**0.03**	J	*0.1*	U
Naphthalene	10	0.1	U	0.1	U	0.1	U	0.62		0.1	U	0.1	U	0.09	J	0.1	U	0.1	U	0.1	U	0.1	U	0.06	J	0.1	U
Phenanthrene	50	0.1	U	0.05	J	0.05	J	0.29		0.1	U	0.12		0.12		0.1	UJ	0.02	J	0.03	J	0.04	J	0.38		0.1	U
Pyrene	50	0.1	U	0.03	J	0.05	J	0.06	J	0.1	U	0.11		0.05	J	0.1	U	0.1	U	0.03	J	0.11		0.25		0.1	U

Notes provided on Page 3.

Table 6
Groundwater Summary Report
Groundwater Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	**NYSDEC SGVs**	**MW-1**	**MW-2**	**MW-3**	**MW-4**	**MW-5**	**MW-6**	**MW-7**	**MW-8**	**MW-8**	**MW-9**	**MW-10**	**MW-11**	**MW-12**
Sample ID		**MW-1_021820**	**MW-2_021420**	**MW-3_021820**	**MW-4_021420**	**MW-5_021820**	**MW-6_021420**	**MW-7_021820**	**MW-8_021920**	**GWDUP01_021920**	**MW-9_021420**	**MW-10_021920**	**MW-11_021920**	**MW-12_021920**
Laboratory ID		**L2007256-01**	**L2006934-01**	**L2007256-02**	**L2006934-02**	**L2007256-03**	**L2006934-03**	**L2007256-04**	**L2007457-01**	**L2007457-05**	**L2006934-04**	**L2007457-04**	**L2007457-03**	**L2007457-02**
Sample Date		**2/18/2020**	**2/14/2020**	**2/18/2020**	**2/14/2020**	**2/18/2020**	**2/14/2020**	**2/18/2020**	**2/19/2020**	**2/19/2020**	**2/14/2020**	**2/19/2020**	**2/19/2020**	**2/19/2020**
Pesticides (µg/L)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Herbicides (µg/L)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls (µg/L)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics (µg/L)														
Aluminum (Dissolved)	~	3.94 J	4.5 J	3.95 J	5.8 J	10 U	8.96 J	4.07 J	4.32 J	10 UJ	4.26 J	4.08 J	5.49 J	3.66 J
Aluminum	~	6.46 J	13.9 U	21.8	11.8 U	22.1	286	29.8	10 U	10 U	10 U	10 U	12.4 U	11.2 U
Antimony (Dissolved)	3	**34.73**	2.6 J	0.51 J	*4* U	*4* U	0.44 J	**3.24** J	1.25 J	0.63 J	0.56 J	0.59 J	1.15 J	0.8 J
Antimony	3	**36.4**	1.83 J	0.55 J	*4* U	*4* U	0.44 J	0.53 J	0.83 J	0.49 J	0.57 J	*4* U	0.85 J	0.46 J
Arsenic (Dissolved)	25	13.91	7.33	5.66	8.82	18.21	4.15	6.68	3.23	3.39	1.89	2	3.01	5.59
Arsenic	25	14.16	7.03	5.97	7.13	19.6	4.26	6.32	3.69	3.55	1.86	1.54	2.88	5.95
Barium (Dissolved)	1000	37.28	62.59	34.26	28.97	23.93	54.22	44.84	19.5 J	22.82 J	21.56	24.27	22.79	32.37
Barium	1000	37.63	63.2	31.97	27.67	22.48	54.22	43.42	19.46 J	18.8 J	19.38	20.34	16.43	27.06
Cadmium (Dissolved)	5	1.15	0.18 J	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	0.2 U	0.06 J
Cadmium	5	1.11	0.19 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.31	0.2 U	0.07 J
Calcium (Dissolved)	~	73,200	146,000	155,000	150,000	68,600	134,000	139,000	196,000 J	206,000 J	160,000	58,100	33,000	139,000
Calcium	~	74,200	150,000	143,000	160,000	66,900	143,000	145,000	195,000 J	192,000 J	174,000	54,600	29,300	131,000
Chromium, Hexavalent	50	10 U	10 U	3 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chromium, Total (Dissolved)	50	0.33 J	0.24 J	0.66 J	0.25 J	0.83 J	0.2 J	0.25 J	1 UJ	0.18 J	0.29 J	0.46 J	1 U	1 U
Chromium, Total	50	0.38 J	0.99 J	0.59 J	0.39 J	1.04	2.23	0.59 J	0.33 J	0.29 J	0.34 J	0.69 J	1 U	0.33 J
Cobalt (Dissolved)	~	0.81	0.77	0.5 U	0.5 U	0.5 U	0.29 J	1.72	0.36 J	0.32 J	0.45 J	1.84	0.36 J	0.4 J
Cobalt	~	0.74	0.75	0.5 U	0.5 U	0.5 U	0.39 J	1.75	0.31 J	0.27 J	0.55	1.55	0.34 J	0.35 J
Copper (Dissolved)	200	0.64 J	3.33	0.46 J	0.47 J	0.64 J	1.9	1.7	0.46 J	1.43 J	1.44	2.66	2.25	1.95
Copper	200	0.82 J	2.05	1 U	1 U	1 U	1.42	1.24	0.66 J	0.59 J	1 U	1.21	0.9 J	0.95 J
Cyanide	200	3 J	16	2 J	2 J	2 J	5 U	5 U	3 J	1 J	5 U	2 J	5 U	2 J
Iron (Dissolved)	300	**5,370**	**1,090**	**1,630**	**1,680**	**14,200**	**1,070**	**3,830**	**1,090** J	**1,170** J	**2,220**	**2,120**	**397**	**2,450**
Iron	300	**5,420**	**1,260**	**1,540**	**1,740**	**14,300**	**1,490**	**3,790**	**1,240** J	**1,160** J	**2,350**	**2,010**	**449**	**2,490**
Lead (Dissolved)	25	1 U	0.88 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Lead	25	1 U	0.89 J	0.47 J	1 U	1 U	0.92 J	0.37 J	1 U	1 U	1 U	1 U	0.82 J	1 U
Magnesium (Dissolved)	35000	5,970	20,600	23,300	30,000	11,200	19,600	15,400	23,400 J	24,900 J	24,400	8,010	7,770	34,200
Magnesium	35000	6,230	20,900	24,100	28,000	11,300	19,800	15,600	24,000	24,000	24,800	7,640	6,920	32,900
Manganese (Dissolved)	300	271.1	74.52	**470.3**	57.56	**1,010**	76.79	**1,599**	76.4 J	81.88 J	**666.6**	158.1	33.97	83.03
Manganese	300	274.9	81.42	**441.9**	62.86	**1,012**	84.01	**1,668**	77.98 J	69.94 J	**707**	142	29.49	78.9
Nickel (Dissolved)	100	3.21	3.15	0.96 J	0.79 J	0.62 J	1.46 J	2.38	1.6 J	1.56 J	1.17 J	6.06	1.6 J	2.13
Nickel	100	3.3	3.05	0.9 J	0.69 J	0.74 J	2.13	2.27	1.84 J	1.52 J	1.38 J	5.39	1.35 J	1.88 J
Potassium (Dissolved)	~	5,710	13,600	21,900	27,100	8,840	15,400	8,060	18,500 J	19,600 J	15,500	7,090	3,890	17,000
Potassium	~	5,830	13,900	20,400	28,100	8,500	16,500	8,270	18,500 J	18,400 J	16,100	6,530	3,410	16,200
Selenium (Dissolved)	10	5 U	3.44 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	10	5 U	3.05 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Sodium (Dissolved)	20000	**97,500**	**79,000**	**303,000**	**268,000**	**110,000**	**84,200**	**35,700**	**122,000** J	**128,000** J	**93,800**	**62,900**	**26,100**	**164,000**
Sodium	20000	**131,000** J	**96,700**	**259,000**	**323,000**	**93,400**	**106,000**	**32,700**	**104,000** J	**106,000** J	**116,000**	**49,300**	**22,500**	**133,000**
Vanadium (Dissolved)	~	4.43 J	10.99	1.91 J	2.17 J	2.81 J	1.87 J	1.81 J	2.06 J	2.06 J	5 U	5 U	2.76 J	2.32 J
Vanadium	~	4.27 J	10.9	2.3 J	1.94 J	3.03 J	2.58 J	1.93 J	2.12 J	2.06 J	5 U	5 U	2.3 J	1.89 J
Zinc (Dissolved)	2000	280.2	85.56	10 U	6.77 J	10 U	11.58	6.16 J	5.44 J	6.97 J	6.76 J	324.7	41.6	22.8
Zinc	2000	285.4	77.42	10 U	5.87 J	10 U	12.47	5.68 J	7.03 J	5.86 J	4.02 J	318.9	37.12	22.07

Notes provided on Page 3.

Table 6
Groundwater Summary Report
Groundwater Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

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. Only detected analytes are shown in the table.
4. Detected analytical results above NYSDEC SGVs are bolded and shaded.
5. Analytical results with reporting limits (RL) above NYSDEC SGVs are italicized.
6. Sample GWDUP01_021920 is a duplicate sample of MW-8_021920.
7. ~ = Regulatory limit for this analyte does not exist
8. µg/L = micrograms per liter
9. NA = Not analyzed
10. ND = Not detected

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 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 contamir

Table 7
Groundwater Summary Report
Groundwater Sample Emerging Contaminant Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location **Sample ID** **Laboratory ID** **Sample Date**	**NYSDEC January 2021 Guidance Values**	**MW-1** **MW-1_021820** **L2007256-01** **2/18/2020**		**MW-2** **MW-2_021420** **L2006934-01** **2/14/2020**		**MW-3** **MW-3_021820** **L2007256-02** **2/18/2020**		**MW-4** **MW-4_021420** **L2006934-02** **2/14/2020**		**MW-5** **MW-5_021820** **L2007256-03** **2/18/2020**		**MW-6** **MW-6_021420** **L2006934-03** **2/14/2020**		**MW-7** **MW-7_021820** **L2007256-04** **2/18/2020**		**MW-8** **MW-8_021920** **L2007457-01** **2/19/2020**		**MW-8** **GWDUP01_021920** **L2007457-05** **2/19/2020**		**MW-9** **MW-9_021420** **L2006934-04** **2/14/2020**		**MW-10** **MW-10_021920** **L2007457-04** **2/19/2020**		**MW-11** **MW-11_021920** **L2007457-03** **2/19/2020**		**MW-12** **MW-12_021920** **L2007457-02** **2/19/2020**	
Semivolatile Organic Compounds (ng/L)																											
1,4-Dioxane (P-Dioxane)	1,000	144	U	150	U	144	U	156	U	150	U	163	U	144	U	156	U	144	U	156	U	144	U	144	U	150	U
Per and Polyfluoroalkyl Substances (ng/L)																											
N-ethyl perfluorooctane- sulfonamidoacetic Acid (NEtFOSAA)	100	1.88	U	1.85	U	1.87	U	0.913	J	1.94	U	1.87	U	1.86	U	1.88	UJ	1.88	UJ	1.87	U	1.95	UJ	1.87	UJ	1.9	UJ
N-methyl perfluorooctane- sulfonamidoacetic Acid (NMeFOSAA)	100	1.88	U	1.85	UJ	1.87	U	1.89	UJ	1.94	U	1.87	UJ	1.86	U	1.88	U	1.88	U	1.87	UJ	1.95	U	1.87	U	1.9	U
Perfluorobutanesulfonic Acid (PFBS)	100	3.85		4.04		4.04		3.05		3.33		4.69		3.24		4.71		4.81		2.38		9.65		2.85		3.19	
Perfluorobutanoic acid (PFBA)	100	11.4		4		8.46		6.16		5.84		7.18		4.97		6.91		7.3		6.16		13.8		3.4		5.65	
Perfluorodecanesulfonic Acid (PFDS)	100	1.88	U	1.85	U	1.87	U	1.89	U	1.94	U	1.87	U	1.86	U	1.88	U	1.88	U	1.87	U	1.95	U	1.87	U	1.9	U
Perfluorodecanoic Acid (PFDA)	100	0.748	J	0.444	J	0.985	J	1.89	U	1.22	J	1.01	J	1.22	J	0.771	J	0.688	J	0.667	J	1.28	J	3.45		0.65	J
Perfluorododecanoic Acid (PFDoA)	100	1.88	U	1.85	U	1.87	U	1.89	U	1.94	U	1.87	U	1.86	U	1.88	U	1.88	U	1.87	U	1.95	U	1.87	U	1.9	U
Perfluoroheptanesulfonic Acid (PFHpS)	100	1.88	U	1.85	U	1.87	UJ	1.89	U	1.94	UJ	1.87	U	1.86	UJ	1.88	U	1.74	J	1.87	U	1.95	U	1.87	U	0.722	J
Perfluoroheptanoic acid (PFHpA)	100	7.77		5.46		6.48		6.82		4.31		3.45		3.91		4.41		4.2		4.29		13.7		4.95		4.51	
Perfluorohexanesulfonic Acid (PFHxS)	100	2.77		8.29	J	6.75		1.89	UJ	4.84		1.87	UJ	2.9		2.5		3.35		1.87	UJ	3.14		1.19	J	2.99	
Perfluorohexanoic Acid (PFHxA)	100	14.6		3.82		8.82		6.01		4.93		4.42		5.42		5.11		4.91		5		25.2		4.66		4.35	
Perfluorononanoic Acid (PFNA)	100	1.94		3.56		3.54	J	2.02		2.54	J	2.82		4.8	J	2		1.99		2.19		5.16		3.12		2.8	
Perfluorooctanesulfonamide (FOSA)	100	1.88	U	1.85	U	1.87	U	1.89	U	1.94	U	1.87	U	1.86	U	1.88	U	1.88	U	1.87	U	1.95	U	1.87	U	1.9	U
Perfluorooctanesulfonic Acid (PFOS)	10	**28.1**	J	**47.3**		**50.2**	J	9.44		**62.1**	J	**26**		**37.1**	J	**58.4**	J	**67.1**	J	**21.8**		**28.2**		**62.8**		**21.9**	
Perfluorooctanoic Acid (PFOA)	10	**16.3**		**39.6**		**39.3**	J	**42.6**		**37.5**	J	**19.2**		**13.7**	J	**26.1**	J	**28.3**	J	**29.6**		**34.6**		**11.6**		**25.8**	
Perfluoropentanoic Acid (PFPeA)	100	18.9		3.48		10.3		6.61		7.81		5.36		7.08		5.91		6.16		6.59		19		7.32		4.79	
Perfluorotetradecanoic Acid (PFTA)	100	1.88	U	1.85	U	1.87	U	1.89	U	1.94	U	1.87	U	1.86	U	1.88	U	1.88	U	1.87	U	1.95	U	1.87	U	1.9	U
Perfluorotridecanoic Acid (PFTrDA)	100	1.88	U	1.85	U	1.87	U	1.89	U	1.94	U	1.87	U	1.86	U	1.88	U	1.88	U	1.87	U	1.95	U	1.87	U	1.9	U
Perfluoroundecanoic Acid (PFUnA)	100	1.88	U	1.85	U	1.87	U	1.89	U	1.94	U	1.87	U	1.86	U	1.88	U	1.88	U	1.87	U	1.95	U	1.87	U	1.9	U
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2) (8:2FTS)	100	1.88	U	1.85	U	1.87	U	1.89	U	1.94	U	1.87	U	1.86	U	1.88	U	1.88	U	1.87	U	1.95	U	1.87	U	1.9	U
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2) (6:2FTS)	100	2.5	J	1.85	U	26.6	J	1.89	U	25.4	J	1.87	U	17	J	1.88	U	1.88	U	1.87	U	1.95	U	1.87	U	1.9	U
Total PFOA and PFOS	~	44.4		86.9		89.5		52		99.6		45.2		50.8		84.5	J	95.4	J	51.4		62.8		74.4		47.7	
Total PFAS	500	109		120		166		83.6		160		74.1		101		117		131		78.7		154		105		77.4	

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 GWDUP01_021920 is a duplicate sample of MW-8_021920.
5. ~ = Regulatory limit for this analyte does not exist
6. 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.

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 8
Soil Vapor Summary Report
Soil Vapor Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	**AA01**		**AA01_0321**		**AA01_1220**		**AA02**		**SV-1**		**SV-2**		**SV-3**		**SV-4**		**SV-5**		**SV-6**		**SV-7**	
Sample ID	**AA01_021220**		**AA-01_030221**		**AA01_120320**		**AA02_021320**		**SV-1_021220**		**SV-2_021320**		**SV-3_021220**		**SV-4_021220**		**SV-5_021220**		**SV-6_021320**		**SV-7_021220**	
Laboratory ID	**L2006386-07**		**L2110268-04**		**L2053758-09**		**L2006636-04**		**L2006386-04**		**L2006636-03**		**L2006386-09**		**L2006386-05**		**L2006386-06**		**L2006636-05**		**L2006386-02**	
Sample Date	**2/12/2020**		**3/2/2021**		**12/3/2020**		**2/13/2020**		**2/12/2020**		**2/13/2020**		**2/12/2020**		**2/12/2020**		**2/12/2020**		**2/13/2020**		**2/12/2020**	
Sample Type	**AA**		**AA**		**AA**		**AA**		**SV**		**SV**		**SV**		**SV**		**SV**		**SV**		**SV**	
Volatile Organic Compounds (µg/m³)																						
1,1,1-Trichloroethane	2.7	U	1.09	U	1.09	U	3.18	U	1.09	U	68.7	U	1.36		2.7		1.09	U	1.09	U	2.27	
1,1-Dichloroethane	2	U	0.809	U	0.809	U	2.36	U	0.809	U	51	U	0.809	U	0.809	U	0.809	U	1.33		1.62	U
1,1-Dichloroethene	1.96	U	0.793	U	0.793	U	2.31	U	0.793	U	50	U	0.793	U	0.793	U	0.793	U	1.37		1.59	U
1,2,4-Trimethylbenzene	2.43	U	0.983	U	0.983	U	2.86	U	2.99		61.9	U	2.15		2.29		1.91		1.92		3.59	
1,3,5-Trimethylbenzene (Mesitylene)	2.43	U	0.983	U	0.983	U	2.86	U	1.3		61.9	U	0.983	U	0.983	U	0.983	U	0.983	U	2.95	
1,3-Butadiene	1.1	U	0.442	U	0.442	U	1.29	U	0.442	U	27.9	U	0.442	U	0.478		0.442	U	4.16		5.77	
2,2,4-Trimethylpentane	2.31	U	0.934	U	0.934	U	2.72	U	2.47		58.9	U	2.94		0.934	U	0.934	U	0.934	U	1.87	U
2-Hexanone	2.03	U	0.82	U	0.82	U	2.39	U	0.82	U	51.6	U	0.82	U	0.82	U	0.82	U	0.82	U	1.64	U
4-Ethyltoluene	2.43	U	0.983	U	0.983	U	2.86	U	0.983	U	61.9	U	0.983	U	0.983	U	0.983	U	0.983	U	1.97	U
Acetone	5.89	U	5.39		3.21		6.91	U	107		150	U	11.9		25.4		10.4		24.9		20.9	
Benzene	1.58	U	0.639	U	0.639	U	1.86	U	7.32		40.3	U	0.748		3.11		0.639	U	2.37		7.12	
Carbon Disulfide	1.54	U	0.623	U	0.623	U	1.81	U	11.4		39.2	U	2.44		12.4		0.623	U	47.6		27.7	
Chloroform	2.42	U	0.977	U	0.977	U	2.84	U	0.977	U	61.5	U	0.977	U	0.977	U	0.977	U	0.977	U	1.95	U
Chloromethane	1.07		0.855		0.888		1.29		0.413	U	26	U	0.413	U	0.413	U	0.413	U	0.413	U	0.826	U
Cis-1,2-Dichloroethene	1.96	U	0.793	U	0.793	U	2.31	U	0.793	U	2,390		0.793	U	0.793	U	0.793	U	21.8		4.08	
Cyclohexane	1.7	U	0.688	U	0.688	U	2	U	0.688	U	43.4	U	0.688	U	1.36		0.688	U	43		2.35	
Dichlorodifluoromethane	2.45	U	2.26		2.09		2.88	U	22.8		62.3	U	93.5		234		117		35.2		114	
Ethanol	23.4	U	9.42	U	9.42	U	27.5	U	9.42	U	594	U	9.42	U	9.42	U	9.42	U	9.42	U	18.8	U
Ethyl Acetate	4.47	U	1.8	U	1.8	U	5.26	U	1.8	U	114	U	1.8	U	1.8	U	1.8	U	1.8	U	3.6	U
Ethylbenzene	2.15	U	0.869	U	0.869	U	2.53	U	6.56		54.7	U	1.11		1.69		0.869	U	1.37		1.92	
Isopropanol	3.05	U	1.23	U	1.87		3.59	U	1.4		77.4	U	1.23	U	1.23	U	1.23	U	1.23	U	2.46	U
M,P-Xylene	4.3	U	1.74	U	1.74	U	5.04	U	14.7		109	U	4.34		6.25		3.84		5.04		6.6	
Methyl Ethyl Ketone (2-Butanone)	3.66	U	1.47	U	1.47	U	4.31	U	8.32		92.9	U	1.47	U	7.43		1.47	U	5.72		10	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanor	5.08	U	2.05	U	2.05	U	5.98	U	2.05	U	129	U	2.05	U	2.05	U	2.05	U	2.05	U	4.1	U
Methylene Chloride	4.31	U	1.74	U	1.84		5.07	U	1.74	U	109	U	1.74	U	1.74	U	1.74	U	1.74	U	3.47	U
n-Heptane	2.03	U	0.82	U	0.82	U	2.39	U	1.07		51.6	U	0.82	U	2.71		0.82	U	36.1		220	
n-Hexane	1.74	U	0.705	U	0.952		2.05	U	2.46		44.4	U	0.705	U	2.66		0.705	U	40.2		329	
o-Xylene (1,2-Dimethylbenzene)	2.15	U	0.869	U	0.869	U	2.53	U	6.43		54.7	U	1.47		2.29		1.35		1.94		3.13	
Styrene	2.11	U	0.852	U	0.852	U	2.48	U	0.852	U	53.6	U	0.852	U	0.852	U	0.852	U	0.852	U	1.7	U
Tert-Butyl Alcohol	3.76	U	1.52	U	1.52	UJ	4.43	U	1.52	U	95.5	U	1.52	U	1.52	U	1.52	U	3.4		3.03	U
Tetrachloroethene (PCE)	3.36	U	1.36	U	1.36	U	3.95	U	5.23		23,200		4.52		3.62		5.45		7.12		18.3	
Tetrahydrofuran	3.66	U	1.47	U	1.47	U	4.31	U	1.47	U	92.9	U	1.47	U	1.47	U	1.47	U	1.47	U	2.95	U
Toluene	1.87	U	0.754	U	0.754	U	2.19	U	17.1		47.5	U	14.5		8.55		2.45		5.2		6.41	
Total Xylenes	2.15	U	0.869	U	0.869	U	NA		21.2		NA		5.82		8.56		5.21		NA		9.73	
Trans-1,2-Dichloroethene	1.96	U	0.793	U	0.793	U	2.31	U	0.793	U	50	U	0.793	U	0.793	U	0.793	U	0.793	U	1.59	U
Trichloroethene (TCE)	2.66	U	1.07	U	1.07	U	3.13	U	1.07	U	1,900		1.07	U	1.07	U	1.07	U	3.65		2.15	U
Trichlorofluoromethane	2.78	U	1.24		1.12	U	3.27	U	2.13		70.8	U	1.33		5.73		1.64		1.12	U	7.81	
Vinyl Chloride	1.27	U	0.511	U	0.511	U	1.49	U	0.511	U	32.2	U	0.511	U	0.511	U	0.511	U	22.2		1.02	U

Notes provided on Page 4.

Table 8
Soil Vapor Summary Report
Soil Vapor Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	**SV-8**		**SV-9**		**SV-10**		**SV-11**		**SV-12**		**SV-13**		**SV-14**		**SV-15**		**SV-16**		**SV-17**		**SV-17**	
Sample ID	**SV-8_021220**		**SV-9_021220**		**SV-10_021320**		**SV-11_021220**		**SV-12_021220**		**SV-13_021320**		**SV-14_021320**		**SV-15_021320**		**SV-16_120320**		**SV-17_120320**		**DUP01_120320**	
Laboratory ID	**L2006386-01**		**L2006386-03**		**L2006636-06**		**L2006386-10**		**L2006386-08**		**L2006636-02**		**L2006636-07**		**L2006636-01**		**L2053758-01**		**L2053758-02**		**L2053758-08**	
Sample Date	**2/12/2020**		**2/12/2020**		**2/13/2020**		**2/12/2020**		**2/12/2020**		**2/13/2020**		**2/13/2020**		**2/13/2020**		**12/3/2020**		**12/3/2020**		**12/3/2020**	
Sample Type	**SV**		**SV**		**SV**		**SV**		**SV**		**SV**		**SV**		**SV**		**SV**		**SV**		**SV**	
Volatile Organic Compounds (μg/m³)																						
1,1,1-Trichloroethane	3.41	U	1.09	U	1.09	U	5.25		8.51		5.43		1.09	U	3.26		4.54	U	4.14		4.45	
1,1-Dichloroethane	2.53	U	0.809	U	0.809	U	0.809	U	0.809	U	0.809	U	0.809	U	0.809	U	3.37	U	0.809	U	0.809	U
1,1-Dichloroethene	2.48	U	0.793	U	0.793	U	0.793	U	0.793	U	0.793	U	0.793	U	0.793	U	3.3	U	0.793	U	0.793	U
1,2,4-Trimethylbenzene	6.78		1.7		2.17		1.89		3.05		2.11		1.22		1.75		12.9		16		15.2	
1,3,5-Trimethylbenzene (Mesitylene)	7.82		0.983	U	0.983	U	0.983	U	0.983	U	0.983	U	0.983	U	0.983	U	4.1	U	4.23		4.23	
1,3-Butadiene	2.05		0.442	U	0.489		0.442	U	0.442	U	0.442	U	0.442	U	0.442	U	3.5		0.719		0.542	
2,2,4-Trimethylpentane	2.92	U	0.934	U	0.934	U	0.934	U	0.934	U	0.934	U	0.934	U	0.934	U	47.2		2.36		2.68	
2-Hexanone	2.56	U	0.82	U	6.07		0.82	U	7.54		0.82	U	0.82	U	0.82	U	4.26		2.93	J	1.89	J
4-Ethyltoluene	3.07	U	0.983	U	0.983	U	0.983	U	1		0.983	U	0.983	U	0.983	U	4.1	U	4.65		4.97	
Acetone	27.1		11.3		28.7		17.1		24.7		10		16.7		6.53		295		128		112	
Benzene	6.2		0.639	U	1.93		0.674		0.639	U	0.639	U	0.639	U	0.639	U	4.19		2.24		2.19	
Carbon Disulfide	37.7		0.623	U	5.98		2.76		0.623	U	1.64		0.685		0.623	U	2.72		3.1		2.97	
Chloroform	3.05	U	0.977	U	0.977	U	0.977	U	0.977	U	0.977	U	1.44		0.977	U	4.07	U	1.91		2.29	
Chloromethane	1.29	U	0.413	U	0.413	U	0.413	U	0.413	U	0.413	U	0.413	U	0.413	U	1.72	U	0.413	U	0.413	U
Cis-1,2-Dichloroethene	2.48	U	0.793	U	0.793	U	0.793	U	0.793	U	0.793	U	0.793	U	0.793	U	3.3	U	0.793	U	0.793	U
Cyclohexane	2.91		0.688	U	2.7		0.688	U	0.688	U	0.688	U	0.688	U	0.688	U	5.71		1.2		1.35	
Dichlorodifluoromethane	84.6		13.9		16.6		309		21.9		4		4.23		170		4.12	U	6.77		6.38	
Ethanol	29.4	U	9.42	U	9.42	U	9.42	U	9.42	U	9.42	U	9.42	U	9.42	U	39.2	U	21.9		12.9	
Ethyl Acetate	5.62	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	7.5	U	1.8	U	3.89	
Ethylbenzene	3.65		1.1		1.11		0.986		2.1		1		0.869	U	1.11		10.6		13.5		14.6	
Isopropanol	3.83	U	1.23	U	1.23	U	1.23	U	1.23	U	1.23	U	1.23	U	1.23	U	5.11	U	5.95	J	10.5	J
M,P-Xylene	37.7		4.86		4.1		4.43		7.99		4.34		1.74		4.52		44.3		52.6		56.5	
Methyl Ethyl Ketone (2-Butanone)	28.4		1.47	U	14		2.85		22.8		1.47	U	1.62		1.47	U	79.3		8.76		6.75	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanor	6.39	U	2.05	U	2.05	U	2.05	U	2.05	U	2.05	U	2.05	U	2.05	U	8.52	U	5.04		4.18	
Methylene Chloride	5.42	U	1.74	U	1.74	U	1.74	U	1.74	U	1.74	U	1.74	U	1.74	U	7.23	U	1.74	U	1.74	U
n-Heptane	212		0.82	U	3.33		0.82	U	3.4		0.82	U	0.82	U	0.82	U	9.3		5.49		5.57	
n-Hexane	193		0.705	U	2.3		0.705	U	0.758		0.705	U	0.705	U	0.835		15.5		6.59		6.59	
o-Xylene (1,2-Dimethylbenzene)	23.1		1.6		1.5		1.45		2.8		1.5		0.869	U	1.51		16.3		19.8		21	
Styrene	2.66	U	0.852	U	0.852	U	0.852	U	0.852	U	0.852	U	0.852	U	0.852	U	3.55	U	1.57		1.69	
Tert-Butyl Alcohol	4.73	U	1.52	U	1.52	U	1.52	U	3.03		1.52	U	1.52	U	1.52	U	6.31	UJ	6.76	J	3.94	J
Tetrachloroethene (PCE)	14.2		4.69		7.8		2.76		14		12		27.7		7.46		1,970		30.3		30.4	
Tetrahydrofuran	4.6	U	1.47	U	1.47	U	1.47	U	1.47	U	1.47	U	1.47	U	1.47	U	6.13	U	3.95		3.57	
Toluene	19.3		3.37		3.23		3.22		5.43		3.01		1.37		4.45		34.4		39.2		44.5	
Total Xylenes	60.8		6.47		NA		5.86		10.8		NA		NA		NA		60.8		72.5		77.3	
Trans-1,2-Dichloroethene	2.48	U	0.793	U	0.793	U	0.793	U	1.3		0.793	U	0.793	U	0.793	U	3.3	U	0.793	U	0.793	U
Trichloroethene (TCE)	3.36	U	1.07	U	1.07	U	1.07	U	1.07	U	1.07	U	1.07	U	1.07	U	56.4		1.07	U	1.07	U
Trichlorofluoromethane	4.32		2.03		1.12	U	1.46		11.4		12.5		27.8		2.38		4.68	U	1.17		1.17	
Vinyl Chloride	1.6	U	0.511	U	0.511	U	0.511	U	0.511	U	0.511	U	0.511	U	0.511	U	2.13	U	0.511	U	0.511	U

Notes provided on Page 4.

Table 8
Soil Vapor Summary Report
Soil Vapor Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Location	**SV-18**		**SV-19**		**SV-20**		**SV-21**		**SV-22**		**SV-23**		**SV-24**		**SV-24**		**SV-25**	
Sample ID	**SV-18_120320**		**SV-19_120320**		**SV-20_120320**		**SV-21_120320**		**SV-22_120320**		**SV-23_030221**		**SV-24_030221**		**DUP-01_030221**		**SV-25_030221**	
Laboratory ID	**L2053758-03**		**L2053758-04**		**L2053758-05**		**L2053758-06**		**L2053758-07**		**L2110268-01**		**L2110268-02**		**L2110268-05**		**L2110268-03**	
Sample Date	**12/3/2020**		**12/3/2020**		**12/3/2020**		**12/3/2020**		**12/3/2020**		**3/2/2021**		**3/2/2021**		**3/2/2021**		**3/2/2021**	
Sample Type	**SV**		**SV**		**SV**		**SV**		**SV**		**SV**		**SV**		**SV**		**SV**	
Volatile Organic Compounds (µg/m³)																		
1,1,1-Trichloroethane	1.09	U	4.92		1.09	U	1.93		5.41		1.09	U	1.09	U	4.96	U	1.09	U
1,1-Dichloroethane	0.809	U	0.809	U	0.809	U	0.809	U	0.809	U	0.809	U	0.809	U	3.68	U	0.809	U
1,1-Dichloroethene	0.793	U	0.793	U	0.793	U	0.793	U	1.35		0.793	U	0.793	U	3.6	U	0.793	U
1,2,4-Trimethylbenzene	11.9		11.9		16.2		12.7		12.7		0.983	U	1.06		4.47	U	1.13	
1,3,5-Trimethylbenzene (Mesitylene)	3.21		3.2		4.4		3.72		3.5		0.983	U	0.983	U	4.47	U	0.983	U
1,3-Butadiene	4.31		0.442	U	0.442	U	0.88		1.36		5.57		0.442	U	2.01	U	1.73	
2,2,4-Trimethylpentane	2.38		5		1.7		3.21		47.6		1.21		0.934	U	4.25	U	4.76	
2-Hexanone	0.82	U	1.79		0.82	U	0.82	U	1.94		4.26		4.1		3.73	U	4.43	
4-Ethyltoluene	3.47		3.35		5.21		4.59		4.25		0.983	U	0.983	U	4.47	U	0.983	U
Acetone	77.2		69.6		33.5		108		58.9		24.7		14.9		10.8	U	15.2	
Benzene	3.8		1.64		1.94		2.77		5.49		3.87		0.639	U	2.9	U	1.35	
Carbon Disulfide	4.48		1.48		0.984		3.99		1.79		2.45		0.623	U	2.83	U	1.66	
Chloroform	0.977	U	1.62		0.977	U	1.12		1.79		0.977	U	1.89		4.44	U	0.977	U
Chloromethane	0.413	U	0.413	U	0.413	U	0.413	U	0.413	U	0.413	U	0.413	U	1.88	U	0.413	U
Cis-1,2-Dichloroethene	0.793	U	0.793	U	0.793	U	0.793	U	0.793	U	48		2		3.6	U	0.793	U
Cyclohexane	1.98		2.49		0.699		1.66		5.09		3.09		1.69		3.13	U	3.07	
Dichlorodifluoromethane	22.6		12.8		4.7		3.27		5.09		12.5		3.28		4.49	U	3.45	
Ethanol	9.42	U	10.3		9.42	U	9.42	U	9.44		9.42	U	9.42	U	42.8	U	9.42	U
Ethyl Acetate	1.8	U	1.8	U	1.94		1.8	U	1.8	U	1.8	U	1.8	U	8.18	U	1.8	U
Ethylbenzene	12.8		10.3		13.7		15.3		12.9		1.3		1.12		3.95	U	1.28	
Isopropanol	1.23	U	1.74		1.23	U	1.47		2.37		1.23	U	1.84		5.58	U	1.23	U
M,P-Xylene	47.8		40.7		53.4		56.5		50		3.33		2.92		7.91	U	3.48	
Methyl Ethyl Ketone (2-Butanone)	11.2		4.51		1.78		3.48		7.31		47.5		59	J	21.7	J	35.4	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanor	2.05	U	2.85		2.05	U	2.05	U	3.27		2.05	U	2.05	U	9.3	U	2.05	U
Methylene Chloride	1.74	U	1.74	U	1.74	U	1.74	U	1.74	U	1.74	U	1.74	U	7.89	U	1.74	U
n-Heptane	6.07		3.68		4.22		6.93		5		2.36		0.82	U	3.73	U	3.97	
n-Hexane	6.59		4.23		3.4		7.51		5.99		5.11		0.705	U	3.2	U	5.53	
o-Xylene (1,2-Dimethylbenzene)	17.8		15.6		20.6		20.6		18.8		1.14		1.06		3.95	U	1.29	
Styrene	1.34		1.23		1.58		1.5		1.51		0.852	U	1.12		3.87	U	0.852	U
Tert-Butyl Alcohol	2.32	J	4.18	J	1.52	UJ	2.04	J	3.64	J	4.34		1.52	U	6.88	U	1.52	U
Tetrachloroethene (PCE)	25.4		20.8		26.5		30.6		30.1		161		2,010		1,880		50.7	
Tetrahydrofuran	1.47	U	1.47	U	1.47	U	1.47	U	2.52		1.47	U	1.47	U	6.69	U	1.47	U
Toluene	42.2		29.6		39.6		51.3		36.9		5.99		4.07		3.7		5.16	
Total Xylenes	65.6		56		73.8		77.3		68.6		4.47		3.98		3.95	U	4.78	
Trans-1,2-Dichloroethene	0.793	U	0.793	U	0.793	U	0.793	U	0.793	U	1.93		0.793	U	3.6	U	0.793	U
Trichloroethene (TCE)	1.07	U	1.07	U	1.07	U	1.07	U	1.07	U	20.6		49.3		44.4		1.07	U
Trichlorofluoromethane	2.1		17.8		19.9		9.55		3.73		1.12	U	2.42		5.11	U	1.22	
Vinyl Chloride	0.511	U	0.511	U	0.511	U	0.511	U	0.511	U	0.511	U	0.511	U	2.32	U	0.511	U

Notes provided on Page 4.

Table 8
Soil Vapor Summary Report
Soil Vapor Sample Analytical Results

1607 Surf Avenue
Brooklyn, New York
Langan Project No.: 170599501

Notes:

1. Ambient air sample analytical results are shown for reference only.
2. Only detected analytes are shown in the table.
3. Analytical results with reporting limits (RL) above the minimum soil vapor concentrations recommending mitigation are italicized.
4. Sample DUP01_120320 is a duplicate of parent sample SV-17_120320 and sample DUP-01_030221 is a duplicate sample of SV-24_030221.
5. µg/m³ = micrograms per cubic meter
6. AA = Ambient Air
7. SV = Soil Vapor

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.

FIGURES

Notes:
1. World topographic basemap provided through Langan's subscription to Esri's ArcGIS software licensing.
2. Parcel information from MapPLUTO 20v1 copyrighted by the New York City Department of Planning.

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Langan International LLC
Collectively known as Langan

Project

1607 SURF AVE

BLOCK No. 7062, LOT No. 28

CONEY ISLAND

BROOKLYN NEW YORK

Drawing Title

SITE LOCATION MAP

Project No. 170599501	Figure 1
Date 5/5/2020	
Scale 1"=2000'	
Drawn By IHB	

Path: \\langan.com\data\NYC\data5\170599501\Project Data\ArcGIS\MXD\Environmental_Figures\2020-03 - RIR\Figure 1 - Site Location Map.mxd Date: 5/5/2020 User: aruane Time: 11:42:39 AM

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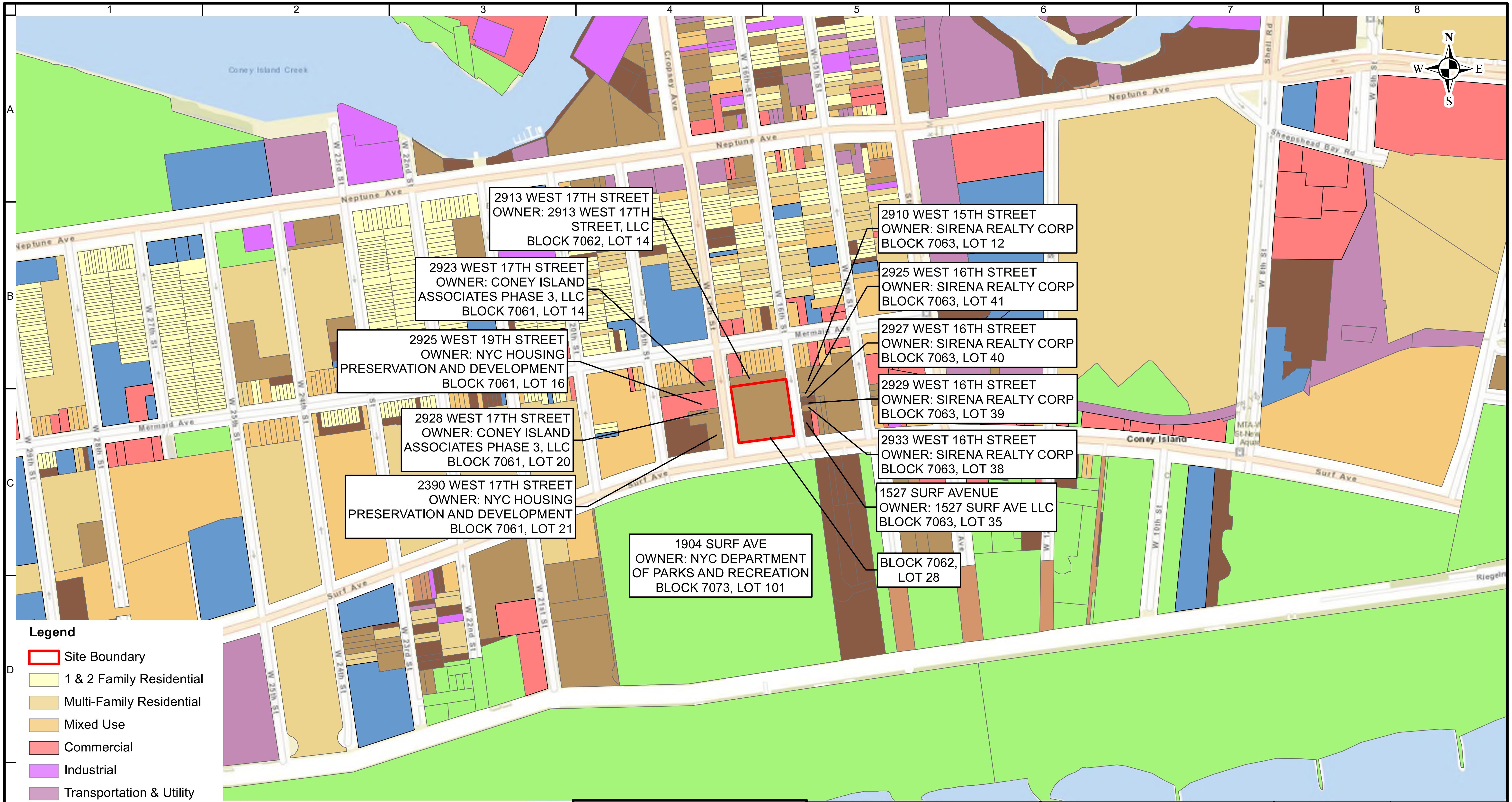
Project	Drawing Title	Project No.	Figure
1607 SURF AVE BLOCK No. 7062, LOT No. 28 CONEY ISLAND BROOKLYN NEW YORK	SITE PLAN	170599501	2
		Date 5/7/2020	
		Scale 1"=2000'	
		Drawn By JR	

Path: \\langan.com\data\NYC\data5\170599501\Project Data\ArcGIS\MXD\Environmental_Figures\2020-03 - RIR\Figure 2 - Site Plan.mxd Date: 5/7/2020 User: aruane Time: 1:25:14 PM



Notes:
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Project

1607 SURF AVENUE

BLOCK No. 7062, LOT No. 28
CONEY ISLAND

BROOKLYN NEW YORK

Drawing Title

ADJACENT PROPERTY AND SURROUNDING LAND USE MAP

Project No.
170599501
Date
5/5/2020
Scale
1 " = 400 '
Drawn By
JR
Submission Date

Figure
3

Legend

🟥 Site Boundary

☐ Lot Boundary

▨ Potential Areas of Concern

— Groundwater Contour

→ Groundwater Flow Direction

⊕ Langan Soil Boring / Monitoring Well Location

◉ Langan Soil Boring / Monitoring Well/ Soil Vapor Sample Location

Notes:

1. Aerial imagery provided through Langan's subscription to NearMap, imagery dated 21 September 2019.
2. Parcel boundaries provided through the New York City Department of Planning's MapPLUTO 20v1, last updated 2020.
3. AOC-1: Historic Fill encompasses the extent of the site.
4. Langan monitoring well locations are based on locations surveyed by a licensed surveyor.
5. Langan soil boring and soil vapor samples shown are approximate and based on field measurements, except for those collocated to monitoring wells.
6. Groundwater elevations are provided at each well location. All elevations are referenced in the North American Vertical Datum of 1988 (NAVD88).

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Project

1607 SURF AVENUE

BLOCK No. 7062, LOT No. 28
CONEY ISLAND
BROOKLYN NEW YORK

Figure Title

GROUNDWATER CONTOUR MAP

Project No.
170599501
Date
5/7/2020
Scale
1 " = 50 '
Drawn By
IHB
Submission Date

Figure
4

Path: \\langan.com\data\NYC\data5\170599501\Project Data\ArcGIS\MXD\Environmental_Figures\2020-03 - RIR\Figure 4 - Groundwater Contour Map.mxd Date: 5/7/2020 User: aruane Time: 4:05:11 PM

Legend

🟥 Site Boundary

☐ Lot Boundary

▨ Potential Areas of Concern

● Langan Soil Vapor Sample Location

● Langan Soil Boring/ Soil Vapor Sample Location

⊕ Langan Soil Boring/ Monitoring Well Location

◉ Langan Soil Boring/ Monitoring Well/ Soil Vapor Sample Location

✦ Langan Ambient Air Sample Location

Notes:

1. Aerial imagery provided through Langan's subscription to NearMap, imagery dated 21 September 2019.
2. Parcel boundaries provided through the New York City Department of Planning's MapPLUTO 20v1, last updated 2020.
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Project

1607 SURF AVENUE

BLOCK No. 7062, LOT No. 28

CONEY ISLAND

BROOKLYN NEW YORK

Drawing Title

SAMPLE LOCATION MAP AND POTENTIAL AREAS OF CONCERN

Project No.
170599501

Date
3/11/2021

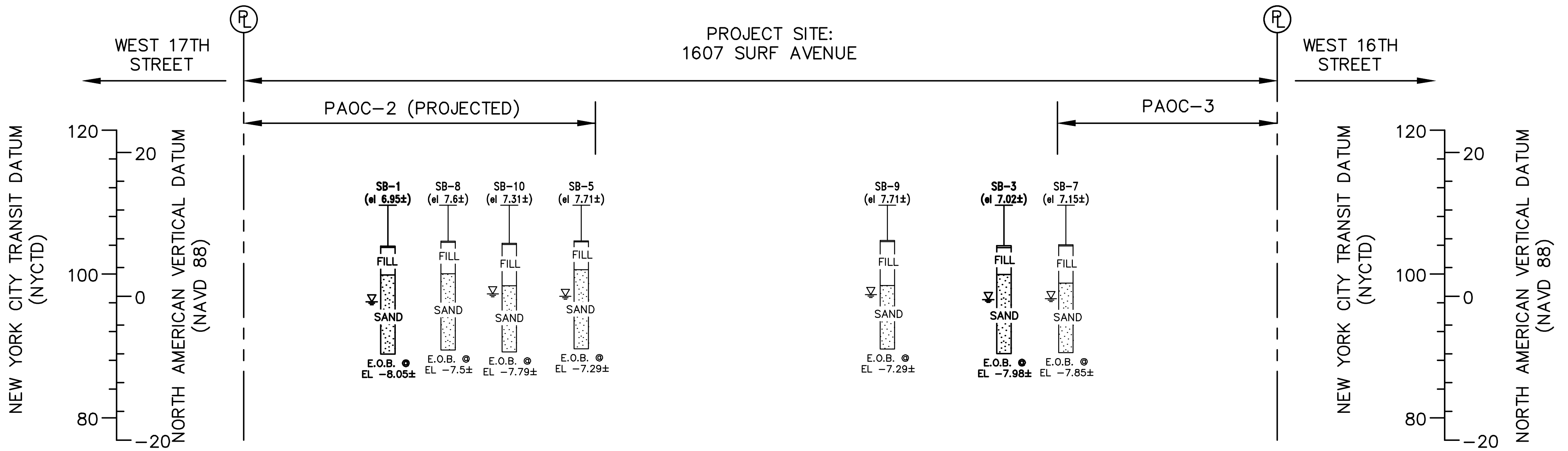
Scale
1 " = 50 '

Drawn By
IHB

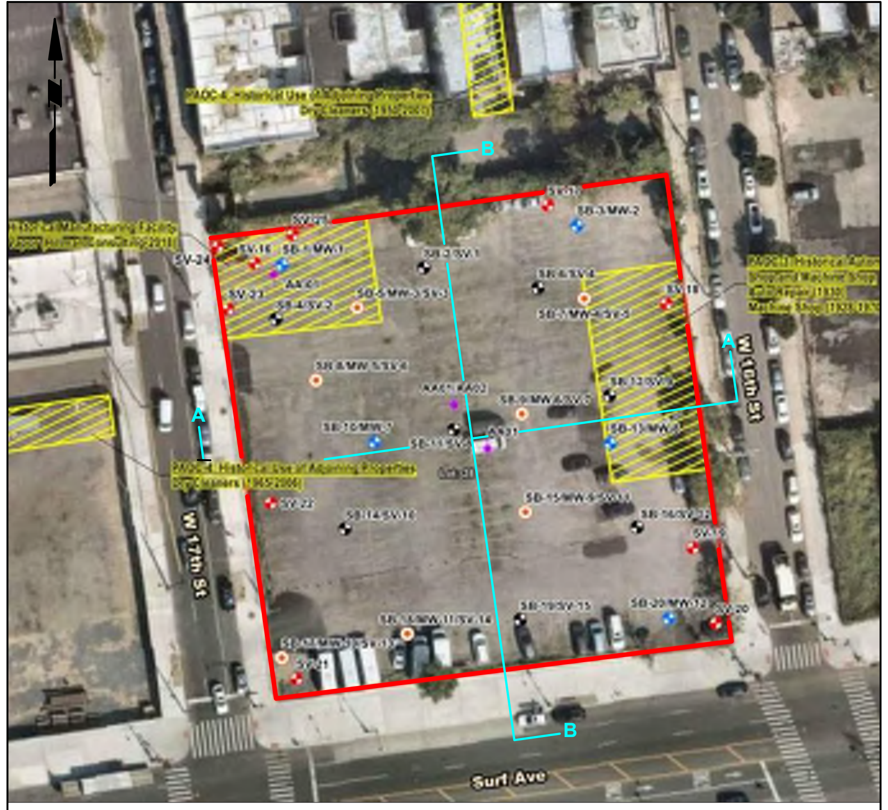
Submission Date

Figure
5

Path: \\langan.com\data\NYC\data5\170599501\Project Data\ArcGIS\MXD\Environmental_Figures\2020-12 - Revised RIR\Figure 5 - Sample Location Map and Potential Areas of Concern.mxd Date: 3/11/2021 User: ibaker Time: 4:33:11 PM

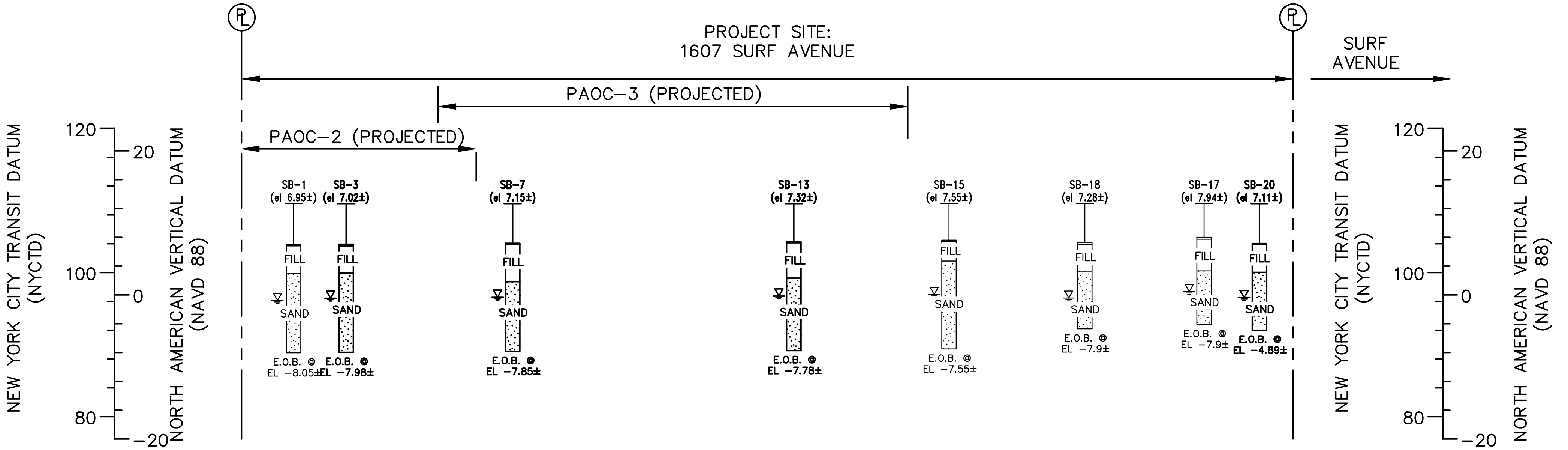


SECTION A - A'
SCALE: 1" = 20'



SITE MAP
SCALE: 1" = 100'

100 0 50 100
SCALE IN FEET



SECTION B - B'
SCALE: 1" = 20'

LEGEND

🟥	1607 SURF AVENUE SITE BOUNDARY
▨	POTENTIAL AREAS OF CONCERN
●	LANGAN SOIL VAPOR SAMPLE LOCATION
●	LANGAN SOIL BORING/SOIL VAPOR SAMPLE LOCATION
●	LANGAN SOIL BORING/MONITORING WELL LOCATION
◉	LANGAN SOIL BORING/MONITORING WELL/SOIL VAPOR SAMPLE LOCATION
✦	LANGAN AMBIENT AIR SAMPLE LOCATION

NOTE

1. BASEMAP IS REFERENCED FROM A DRAWING TITLED "SAMPLE LOCATION MAP AND POTENTIAL AREAS OF CONCERN", PREPARED BY LANGAN, DATED DECEMBER 22, 2020.
2. SUBSURFACE PROFILES WERE GENERATED BASED ON THE BORING LOGS COLLECTED DURING THE FEBRUARY 2020 REMEDIAL INVESTIGATION.

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, TO ALTER THIS ITEM IN ANY WAY.

20 0 5 10 20
SCALE IN FEET

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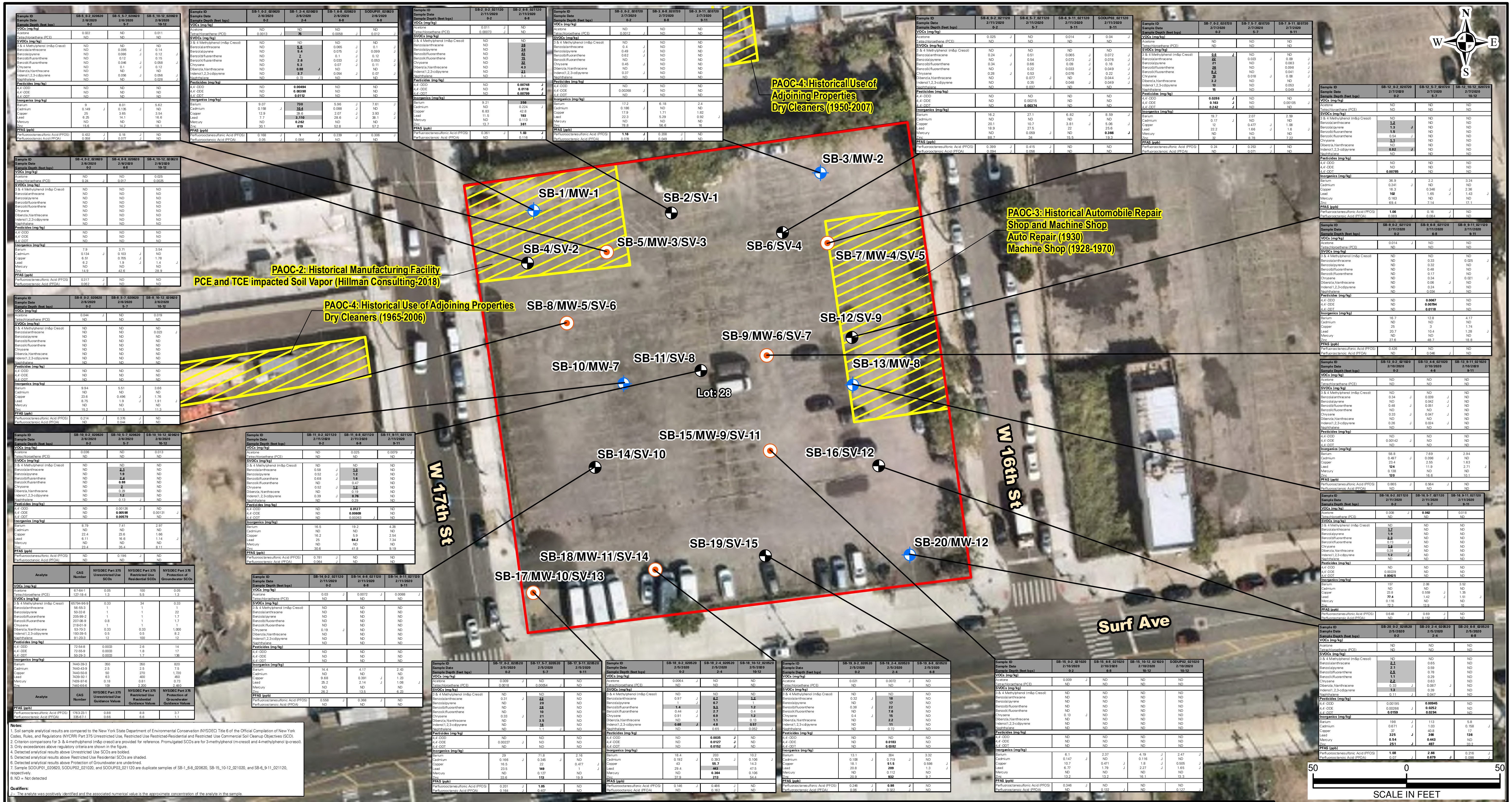
Project
1607 SURF AVENUE
BLOCK No. 7062, LOT 28
CONEY ISLAND
BROOKLYN NEW YORK

Drawing Title
SUBSURFACE PROFILES

Project No. 170599501
Date 3/15/2021
Drawn By AC
Checked By AK

Drawing No.
6



Sample ID Sample Date Sample Depth (feet bgs)	SB-1_0-2_020620 2/6/2020 0-2	SB-1_2-4_020620 2/6/2020 2-4	SB-1_6-8_020620 2/6/2020 6-8	SODUP01_020620 2/6/2020 6-8
VOCs (mg/kg)				
Acetone	ND	ND	ND	ND
Tetrachloroethene (PCE)	0.0013 J	**75**	0.0058 J	0.012 J
SVOCs (mg/kg)				
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND	ND
Benzo(a)anthracene	ND	**5.8**	0.065 J	0.1 J
Benzo(a)pyrene	ND	**5.4**	0.075 J	0.099 J
Benzo(b)fluoranthene	ND	**7**	0.1 J	0.12
Benzo(k)fluoranthene	ND	**2.6**	0.033 J	0.053 J
Chrysene	ND	**5.3**	0.07 J	0.11 J
Dibenz(a,h)anthracene	ND	**0.88 J**	ND	ND
Indeno(1,2,3-cd)pyrene	ND	**3.7**	0.054 J	0.07 J
Naphthalene	ND	0.72 J	ND	ND
Pesticides (mg/kg)				
4,4'-DDD	ND	**0.00494**	ND	ND
4,4'-DDE	ND	**0.00398**	ND	ND
4,4'-DDT	ND	**0.0112**	ND	ND
Inorganics (mg/kg)				
Barium	9.07	**730**	5.96 J	7.61 J
Cadmium	0.158 J	**10.4**	0.088 J	ND
Copper	12.9	39.6	2.07 J	3.93 J
Lead	7.7	**3,110**	28.6 J	38.1 J
Mercury	ND	**0.262**	ND	ND
Zinc	30.1	**619**	52.8	57.2
PFAS (ppb)				
Perfluorooctanesulfonic Acid (PFOS)	0.168 J	**1 J**	0.239 J	0.306 J
Perfluorooctanoic Acid (PFOA)	0.05 J	0.086 J	ND	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-2_0-2_021120 2/11/2020 0-2	SB-2_6-8_021120 2/11/2020 6-8
VOCs (mg/kg)		
Acetone	0.011 J	ND
Tetrachloroethene (PCE)	0.00073 J	ND
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	ND	ND
Benzo(a)anthracene	ND	**36**
Benzo(a)pyrene	ND	**34**
Benzo(b)fluoranthene	ND	**43**
Benzo(k)fluoranthene	ND	**15**
Chrysene	ND	**32**
Dibenz(a,h)anthracene	ND	**4.3**
Indeno(1,2,3-cd)pyrene	ND	**21**
Naphthalene	ND	3.4
Pesticides (mg/kg)		
4,4'-DDD	ND	**0.00748 J**
4,4'-DDE	ND	**0.0116 J**
4,4'-DDT	ND	**0.00799 J**
Inorganics (mg/kg)		
Barium	9.21	**356**
Cadmium	ND	0.224 J
Copper	6.83	42.8
Lead	11.5	**193**
Mercury	ND	0.113
Zinc	13.7	**361**
PFAS (ppb)		
Perfluorooctanesulfonic Acid (PFOS)	0.361 J	**1.03 J**
Perfluorooctanoic Acid (PFOA)	ND	0.116 J

Sample ID Sample Date Sample Depth (feet bgs)	SB-3_0-2_020720 2/7/2020 0-2	SB-3_6-8_020720 2/7/2020 6-8	SB-3_9-11_020720 2/7/2020 9-11
VOCs (mg/kg)			
Acetone	ND	ND	ND
Tetrachloroethene (PCE)	0.0012 J	ND	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	0.4 J	ND	ND
Benzo(a)pyrene	0.49 J	ND	ND
Benzo(b)fluoranthene	0.62 J	ND	ND
Benzo(k)fluoranthene	ND	ND	ND
Chrysene	0.45 J	ND	ND
Dibenz(a,h)anthracene	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.37 J	ND	ND
Naphthalene	ND	ND	ND
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	0.00268 J	ND	ND
4,4'-DDT	ND	ND	ND
Inorganics (mg/kg)			
Barium	17.2	6.18	2.4
Cadmium	0.186 J	ND	ND
Copper	17.9	1.71	1.82
Lead	22.3	5.29	0.92 J
Mercury	ND	ND	ND
Zinc	78.8	56.6	16
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	**1.16 J**	0.208 J	ND
Perfluorooctanoic Acid (PFOA)	0.078 J	0.049 J	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-4_0-2_020620 2/6/2020 0-2	SB-4_6-8_020620 2/6/2020 6-8	SB-4_10-12_020620 2/6/2020 10-12
VOCs (mg/kg)			
Acetone	ND	ND	0.025
Tetrachloroethene (PCE)	0.24 J	0.017	0.0025
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	ND	ND	ND
Benzo(a)pyrene	ND	ND	ND
Benzo(b)fluoranthene	ND	ND	ND
Benzo(k)fluoranthene	ND	ND	ND
Chrysene	ND	ND	ND
Dibenz(a,h)anthracene	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND	ND
Naphthalene	ND	ND	ND
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	ND	ND	ND
4,4'-DDT	ND	ND	ND
Inorganics (mg/kg)			
Barium	7.9	3.71	3.54
Cadmium	0.134 J	0.103 J	ND
Copper	6.51	0.705 J	1.78
Lead	6.2	1.9 J	1.4 J
Mercury	ND	ND	ND
Zinc	14.9	42.6	28.9
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.317 J	ND	ND
Perfluorooctanoic Acid (PFOA)	0.062 J	ND	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-5_0-2_020620 2/6/2020 0-2	SB-5_5-7_020620 2/6/2020 5-7	SB-5_10-12_020620 2/6/2020 10-12
VOCs (mg/kg)			
Acetone	0.022	ND	0.011
Tetrachloroethene (PCE)	ND	ND	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	ND	0.095 J	0.14
Benzo(a)pyrene	ND	0.086 J	0.12 J
Benzo(b)fluoranthene	ND	0.12	0.15
Benzo(k)fluoranthene	ND	0.046 J	0.058 J
Chrysene	ND	0.1 J	0.12
Dibenz(a,h)anthracene	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ND	0.056 J	0.056 J
Naphthalene	ND	ND	0.028 J
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	ND	ND	ND
4,4'-DDT	ND	ND	ND
Inorganics (mg/kg)			
Barium	9	8.01	5.62
Cadmium	0.149 J	0.135 J	ND
Copper	25	3.65	3.54
Lead	6.25	14.1	16.6
Mercury	ND	ND	ND
Zinc	15.6	14.2	18.1
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.432 J	0.18 J	ND
Perfluorooctanoic Acid (PFOA)	0.058 J	0.077 J	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-6_0-2_021120 2/11/2020 0-2	SB-6_5-7_021120 2/11/2020 5-7	SB-6_9-11_021120 2/11/2020 9-11	SODUP03_021120 2/11/2020 9-11
VOCs (mg/kg)				
Acetone	0.025 J	ND	0.014 J	0.04 J
Tetrachloroethene (PCE)	ND	ND	ND	ND
SVOCs (mg/kg)				
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND	ND
Benzo(a)anthracene	0.24 J	0.51	0.065 J	0.072 J
Benzo(a)pyrene	ND	0.54	0.073 J	0.076 J
Benzo(b)fluoranthene	0.34 J	0.66	0.09 J	0.16 J
Benzo(k)fluoranthene	ND	0.22	0.033 J	0.049 J
Chrysene	0.28 J	0.53	0.076 J	0.22 J
Dibenz(a,h)anthracene	ND	0.077 J	ND	0.044 J
Indeno(1,2,3-cd)pyrene	ND	0.35	0.048 J	0.049 J
Naphthalene	ND	0.037 J	ND	ND
Pesticides (mg/kg)				
4,4'-DDD	ND	ND	ND	ND
4,4'-DDE	ND	0.00215	ND	ND
4,4'-DDT	ND	**0.00374**	ND	ND
Inorganics (mg/kg)				
Barium	16.2	27.1	6.82 J	8.59 J
Cadmium	ND	ND	ND	ND
Copper	20.1	10.7	3.81 J	5.06 J
Lead	18.9	27.5	22	25.6
Mercury	ND	0.059 J	ND	**0.366 J**
Zinc	88.7	34	15.5	19.3
PFAS (ppb)				
Perfluorooctanesulfonic Acid (PFOS)	0.399 J	0.415 J	ND	ND
Perfluorooctanoic Acid (PFOA)	0.094 J	0.056 J	ND	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-7_0-2_020720 2/7/2020 0-2	SB-7_5-7_020720 2/7/2020 5-7	SB-7_9-11_020720 2/7/2020 9-11
VOCs (mg/kg)			
Acetone	ND	ND	ND
Tetrachloroethene (PCE)	ND	ND	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	**0.6 J**	ND	ND
Benzo(a)anthracene	**22**	0.023 J	0.09 J
Benzo(a)pyrene	**21**	ND	0.083 J
Benzo(b)fluoranthene	**26**	ND	0.098 J
Benzo(k)fluoranthene	**8.2**	ND	0.041 J
Chrysene	**19**	0.018 J	0.08 J
Dibenz(a,h)anthracene	**3.2**	ND	ND
Indeno(1,2,3-cd)pyrene	**13**	ND	0.053 J
Naphthalene	**15**	ND	0.049 J
Pesticides (mg/kg)			
4,4'-DDD	**0.0286 J**	ND	ND
4,4'-DDE	**0.163 J**	ND	0.00105 J
4,4'-DDT	**0.242 J**	ND	ND
Inorganics (mg/kg)			
Barium	19.7	2.07	2.59
Cadmium	0.17 J	ND	ND
Copper	12	0.477 J	1.08
Lead	22.2	1.66 J	1.6 J
Mercury	ND	ND	ND
Zinc	32	8.78	7.22
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.24 J	0.253 J	ND
Perfluorooctanoic Acid (PFOA)	ND	0.071 J	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-8_0-2_020620 2/6/2020 0-2	SB-8_5-7_020620 2/6/2020 5-7	SB-8_10-12_020620 2/6/2020 10-12
VOCs (mg/kg)			
Acetone	0.044 J	ND	0.019
Tetrachloroethene (PCE)	ND	ND	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	ND	ND	0.023 J
Benzo(a)pyrene	ND	ND	ND
Benzo(b)fluoranthene	ND	ND	ND
Benzo(k)fluoranthene	ND	ND	ND
Chrysene	ND	ND	ND
Dibenz(a,h)anthracene	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND	ND
Naphthalene	ND	ND	ND
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	ND	ND	ND
4,4'-DDT	ND	ND	ND
Inorganics (mg/kg)			
Barium	9.94	5.51	3.66
Cadmium	ND	ND	ND
Copper	23.6	0.496 J	1.76
Lead	8.75	1.9 J	1.91 J
Mercury	ND	ND	ND
Zinc	15.2	11.5	11.3
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.214 J	0.376 J	ND
Perfluorooctanoic Acid (PFOA)	ND	0.044 J	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-9_0-2_021120 2/11/2020 0-2	SB-9_6-8_021120 2/11/2020 6-8	SB-9_9-11_021120 2/11/2020 9-11
VOCs (mg/kg)			
Acetone	0.014 J	ND	ND
Tetrachloroethene (PCE)	ND	ND	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	ND	0.33	0.025 J
Benzo(a)pyrene	ND	0.32	ND
Benzo(b)fluoranthene	ND	0.48	ND
Benzo(k)fluoranthene	ND	0.17	ND
Chrysene	ND	0.34	0.021 J
Dibenz(a,h)anthracene	ND	0.06 J	ND
Indeno(1,2,3-cd)pyrene	ND	0.24	ND
Naphthalene	ND	0.034 J	ND
Pesticides (mg/kg)			
4,4'-DDD	ND	**0.0067**	ND
4,4'-DDE	ND	**0.00794**	ND
4,4'-DDT	ND	**0.0118**	ND
Inorganics (mg/kg)			
Barium	16.7	12.8	4.17
Cadmium	ND	ND	ND
Copper	25	3	1.74
Lead	20.7	10.4	1.28 J
Mercury	ND	ND	ND
Zinc	27.6	48.7	18.8
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.426 J	ND	ND
Perfluorooctanoic Acid (PFOA)	ND	0.046 J	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-10_0-2_020620 2/6/2020 0-2	SB-10_5-7_020620 2/6/2020 5-7	SB-10_10-12_020620 2/6/2020 10-12
VOCs (mg/kg)			
Acetone	0.036	ND	0.013
Tetrachloroethene (PCE)	ND	ND	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	ND	**2.1**	ND
Benzo(a)pyrene	ND	**1.9**	ND
Benzo(b)fluoranthene	ND	**2.4**	ND
Benzo(k)fluoranthene	ND	**0.88**	ND
Chrysene	ND	**2**	ND
Dibenz(a,h)anthracene	ND	0.29	ND
Indeno(1,2,3-cd)pyrene	ND	**1.2**	ND
Naphthalene	ND	0.13 J	ND
Pesticides (mg/kg)			
4,4'-DDD	ND	0.00126 J	ND
4,4'-DDE	ND	**0.00598**	0.00131 J
4,4'-DDT	ND	**0.00579**	ND
Inorganics (mg/kg)			
Barium	8.79	7.41	2.97
Cadmium	ND	ND	ND
Copper	22.4	23.6	1.66
Lead	6.11	16.6	1.14 J
Mercury	ND	ND	ND
Zinc	23.4	35.4	8.11
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	ND	0.196 J	ND
Perfluorooctanoic Acid (PFOA)	ND	ND	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-11_0-2_021120 2/11/2020 0-2	SB-11_6-8_021120 2/11/2020 6-8	SB-11_9-11_021120 2/11/2020 9-11
VOCs (mg/kg)			
Acetone	ND	0.025	0.0079 J
Tetrachloroethene (PCE)	ND	ND	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	0.58 J	**1.3**	ND
Benzo(a)pyrene	0.52 J	**1.2**	ND
Benzo(b)fluoranthene	0.68 J	**1.6**	ND
Benzo(k)fluoranthene	ND	0.47	ND
Chrysene	0.52 J	**1.2**	ND
Dibenz(a,h)anthracene	ND	0.19	ND
Indeno(1,2,3-cd)pyrene	0.39 J	**0.76**	ND
Naphthalene	ND	0.29	ND
Pesticides (mg/kg)			
4,4'-DDD	ND	**0.0127**	ND
4,4'-DDE	ND	**0.00609**	ND
4,4'-DDT	ND	0.00263 J	ND
Inorganics (mg/kg)			
Barium	16.5	19.2	4.28
Cadmium	ND	ND	ND
Copper	16.2	5.9	2.54
Lead	25	**64.2**	7.34
Mercury	ND	ND	ND
Zinc	30.6	41.8	9.19
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.781 J	ND	ND
Perfluorooctanoic Acid (PFOA)	0.064 J	ND	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-12_0-2_020720 2/7/2020 0-2	SB-12_5-7_020720 2/7/2020 5-7	SB-12_10-12_020720 2/7/2020 10-12
VOCs (mg/kg)			
Acetone	ND	ND	ND
Tetrachloroethene (PCE)	ND	ND	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	**1.2**	ND	ND
Benzo(a)pyrene	**1.3 J**	ND	ND
Benzo(b)fluoranthene	**1.5**	ND	ND
Benzo(k)fluoranthene	0.54 J	ND	ND
Chrysene	**1.1**	ND	ND
Dibenz(a,h)anthracene	ND	ND	ND
Indeno(1,2,3-cd)pyrene	**0.82 J**	ND	ND
Naphthalene	ND	ND	ND
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	ND	ND	ND
4,4'-DDT	**0.00785 J**	ND	ND
Inorganics (mg/kg)			
Barium	36.9	2.2	3.24
Cadmium	0.241 J	ND	ND
Copper	16.3	0.346 J	2.36
Lead	**102**	1.65 J	1.43 J
Mercury	0.163	ND	ND
Zinc	69.4	7.14	17.1
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	**1.06**	0.16 J	ND
Perfluorooctanoic Acid (PFOA)	0.089 J	0.084 J	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-13_0-2_021020 2/10/2020 0-2	SB-13_4-6_021020 2/10/2020 4-6	SB-13_9-11_021020 2/10/2020 9-11
VOCs (mg/kg)			
Acetone	ND	ND	ND
Tetrachloroethene (PCE)	ND	ND	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	0.34 J	0.039 J	ND
Benzo(a)pyrene	ND	0.042 J	ND
Benzo(b)fluoranthene	0.48 J	0.051 J	ND
Benzo(k)fluoranthene	ND	ND	ND
Chrysene	0.33 J	0.047 J	ND
Dibenz(a,h)anthracene	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.26 J	0.024 J	ND
Naphthalene	ND	ND	ND
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	0.00142 J	ND	ND
4,4'-DDT	ND	ND	ND
Inorganics (mg/kg)			
Barium	58.8	7.69	2.94
Cadmium	0.497 J	0.098 J	ND
Copper	23.4	2.55	1.63
Lead	**124**	11.9	2.71 J
Mercury	0.138	ND	ND
Zinc	**120**	16.6	10.1
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.865 J	0.564 J	ND
Perfluorooctanoic Acid (PFOA)	ND	ND	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-14_0-2_021120 2/11/2020 0-2	SB-14_6-8_021120 2/11/2020 6-8	SB-14_9-11_021120 2/11/2020 9-11
VOCs (mg/kg)			
Acetone	0.03 J	0.0072 J	0.0088 J
Tetrachloroethene (PCE)	ND	ND	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	ND	ND	ND
Benzo(a)pyrene	ND	ND	ND
Benzo(b)fluoranthene	ND	ND	ND
Benzo(k)fluoranthene	ND	ND	ND
Chrysene	0.19 J	ND	ND
Dibenz(a,h)anthracene	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND	ND
Naphthalene	ND	ND	ND
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	ND	ND	ND
4,4'-DDT	ND	ND	ND
Inorganics (mg/kg)			
Barium	14.4	4.17	2.43
Cadmium	ND	ND	ND
Copper	9.68	0.391 J	1.23
Lead	25.2	2.14 J	1.08 J
Mercury	ND	ND	ND
Zinc	26.2	13.5	6.23
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.558 J	0.368 J	ND
Perfluorooctanoic Acid (PFOA)	ND	ND	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-15_0-2_021020 2/10/2020 0-2	SB-15_6-8_021020 2/10/2020 6-8	SB-15_10-12_021020 2/10/2020 10-12	SODUP02_021020 2/10/2020 10-12
VOCs (mg/kg)				
Acetone	0.009 J	ND	ND	ND
Tetrachloroethene (PCE)	ND	ND	ND	ND
SVOCs (mg/kg)				
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND	ND
Benzo(a)anthracene	ND	ND	ND	ND
Benzo(a)pyrene	ND	ND	ND	ND
Benzo(b)fluoranthene	ND	ND	ND	ND
Benzo(k)fluoranthene	ND	ND	ND	ND
Chrysene	0.13 J	ND	ND	ND
Dibenz(a,h)anthracene	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND
Pesticides (mg/kg)				
4,4'-DDD	ND	ND	ND	ND
4,4'-DDE	ND	ND	ND	ND
4,4'-DDT	ND	ND	ND	ND
Inorganics (mg/kg)				
Barium	6.1	2.37	4.19 J	2.47 J
Cadmium	0.147 J	ND	0.116 J	ND
Copper	10.7	0.471 J	1.8 J	0.505 J
Lead	6.77	1.79 J	2.27 J	1.65 J
Mercury	ND	ND	ND	ND
Zinc	13.2	13.2	16.1	13.3
PFAS (ppb)				
Perfluorooctanesulfonic Acid (PFOS)	0.346 J	ND	ND	ND
Perfluorooctanoic Acid (PFOA)	ND	0.132 J	ND	0.127 J

Sample ID Sample Date Sample Depth (feet bgs)	SB-16_0-2_021120 2/11/2020 0-2	SB-16_5-7_021120 2/11/2020 5-7	SB-16_9-11_021120 2/11/2020 9-11
VOCs (mg/kg)			
Acetone	0.008 J	**0.062**	0.018
Tetrachloroethene (PCE)	ND	ND	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	**1.7**	ND	ND
Benzo(a)pyrene	**1.9**	ND	ND
Benzo(b)fluoranthene	**2.3**	ND	ND
Benzo(k)fluoranthene	0.73 J	ND	ND
Chrysene	**1.6**	ND	ND
Dibenz(a,h)anthracene	0.28 J	ND	ND
Indeno(1,2,3-cd)pyrene	**1.2 J**	ND	ND
Naphthalene	ND	ND	ND
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	0.00229	ND	ND
4,4'-DDT	**0.00625**	ND	ND
Inorganics (mg/kg)			
Barium	157	2.08	3.52
Cadmium	ND	ND	ND
Copper	23.8	0.559 J	1.35
Lead	**77.4**	1.42 J	1.51 J
Mercury	0.116	ND	ND
Zinc	72.3	13.9	10
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.648 J	0.69 J	ND
Perfluorooctanoic Acid (PFOA)	ND	0.152 J	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-17_0-2_020520 2/5/2020 0-2	SB-17_5-7_020520 2/5/2020 5-7	SB-17_9-11_020520 2/5/2020 9-11
VOCs (mg/kg)			
Acetone	0.009 J	ND	ND
Tetrachloroethene (PCE)	0.0018	0.00054 J	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	0.31 J	**22**	ND
Benzo(a)pyrene	ND	**20**	ND
Benzo(b)fluoranthene	ND	**28**	ND
Benzo(k)fluoranthene	ND	**10**	ND
Chrysene	0.33 J	**21**	ND
Dibenz(a,h)anthracene	ND	**3.5**	ND
Indeno(1,2,3-cd)pyrene	ND	**14**	ND
Naphthalene	ND	1.1 J	ND
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	0.00227 J	ND	ND
4,4'-DDT	ND	ND	ND
Inorganics (mg/kg)			
Barium	29	71.8	2.16
Cadmium	0.166 J	0.345 J	ND
Copper	16.5	22	0.477 J
Lead	23.5	**149**	1 J
Mercury	ND	0.127	ND
Zinc	33.6	**113**	19.9
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.201 J	**1.05**	ND
Perfluorooctanoic Acid (PFOA)	0.164 J	0.407 J	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-18_0-2_020520 2/5/2020 0-2	SB-18_2-4_020520 2/5/2020 2-4	SB-18_10-12_020520 2/5/2020 10-12
VOCs (mg/kg)			
Acetone	0.0064 J	ND	ND
Tetrachloroethene (PCE)	ND	ND	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	0.97 J	**6.7**	**1.2**
Benzo(a)pyrene	1 J	**6.7**	1
Benzo(b)fluoranthene	**1.4**	**9.3**	**1.2**
Benzo(k)fluoranthene	0.44 J	**2.7**	0.4
Chrysene	0.91 J	**6.9**	**1.2**
Dibenz(a,h)anthracene	ND	**1.1**	0.13
Indeno(1,2,3-cd)pyrene	**0.68 J**	**4.8**	**0.57**
Naphthalene	ND	0.65 J	0.052 J
Pesticides (mg/kg)			
4,4'-DDD	ND	**0.0035 J**	ND
4,4'-DDE	ND	**0.0127 J**	ND
4,4'-DDT	ND	**0.0152 J**	ND
Inorganics (mg/kg)			
Barium	18.4	203	10.2
Cadmium	0.192 J	0.393 J	0.106 J
Copper	43	**55.7**	14.3
Lead	29.4	**443**	47.5
Mercury	ND	**0.364**	0.106
Zinc	37.9	**213**	54.4
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.146 J	0.486 J	ND
Perfluorooctanoic Acid (PFOA)	ND	0.162 J	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-19_0-2_020520 2/5/2020 0-2	SB-19_2-4_020520 2/5/2020 2-4	SB-19_6-8_020520 2/5/2020 6-8
VOCs (mg/kg)			
Acetone	0.021	0.0072 J	ND
Tetrachloroethene (PCE)	ND	ND	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	0.32 J	**18**	ND
Benzo(a)pyrene	ND	**17**	ND
Benzo(b)fluoranthene	0.38 J	**22**	ND
Benzo(k)fluoranthene	ND	**7.6**	ND
Chrysene	0.4 J	**15**	ND
Dibenz(a,h)anthracene	ND	**2.2**	ND
Indeno(1,2,3-cd)pyrene	ND	**11**	ND
Naphthalene	ND	0.72 J	ND
Pesticides (mg/kg)			
4,4'-DDD	ND	ND	ND
4,4'-DDE	ND	**0.0183**	ND
4,4'-DDT	ND	**0.0382**	ND
Inorganics (mg/kg)			
Barium	13.1	304	3.32
Cadmium	0.108 J	0.719 J	ND
Copper	18.1	**51.5**	0.598 J
Lead	20.8	**209**	1.3 J
Mercury	ND	0.112	ND
Zinc	20.9	**932**	9.7
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	0.246 J	**0.98 J**	ND
Perfluorooctanoic Acid (PFOA)	0.06 J	0.322 J	ND

Sample ID Sample Date Sample Depth (feet bgs)	SB-20_0-2_020520 2/5/2020 0-2	SB-20_2-4_020520 2/5/2020 2-4	SB-20_6-8_020520 2/5/2020 6-8
VOCs (mg/kg)			
Acetone	ND	ND	ND
Tetrachloroethene (PCE)	ND	ND	ND
SVOCs (mg/kg)			
3 & 4 Methylphenol (m&p Cresol)	ND	ND	ND
Benzo(a)anthracene	**2.1**	0.65	ND
Benzo(a)pyrene	**2.1**	0.59	ND
Benzo(b)fluoranthene	**2.5**	0.78	ND
Benzo(k)fluoranthene	**1.1**	0.29	ND
Chrysene	**2.2**	0.63	ND
Dibenz(a,h)anthracene	0.33 J	0.087 J	ND
Indeno(1,2,3-cd)pyrene	**1.3**	0.39	ND
Naphthalene	0.11 J	0.047 J	ND
Pesticides (mg/kg)			
4,4'-DDD	0.00195	**0.00945**	ND
4,4'-DDE	0.00266 J	**0.0252**	ND
4,4'-DDT	**0.0159**	**0.0294**	ND
Inorganics (mg/kg)			
Barium	198 J	113	5.8
Cadmium	0.671 J	1.03	0.158 J
Copper	37	40.8	17
Lead	**325 J**	**366**	**136**
Mercury	**0.54**	**0.443**	ND
Zinc	**251 J**	**497**	33.2
PFAS (ppb)			
Perfluorooctanesulfonic Acid (PFOS)	**1.08**	**2.66**	0.216 J
Perfluorooctanoic Acid (PFOA)	0.07 J	**0.679 J**	0.098 J

Analyte	CAS Number	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Residential SCOs	NYSDEC Part 375 Protection of Groundwater SCOs
VOCs (mg/kg)				
Acetone	67-64-1	0.05	100	0.05
Tetrachloroethene (PCE)	127-18-4	1.3	5.5	1.3
SVOCs (mg/kg)				
3 & 4 Methylphenol (m&p Cresol)	65794-96-9	0.33	34	0.33
Benzo(a)anthracene	56-55-3	1	1	1
Benzo(a)pyrene	50-32-8	1	1	22
Benzo(b)fluoranthene	205-99-2	1	1	1.7
Benzo(k)fluoranthene	207-08-9	0.8	1	1.7
Chrysene	218-01-9	1	1	1
Dibenz(a,h)anthracene	53-70-3	0.33	0.33	1,000
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	0.5	8.2
Naphthalene	91-20-3	12	100	12
Pesticides (mg/kg)				
4,4'-DDD	72-54-8	0.0033	2.6	14
4,4'-DDE	72-55-9	0.0033	1.8	17
4,4'-DDT	50-29-3	0.0033	1.7	136
Inorganics (mg/kg)				
Barium	7440-39-3	350	350	820
Cadmium	7440-43-9	2.5	2.5	7.5
Copper	7440-50-8	50	270	1,720
Lead	7439-92-1	63	400	450
Mercury	7439-97-6	0.18	0.81	0.73
Zinc	7440-66-6	109	2,200	2,480
Analyte	**CAS Number**	**NYSDEC Part 375 Unrestricted Use Guidance Values**	**NYSDEC Part 375 Restricted Use Residential Guidance Values**	**NYSDEC Part 375 Protection of Groundwater Guidance Values**
PFAS (ppb)				
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	0.88	8.8	3.7
Perfluorooctanoic Acid (PFOA)	335-67-1	0.66	6.6	1.1

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, Restricted Use Restricted-Residential and Restricted Use Commercial Soil Cleanup Objectives (SCO).
2. Criterion comparisons for 3- & 4-methylphenol (m&p cresol) are provided for reference. Promulgated SCOs are for 3-methylphenol (m-cresol) and 4-methylphenol (p-cresol).
3. Only exceedances above regulatory criteria are shown in the figure.
4. Detected analytical results above Unrestricted Use SCOs are bolded.
5. Detected analytical results above Restricted Use Residential SCOs are shaded.
6. Detected analytical results above Protection of Groundwater are underlined.
7. Sample SODUP01_020620, SODUP02_021020, and SODUP03_021120 are duplicate samples of SB-1_6-8_020620, SB-15_10-12_021020, and SB-6_9-11_021120, respectively.
8. ND = Not detected

Qualifiers:

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

Legend

- ▭ Site Boundary
- ▭ Lot Boundary
- ▨ Potential Areas of Concern
- ◐ Langan Soil Boring / Soil Vapor Sample Location
- ⊕ Langan Soil Boring / Monitoring Well Location
- ◎ Langan Soil Boring / Monitoring Well/ Soil Vapor Sample Location

Notes:

1. Aerial imagery provided through Langan's subscription to NearMap, imagery dated 21 September 2019.
2. Parcel boundaries provided through the New York City Department of Planning's MapPLUTO 20v1, last updated 2020.
3. AOC-1: Historic Fill encompasses the extent of the site.
4. Langan monitoring well locations are based on locations surveyed by a licensed surveyor.
5. Langan soil boring and soil vapor samples shown are approximate and based on field measurements, except for those converted to monitoring wells.
6. Only analytes with exceedances above regulatory criteria are shown in the figure.

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Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC
Collectively known as Langan

Project

1607 SURF AVENUE

BLOCK No. 7062, LOT No. 28
CONEY ISLAND
BROOKLYN NEW YORK

Figure Title

SOIL ANALYTICAL RESULTS

Project No.
170599501

Date
4/28/2021

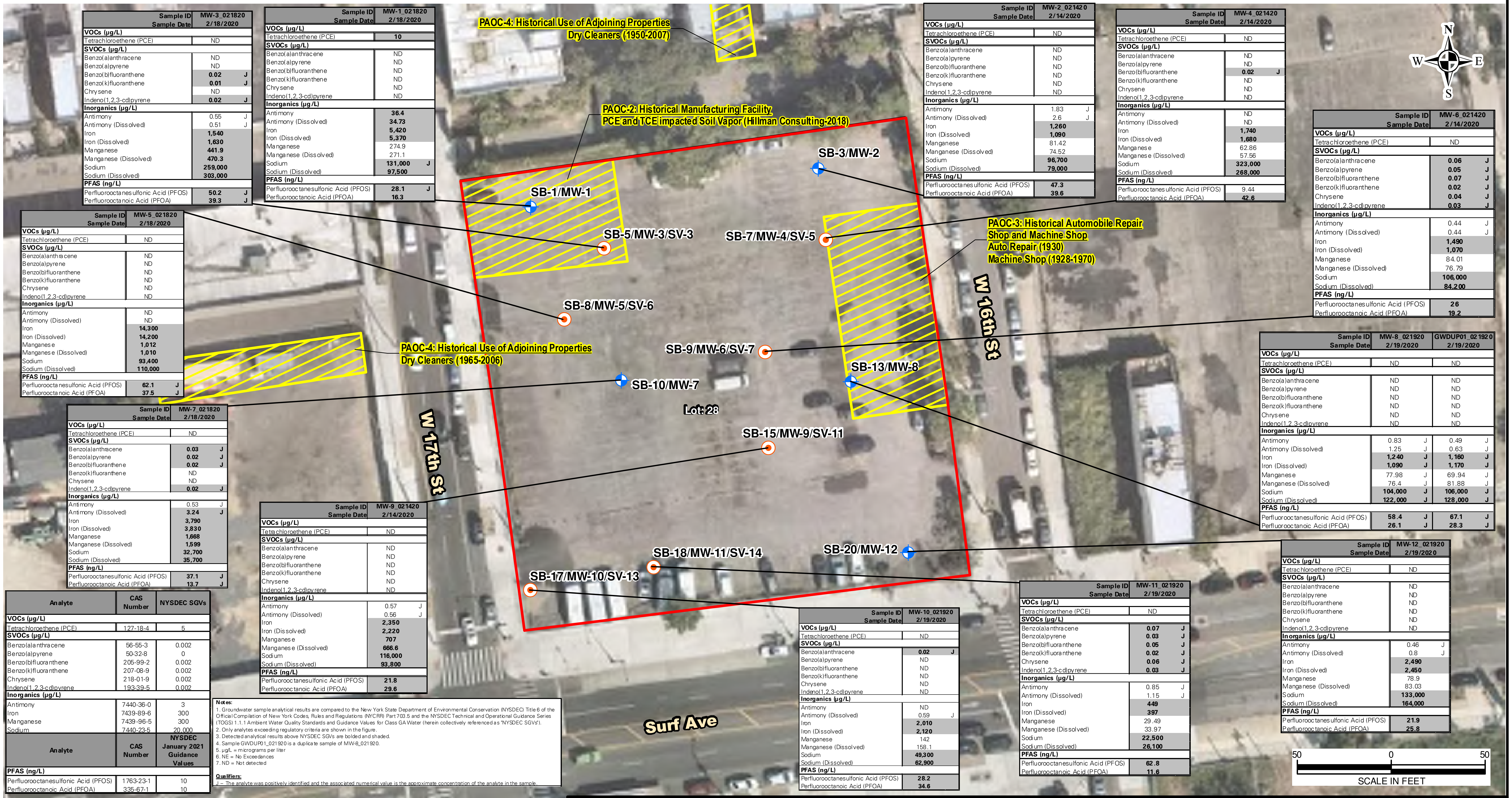
Scale
1 " = 50 '

Drawn By
IHB

Submission Date

Figure
7

Path: \\langan.com\data\NYC\data5\170599501\Project Data\ArcGIS\MXD\Environmental_Figures\2020-12 - Revised RIR\Figure 7 - Soil Analytical Results.mxd Date: 4/28/2021 User: aruane Time: 4:10:35 PM



Sample ID	MW-3_021820	
Sample Date	2/18/2020	
VOCs (µg/L)		
Tetrachloroethene (PCE)	ND	
SVOCs (µg/L)		
Benzo(a)anthracene	ND	
Benzo(a)pyrene	ND	
Benzo(b)fluoranthene	**0.02**	**J**
Benzo(k)fluoranthene	**0.01**	**J**
Chrysene	ND	
Indeno(1,2,3-cd)pyrene	**0.02**	**J**
Inorganics (µg/L)		
Antimony	0.55	J
Antimony (Dissolved)	0.51	J
Iron	**1,540**	
Iron (Dissolved)	**1,630**	
Manganese	**441.9**	
Manganese (Dissolved)	**470.3**	
Sodium	**259,000**	
Sodium (Dissolved)	**303,000**	
PFAS (ng/L)		
Perfluorooctanesulfonic Acid (PFOS)	**50.2**	**J**
Perfluorooctanoic Acid (PFOA)	**39.3**	**J**

Sample ID	MW-1_021820	
Sample Date	2/18/2020	
VOCs (µg/L)		
Tetrachloroethene (PCE)	**10**	
SVOCs (µg/L)		
Benzo(a)anthracene	ND	
Benzo(a)pyrene	ND	
Benzo(b)fluoranthene	ND	
Benzo(k)fluoranthene	ND	
Chrysene	ND	
Indeno(1,2,3-cd)pyrene	ND	
Inorganics (µg/L)		
Antimony	**36.4**	
Antimony (Dissolved)	**34.73**	
Iron	**5,420**	
Iron (Dissolved)	**5,370**	
Manganese	274.9	
Manganese (Dissolved)	271.1	
Sodium	**131,000**	**J**
Sodium (Dissolved)	**97,500**	
PFAS (ng/L)		
Perfluorooctanesulfonic Acid (PFOS)	**28.1**	**J**
Perfluorooctanoic Acid (PFOA)	**16.3**	

Sample ID	MW-2_021420	
Sample Date	2/14/2020	
VOCs (µg/L)		
Tetrachloroethene (PCE)	ND	
SVOCs (µg/L)		
Benzo(a)anthracene	ND	
Benzo(a)pyrene	ND	
Benzo(b)fluoranthene	ND	
Benzo(k)fluoranthene	ND	
Chrysene	ND	
Indeno(1,2,3-cd)pyrene	ND	
Inorganics (µg/L)		
Antimony	1.83	J
Antimony (Dissolved)	2.6	J
Iron	**1,260**	
Iron (Dissolved)	**1,090**	
Manganese	81.42	
Manganese (Dissolved)	74.52	
Sodium	**96,700**	
Sodium (Dissolved)	**79,000**	
PFAS (ng/L)		
Perfluorooctanesulfonic Acid (PFOS)	**47.3**	
Perfluorooctanoic Acid (PFOA)	**39.6**	

Sample ID	MW-4_021420	
Sample Date	2/14/2020	
VOCs (µg/L)		
Tetrachloroethene (PCE)	ND	
SVOCs (µg/L)		
Benzo(a)anthracene	ND	
Benzo(a)pyrene	ND	
Benzo(b)fluoranthene	**0.02**	**J**
Benzo(k)fluoranthene	ND	
Chrysene	ND	
Indeno(1,2,3-cd)pyrene	ND	
Inorganics (µg/L)		
Antimony	ND	
Antimony (Dissolved)	ND	
Iron	**1,740**	
Iron (Dissolved)	**1,680**	
Manganese	62.86	
Manganese (Dissolved)	57.56	
Sodium	**323,000**	
Sodium (Dissolved)	**268,000**	
PFAS (ng/L)		
Perfluorooctanesulfonic Acid (PFOS)	9.44	
Perfluorooctanoic Acid (PFOA)	**42.6**	

Sample ID	MW-6_021420	
Sample Date	2/14/2020	
VOCs (µg/L)		
Tetrachloroethene (PCE)	ND	
SVOCs (µg/L)		
Benzo(a)anthracene	**0.06**	**J**
Benzo(a)pyrene	**0.05**	**J**
Benzo(b)fluoranthene	**0.07**	**J**
Benzo(k)fluoranthene	**0.02**	**J**
Chrysene	**0.04**	**J**
Indeno(1,2,3-cd)pyrene	**0.03**	**J**
Inorganics (µg/L)		
Antimony	0.44	J
Antimony (Dissolved)	0.44	J
Iron	**1,490**	
Iron (Dissolved)	**1,070**	
Manganese	84.01	
Manganese (Dissolved)	76.79	
Sodium	**106,000**	
Sodium (Dissolved)	**84,200**	
PFAS (ng/L)		
Perfluorooctanesulfonic Acid (PFOS)	**26**	
Perfluorooctanoic Acid (PFOA)	**19.2**	

Sample ID	MW-5_021820	
Sample Date	2/18/2020	
VOCs (µg/L)		
Tetrachloroethene (PCE)	ND	
SVOCs (µg/L)		
Benzo(a)anthracene	ND	
Benzo(a)pyrene	ND	
Benzo(b)fluoranthene	ND	
Benzo(k)fluoranthene	ND	
Chrysene	ND	
Indeno(1,2,3-cd)pyrene	ND	
Inorganics (µg/L)		
Antimony	ND	
Antimony (Dissolved)	ND	
Iron	**14,300**	
Iron (Dissolved)	**14,200**	
Manganese	**1,012**	
Manganese (Dissolved)	**1,010**	
Sodium	**93,400**	
Sodium (Dissolved)	**110,000**	
PFAS (ng/L)		
Perfluorooctanesulfonic Acid (PFOS)	**62.1**	**J**
Perfluorooctanoic Acid (PFOA)	**37.5**	**J**

Sample ID	MW-8_021920		GWDUP01_021920	
Sample Date	2/19/2020		2/19/2020	
VOCs (µg/L)				
Tetrachloroethene (PCE)	ND		ND	
SVOCs (µg/L)				
Benzo(a)anthracene	ND		ND	
Benzo(a)pyrene	ND		ND	
Benzo(b)fluoranthene	ND		ND	
Benzo(k)fluoranthene	ND		ND	
Chrysene	ND		ND	
Indeno(1,2,3-cd)pyrene	ND		ND	
Inorganics (µg/L)				
Antimony	0.83	J	0.49	J
Antimony (Dissolved)	1.25	J	0.63	J
Iron	**1,240**	**J**	**1,160**	**J**
Iron (Dissolved)	**1,090**	**J**	**1,170**	**J**
Manganese	77.98	J	69.94	J
Manganese (Dissolved)	76.4	J	81.88	J
Sodium	**104,000**	**J**	**106,000**	**J**
Sodium (Dissolved)	**122,000**	**J**	**128,000**	**J**
PFAS (ng/L)				
Perfluorooctanesulfonic Acid (PFOS)	**58.4**	**J**	**67.1**	**J**
Perfluorooctanoic Acid (PFOA)	**26.1**	**J**	**28.3**	**J**

Sample ID	MW-7_021820	
Sample Date	2/18/2020	
VOCs (µg/L)		
Tetrachloroethene (PCE)	ND	
SVOCs (µg/L)		
Benzo(a)anthracene	**0.03**	**J**
Benzo(a)pyrene	**0.02**	**J**
Benzo(b)fluoranthene	**0.02**	**J**
Benzo(k)fluoranthene	ND	
Chrysene	ND	
Indeno(1,2,3-cd)pyrene	**0.02**	**J**
Inorganics (µg/L)		
Antimony	0.53	J
Antimony (Dissolved)	**3.24**	**J**
Iron	**3,790**	
Iron (Dissolved)	**3,830**	
Manganese	**1,668**	
Manganese (Dissolved)	**1,599**	
Sodium	**32,700**	
Sodium (Dissolved)	**35,700**	
PFAS (ng/L)		
Perfluorooctanesulfonic Acid (PFOS)	**37.1**	**J**
Perfluorooctanoic Acid (PFOA)	**13.7**	**J**

Sample ID	MW-9_021420	
Sample Date	2/14/2020	
VOCs (µg/L)		
Tetrachloroethene (PCE)	ND	
SVOCs (µg/L)		
Benzo(a)anthracene	ND	
Benzo(a)pyrene	ND	
Benzo(b)fluoranthene	ND	
Benzo(k)fluoranthene	ND	
Chrysene	ND	
Indeno(1,2,3-cd)pyrene	ND	
Inorganics (µg/L)		
Antimony	0.57	J
Antimony (Dissolved)	0.56	J
Iron	**2,350**	
Iron (Dissolved)	**2,220**	
Manganese	**707**	
Manganese (Dissolved)	**666.6**	
Sodium	**116,000**	
Sodium (Dissolved)	**93,800**	
PFAS (ng/L)		
Perfluorooctanesulfonic Acid (PFOS)	**21.8**	
Perfluorooctanoic Acid (PFOA)	**29.6**	

Sample ID	MW-12_021920	
Sample Date	2/19/2020	
VOCs (µg/L)		
Tetrachloroethene (PCE)	ND	
SVOCs (µg/L)		
Benzo(a)anthracene	ND	
Benzo(a)pyrene	ND	
Benzo(b)fluoranthene	ND	
Benzo(k)fluoranthene	ND	
Chrysene	ND	
Indeno(1,2,3-cd)pyrene	ND	
Inorganics (µg/L)		
Antimony	0.46	J
Antimony (Dissolved)	0.8	J
Iron	**2,490**	
Iron (Dissolved)	**2,450**	
Manganese	78.9	
Manganese (Dissolved)	83.03	
Sodium	**133,000**	
Sodium (Dissolved)	**164,000**	
PFAS (ng/L)		
Perfluorooctanesulfonic Acid (PFOS)	**21.9**	
Perfluorooctanoic Acid (PFOA)	**25.8**	

Sample ID	MW-11_021920	
Sample Date	2/19/2020	
VOCs (µg/L)		
Tetrachloroethene (PCE)	ND	
SVOCs (µg/L)		
Benzo(a)anthracene	**0.07**	**J**
Benzo(a)pyrene	**0.03**	**J**
Benzo(b)fluoranthene	**0.05**	**J**
Benzo(k)fluoranthene	**0.02**	**J**
Chrysene	**0.06**	**J**
Indeno(1,2,3-cd)pyrene	**0.03**	**J**
Inorganics (µg/L)		
Antimony	0.85	J
Antimony (Dissolved)	1.15	J
Iron	**449**	
Iron (Dissolved)	**397**	
Manganese	29.49	
Manganese (Dissolved)	33.97	
Sodium	**22,500**	
Sodium (Dissolved)	**26,100**	
PFAS (ng/L)		
Perfluorooctanesulfonic Acid (PFOS)	**62.8**	
Perfluorooctanoic Acid (PFOA)	**11.6**	

Sample ID	MW-10_021920	
Sample Date	2/19/2020	
VOCs (µg/L)		
Tetrachloroethene (PCE)	ND	
SVOCs (µg/L)		
Benzo(a)anthracene	**0.02**	**J**
Benzo(a)pyrene	ND	
Benzo(b)fluoranthene	ND	
Benzo(k)fluoranthene	ND	
Chrysene	ND	
Indeno(1,2,3-cd)pyrene	ND	
Inorganics (µg/L)		
Antimony	ND	
Antimony (Dissolved)	0.59	J
Iron	**2,010**	
Iron (Dissolved)	**2,120**	
Manganese	142	
Manganese (Dissolved)	158.1	
Sodium	**49,300**	
Sodium (Dissolved)	**62,900**	
PFAS (ng/L)		
Perfluorooctanesulfonic Acid (PFOS)	**28.2**	
Perfluorooctanoic Acid (PFOA)	**34.6**	

Analyte	CAS Number	NYSDEC SGVs
VOCs (µg/L)		
Tetrachloroethene (PCE)	127-18-4	5
SVOCs (µg/L)		
Benzo(a)anthracene	56-55-3	0.002
Benzo(a)pyrene	50-32-8	0
Benzo(b)fluoranthene	205-99-2	0.002
Benzo(k)fluoranthene	207-08-9	0.002
Chrysene	218-01-9	0.002
Indeno(1,2,3-cd)pyrene	193-39-5	0.002
Inorganics (µg/L)		
Antimony	7440-36-0	3
Iron	7439-89-6	300
Manganese	7439-96-5	300
Sodium	7440-23-5	20,000
Analyte	**CAS Number**	**NYSDEC January 2021 Guidance Values**
PFAS (ng/L)		
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	10
Perfluorooctanoic Acid (PFOA)	335-67-1	10

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. Only analytes exceeding regulatory criteria are shown in the figure.
3. Detected analytical results above NYSDEC SGVs are bolded and shaded.
4. Sample GWDUP01_021920 is a duplicate sample of MW-8_021920.
5. µg/L = micrograms per liter
6. NE = No Exceedances
7. ND = Not detected

Qualifiers:

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

Legend

□	Site Boundary
□	Lot Boundary
▨	Potential Areas of Concern
⊕	Langan Soil Boring / Monitoring Well Location
◉	Langan Soil Boring / Monitoring Well/ Soil Vapor Sample Location

Notes:

1. Aerial imagery provided through Langan's subscription to NearMap, imagery dated 21 September 2019.
2. Parcel boundaries provided through the New York City Department of Planning's MapPLUTO 20v1, last updated 2020.
3. AOC-1: Historic Fill encompasses the extent of the site
4. Langan monitoring well locations are based on locations surveyed by a licensed surveyor.
5. Only analytes with exceedances above regulatory criteria are shown in the figure.

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Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC
Collectively known as Langan

Project

1607 SURF AVENUE

BLOCK No. 7062, LOT No. 28
CONEY ISLAND

BROOKLYN NEW YORK

Figure Title

GROUNDWATER ANALYTICAL RESULTS

Project No.
170599501

Date
4/28/2021

Scale
1 " = 50 '

Drawn By
IHB

Submission Date

Figure
8

Sample ID Sample Date Sample Type	SV-16_120320 12/3/2020 SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	4.54	U
1,1-Dichloroethene	3.3	U
1,2,4-Trimethylbenzene	12.9	
1,3-Butadiene	3.5	
2,2,4-Trimethylpentane	47.2	
2-Hexanone	4.26	
Acetone	295	
Benzene	4.19	
Carbon Disulfide	2.72	
Carbon Tetrachloride	5.24	U
Cis-1,2-Dichloroethene	3.3	U
Cyclohexane	5.71	
Ethylbenzene	10.6	
M,P-Xylene	44.3	
Methyl Ethyl Ketone (2-Butanone)	79.3	
Methylene Chloride	7.23	U
n-Heptane	9.3	
n-Hexane	15.5	
o-Xylene (1,2-Dimethylbenzene)	16.3	
Tetrachloroethene (PCE)	1,970	
Toluene	34.4	
Total Xylenes	60.8	
Trichloroethene (TCE)	56.4	
Vinyl Chloride	2.13	U

Sample ID Sample Date Sample Type	SV-24_030221 3/2/2021 SV		DUP-01_030221 3/2/2021 SV	
VOCs (µg/m³)				
1,1,1-Trichloroethane	1.09	U	4.96	U
1,1-Dichloroethene	0.793	U	3.6	U
1,2,4-Trimethylbenzene	1.06		4.47	U
2-Hexanone	4.1		3.73	U
Acetone	14.9		10.8	U
Carbon Tetrachloride	1.26	U	5.72	U
Chloroform	1.89		4.44	U
Cis-1,2-Dichloroethene	2		3.6	U
Cyclohexane	1.69		3.13	U
Dichlorodifluoromethane	3.28		4.49	U
Ethylbenzene	1.12		3.95	U
Isopropanol	1.84		5.58	U
M,P-Xylene	2.92		7.91	U
Methyl Ethyl Ketone (2-Butanone)	59	J	21.7	J
Methylene Chloride	1.74	U	7.89	U
o-Xylene (1,2-Dimethylbenzene)	1.06		3.95	U
Styrene	1.12		3.87	U
Tetrachloroethene (PCE)	2,010		1,880	
Toluene	4.07		3.7	
Total Xylenes	3.98		3.95	U
Trichloroethene (TCE)	49.3		44.4	
Trichlorofluoromethane	2.42		5.11	U
Vinyl Chloride	0.511	U	2.32	U

Sample ID Sample Date Sample Type	SV-25_030221 3/2/2021 SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	1.09	U
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	1.13	
1,3-Butadiene	1.73	
2,2,4-Trimethylpentane	4.76	
2-Hexanone	4.43	
Acetone	15.2	
Benzene	1.35	
Carbon Disulfide	1.66	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	0.793	U
Cyclohexane	3.07	
Dichlorodifluoromethane	3.45	
Ethylbenzene	1.28	
M,P-Xylene	3.48	
Methylene Chloride	1.74	U
Methyl Ethyl Ketone (2-Butanone)	35.4	
n-Heptane	3.97	
n-Hexane	5.53	
o-Xylene (1,2-Dimethylbenzene)	1.29	
Tetrachloroethene (PCE)	50.7	
Trichloroethene (TCE)	1.07	U
Toluene	5.16	
Total Xylenes	4.78	
Trichlorofluoromethane	1.22	
Vinyl Chloride	0.511	U

Location Sample ID Sample Date Sample Type	SV-01 SV-1_021220 2/12/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	1.09	U
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	2.99	
1,3,5-Trimethylbenzene (Mesitylene)	1.3	
2,2,4-Trimethylpentane	2.47	
Acetone	107	
Benzene	7.32	
Carbon Disulfide	11.4	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	0.793	U
Dichlorodifluoromethane	22.8	
Ethylbenzene	6.56	
Isopropanol	1.4	
M,P-Xylene	14.7	
Methyl Ethyl Ketone (2-Butanone)	8.32	
Methylene Chloride	1.74	U
n-Heptane	1.07	
n-Hexane	2.46	
o-Xylene (1,2-Dimethylbenzene)	6.43	
Tetrachloroethene (PCE)	5.23	
Toluene	17.1	
Total Xylenes	21.2	
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	2.13	
Vinyl Chloride	0.511	U

Location Sample ID Sample Date Sample Type	SV-04 SV-4_021220 2/12/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	2.7	
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	2.29	
1,3-Butadiene	0.478	
Acetone	25.4	
Benzene	3.11	
Carbon Disulfide	12.4	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	0.793	U
Cyclohexane	1.36	
Dichlorodifluoromethane	234	
Ethylbenzene	1.69	
M,P-Xylene	6.25	
Methyl Ethyl Ketone (2-Butanone)	7.43	
Methylene Chloride	1.74	U
n-Heptane	2.71	
n-Hexane	2.66	
o-Xylene (1,2-Dimethylbenzene)	2.29	
Tetrachloroethene (PCE)	3.62	
Toluene	8.55	
Total Xylenes	8.56	
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	5.73	
Vinyl Chloride	0.511	U

Location Sample ID Sample Date Sample Type	SV-05 SV-5_021220 2/12/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	1.09	U
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	1.91	
Acetone	10.4	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	0.793	U
Dichlorodifluoromethane	117	
M,P-Xylene	3.84	
Methylene Chloride	1.74	U
o-Xylene (1,2-Dimethylbenzene)	1.35	
Tetrachloroethene (PCE)	5.45	
Toluene	2.45	
Total Xylenes	5.21	
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	1.64	
Vinyl Chloride	0.511	U

Sample ID Sample Date Sample Type	SV-17_120320 12/3/2020 SV		DUP01_120320 12/3/2020 SV	
VOCs (µg/m³)				
1,1,1-Trichloroethane	4.14		4.45	
1,1-Dichloroethene	0.793	U	0.793	U
1,2,4-Trimethylbenzene	16		15.2	
1,3,5-Trimethylbenzene (Mesitylene)	4.23		4.23	
1,3-Butadiene	0.719		0.542	
2,2,4-Trimethylpentane	2.36		2.68	
2-Hexanone	2.93	J	1.89	J
4-Ethyltoluene	4.65		4.97	
Acetone	128		112	
Benzene	2.24		2.19	
Carbon Disulfide	3.1		2.97	
Chlorobenzene	0.921	U	0.921	U
Chloroform	1.91		2.29	
Cis-1,2-Dichloroethene	0.793	U	0.793	U
Cyclohexane	1.2		1.35	
Dichlorodifluoromethane	6.77		6.38	
Ethanol	21.9		12.9	
Ethyl Acetate	1.8	U	3.89	
Ethylbenzene	13.5		14.6	
Isopropanol	5.95	J	10.5	J
M,P-Xylene	52.6		56.5	
Methyl Ethyl Ketone (2-Butanone)	8.76		6.75	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	5.04		4.18	
Methylene Chloride	1.74	U	1.74	U
n-Heptane	5.49		5.57	
n-Hexane	6.59		6.59	
o-Xylene (1,2-Dimethylbenzene)	19.8		21	
Styrene	1.57		1.69	
Tert-Butyl Alcohol	6.76	J	3.94	J
Tetrachloroethene (PCE)	30.3		30.4	
Tetrahydrofuran	3.95		3.57	
Toluene	39.2		44.5	
Total Xylenes	72.5		77.3	
Trichloroethene (TCE)	1.07	U	1.07	U
Trichlorofluoromethane	1.17		1.17	
Vinyl Chloride	0.511	U	0.511	U

Sample ID Sample Date Sample Type	SV-18_120320 12/3/2020 SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	1.09	U
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	11.9	
1,3,5-Trimethylbenzene (Mesitylene)	3.21	
1,3-Butadiene	4.31	
2,2,4-Trimethylpentane	2.38	
4-Ethyltoluene	3.47	
Acetone	77.2	
Benzene	3.8	
Carbon Disulfide	4.48	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	0.793	U
Cyclohexane	1.98	
Dichlorodifluoromethane	22.6	
Ethylbenzene	12.8	
M,P-Xylene	47.8	
Methyl Ethyl Ketone (2-Butanone)	11.2	
Methylene Chloride	1.74	U
n-Heptane	6.07	
n-Hexane	6.59	
o-Xylene (1,2-Dimethylbenzene)	17.8	
Styrene	1.34	
Tert-Butyl Alcohol	2.32	J
Tetrachloroethene (PCE)	25.4	
Toluene	42.2	
Total Xylenes	65.6	
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	2.1	
Vinyl Chloride	0.511	U

Location Sample ID Sample Date Sample Type	SV-07 SV-7_021220 2/12/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	2.27	
1,1-Dichloroethene	1.59	U
1,2,4-Trimethylbenzene	3.59	
1,3,5-Trimethylbenzene (Mesitylene)	2.95	
1,3-Butadiene	5.77	
Acetone	20.9	
Benzene	7.12	
Carbon Disulfide	27.7	
Carbon Tetrachloride	2.52	U
Cis-1,2-Dichloroethene	4.08	
Cyclohexane	2.35	
Dichlorodifluoromethane	114	
Ethylbenzene	1.92	
M,P-Xylene	6.6	
Methyl Ethyl Ketone (2-Butanone)	10	
Methylene Chloride	3.47	U
n-Heptane	220	
n-Hexane	329	
o-Xylene (1,2-Dimethylbenzene)	3.13	
Tetrachloroethene (PCE)	18.3	
Toluene	6.41	
Total Xylenes	9.73	
Trichloroethene (TCE)	2.15	U
Trichlorofluoromethane	7.81	
Vinyl Chloride	1.02	U

Location Sample ID Sample Date Sample Type	SV-09 SV-9_021220 2/12/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	1.09	U
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	1.7	
Acetone	11.3	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	0.793	U
Dichlorodifluoromethane	13.9	
Ethylbenzene	1.1	
M,P-Xylene	4.86	
Methylene Chloride	1.74	U
o-Xylene (1,2-Dimethylbenzene)	1.6	
Tetrachloroethene (PCE)	4.69	
Toluene	3.37	
Total Xylenes	6.47	
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	2.03	
Vinyl Chloride	0.511	U

Sample ID Sample Date Sample Type	SV-23_030221 3/2/2021 SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	1.09	U
1,1-Dichloroethene	0.793	U
1,3-Butadiene	5.57	
2,2,4-Trimethylpentane	1.21	
2-Hexanone	4.26	
Acetone	24.7	
Benzene	3.87	
Carbon Disulfide	2.45	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	48	
Cyclohexane	3.09	
Dichlorodifluoromethane	12.5	
Ethylbenzene	1.3	
M,P-Xylene	3.33	
Methyl Ethyl Ketone (2-Butanone)	47.5	
Methylene Chloride	1.74	U
n-Heptane	2.36	
n-Hexane	5.11	
o-Xylene (1,2-Dimethylbenzene)	1.14	
Tert-Butyl Alcohol	4.34	
Tetrachloroethene (PCE)	161	
Toluene	5.99	
Total Xylenes	4.47	
Trans-1,2-Dichloroethene	1.93	
Trichloroethene (TCE)	20.6	
Vinyl Chloride	0.511	U

Location Sample ID Sample Date Sample Type	SV-03 SV-3_021220 2/12/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	1.36	
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	2.15	
2,2,4-Trimethylpentane	2.94	
Acetone	11.9	
Benzene	0.748	
Carbon Disulfide	2.44	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	0.793	U
Dichlorodifluoromethane	93.5	
Ethylbenzene	1.11	
M,P-Xylene	4.34	
Methylene Chloride	1.74	U
o-Xylene (1,2-Dimethylbenzene)	1.47	
Tetrachloroethene (PCE)	4.52	
Toluene	14.5	
Total Xylenes	5.82	
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	1.33	
Vinyl Chloride	0.511	U

Sample ID Sample Date Sample Type	AA-01_030221 3/2/2021 AA	
VOCs (µg/m³)		
1,1,1-Trichloroethane	1.09	U
1,1-Dichloroethene	0.793	U
Acetone	5.39	
Carbon Tetrachloride	1.26	U
Chloromethane	0.855	
Cis-1,2-Dichloroethene	0.793	U
Dichlorodifluoromethane	2.26	
Methylene Chloride	1.74	U
Tetrachloroethene (PCE)	1.36	U
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	1.24	
Vinyl Chloride	0.511	U

Location Sample ID Sample Date Sample Type	SV-02 SV-2_021320 2/13/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	68.7	U
1,1-Dichloroethene	50	U
Carbon Tetrachloride	79.3	U
Cis-1,2-Dichloroethene	2,390	
Methylene Chloride	109	U
Tetrachloroethene (PCE)	23,200	
Trichloroethene (TCE)	1,900	
Vinyl Chloride	32.2	U

Location Sample ID Sample Date Sample Type	SV-06 SV-6_021320 2/13/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	1.09	U
1,1-Dichloroethane	1.33	
1,1-Dichloroethene	1.37	
1,2,4-Trimethylbenzene	1.92	
1,3-Butadiene	4.16	
Acetone	24.9	
Benzene	2.37	
Carbon Disulfide	47.6	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	21.8	
Cyclohexane	43	
Dichlorodifluoromethane	35.2	
Ethylbenzene	1.37	
M,P-Xylene	5.04	
Methyl Ethyl Ketone (2-Butanone)	5.72	
Methylene Chloride	1.74	U
n-Heptane	36.1	
n-Hexane	40.2	
o-Xylene (1,2-Dimethylbenzene)	1.94	
Tert-Butyl Alcohol	3.4	
Tetrachloroethene (PCE)	7.12	
Toluene	5.2	
Trichloroethene (TCE)	3.65	
Vinyl Chloride	22.2	

Location Sample ID Sample Date Sample Type	AA01 AA01_021220 2/12/2020 AO		AA02 AA02_021320 2/13/2020 AO	
VOCs (µg/m³)				
1,1,1-Trichloroethane	2.7	U	3.18	U
1,1-Dichloroethene	1.96	U	2.31	U
Carbon Tetrachloride	3.11	U	3.66	U
Chloromethane	1.07		1.29	
Cis-1,2-Dichloroethene	1.96	U	2.31	U
Methylene Chloride	4.31	U	5.07	U
Tetrachloroethene (PCE)	3.36	U	3.95	U
Trichloroethene (TCE)	2.66	U	3.13	U
Vinyl Chloride	1.27	U	1.49	U

Location Sample ID Sample Date Sample Type	SV-08 SV-8_021220 2/12/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	3.41	U
1,1-Dichloroethene	2.48	U
1,2,4-Trimethylbenzene	6.78	
1,3,5-Trimethylbenzene (Mesitylene)	7.82	
1,3-Butadiene	2.05	
Acetone	27.1	
Benzene	6.2	
Carbon Disulfide	37.7	
Carbon Tetrachloride	3.93	U
Cis-1,2-Dichloroethene	2.48	U
Cyclohexane	2.91	
Dichlorodifluoromethane	84.6	
Ethylbenzene	3.65	
M,P-Xylene	37.7	
Methyl Ethyl Ketone (2-Butanone)	28.4	
Methylene Chloride	5.42	U
n-Heptane	212	
n-Hexane	193	
o-Xylene (1,2-Dimethylbenzene)	23.1	
Tetrachloroethene (PCE)	14.2	
Toluene	19.3	
Total Xylenes	60.8	
Trichloroethene (TCE)	3.36	U
Trichlorofluoromethane	4.32	
Vinyl Chloride	1.6	U

Sample ID Sample Date Sample Type	SV-22_120320 12/3/2020 SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	5.41	
1,1-Dichloroethene	1.35	
1,2,4-Trimethylbenzene	12.7	
1,3,5-Trimethylbenzene (Mesitylene)	3.5	
1,3-Butadiene	1.36	
2,2,4-Trimethylpentane	47.6	
2-Hexanone	1.94	
4-Ethyltoluene	4.25	
Acetone	58.9	
Benzene	5.49	
Carbon Disulfide	1.79	
Carbon Tetrachloride	1.26	U
Chloroform	1.79	
Cis-1,2-Dichloroethene	0.793	U
Cyclohexane	5.09	
Dichlorodifluoromethane	5.09	
Ethanol	9.44	
Ethylbenzene	12.9	
Isopropanol	2.37	
M,P-Xylene	50	
Methyl Ethyl Ketone (2-Butanone)	7.31	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	3.27	
Methylene Chloride	1.74	U
n-Heptane	5	
n-Hexane	5.99	
o-Xylene (1,2-Dimethylbenzene)	18.8	
Styrene	1.51	
Tert-Butyl Alcohol	3.64	J
Tetrachloroethene (PCE)	30.1	
Tetrahydrofuran	2.52	
Toluene	36.9	
Total Xylenes	68.6	
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	3.73	
Vinyl Chloride	0.511	U

Location Sample ID Sample Date Sample Type	SV-10 SV-10_021320 2/13/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	1.09	U
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	2.17	
1,3-Butadiene	0.489	
2-Hexanone	6.07	
Acetone	28.7	
Benzene	1.93	
Carbon Disulfide	5.98	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	0.793	U
Cyclohexane	2.7	
Dichlorodifluoromethane	16.6	
Ethylbenzene	1.11	
M,P-Xylene	4.1	
Methyl Ethyl Ketone (2-Butanone)	14	
Methylene Chloride	1.74	U
n-Heptane	3.33	
n-Hexane	2.3	
o-Xylene (1,2-Dimethylbenzene)	1.5	
Tetrachloroethene (PCE)	7.8	
Toluene	3.23	
Trichloroethene (TCE)	1.07	U
Vinyl Chloride	0.511	U

Location Sample ID Sample Date Sample Type	SV-13 SV-13_021320 2/13/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	5.43	
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	2.11	
Acetone	10	
Carbon Disulfide	1.64	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	0.793	U
Dichlorodifluoromethane	4	
Ethylbenzene	1	
M,P-Xylene	4.34	
Methylene Chloride	1.74	U
o-Xylene (1,2-Dimethylbenzene)	1.5	
Tetrachloroethene (PCE)	12	
Toluene	3.01	
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	12.5	
Vinyl Chloride	0.511	U

Sample ID Sample Date Sample Type	SV-21_120320 12/3/2020 SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	1.93	
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	12.7	
1,3,5-Trimethylbenzene (Mesitylene)	3.72	
1,3-Butadiene	0.88	
2,2,4-Trimethylpentane	3.21	
4-Ethyltoluene	4.59	
Acetone	108	
Benzene	2.77	
Carbon Disulfide	3.99	
Carbon Tetrachloride	1.26	U
Chloroform	1.12	
Cis-1,2-Dichloroethene	0.793	U
Cis-1,3-Dichloropropene	0.908	U
Cyclohexane	1.66	
Dichlorodifluoromethane	3.27	
Ethylbenzene	15.3	
Isopropanol	1.47	
M,P-Xylene	56.5	
Methyl Ethyl Ketone (2-Butanone)	3.48	
Methylene Chloride	1.74	U
n-Heptane	6.93	
n-Hexane	7.51	
o-Xylene (1,2-Dimethylbenzene)	20.6	
Styrene	1.5	
Tert-Butyl Alcohol	2.04	J
Tetrachloroethene (PCE)	30.6	
Toluene	51.3	
Total Xylenes	77.3	
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	9.55	
Vinyl Chloride	0.511	U

Location Sample ID Sample Date Sample Type	SV-14 SV-14_021320 2/13/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	1.09	U
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	1.22	
Acetone	16.7	
Carbon Disulfide	0.685	
Carbon Tetrachloride	1.26	U
Chloroform	1.44	
Cis-1,2-Dichloroethene	0.793	U
Dichlorodifluoromethane	4.23	
M,P-Xylene	1.74	
Methyl Ethyl Ketone (2-Butanone)	1.62	
Methylene Chloride	1.74	U
Tetrachloroethene (PCE)	27.7	
Toluene	1.37	
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	27.8	
Vinyl Chloride	0.511	U

Location Sample ID Sample Date Sample Type	SV-15 SV-15_021320 2/13/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	3.26	
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	1.75	
Acetone	6.53	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	0.793	U
Dichlorodifluoromethane	170	
Ethylbenzene	1.11	
M,P-Xylene	4.52	
Methylene Chloride	1.74	U
n-Hexane	0.835	
o-Xylene (1,2-Dimethylbenzene)	1.51	
Tetrachloroethene (PCE)	7.46	
Toluene	4.45	
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	2.38	
Vinyl Chloride	0.511	U

Sample ID Sample Date Sample Type	SV-20_120320 12/3/2020 SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	1.09	U
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	16.2	
1,3,5-Trimethylbenzene (Mesitylene)	4.4	
2,2,4-Trimethylpentane	1.7	
4-Ethyltoluene	5.21	
Acetone	33.5	
Benzene	1.94	
Carbon Disulfide	0.984	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	0.793	U
Cyclohexane	0.699	
Dichlorodifluoromethane	4.7	
Ethyl Acetate	1.94	
Ethylbenzene	13.7	
M,P-Xylene	53.4	
Methyl Ethyl Ketone (2-Butanone)	1.78	
Methylene Chloride	1.74	U
n-Heptane	4.22	
n-Hexane	3.4	
o-Xylene (1,2-Dimethylbenzene)	20.6	
Styrene	1.58	
Tetrachloroethene (PCE)	26.5	
Toluene	39.6	
Total Xylenes	73.8	
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	19.9	
Vinyl Chloride	0.511	U

Location Sample ID Sample Date Sample Type	SV-11 SV-11_021220 2/12/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	5.25	
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	1.89	
Acetone	17.1	
Benzene	0.674	
Carbon Disulfide	2.76	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	0.793	U
Dichlorodifluoromethane	309	
Ethylbenzene	0.986	
M,P-Xylene	4.43	
Methyl Ethyl Ketone (2-Butanone)	2.85	
Methylene Chloride	1.74	U
o-Xylene (1,2-Dimethylbenzene)	1.45	
Tetrachloroethene (PCE)	2.76	
Toluene	3.22	
Total Xylenes	5.86	
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	1.46	
Vinyl Chloride	0.511	U

Sample ID Sample Date Sample Type	AA01_120320 12/3/2020 SV	
VOCs (µg/m³)		
1,1,1-Trichloroethane	1.09	U
1,1-Dichloroethene	0.793	U
Acetone	3.21	
Carbon Tetrachloride	1.26	U
Chloromethane	0.888	
Cis-1,2-Dichloroethene	0.793	U
Dichlorodifluoromethane	2.09	
Isopropanol	1.87	
Methylene Chloride	1.84	
n-Hexane	0.952	
Tetrachloroethene (PCE)	1.36	U
Trichloroethene (TCE)	1.07	U

Location Sample ID Sample Date Sample Type	SV-12 SV-12_021220 2/12/2020 AS	
VOCs (µg/m³)		
1,1,1-Trichloroethane	8.51	
1,1-Dichloroethene	0.793	U
1,2,4-Trimethylbenzene	3.05	
2-Hexanone	7.54	
4-Ethyltoluene	1	
Acetone	24.7	
Carbon Tetrachloride	1.26	U
Cis-1,2-Dichloroethene	0.793	U
Dichlorodifluoromethane	21.9	
Ethylbenzene	2.1	
M,P-Xylene	7.99	
Methyl Ethyl Ketone (2-Butanone)	22.8	
Methylene Chloride	1.74	U
n-Heptane	3.4	
n-Hexane	0.758	
o-Xylene (1,2-Dimethylbenzene)	2.8	
Tert-Butyl Alcohol	3.03	
Tetrachloroethene (PCE)	14	
Toluene	5.43	
Total Xylenes	10.8	
Trans-1,2-Dichloroethene	1.3	
Trichloroethene (TCE)	1.07	U
Trichlorofluoromethane	11.4	
Vinyl Chloride	0.511	U

Sample ID Sample Date Sample Type	SV-17_120320 12/3/2020 SV		DUP01_120320 12/3/2020 SV	
VOCs (µg/m³)				
1,1,1-Trichloroethane	4.14		4.45	
1,1-Dichloroethene	0.793	U	0.793	U
1,2,4-Trimethylbenzene	16		15.2	
1,3,5-Trimethylbenzene (Mesitylene)	4.23		4.23	
1,3-Butadiene	0.719		0.542	
2,2,4-Trimethylpentane	2.36		2.68	
2-Hexanone	2.93	J	1.89	J
4-Ethyltoluene	4.65		4.97	
Acetone	128		112	
Benzene	2.24		2.19	
Carbon Disulfide	3.1		2.97	
Chlorobenzene	0.921	U	0.921	U
Chloroform	1.91		2.29	
Cis-1,2-Dichloroethene	0.793	U	0.793	U
Cyclohexane	1.2		1.35	
Dichlorodifluoromethane	6.77		6.38	
Ethanol	21.9		12.9	
Ethyl Acetate	1.8	U	3.89	
Ethylbenzene	13.5		14.6	
Isopropanol	5.95	J	10.5	J
M,P-Xylene	52.6		56.5	
Methyl Ethyl Ketone (2-Butanone)	8.76		6.75	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	5.04		4.18	
Methylene Chloride	1.74	U	1.74	U
n-Heptane	5.49		5.57	
n-Hexane	6.59		6.59	
o-Xylene (1,2-Dimethylbenzene)	19.8		21	
Styrene	1.57		1.69	
Tert-Butyl Alcohol	6.76	J	3.94	J
Tetrachloroethene (PCE)	30.3		30.4	
Tetrahydrofuran	3.95		3.57	
Toluene	39.2		44.5	
Total Xylenes	72.5		77.3	
Trichloroethene (TCE)	1.07	U	1.07	U
Trichlorofluoromethane	1.17		1.17	
Vinyl Chloride	0.511	U	0.511	U

Notes:
1. Ambient air sample analytical results are shown for reference only.
2. Only detected analytes and chlorinated VOCs are shown.
3. Sample DUP01_120320 is a duplicate of parent sample SV-17_120320 and sample DUP-01_030221 is a duplicate sample of SV-24_030221.
4. µg/m³ = micrograms per cubic meter
5. AA = Ambient Air
6. SV = Soil Vapor
7. VOC = Volatile Organic Compound

Qualifiers:

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.

Legend

- 🟥 Site Boundary
- ☐ Lot Boundary
- ▨ Potential Areas of Concern
- ● Langan Soil Vapor Sample Location
- ● Langan Soil Boring / Soil Vapor Sample Location
- ● Langan Soil Boring / Monitoring Well/ Soil Vapor Sample Location
- ✛ Langan Ambient Air Sample

Notes:
1. Aerial imagery provided through Langan's subscription to NearMap, imagery dated 21 September 2019.
2. Parcel boundaries provided through the New York City Department of Planning's MapPLUTO 20v1, last updated 2020.
3. AOC-1: Historic Fill encompasses the extent of the site
4. Langan soil boring and soil vapor samples shown are approximates and based on field measurements, except for those converted to monitoring wells.

LANGAN

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Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC
Collectively known as Langan

Project
1607 SURF AVENUE
BLOCK No. 7062, LOT No. 28
CONEY ISLAND
BROOKLYN   NEW YORK

Figure Title
SOIL VAPOR ANALYTICAL RESULTS

Project No.
170599501
Date
5/4/2021
Scale
1 " = 80 '
Drawn By
IHB
Submission Date

Figure
9

Path: \\langan.com\data\NYC\data5\170599501\Project Data\ArcGIS\MXD\Environmental_Figures\2020-12 - Revised RIR\Figure 9 - Soil Vapor Analytical Results.mxd Date: 5/4/2021 User: aruane Time: 3:04:38 PM

APPENDIX A

PREVIOUS ENVIRONMENTAL REPORTS

(Submitted Under Separate Cover)

APPENDIX B

GEOPHYSICAL SURVEY REPORTS

GEOPHYSICAL ENGINEERING SURVEY REPORT

Commercial Site
1607 Surf Avenue,
Brooklyn, New York 11224

NOVA PROJECT NUMBER:

20-1640

DATED:

February 12, 2020

PREPARED FOR:

LANGAN

21 Penn Plaza
360 West 31st Street, 8th Floor
New York, New York 10001-2727

PREPARED BY:

NOVA
GEOPHYSICAL
ENGINEERING
Subsurface Mapping Solutions

56-01 Marathon Parkway # 765
Douglaston, New York 11362
347-556-7787 (PHONE)
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www.novagsi.com

February 12, 2020

Allyson Kritzer
Senior Staff Engineer
LANGAN
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, New York 10001-2727
P: 973.560.4289 | E: akrizter@langan.com

Re: Geophysical Engineering Survey (GES) Report
Commercial Site
1607 Surf Avenue,
Brooklyn, New York 11224

Dear Ms. Kritzer,

Nova Geophysical Services (NOVA) is pleased to provide the findings of the geophysical engineering survey (GES) at the above referenced project site: 1607 Surf Avenue, Brooklyn, New York 11224 (the “Site”).

INTRODUCTION TO GEOPHYSICAL ENGINEERING SURVEY (GES)

NOVA performed a geophysical engineering survey (GES) consisting of a Ground Penetrating Radar (GPR) and Electromagnetic (EM) survey at the site. The purpose of this survey is to locate and identify utilities, underground storage tanks and other substructures on February 5th, 2020.

The equipment selected for this investigation was a Sensors and Software Noggin 250 MHz ground penetrating radar (GPR) with a shielded antenna and a Radio Detection RD7100 Electromagnetic utility locator.

A GPR system consists of a radar control unit, control cable, and transducer (antenna). The control unit transmits a trigger pulse at a normal repetition rate of 250 MHz. The trigger pulse is sent to the transmitter electronics in the transduce via the control cable. The transmitter electronics amplify the trigger pulse into bipolar pulses that are radiated to the surface. The transformed pulses vary in shape and frequency according to the transducer used. In the subsurface, variations of the signal occur at boundaries where there is a dielectric contrast (void, steel, soil type, etc.). Signal reflections travel back to the control unit and are represented as color graphic images for interpolation.

A typical electromagnetic (EM) utility locating system consists of a transmitter unit and a receiver unit. The receiver unit can be used independently of the transmitter unit in order to detect utility lines with an inherent EM signature (electric utility lines, water lines, etc.). If needed a current at a specific frequency can also be placed on a utility that is being located. This can be done via the transmitter unit by either direct connection or induction via an EM field varying at specific frequency. The receiver unit is then set to the selected frequency and the electromagnetic field created by the current running through the utility can be located allowing the utility to be marked.

GEOPHYSICAL METHODS

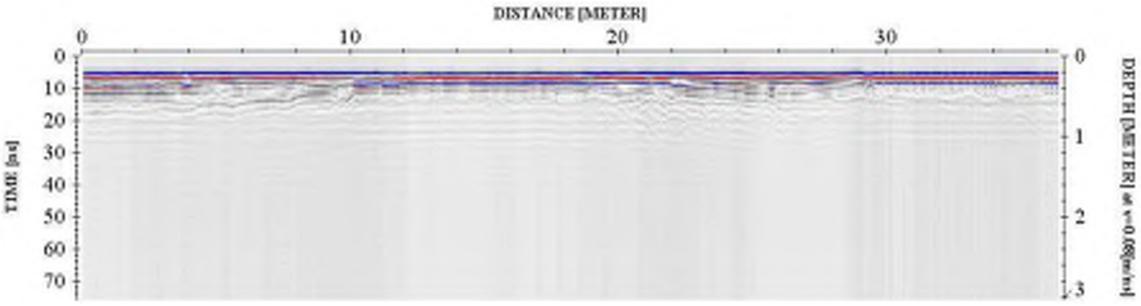
The project site was screened using GPR to search the specified area and inspected for reflections, which could be indicative of substructures and utilities within the subsurface. An EM utility locator was used to help determine the locations of utilities within the survey area.

EM data was collected and interpreted on site and suspected utilities marked as needed. GPR data profiles were collected for the areas of the Site specified by the client and processed as specified below.

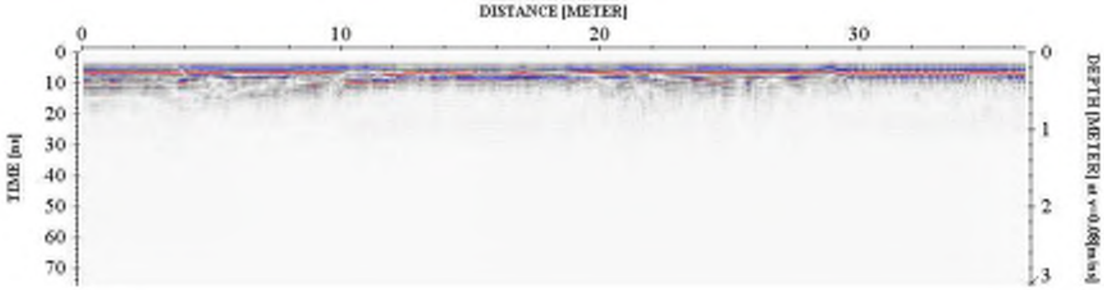
DATA PROCESSING

In order to improve the quality of the results and to better identify anomalies NOVA processed the collected data. The processing work flow is briefly described in this section.

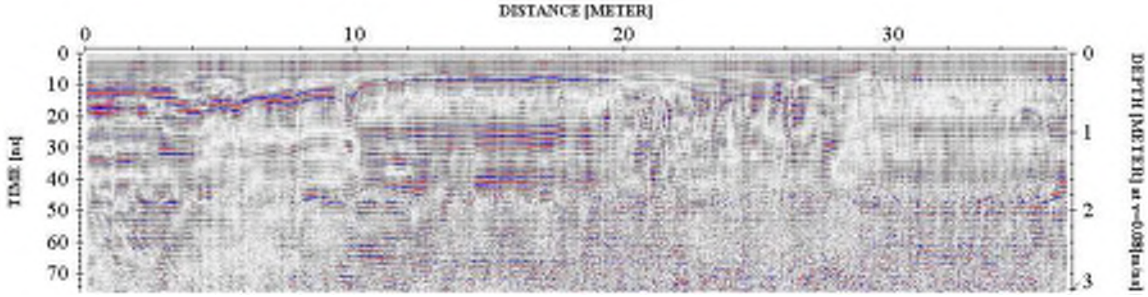
Step 1. Import Raw RAMAC data to standard processing format



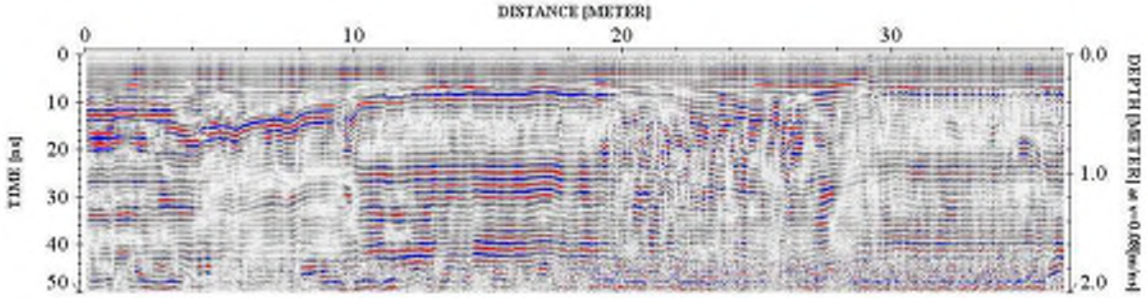
Step 2. Remove instrument noise *(dewow)*



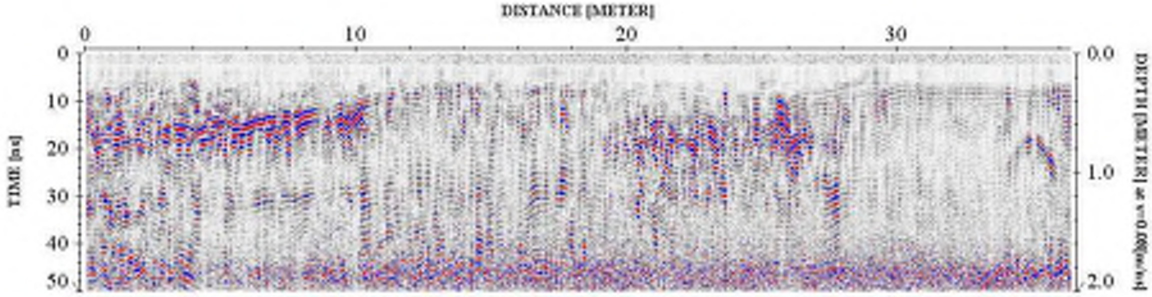
Step 3. Correct for attenuation losses *(energy decay function)*



Step 4. Remove static from bottom of profile *(time cut)*



Step 5. Mute horizontal ringing/noise *(subtracting average)*



The above example shows the significance of data processing. The last image (step 5) has higher resolution than the starting image (raw data – step 1) and represents the subsurface anomalies much more accurately.

PHYSICAL SETTINGS

NOVA observed the following physical conditions at the time of the survey.

Weather: Cloudy, Rain

Temperature: 37° F

Surface: Asphalt, Concrete

Limitations: The geophysical noise level at the site was moderate due to being located in a semi-urban environment and active drilling.

RESULTS

The results of the geophysical engineering survey (GES) identified the following at the project site:

- Anomalies resembling potential subsurface utilities (such as electric and gas) were identified within the survey area.
- No large geophysical anomalies resembling an underground storage tank (UST) were identified during the GES.
- A geophysical anomaly resembling an unknown utility line was identified on site. Shown on Survey Plan.
- All detected subsurface anomalies were marked in the onsite mark out.
- All cleared boring locations were marked in the onsite mark out.

If you have any questions, please do not hesitate to contact the undersigned.

Sincerely,

NOVA Geophysical Services

Levent Eskicakit, P.G., E.P.

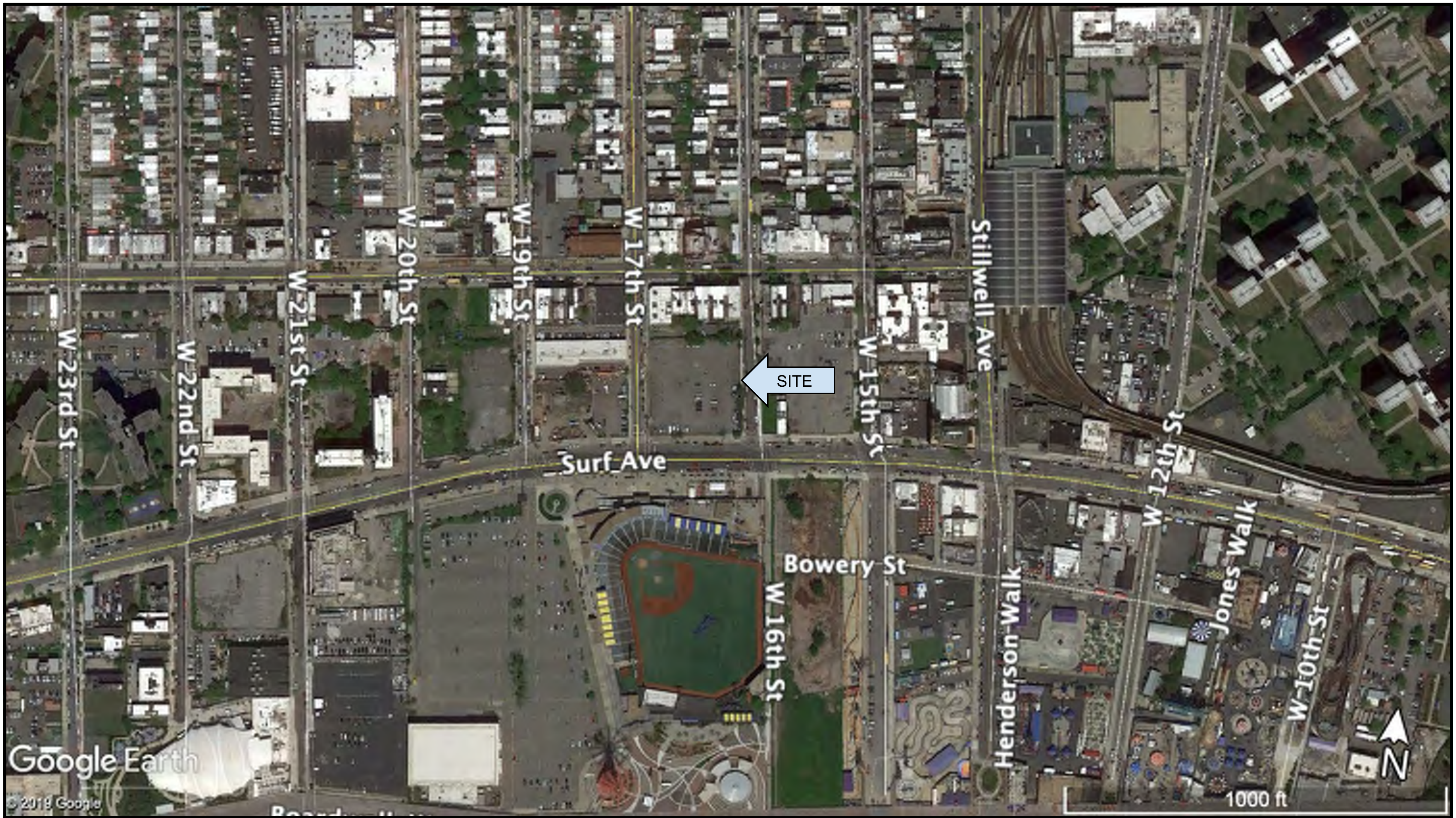
Project Engineer

Attachments:

Location Map

Survey Plan

Geophysical Images



NOVA Geophysical Services

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Douglaston, New York 11362
Phone (347) 556-7787 * Fax (718) 261-1527
www.novagsi.com

LOCATION MAP

SITE: **Commercial Site**
1607 Surf Avenue,
Brooklyn, New York 11224

CLIENT: Langan

DATE: February 5th, 2020

AUTH: Peter Hurst

LEGEND

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SURVEY PLAN

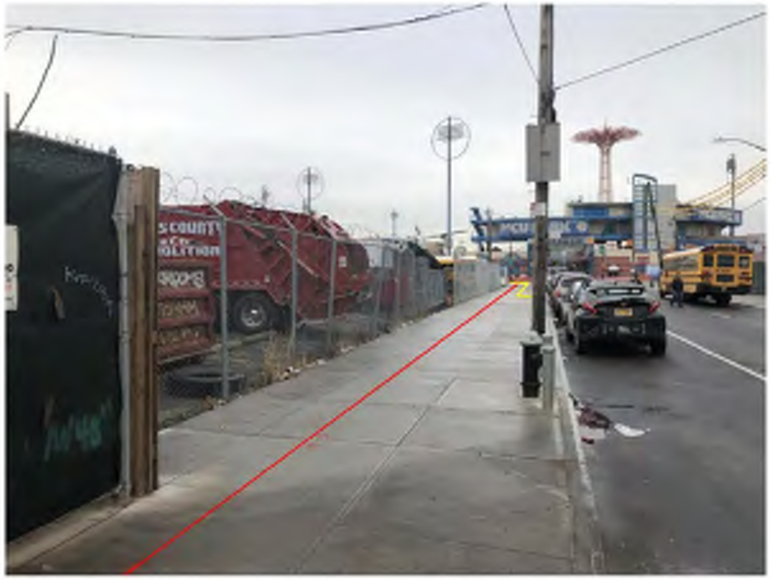
SITE:	**Commercial Site** 1607 Surf Avenue, Brooklyn, New York 11224
CLIENT:	Langan
DATE:	February 5th, 2020
AUTH:	Peter Hurst

LEGEND

☐ Survey Area
╲ Gas
╲ Electric
╲ Geophysical Anomaly

GEOPHYSICAL IMAGES

Commercial Site
1607 Surf Avenue,
Brooklyn, New York 11224
February 5th, 2020



GEOPHYSICAL IMAGES

Commercial Site
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February 5th, 2020

GEOPHYSICAL IMAGES

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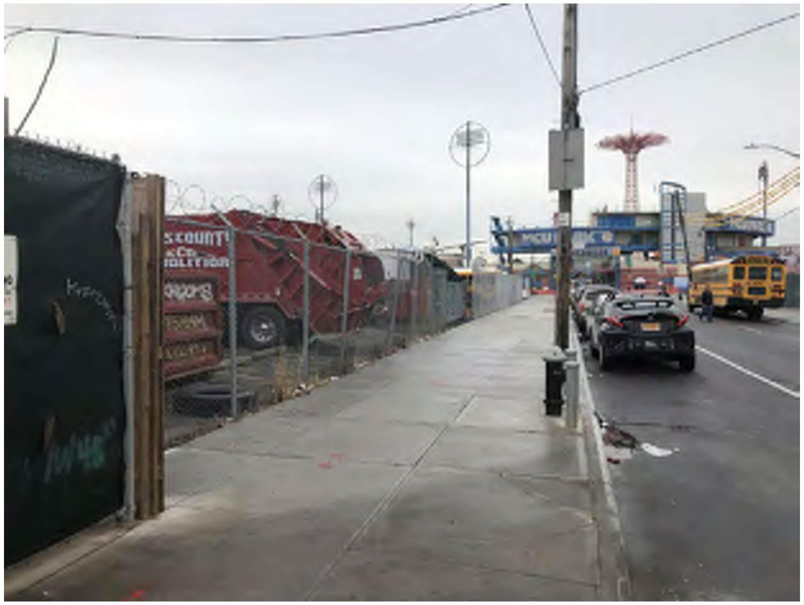

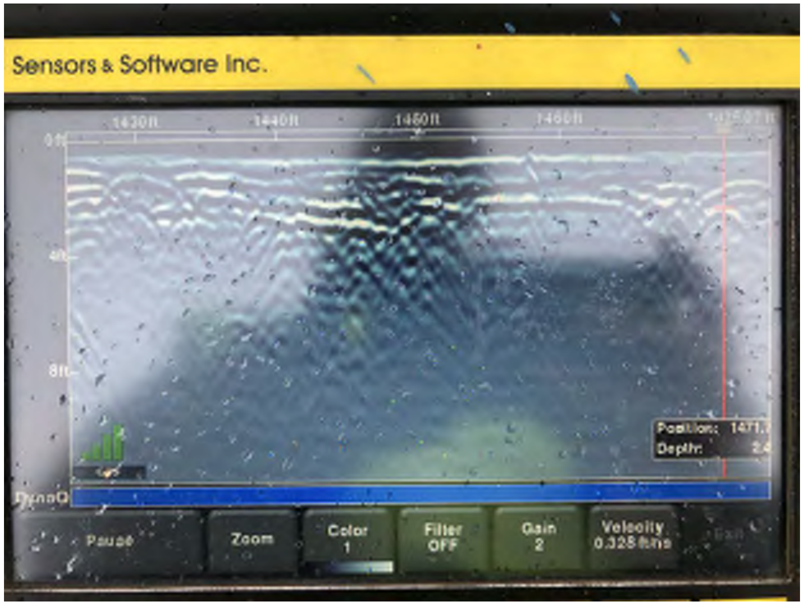

GEOPHYSICAL IMAGES

Commercial Site
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February 5th, 2020

GEOPHYSICAL IMAGES

Commercial Site

1607 Surf Avenue,
Brooklyn, New York 11224
February 5th, 2020

APPENDIX C

SOIL BORING LOGS

LANGAN

Log of Boring **SB-1** Sheet 1 of 1

Project 1607 Surf Avenue		Project No. 170599501	
Location Brooklyn, NY		Elevation and Datum 6.95 ft NAVD88	
Drilling Company Aquifer Drilling & Testing (ADT)		Date Started 2/6/20	Date Finished 2/6/20
Drilling Equipment Geoprobe 7822DT		Completion Depth 15 ft	Rock Depth NA
Size and Type of Bit 2-in Direct Push		Number of Samples	Disturbed 3 Undisturbed NA Core NA
Casing Diameter (in) NA	Casing Depth (ft) NA	Water Level (ft.)	First ▽ 7.8 Completion ▼ NA 24 HR. ▼ NA
Casing Hammer NA Weight (lbs) NA Drop (in) NA		Drilling Foreman ADT/Luke Caballero	
Sampler 4-ft Acetate Lined Macrocore			
Sampler Hammer NA Weight (lbs) NA Drop (in) NA		Field Engineer Langan/Patrick Stovall	

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.)
+7.0 +6.8	ASPHALT	0						
	R1A (0-22") Black to dark brown gravelly fine SAND, glass, coal fragment (dry) [FILL]						0.0	
		1					0.0	Collect SB-1_0-2_020620
							0.0	
		2	R1	MACROCORE	28"		0.0	
							0.0	
	R1B (22-28") Reddish-brown fine SAND, some fine gravel, coal fragment, brick (dry) [FILL]	3					0.0	Collect SB-1_2-4_020620
							0.0	
+3.0	R2A (0-20.5") Tan to light grey fine SAND, trace fine gravel (moist)	4					0.0	
							0.0	
		5					0.0	
							0.0	
		6	R2	MACROCORE	22"		0.0	
							0.0	
		7					0.0	Collect SB-1_6-8_020620
	▽						0.0	
	R2B (20.5-22") Tan to light grey fine SAND, trace fine gravel (wet) R3 (0-36") Grey to purplish-grey fine SAND (wet)	8					0.0	
							0.0	
		9					0.0	
							0.0	
		10	R3	MACROCORE	36"		0.0	
							0.0	
		11					0.0	
							0.0	
	R4 (0-30") Dark grey fine SAND, trace silt (wet)	12					0.0	
							0.0	
		13					0.0	
			R4	MACROCORE	30"		0.0	
		14					0.0	
							0.0	
-8.1		15						End of boring at 15 feet bgs. Borehole backfilled to 12 feet and converted into monitoring well MW-1.
		16						
		17						

Log of Boring SB-2 Sheet 1 of 1

Project 1607 Surf Avenue	Project No. 170599501
Location Brooklyn, NY	Elevation and Datum 7.71 ft NAVD88
Drilling Company Aquifer Drilling & Testing (ADT)	Date Started 2/7/20 Date Finished 2/7/20
Drilling Equipment Geoprobe 7822DT	Completion Depth 10 ft Rock Depth NA
Size and Type of Bit 2-in Direct Push	Number of Samples: Disturbed 2 Undisturbed NA Core NA
Casing Diameter (in) NA Casing Depth (ft) NA	Water Level (ft.): First ∇ 7.5 Completion ▼ NA 24 HR. ▼ NA
Casing Hammer NA Weight (lbs) NA Drop (in) NA	Drilling Foreman ADT/Luke Caballero
Sampler 4-ft Acetate Lined Macrocore	Field Engineer Langan/Patrick Stovall
Sampler Hammer NA Weight (lbs) NA Drop (in) NA	

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.)
+7.7								
+7.6	ASPHALT	0						
	R1 (0-36") Black gravelly fine SAND, glass, coal fragment, brick, concrete (dry) [FILL]						0.0	
		1					0.0	Collect SB-2_0-2_021120
							0.0	
		2	R1	MACROCORE	36"		0.0	
							0.0	
		3					0.0	
							0.0	
	R2A (0-17.5") Grey fine GRAVEL, brick (moist) [FILL]	4					0.0	
							0.0	
		5					0.0	
							0.0	
		6	R2	MACROCORE	20"		0.0	
							0.0	
		7					0.0	Collect SB-2_6-8_021120
	∇ R2B (17.5-20") Grey fine GRAVEL, brick (wet) [FILL]						0.0	
	R3 (0-24") Grey to red fine GRAVEL (wet) [FILL]	8					0.0	
							0.0	
		9	R3	MACROCORE	24"		0.0	
							0.0	
-2.3		10						End of boring at 10 feet bgs due to refusal. Borehole backfilled with No. 2 sand and non-impacted IDW and patched with concrete.
		11						
		12						
		13						
		14						
		15						
		16						
		17						

LANGAN

Log of Boring **SB-3** Sheet 1 of 1

Project 1607 Surf Avenue	Project No. 170599501
Location Brooklyn, NY	Elevation and Datum 7.02 ft NAVD88
Drilling Company Aquifer Drilling & Testing (ADT)	Date Started 2/7/20 / Date Finished 2/7/20
Drilling Equipment Geoprobe 7822DT	Completion Depth 15 ft / Rock Depth NA
Size and Type of Bit 2-in Direct Push	Number of Samples: Disturbed 3 / Undisturbed NA / Core NA
Casing Diameter (in) NA / Casing Depth (ft) NA	Water Level (ft.): First ▽ 7.5 / Completion ▼ NA / 24 HR. ▼ NA
Casing Hammer NA / Weight (lbs) NA / Drop (in) NA	Drilling Foreman ADT/Luke Caballero
Sampler 4-ft Acetate Lined Macrocore	Field Engineer Langan/Patrick Stovall
Sampler Hammer NA / Weight (lbs) NA / Drop (in) NA	

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.)
■	+7.0 +6.8	ASPHALT	0						
▨		R1A (0-16") Black to dark brown gravelly fine SAND, coal fragment, brick (dry) [FILL]						0.0	
▨			1					0.0	Collect SB-3_0-2_020720
▨								0.0	
▨		R1B (16-36") Dark brown fine SAND, some fine gravel, brick, ceramic, coal fragment (dry) [FILL]	2	R1	MACROCORE	36"		0.0	
▨								0.0	
▨			3					0.0	
▨								0.0	
⁙	+3.0	R2A (0-21") Light tan to grey fine SAND, trace fine gravel (moist)	4					0.0	
⁙								0.0	
⁙			5					0.0	
⁙								0.0	
⁙			6	R2	MACROCORE	24"		0.0	
⁙								0.0	
⁙			7					0.0	Collect SB-3_6-8_020720
⁙		▽ R2B (21-24") Light tan to grey fine SAND, trace fine gravel (wet)						0.0	
⁙		R3 (0-42") Light grey fine SAND (wet)	8					0.0	
⁙								0.0	
⁙			9					0.0	
⁙								0.0	
⁙			10	R3	MACROCORE	42"		0.0	Collect SB-3_9-11_020720
⁙								0.0	
⁙			11					0.0	
⁙								0.0	
⁙		R4 (0-36") Grey fine SAND, some silt, trace clay (wet)	12					0.0	
⁙								0.0	
⁙			13	R4	MACROCORE	30"		0.0	
⁙								0.0	
⁙			14					0.0	
⁙								0.0	
	-8.0		15						End of boring at 15 feet bgs. Borehole backfilled to 12 feet and converted into monitoring well MW-2.
			16						
			17						

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Log of Boring **SB-4** Sheet 1 of 1

Project 1607 Surf Avenue		Project No. 170599501	
Location Brooklyn, NY		Elevation and Datum 6.95 ft NAVD88	
Drilling Company Aquifer Drilling & Testing (ADT)		Date Started 2/6/20	Date Finished 2/6/20
Drilling Equipment Geoprobe 7822DT		Completion Depth 15 ft	Rock Depth NA
Size and Type of Bit 2-in Direct Push		Number of Samples	Disturbed 3 / Undisturbed NA / Core NA
Casing Diameter (in) NA	Casing Depth (ft) NA	Water Level (ft.)	First ∇ 7.8 / Completion ▼ NA / 24 HR. ▼ NA
Casing Hammer NA / Weight (lbs) NA	Drop (in) NA	Drilling Foreman ADT/Luke Caballero	
Sampler 4-ft Acetate Lined Macrocore		Field Engineer Langan/Patrick Stovall	
Sampler Hammer NA / Weight (lbs) NA	Drop (in) NA		

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.)
■	+7.0 +6.8	ASPHALT	0						
▨		R1A (0-34") Black to dark brown gravelly fine SAND, brick, coal fragment, slag (dry) [FILL]						0.0	
			1					0.0	Collect SB-4_0-2_020620
								0.0	
			2	R1	MACROCORE	46"		0.0	
								0.0	
		R1B (34-46") Tan to grey fine SAND, some fine gravel, glass, coal fragment (dry) [FILL]	3					0.0	
								0.0	
░	+3.0	R2A (0-30") Tan to grey fine SAND (moist)	4					0.0	
								0.0	
			5					0.0	
								0.0	
			6	R2	MACROCORE	32"		0.0	
								0.0	
			7					0.0	Collect SB-4_6-8_020620
		∇						0.0	
		R2B (30-32") Tan to grey fine SAND (wet) R3 (0-24") Dark grey fine SAND, trace silt (wet)	8					0.0	
								0.0	
			9					0.0	
								0.0	
			10	R3	MACROCORE	24"		0.0	
								0.0	
			11					0.0	Collect SB-4_10-12_020620
								0.0	
		R4 (0-32") Dark grey fine SAND, some silt, trace clay (wet)	12					0.0	
								0.0	
			13					0.0	
				R4	MACROCORE	32"		0.0	
			14					0.0	
								0.0	
	-8.1		15						End of boring at 15 feet bgs. Borehole backfilled with No. 2 sand and non-impacted IDW and patched with concrete.
			16						
			17						

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Log of Boring **SB-5** Sheet 1 of 1

Project	1607 Surf Avenue	Project No.	170599501
Location	Brooklyn, NY	Elevation and Datum	7.71 ft NAVD88
Drilling Company	Aquifer Drilling & Testing (ADT)	Date Started	2/6/20
		Date Finished	2/6/20
Drilling Equipment	Geoprobe 7822DT	Completion Depth	15 ft
		Rock Depth	NA
Size and Type of Bit	2-in Direct Push	Number of Samples	Disturbed 3 / Undisturbed NA / Core NA
Casing Diameter (in)	NA	Water Level (ft.)	First ∇ 7.8 / Completion ▼ NA / 24 HR. ▼ NA
Casing Depth (ft)	NA		
Casing Hammer	NA	Drilling Foreman	ADT/Luke Caballero
Weight (lbs)	NA		
Drop (in)	NA		
Sampler	4-ft Acetate Lined Macrocore	Field Engineer	Langan/Patrick Stovall
Sampler Hammer	NA		
Weight (lbs)	NA		
Drop (in)	NA		

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.)
	+7.7								
	+7.6	ASPHALT	0						
		R1A (0-20") Black gravelly fine SAND, concrete, brick (dry) [FILL]						0.0	
			1					0.0	Collect SB-5_0-2_020620
								0.0	
		R1B (20-46") BRICK AND CONCRETE	2	R1	MACROCORE	46"		0.0	
								0.0	
			3					0.0	
								0.0	
	+3.7	R2A (0-18.75") Tan to grey fine SAND, trace fine gravel (moist)	4					0.0	
								0.0	
			5					0.0	
								0.0	
			6	R2	MACROCORE	20"		0.0	Collect SB-5_6-8_020620
								0.0	
			7					0.0	
			∇					0.0	
		R2B (18.75-20") Tan to grey fine SAND, trace fine gravel (wet) R3 (0-24") Dark grey fine SAND (wet)	8					0.0	
								0.0	
			9					0.0	
								0.0	
			10	R3	MACROCORE	24"		0.0	
								0.0	
			11					0.0	Collect SB-5_10-12_020620
								0.0	
		R4 (0-30") Dark grey fine SAND, trace silt (wet)	12					0.0	
								0.0	
			13					0.0	
				R4	MACROCORE	30"		0.0	
			14					0.0	
								0.0	
	-7.3		15						End of boring at 15 feet bgs. Borehole backfilled to 12 feet and converted into monitoring well MW-3.
			16						
			17						

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Log of Boring **SB-6** Sheet 1 of 1

Project: 1607 Surf Avenue
Project No.: 170599501
Location: Brooklyn, NY
Elevation and Datum: 7.15 ft NAVD88
Drilling Company: Aquifer Drilling & Testing (ADT)
Date Started: 2/11/20
Date Finished: 2/11/20
Drilling Equipment: Geoprobe 7822DT
Completion Depth: 15 ft
Rock Depth: NA
Size and Type of Bit: 2-in Direct Push
Number of Samples: Disturbed 3 | Undisturbed NA | Core NA
Casing Diameter (in): NA
Casing Depth (ft): NA
Water Level (ft.): First ▽ 7.5 | Completion ▼ NA | 24 HR. ▼ NA
Casing Hammer: NA
Weight (lbs): NA
Drop (in): NA
Drilling Foreman: ADT/Luke Caballero
Sampler: 4-ft Acetate Lined Macrocore
Field Engineer: Langan/Patrick Stovall
Sampler Hammer: NA
Weight (lbs): NA
Drop (in): NA

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.)
■	+7.2 +7.0	ASPHALT	0						
▨		R1A (0-20") Black gravelly fine SAND, glass, ceramic (dry) [FILL]						0.0	
▨			1					0.0	Collect SB-6_0-2_021120
▨								0.0	
▨			2	R1	MACROCORE	36"		0.0	
▨		R1B (20-36") Tan to grey fine SAND, some fine gravel, concrete, brick, coal fragment (dry) [FILL]						0.0	
▨			3					0.0	
▨								0.0	
▨		R2A (0-4") Tan to black gravelly fine SAND [FILL]	4					0.0	
░	+2.7	R2B (4-31.5") Grey fine SAND, trace silt (moist)						0.0	
░			5					0.0	
░								0.0	
░			6	R2	MACROCORE	36"		0.0	Collect SB-6_6-8_021120
░								0.0	
░			7					0.0	
░		▽ R2C (31.5-36") Grey fine SAND, trace silt (wet)						0.0	
░		R3 (0-36") Grey fine SAND, some silt (wet)	8					0.0	
░								0.0	
░			9					0.0	
░								0.0	
░			10	R3	MACROCORE	36"		0.0	Collect SB-6_9-11_021120
░								0.0	
░			11					0.0	
░								0.0	
░		R4 (0-36") Grey fine SAND, some silt (wet)	12					0.0	
░								0.0	
░			13					0.0	
░				R4	MACROCORE	36"		0.0	
░			14					0.0	
░								0.0	
	-7.9		15						End of boring at 15 feet bgs. Borehole backfilled with No. 2 sand and non-impacted IDW and patched with concrete.
			16						
			17						

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Log of Boring **SB-7** Sheet 1 of 1

Project 1607 Surf Avenue			Project No. 170599501			
Location Brooklyn, NY			Elevation and Datum 7.15 ft NAVD88			
Drilling Company Aquifer Drilling & Testing (ADT)			Date Started 2/7/20		Date Finished 2/7/20	
Drilling Equipment Geoprobe 7822DT			Completion Depth 15 ft		Rock Depth NA	
Size and Type of Bit 2-in Direct Push			Number of Samples	Disturbed 3	Undisturbed NA	Core NA
Casing Diameter (in) NA		Casing Depth (ft) NA	Water Level (ft.)	First ∇ 7.5	Completion ▼ NA	24 HR. ▼ NA
Casing Hammer NA	Weight (lbs) NA	Drop (in) NA	Drilling Foreman ADT/Luke Caballero			
Sampler 4-ft Acetate Lined Macrocore			Field Engineer Langan/Patrick Stovall			
Sampler Hammer NA	Weight (lbs) NA	Drop (in) NA				

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.)
■	+7.2 +7.0	ASPHALT	0						
▩		R1A (0-16") Black to dark brown gravelly fine SAND, glass (dry) [FILL]						0.0	
▩			1					0.0	Collect SB-7_0-2_020720
▩		R1B (16-42") Tan to brown fine SAND, some fine gravel, coal fragment, brick (dry) [FILL]						0.0	
▩			2	R1	MACROCORE	42"		0.0	
▩								0.0	
▩			3					0.0	
▩								0.0	
▩			4					0.0	
▩		R2A (0-12") Tan to brown fine SAND, some fine gravel, brick (dry) [FILL]						0.0	
▩			5					0.0	
░	+1.8	R2B (12-31.5") Light tan fine SAND (moist)						0.0	
░			6	R2	MACROCORE	36"		0.0	Collect SB-7_5-7_020720
░								0.0	
░			7					0.0	
░		∇ R2C (31.5-36") Light tan fine SAND (wet)						0.0	
░		R3 (0-30") Dark grey fine SAND, trace silt (wet)	8					0.0	
░								0.0	
░			9					0.0	
░								0.0	
░			10	R3	MACROCORE	30"		0.0	Collect SB-7_9-11_020720
░								0.0	
░			11					0.0	
░								0.0	
░		R4 (0-36") Dark grey fine SAND, some silt, trace clay (wet)	12					0.0	
░								0.0	
░			13					0.0	
░				R4	MACROCORE	36"		0.0	
░			14					0.0	
░								0.0	
	-7.9		15						End of boring at 15 feet bgs. Borehole backfilled to 12 feet and converted into monitoring well MW-4.
			16						
			17						

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Log of Boring **SB-8** Sheet 1 of 1

Project 1607 Surf Avenue			Project No. 170599501		
Location Brooklyn, NY			Elevation and Datum 7.6 ft NAVD88		
Drilling Company Aquifer Drilling & Testing (ADT)			Date Started 2/6/20	Date Finished 2/6/20	
Drilling Equipment Geoprobe 7822DT			Completion Depth 15 ft	Rock Depth NA	
Size and Type of Bit 2-in Direct Push			Number of Samples	Disturbed 3	Undisturbed NA	Core NA
Casing Diameter (in) NA		Casing Depth (ft) NA	Water Level (ft.)	First ▽ 7.8	Completion ▼ NA	24 HR. ▼ NA
Casing Hammer NA	Weight (lbs) NA	Drop (in) NA	Drilling Foreman ADT/Luke Caballero		
Sampler 4-ft Acetate Lined Macrocore			Field Engineer Langan/Patrick Stovall		
Sampler Hammer NA	Weight (lbs) NA	Drop (in) NA			

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.)
	+7.6 +7.4	ASPHALT	0						
		R1A (0-26") Black to dark brown gravelly fine SAND, coal fragment, brick (dry) [FILL]						0.0	
			1					0.0	Collect SB-8_0-2_020620
								0.0	
			2	R1	MACROCORE	46"		0.0	
		R1B (26-46") Light grey fine SAND, some fine gravel, brick, concrete (dry) [FILL]						0.0	
			3					0.0	
								0.0	
		R2A (0-6") Dark grey gravelly fine SAND, coal (dry) [FILL]	4					0.0	
	+3.1	R2B (6-45") Light grey fine SAND (moist)						0.0	
			5					0.0	
								0.0	
			6	R2	MACROCORE	48"		0.0	Collect SB-8_5-7_020620
								0.0	
			7					0.0	
		▽						0.0	
		R2C (45-48") Light grey fine SAND (wet) R3 (0-24") Dark grey fine SAND, some silt (wet)	8					0.0	
								0.0	
			9					0.0	
								0.0	
			10	R3	MACROCORE	24"		0.0	
								0.0	
			11					0.0	Collect SB-8_10-12_020620
								0.0	
		R4 (0-28") Dark grey fine SAND, some silt, trace clay (wet)	12					0.0	
								0.0	
			13					0.0	
				R4	MACROCORE	28"		0.0	
			14					0.0	
								0.0	
	-7.4		15						End of boring at 15 feet bgs. Borehole backfilled to 12 feet and converted to monitoring well MW-5.
			16						
			17						

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Log of Boring **SB-9** Sheet 1 of 1

Project 1607 Surf Avenue		Project No. 170599501	
Location Brooklyn, NY		Elevation and Datum 7.71 ft NAVD88	
Drilling Company Aquifer Drilling & Testing (ADT)		Date Started 2/11/20	Date Finished 2/11/20
Drilling Equipment Geoprobe 7822DT		Completion Depth 15 ft	Rock Depth NA
Size and Type of Bit 2-in Direct Push		Number of Samples	Disturbed 3 / Undisturbed NA / Core NA
Casing Diameter (in) NA	Casing Depth (ft) NA	Water Level (ft.)	First ▽ 7.5 / Completion ▼ NA / 24 HR. ▼ NA
Casing Hammer NA / Weight (lbs) NA	Drop (in) NA	Drilling Foreman ADT/Luke Caballero	
Sampler 4-ft Acetate Lined Macrocore		Field Engineer Langan/Patrick Stovall	
Sampler Hammer NA / Weight (lbs) NA	Drop (in) NA		

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.)
	+7.7								
■	+7.6	ASPHALT	0						
▨		R1A (0-26") Black gravelly fine SAND, glass, coal fragment, brick (dry) [FILL]		R1	MACROCORE	36"		0.0	
▨			1					0.0	Collect SB-9_0-2_021120
▨								0.0	
▨			2					0.0	
▨								0.0	
▨		R1B (26-36") Grey fine GRAVEL, brick (dry) [FILL]	3					0.0	
▨								0.0	
▨		R2A (0-20") Grey fine GRAVEL, brick (dry) [FILL]	4	R2	MACROCORE	36"		0.0	
▨								0.0	
▨			5					0.0	
▨								0.0	
░	+1.5	R2B (20-31.5") Light tan fine SAND, trace fine gravel (moist)	6					0.0	
░								0.0	
░			7					0.0	Collect SB-9_6-8_021120
░		▽ R2C (31.5-36") Light tan fine SAND, trace fine gravel (wet)						0.0	
░		R3 (0-38") Grey fine SAND, trace silt (wet)	8	R3	MACROCORE	38"		0.0	
░								0.0	
░			9					0.0	
░								0.0	
░			10					0.0	Collect SB-9_9-11_021120
░								0.0	
░			11					0.0	
░								0.0	
░		R4 (0-36") Grey to brown fine SAND, some silt, trace fine gravel (wet)	12	R4	MACROCORE	36"		0.0	
░								0.0	
░			13					0.0	
░								0.0	
░			14					0.0	
░								0.0	
	-7.3		15						End of boring at 15 feet bgs. Borehole backfilled to 12 feet and converted into monitoring well MW-6.
			16						
			17						

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Log of Boring **SB-10** Sheet 1 of 1

Project	1607 Surf Avenue	Project No.	170599501
Location	Brooklyn, NY	Elevation and Datum	7.31 ft NAVD88
Drilling Company	Aquifer Drilling & Testing (ADT)	Date Started / Date Finished	2/6/20 / 2/6/20
Drilling Equipment	Geoprobe 7822DT	Completion Depth / Rock Depth	15 ft / NA
Size and Type of Bit	2-in Direct Push	Number of Samples	Disturbed 3 / Undisturbed NA / Core NA
Casing Diameter (in)	NA	Casing Depth (ft)	NA
Water Level (ft.)	First ▽ 7 / Completion ▼ NA / 24 HR. ▼ NA		
Casing Hammer	NA	Weight (lbs) NA	Drop (in) NA
Drilling Foreman	ADT/Luke Caballero		
Sampler	4-ft Acetate Lined Macrocore	Field Engineer	Langan/Patrick Stovall
Sampler Hammer	NA	Weight (lbs) NA	Drop (in) NA

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.)
	+7.3								
▬	+7.2	ASPHALT	0	R1	MACROCORE	46"			
▨		R1A (0-24") Black to dark brown gravelly fine SAND, glass, coal fragment (dry) [FILL]						0.0	
			1					0.0	Collect SB-10_0-2_020620
								0.0	
		R1B (24-46") Dark brown fine SAND, some fine gravel, brick, concrete (dry) [FILL]	2					0.0	
								0.0	
			3					0.0	
								0.0	
		R2A (0-14") Light tan fine SAND, some fine gravel (dry) [FILL]	4	R2	MACROCORE	30"		0.0	
								0.0	
			5					0.0	
⁘	+1.5							0.0	
		R2B (14-22.5") Grey to tan fine SAND (moist)	6					0.0	Collect SB-10_5-7_020620
								0.0	
		▽ R2C (22.5-30") Grey to tan fine SAND (wet)	7					0.0	
								0.0	
		R3 (0-28") Light tan to grey fine SAND, some silt (wet)	8	R3	MACROCORE	28"		0.0	
								0.0	
			9					0.0	
								0.0	
			10					0.0	
								0.0	
			11					0.0	Collect SB-10_10-12_020620
								0.0	
		R4 (0-28") Dark grey fine SAND, some silt, trace clay (wet)	12	R4	MACROCORE	28"		0.0	
								0.0	
			13					0.0	
								0.0	
			14					0.0	
								0.0	
	-7.7		15						End of boring at 15 feet bgs. Borehole backfilled to 12 feet and converted into monitoring well MW-7.
			16						
			17						

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Log of Boring **SB-11** Sheet 1 of 1

Project: 1607 Surf Avenue
Project No.: 170599501
Location: Brooklyn, NY
Elevation and Datum: 7.71 ft NAVD88
Drilling Company: Aquifer Drilling & Testing (ADT)
Date Started: 2/11/20
Date Finished: 2/11/20
Drilling Equipment: Geoprobe 7822DT
Completion Depth: 15 ft
Rock Depth: NA
Size and Type of Bit: 2-in Direct Push
Number of Samples: Disturbed 3 Undisturbed NA Core NA
Casing Diameter (in): NA
Casing Depth (ft): NA
Water Level (ft.): First ▽ 7 Completion ▼ NA 24 HR. ▼ NA
Casing Hammer: NA Weight (lbs): NA Drop (in): NA
Drilling Foreman: ADT/Luke Caballero
Sampler: 4-ft Acetate Lined Macrocore
Field Engineer: Langan/Patrick Stovall
Sampler Hammer: NA Weight (lbs): NA Drop (in): NA

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.)
■	+7.7 +7.6	ASPHALT	0						
▨		R1 (0-36") Black gravelly fine SAND, brick, concrete, glass (dry) [FILL]						0.0	
			1					0.0	Collect SB-11_0-2_021120
								0.0	
			2	R1	MACROCORE	36"		0.0	
								0.0	
			3					0.0	
								0.0	
		R2A (0-28") Black gravelly fine SAND, brick, coal fragment, glass (dry) [FILL]	4					0.0	
								0.0	
			5					0.0	
								0.0	
			6	R2	MACROCORE	40"		0.0	
								0.0	
⁙	+0.9	R2B (28-30") Grey to dark grey fine SAND, trace silt (moist) R2C (30-40") Grey to dark grey fine SAND, trace silt (wet)	▽ 7					0.0	Collect SB-11_6-8_021120
								0.0	
		R3 (0-40") Grey fine SAND, some silt (wet)	8					0.0	
								0.0	
			9					0.0	
								0.0	
			10	R3	MACROCORE	40"		0.0	Collect SB-11_9-11_021120
								0.0	
			11					0.0	
								0.0	
		R4 (0-36") Dark grey fine SAND, some silt (wet)	12					0.0	
								0.0	
			13					0.0	
				R4	MACROCORE	36"		0.0	
			14					0.0	
								0.0	
	-7.3		15						End of boring at 15 feet bgs. Borehole backfilled with No. 2 sand and patched with concrete.
			16						
			17						

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Log of Boring **SB-12** Sheet 1 of 1

Project	1607 Surf Avenue	Project No.	170599501		
Location	Brooklyn, NY	Elevation and Datum	7.32 ft NAVD88		
Drilling Company	Aquifer Drilling & Testing (ADT)	Date Started	2/7/20	Date Finished	2/7/20
Drilling Equipment	Geoprobe 7822DT	Completion Depth	15 ft	Rock Depth	NA
Size and Type of Bit	2-in Direct Push	Number of Samples	Disturbed 3	Undisturbed NA	Core NA
Casing Diameter (in)	NA	Casing Depth (ft)	NA		
Water Level (ft.)	First ▽ 7	Completion ▼ NA	24 HR. ▼ NA		
Casing Hammer	NA	Weight (lbs)	NA	Drop (in)	NA
Sampler	4-ft Acetate Lined Macrocore	Drilling Foreman	ADT/Luke Caballero		
Sampler Hammer	NA	Weight (lbs)	NA	Drop (in)	NA
Field Engineer	Langan/Patrick Stovall				

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.)
■	+7.3 +7.2	ASPHALT	0	R1	MACROCORE	36"			
▨		R1A (0-18") Black to dark brown gravelly fine SAND, coal fragment, glass (dry) [FILL]						0.0	
			1					0.0	SB-12_0-2_020720
								0.0	
		R1B (18-36") Light tan fine SAND, trace fine gravel, brick, coal fragment (dry) [FILL]	2					0.0	
								0.0	
			3					0.0	
								0.0	
		R2A (0-12") Light tan to dark brown fine SAND, brick, coal fragment (dry) [FILL]	4	R2	MACROCORE	38"		0.0	
								0.0	
░	+2.1	R2B (12-28.5") Light grey to tan fine SAND (moist)	5					0.0	
								0.0	
			6					0.0	SB-12_5-7_020620
								0.0	
		▽ R2C (28.5-38") Light grey to tan fine SAND (wet)	7					0.0	
								0.0	
		R3 (0-28") Light tan to grey fine SAND, some silt (wet)	8	R3	MACROCORE	28"		0.0	
								0.0	
			9					0.0	
								0.0	
			10					0.0	
								0.0	
			11					0.0	SB-12_10-12_020620
								0.0	
		R4 (0-20") Tan to grey fine SAND, some silt (wet)	12	R4	MACROCORE	28"		0.0	
								0.0	
			13					0.0	
								0.0	
			14					0.0	
								0.0	
	-7.7		15						End of boring at 15 feet bgs. Borehole backfilled with No. 2 sand and non-impacted IDW and patched with concrete.
			16						
			17						

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Log of Boring **SB-13** Sheet 1 of 1

Project	1607 Surf Avenue	Project No.	170599501
Location	Brooklyn, NY	Elevation and Datum	7.32 ft NAVD88
Drilling Company	Aquifer Drilling & Testing (ADT)	Date Started	2/10/20
		Date Finished	2/10/20
Drilling Equipment	Geoprobe 7822DT	Completion Depth	15 ft
		Rock Depth	NA
Size and Type of Bit	2-in Direct Push	Number of Samples	Disturbed 3 Undisturbed NA Core NA
Casing Diameter (in)	NA	Water Level (ft.)	First ▽ 7.5 Completion ▼ NA 24 HR. ▼ NA
Casing Depth (ft)	NA	Drilling Foreman	ADT/Luke Caballero
Casing Hammer	NA	Weight (lbs) NA	Drop (in) NA
Sampler	4-ft Acetate Lined Macrocore	Field Engineer	Langan/Patrick Stovall
Sampler Hammer	NA	Weight (lbs) NA	Drop (in) NA

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.)
+7.3 +7.2	ASPHALT	0	R1	MACROCORE	40"			
	R1A (0-18") Black to dark brown gravelly fine SAND, glass, brick (dry) [FILL]						0.0	
		1					0.0	Collect SB-13_0-2_021020
							0.0	
	R1B (18-40") Light tan fine SAND, trace fine gravel (dry) [FILL]	2					0.0	
							0.0	
		3					0.0	
							0.0	
	R2A (0-12") Dark grey to dark brown fine SAND, trace fine gravel (dry) [FILL]	4	R2	MACROCORE	48"		0.0	
							0.0	
+2.3	R2B (12-42") Light tan fine SAND (moist)	5					0.0	Collect SB-13_4-6_021020
							0.0	
		6					0.0	
							0.0	
		7					0.0	
	▽						0.0	
	R2C (42-48") Light tan fine SAND (wet) R3A (0-20") Grey to tan fine SAND, trace fine gravel (wet)	8	R3	MACROCORE	32"		0.0	
							0.0	
		9					0.0	
							0.0	
		10					0.0	Collect SB-13_9-11_021020
	R3B (20-32") Grey fine SAND, some silt (wet)						0.0	Root fibers
		11					0.0	
							0.0	
	R4 (0-36") Grey fine SAND, some silt, trace clay (wet)	12	R4	MACROCORE	36"		0.0	
							0.0	
		13					0.0	
							0.0	
		14					0.0	
							0.0	
-7.7		15						End of boring at 15 feet bgs. Borehole backfilled to 12 feet and converted into monitoring well MW-8.
		16						
		17						

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Log of Boring **SB-14** Sheet 1 of 1

Project: 1607 Surf Avenue
Project No.: 170599501
Location: Brooklyn, NY
Elevation and Datum: 7.31 ft NAVD88
Drilling Company: Aquifer Drilling & Testing (ADT)
Date Started: 2/11/20
Date Finished: 2/11/20
Drilling Equipment: Geoprobe 7822DT
Completion Depth: 15 ft
Rock Depth: NA
Size and Type of Bit: 2-in Direct Push
Number of Samples: Disturbed 3 Undisturbed NA Core NA
Casing Diameter (in): NA
Casing Depth (ft): NA
Water Level (ft.): First ▽ 7.5 Completion ▼ NA 24 HR. ▼ NA
Casing Hammer: NA Weight (lbs): NA Drop (in): NA
Drilling Foreman: ADT/Luke Caballero
Sampler: 4-ft Acetate Lined Macrocore
Field Engineer: Langan/Patrick Stovall
Sampler Hammer: NA Weight (lbs): NA Drop (in): NA

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.)
■	+7.3 +7.2	ASPHALT	0						
▨		R1A (0-14") Black gravelly fine SAND, coal fragment, brick, glass (dry) [FILL]						0.0	
▨			1					0.0	Collect SB-14_0-2_021120
▨		R1B (14-36") Light tan fine SAND, some fine gravel, brick, concrete (dry) [FILL]						0.0	
▨			2	R1	MACROCORE	36"		0.0	
▨								0.0	
▨			3					0.0	
▨								0.0	
▨		R2A (0-16") Light tan to dark brown fine SAND, some fine gravel, brick, coal fragment (dry) [FILL]	4					0.0	
▨								0.0	
▨			5					0.0	
⁙	+1.7	R2B (16-35") Grey to dark grey fine SAND (moist)						0.0	
⁙			6	R2	MACROCORE	40"		0.0	
⁙								0.0	
⁙			7					0.0	Collect SB-14_6-8_021120
⁙		▽ R2C (35-40") Grey to dark grey fine SAND (wet)						0.0	
⁙		R3 (0-40") Dark grey to grey fine SAND, trace silt (wet)	8					0.0	
⁙								0.0	
⁙			9					0.0	
⁙								0.0	
⁙			10	R3	MACROCORE	40"		0.0	Collect SB-14_9-11_021120
⁙								0.0	
⁙			11					0.0	
⁙								0.0	
⁙		R4 (0-30") Dark grey to grey fine SAND, some silt (wet)	12					0.0	
⁙								0.0	
⁙			13					0.0	
⁙				R4	MACROCORE	30"		0.0	
⁙			14					0.0	
⁙								0.0	
	-7.7		15						End of boring at 15 feet bgs. Borehole backfilled with No. 2 sand and non-impacted IDW and patched with concrete.
			16						
			17						

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Log of Boring **SB-15** Sheet 1 of 1

Project	1607 Surf Avenue	Project No.	170599501
Location	Brooklyn, NY	Elevation and Datum	7.55 ft NAVD88
Drilling Company	Aquifer Drilling & Testing (ADT)	Date Started / Date Finished	2/10/20 / 2/10/20
Drilling Equipment	Geoprobe 7822DT	Completion Depth / Rock Depth	15 ft / NA
Size and Type of Bit	2-in Direct Push	Number of Samples	Disturbed 3 Undisturbed NA Core NA
Casing Diameter (in) / Casing Depth (ft)	NA / NA	Water Level (ft.)	First ▽ 7.5 Completion ▼ NA 24 HR. ▼ NA
Casing Hammer / Weight (lbs) / Drop (in)	NA / NA / NA	Drilling Foreman	ADT/Luke Caballero
Sampler	4-ft Acetate Lined Macrocore	Field Engineer	Langan/Patrick Stovall
Sampler Hammer / Weight (lbs) / Drop (in)	NA / NA / NA		

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.)
	+7.6								
■	+7.4	ASPHALT	0						
▩		R1A (0-30") Black to dark brown gravelly fine SAND, glass, brick, coal fragment (dry) [FILL]						0.0	
▩			1					0.0	Collect SB-15_0-2_021020
▩								0.0	
▩			2	R1	MACROCORE	40"		0.0	
▩								0.0	
░	+4.7	R1B (30-40") Light tan fine SAND, trace fine gravel (dry)	3					0.0	
░								0.0	
░		R2A (0-31.5") Light tan fine SAND (moist)	4					0.0	
░								0.0	
░			5					0.0	
░								0.0	
░			6	R2	MACROCORE	36"		0.0	
░								0.0	
░			7					0.0	Collect SB-15_6-8_021020
░		▽ R2B (31.5-36") Light tan fine SAND (wet)						0.0	
░		R3 (0-36") Tan to dark grey fine SAND, trace silt (wet)	8					0.0	
░								0.0	
░			9					0.0	
░								0.0	
░			10	R3	MACROCORE	36"		0.0	
░								0.0	
░			11					0.0	Collect SB-15_10-12_021020
░								0.0	
░		R4 (0-36") Dark grey fine SAND, some silt, trace clay (wet)	12					0.0	
░								0.0	
░			13	R4	MACROCORE	36"		0.0	
░								0.0	
░			14					0.0	
░								0.0	
	-7.5		15						End of boring at 15 feet bgs. Borehole backfilled to 12 feet and converted into monitoring well MW-9.
			16						
			17						

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Log of Boring **SB-16** Sheet 1 of 1

Project 1607 Surf Avenue		Project No. 170599501	
Location Brooklyn, NY		Elevation and Datum 7.2 ft NAVD88	
Drilling Company Aquifer Drilling & Testing (ADT)		Date Started 2/11/20	Date Finished 2/11/20
Drilling Equipment Geoprobe 7822DT		Completion Depth 15 ft	Rock Depth NA
Size and Type of Bit 2-in Direct Push		Number of Samples: Disturbed 3	Undisturbed NA; Core NA
Casing Diameter (in) NA	Casing Depth (ft) NA	Water Level (ft.): First ∇ 7.5	Completion ▼ NA; 24 HR. ▼ NA
Casing Hammer NA; Weight (lbs) NA	Drop (in) NA	Drilling Foreman ADT/Luke Caballero	
Sampler 4-ft Acetate Lined Macrocore		Field Engineer Langan/Patrick Stovall	
Sampler Hammer NA; Weight (lbs) NA	Drop (in) NA		

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.)
+7.2 +7.0	ASPHALT	0						
	R1A (0-22") Black to brown gravelly fine SAND, concrete, ceramic, coal fragment, brick (dry) [FILL]						0.0	
		1					0.0	Collect SB-16_0-2_021120
							0.0	
+5.1	R1B (22-40") Light tan fine SAND, trace fine gravel (dry)	2	R1	MACROCORE	36"		0.0	
							0.0	
		3					0.0	
							0.0	
	R2A (0-31.5") Light tan fine SAND (moist)	4					0.0	
							0.0	
		5					0.0	
							0.0	
		6	R2	MACROCORE	38"		0.0	Collect SB-16_5-7_021120
							0.0	
		7					0.0	
	∇ R2B (31.5-36") Light tan fine SAND (wet)						0.0	
	R3 (0-36") Light grey to tan fine SAND, trace silt (wet)	8					0.0	
							0.0	
		9					0.0	
							0.0	
		10	R3	MACROCORE	34"		0.0	Collect SB-16_9-11_021120
							0.0	
		11					0.0	
							0.0	
	R4 (0-36") Dary grey fine SAND, some silt (wet)	12					0.0	
							0.0	
		13					0.0	
			R4	MACROCORE	36"		0.0	
		14					0.0	
							0.0	
-7.8		15						End of boring at 15 feet bgs. Borehole backfilled with No. 2 sand and non-impacted IDW and patched with concrete.
		16						
		17						

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Log of Boring **SB-17** Sheet 1 of 1

Project 1607 Surf Avenue		Project No. 170599501	
Location Brooklyn, NY		Elevation and Datum 7.94 ft NAVD88	
Drilling Company Aquifer Drilling & Testing (ADT)		Date Started 2/5/20	Date Finished 2/5/20
Drilling Equipment Geoprobe 7822DT		Completion Depth 12 ft	Rock Depth NA
Size and Type of Bit 2-in Direct Push		Number of Samples: Disturbed 3	Undisturbed NA; Core NA
Casing Diameter (in) NA	Casing Depth (ft) NA	Water Level (ft.): First ▽ 7.5	Completion ▼ NA; 24 HR. ▼ NA
Casing Hammer NA; Weight (lbs) NA	Drop (in) NA	Drilling Foreman ADT/Luke Caballero	
Sampler 4-ft Acetate Lined Macrocore		Field Engineer Langan/Patrick Stovall	
Sampler Hammer NA; Weight (lbs) NA	Drop (in) NA		

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.)
	+7.9		0						
■	+7.7	ASPHALT							
▨		R1A (0-10") Brown fine SAND, trace fine gravel, brick, concrete, coal fragment (dry) [FILL]	0.5					0.0	
		R1B (10-20") Grey fine SAND, some fine gravel, coal fragment (dry) [FILL]	1					0.0	Collect SB-17_0-2_020520
			1.5					0.0	
		R1C (20-36") Tan to black fine SAND, glass, brick (dry) [FILL]	2	R1	MACROCORE	36"		0.0	
			2.5					0.0	
			3					0.0	
			3.5					0.0	
		R2A (0-6") Tan to black fine SAND, brick (dry) [FILL]	4					0.0	
	+3.3		4.5					0.0	
		R2B (6-33.25") Tan to grey fine SAND (moist)	5					0.0	
			5.5					0.0	
			6	R2	MACROCORE	38"		0.0	Collect SB-17_5-7_020520
			6.5					0.0	
			7					0.0	
		▽	7.5					0.0	
		R2C (33.25-38") Tan to grey fine SAND (wet)							
		R3 (0-36") Tan to grey fine SAND (wet)	8					0.0	
			8.5					0.0	
			9					0.0	
			9.5					0.0	
			10	R3	MACROCORE	36"		0.0	Collect SB-17_9-11_020520
			10.5					0.0	
			11					0.0	
			11.5					0.0	
	-4.1		12						End of boring at 12 feet bgs. Borehole converted into monitoring well MW-10.
			13						
			14						
			15						
			16						
			17						

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Log of Boring **SB-18** Sheet 1 of 1

Project 1607 Surf Avenue			Project No. 170599501	
Location Brooklyn, NY			Elevation and Datum 7.28 ft NAVD88	
Drilling Company Aquifer Drilling & Testing (ADT)			Date Started 2/5/20	Date Finished 2/5/20
Drilling Equipment Geoprobe 7822DT			Completion Depth 12 ft	Rock Depth NA
Size and Type of Bit 2-in Direct Push			Number of Samples	Disturbed 3 / Undisturbed NA / Core NA
Casing Diameter (in) NA		Casing Depth (ft) NA	Water Level (ft.)	First ∇ 7.8 / Completion ▼ NA / 24 HR. ▼ NA
Casing Hammer NA	Weight (lbs) NA	Drop (in) NA	Drilling Foreman ADT/Luke Caballero	
Sampler 4-ft Acetate Lined Macrocore			Field Engineer Langan/Patrick Stovall	
Sampler Hammer NA	Weight (lbs) NA	Drop (in) NA		

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.)
■	+7.3 +7.0	ASPHALT	0						
▩		R1 (0-36") Black to tan fine SAND, some fine gravel, brick, coal fragment (dry) [FILL]						0.0	
			1					0.0	Refusal at 10 feet bgs, boring offset 2 feet west
								0.0	
			2	R1	MACROCORE	36"		0.0	Collect SB-18_0-2_020520
								0.0	
			3					0.0	Collect SB-18_2-4_020520
								0.0	
⁘	+3.3	R2A (0-18.75") Light tan fine SAND (moist)	4					0.0	
								0.0	
			5					0.0	
								0.0	
			6	R2	MACROCORE	20"		0.0	
								0.0	
			7					0.0	
			∇					0.0	
		R2B (18.75-20") Light tan fine SAND (wet) R3 (0-22") Tan to dark grey fine SAND, wood (wet)	8					0.0	
								0.0	
			9					0.0	
								0.0	
			10	R3	MACROCORE	22"		0.0	
								0.0	
			11					0.0	Collect SB-18_10-12_020520
								0.0	
	-4.7		12						End of boring at 12 feet bgs. Borehole converted into monitoring well MW-11.
			13						
			14						
			15						
			16						
			17						

LANGAN Log of Boring **SB-19** Sheet 1 of 1

Project 1607 Surf Avenue		Project No. 170599501	
Location Brooklyn, NY		Elevation and Datum 7.28 ft NAVD88	
Drilling Company Aquifer Drilling & Testing (ADT)		Date Started 2/5/20	Date Finished 2/5/20
Drilling Equipment Geoprobe 7822DT		Completion Depth 12 ft	Rock Depth NA
Size and Type of Bit 2-in Direct Push		Number of Samples	Disturbed 3 / Undisturbed NA / Core NA
Casing Diameter (in) NA	Casing Depth (ft) NA	Water Level (ft.)	First ∇ 7.8 / Completion ▼ NA / 24 HR. ▼ NA
Casing Hammer NA / Weight (lbs) NA / Drop (in) NA		Drilling Foreman ADT/Luke Caballero	
Sampler 4-ft Acetate Lined Macrocore		Field Engineer Langan/Patrick Stovall	
Sampler Hammer NA / Weight (lbs) NA / Drop (in) NA			

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.)
■	+7.3 +7.0	ASPHALT	0						
▨		R1 (0-30") Black to tan fine SAND, some fine gravel, brick, coal fragment (dry) [FILL]						0.0	
▨			1					0.0	Collect SB-19_0-2_020520
▨								0.0	
▨			2	R1	MACROCORE	30"		0.0	
▨								0.0	
▨			3					0.0	Collect SB-19_2-4_020520
▨								0.0	
░	+3.3	R2A (0-26.25") Light tan fine SAND (moist)	4					0.0	
░								0.0	
░			5					0.0	
░								0.0	
░			6	R2	MACROCORE	38"		0.0	
░								0.0	
░			7					0.0	Collect SB-19_6-8_020520
░		∇						0.0	
░		R2B (26.25-28") Light tan fine SAND (wet) R3 (0-28") Tan to dark grey fine SAND (wet)	8					0.0	
░								0.0	
░			9					0.0	
░								0.0	
░			10	R3	MACROCORE	28"		0.0	
░								0.0	
░			11					0.0	
░								0.0	
	-4.7		12						End of boring at 12 feet bgs. Borehole backfilled with No. 2 sand and non-impacted IDW and patched with concrete.
			13						
			14						
			15						
			16						
			17						

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Log of Boring **SB-20** Sheet 1 of 1

Project 1607 Surf Avenue			Project No. 170599501		
Location Brooklyn, NY			Elevation and Datum 7.11 ft NAVD88		
Drilling Company Aquifer Drilling & Testing (ADT)			Date Started 2/5/20	Date Finished 2/5/20	
Drilling Equipment Geoprobe 7822DT			Completion Depth 12 ft	Rock Depth NA	
Size and Type of Bit 2-in Direct Push			Number of Samples	Disturbed 3	Undisturbed NA	Core NA
Casing Diameter (in) NA		Casing Depth (ft) NA	Water Level (ft.)	First ▽ 7.5	Completion ▼ NA	24 HR. ▼ NA
Casing Hammer NA	Weight (lbs) NA	Drop (in) NA	Drilling Foreman ADT/Luke Caballero		
Sampler 4-ft Acetate Lined Macrocore			Field Engineer Langan/Patrick Stovall		
Sampler Hammer NA	Weight (lbs) NA	Drop (in) NA			

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.)
■	+7.1 +7.0	ASPHALT	0						
▩		R1 (0-32") Black to tan fine SAND, some fine gravel, brick, coal fragment (dry) [FILL]		R1	MACROCORE	32"		0.0	
			1					0.0	Collect SB-20_0-2_020520
								0.0	
			2					0.0	
								0.0	
			3					0.0	Collect SB-20_2-4_020520
								0.0	
░	+3.1	R2A (0-24.5") Light tan fine to grey fine SAND (moist)	4	R2	MACROCORE	28"		0.0	
								0.0	
			5					0.0	
								0.0	
			6					0.0	
								0.0	
			7					0.0	Collect SB-20_6-8_020520
		▽ R2B (24.5-28") Light tan fine to grey fine SAND (wet)						0.0	
		R3 (0-32") Light to dark grey fine SAND (wet)	8	R3	MACROCORE	32"		0.0	
								0.0	
			9					0.0	
								0.0	
			10					0.0	
								0.0	
			11					0.0	
								0.0	
	-4.9		12						End of boring at 12 feet bgs. Borehole converted to monitoring well MW-12.
			13						
			14						
			15						
			16						
			17						

\\LANGAN.COM\DATA\NYC\DATA5\170599501\PROJECT DATA_DISCIPLINE\ENVIRONMENTAL\GINTLOGS\2020-02 REMEDIAL INVESTIGATION\1607 SURF AVE.GPJ ... 3/25/2020 7:59:09 AM ... Report: Log - LANGAN

APPENDIX D

WELL CONSTRUCTION LOGS

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. MW-1

PROJECT 1607 Surf Avenue	**PROJECT NO.** 170599501
LOCATION Brooklyn, NY	**GROUND ELEVATION (ft NAVD88)** 6.95
DRILLING AGENCY ADT	**DATE STARTED** 2/6/2020 **DATE FINISHED** 2/6/2020
DRILLING EQUIPMENT Geoprobe 7822 DT	**DRILLER** Luke Caballero
SIZE AND TYPE OF BIT 4-inch Hollow Stem Auger	**LANGAN REP.** Patrick Stovall

METHOD OF INSTALLATION

ADT drilled SB-1 to 15' bgs. Borehole was backfilled with a combination of IDW and Filpro #2 sand. ADT advanced a 4-inch hollow stem auger to 12 feet bgs. After the PVC well screen and riser were installed, the annulus was backfilled with Fipro #2 clean sand and sealed with bentonite above the well pack. A flushmount manhole was concrete installed at ground surface.

METHOD OF WELL DEVELOPMENT

ADT used a whale pump to purge up to 3 well volumes into a 55-gallon drum.
Groundwater was purged until clear of sediment.

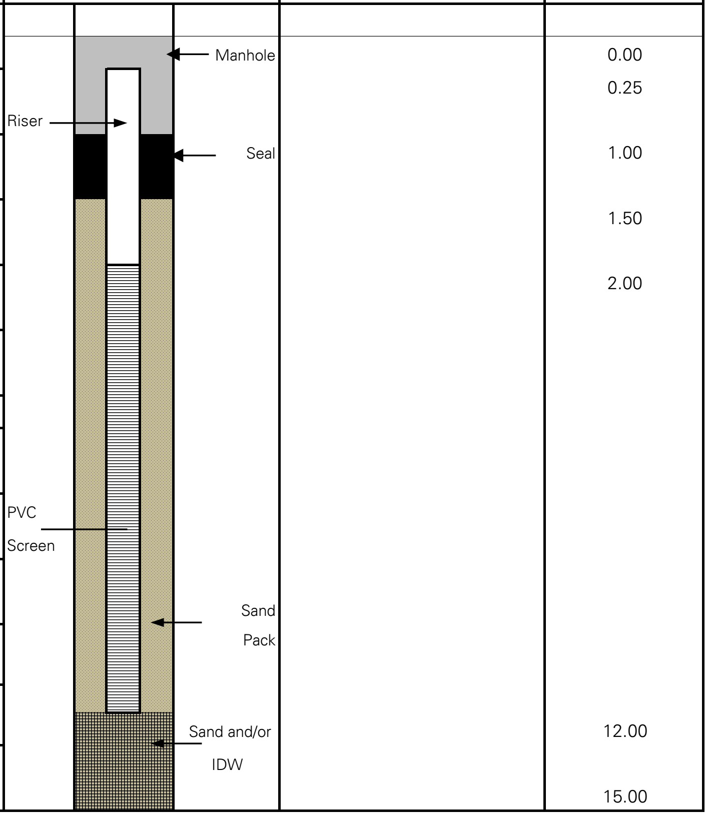
TYPE OF CASING Solid Schedule 40 PVC	**DIAMETER** 2-inch	**TYPE OF BACKFILL MATERIAL** Combination of non-impacted IDW and Filpro #2 Sand
TYPE OF SCREEN Schedule 40 0.01-inch slotted PVC	**DIAMETER** 2-inch	**TYPE OF SEAL MATERIAL** Hydrated bentonite chips
BOREHOLE DIAMETER 4-inch		**TYPE OF FILTER MATERIAL** Filpro #2 Sand

	ELEVATION (ft NAVD88)	**DEPTH (ft bgs)**
TOP OF CASING	6.70	0.25
TOP OF SEAL	5.95	1.00
TOP OF FILTER	5.45	1.50
TOP OF SCREEN	4.95	2.00
BOTTOM OF BORING	-8.05	15.00
SCREEN LENGTH		10 feet
SLOT SIZE		0.01-inch

GROUNDWATER ELEVATIONS

ELEVATION (ft NAVD88)	**DATE**	**DEPTH TO WATER (ft bgs)**
0.72	2/20/2020	5.98

WELL DETAILS	**SUMMARY SOIL CLASSIFICATION**	**DEPTH (ft bgs)**



Notes:

NAVD88 = North American Vertical Datum of 1988

IDW = Investigation Derived Waste

bgs = below ground surface

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. MW-2

PROJECT 1607 Surf Avenue	**PROJECT NO.** 170599501
LOCATION Brooklyn, NY	**GROUND ELEVATION (ft NAVD88)** 7.02
DRILLING AGENCY ADT	**DATE STARTED** 2/7/2020 **DATE FINISHED** 2/7/2020
DRILLING EQUIPMENT Geoprobe 7822 DT	**DRILLER** Luke Caballero
SIZE AND TYPE OF BIT 4-inch Hollow Stem Auger	**LANGAN REP.** Patrick Stovall

METHOD OF INSTALLATION

ADT drilled SB-3 to 15' bgs. Borehole was backfilled with a combination of IDW and Filpro #2 sand. ADT advanced a 4-inch hollow stem auger to 12 feet bgs. After the PVC well screen and riser were installed, the annulus was backfilled with Fipro #2 clean sand and sealed with bentonite above the well pack. A flushmount manhole was concrete installed at ground surface.

METHOD OF WELL DEVELOPMENT

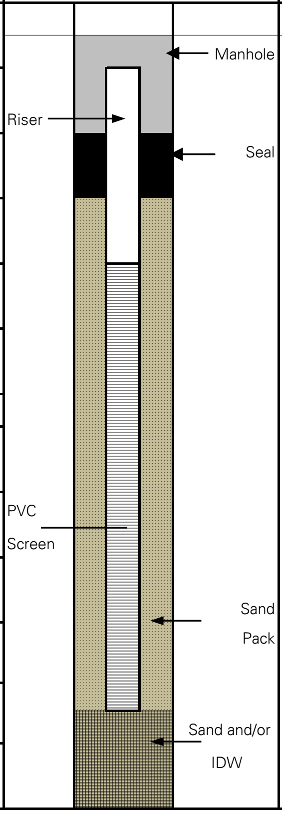
ADT used a whale pump to purge up to 3 well volumes into a 55-gallon drum.
Groundwater was purged until clear of sediment.

TYPE OF CASING Solid Schedule 40 PVC	**DIAMETER** 2-inch	**TYPE OF BACKFILL MATERIAL** Combination of non-impacted IDW and Filpro #2 Sand
TYPE OF SCREEN Schedule 40 0.01-inch slotted PVC	**DIAMETER** 2-inch	**TYPE OF SEAL MATERIAL** Hydrated bentonite chips
BOREHOLE DIAMETER 4-inch		**TYPE OF FILTER MATERIAL** Filpro #2 Sand

	ELEVATION (ft NAVD88)	**DEPTH (ft bgs)**
TOP OF CASING	6.80	0.22
TOP OF SEAL	6.02	1.00
TOP OF FILTER	5.52	1.50
TOP OF SCREEN	5.02	2.00
BOTTOM OF BORING	-7.98	15.00
SCREEN LENGTH		10 feet
SLOT SIZE		0.01-inch

GROUNDWATER ELEVATIONS

ELEVATION (ft NAVD88)	**DATE**	**DEPTH TO WATER (ft bgs)**
0.26	2/20/2020	6.54

WELL DETAILS	**SUMMARY SOIL CLASSIFICATION**	**DEPTH (ft bgs)**
		0.00 0.22 1.00 1.50 2.00 12.00 15.00

Notes:

NAVD88 = North American Vertical Datum of 1988

IDW = Investigation Derived Waste

bgs = below ground surface

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. MW-3

PROJECT 1607 Surf Avenue	**PROJECT NO.** 170599501
LOCATION Brooklyn, NY	**GROUND ELEVATION (ft NAVD88)** 7.71
DRILLING AGENCY ADT	**DATE STARTED** 2/6/2020 **DATE FINISHED** 2/6/2020
DRILLING EQUIPMENT Geoprobe 7822 DT	**DRILLER** Luke Caballero
SIZE AND TYPE OF BIT 4-inch Hollow Stem Auger	**LANGAN REP.** Patrick Stovall

METHOD OF INSTALLATION

ADT drilled SB-5 to 15' bgs. Borehole was backfilled with a combination of IDW and Filpro #2 sand. ADT advanced a 4-inch hollow stem auger to 12 feet bgs. After the PVC well screen and riser were installed, the annulus was backfilled with Fipro #2 clean sand and sealed with bentonite above the well pack. A flushmount manhole was concrete installed at ground surface.

METHOD OF WELL DEVELOPMENT

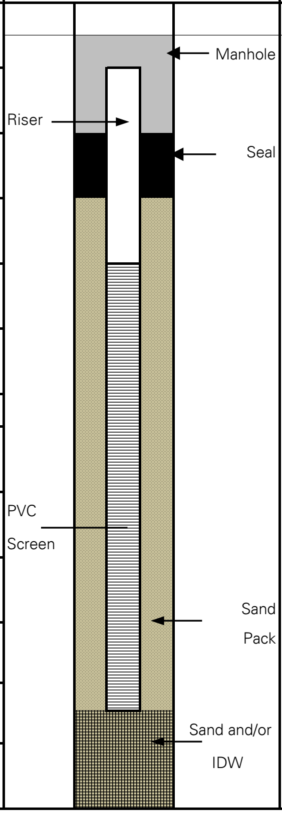
ADT used a whale pump to purge up to 3 well volumes into a 55-gallon drum.
Groundwater was purged until clear of sediment.

TYPE OF CASING Solid Schedule 40 PVC	**DIAMETER** 2-inch	**TYPE OF BACKFILL MATERIAL** Combination of non-impacted IDW and Filpro #2 Sand
TYPE OF SCREEN Schedule 40 0.01-inch slotted PVC	**DIAMETER** 2-inch	**TYPE OF SEAL MATERIAL** Hydrated bentonite chips
BOREHOLE DIAMETER 4-inch		**TYPE OF FILTER MATERIAL** Filpro #2 Sand

	ELEVATION (ft NAVD88)	DEPTH (ft bgs)
TOP OF CASING	7.44	0.27
TOP OF SEAL	6.71	1.00
TOP OF FILTER	6.21	1.50
TOP OF SCREEN	5.71	2.00
BOTTOM OF BORING	-7.29	15.00
SCREEN LENGTH		10 feet
SLOT SIZE		0.01-inch

GROUNDWATER ELEVATIONS

ELEVATION (ft NAVD88)	DATE	DEPTH TO WATER (ft bgs)
0.70	2/20/2020	6.74

WELL DETAILS	SUMMARY SOIL CLASSIFICATION	DEPTH (ft bgs)
		0.00 0.27 1.00 1.50 2.00 12.00 15.00

Notes:

NAVD88 = North American Vertical Datum of 1988

IDW = Investigation Derived Waste

bgs = below ground surface

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. MW-4

PROJECT 1607 Surf Avenue	**PROJECT NO.** 170599501
LOCATION Brooklyn, NY	**GROUND ELEVATION (ft NAVD88)** 7.15
DRILLING AGENCY ADT	**DATE STARTED** 2/7/2020 **DATE FINISHED** 2/7/2020
DRILLING EQUIPMENT Geoprobe 7822 DT	**DRILLER** Luke Caballero
SIZE AND TYPE OF BIT 4-inch Hollow Stem Auger	**LANGAN REP.** Patrick Stovall

METHOD OF INSTALLATION

ADT drilled SB-7 to 15' bgs. Borehole was backfilled with a combination of IDW and Filpro #2 sand. ADT advanced a 4-inch hollow stem auger to 12 feet bgs. After the PVC well screen and riser were installed, the annulus was backfilled with Fipro #2 clean sand and sealed with bentonite above the well pack. A flushmount manhole was concrete installed at ground surface.

METHOD OF WELL DEVELOPMENT

ADT used a whale pump to purge up to 3 well volumes into a 55-gallon drum.
Groundwater was purged until clear of sediment.

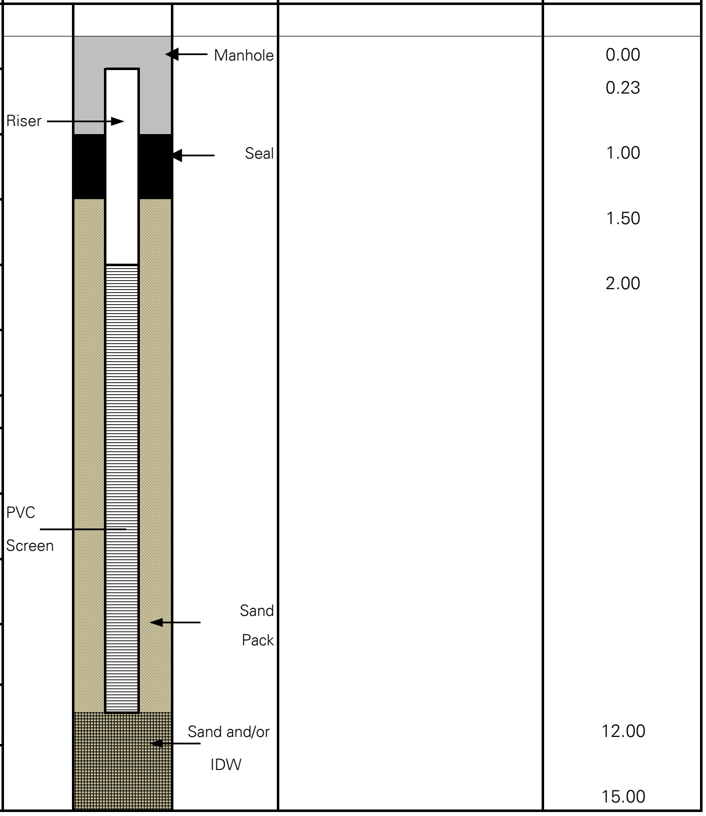
TYPE OF CASING Solid Schedule 40 PVC	**DIAMETER** 2-inch	**TYPE OF BACKFILL MATERIAL** Combination of non-impacted IDW and Filpro #2 Sand
TYPE OF SCREEN Schedule 40 0.01-inch slotted PVC	**DIAMETER** 2-inch	**TYPE OF SEAL MATERIAL** Hydrated bentonite chips
BOREHOLE DIAMETER 4-inch		**TYPE OF FILTER MATERIAL** Filpro #2 Sand

TOP OF CASING	**ELEVATION (ft NAVD88)** 6.92	**DEPTH (ft bgs)** 0.23
TOP OF SEAL	**ELEVATION (ft NAVD88)** 6.15	**DEPTH (ft bgs)** 1.00
TOP OF FILTER	**ELEVATION (ft NAVD88)** 5.65	**DEPTH (ft bgs)** 1.50
TOP OF SCREEN	**ELEVATION (ft NAVD88)** 5.15	**DEPTH (ft bgs)** 2.00
BOTTOM OF BORING	**ELEVATION (ft NAVD88)** -7.85	**DEPTH (ft bgs)** 15.00
SCREEN LENGTH		10 feet
SLOT SIZE		0.01-inch

GROUNDWATER ELEVATIONS

ELEVATION (ft NAVD88)	DATE	DEPTH TO WATER (ft bgs)
0.27	2/20/2020	6.65

WELL DETAILS | **SUMMARY SOIL CLASSIFICATION** | **DEPTH (ft bgs)**



Notes:

NAVD88 = North American Vertical Datum of 1988

IDW = Investigation Derived Waste

bgs = below ground surface

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. MW-5

PROJECT 1607 Surf Avenue	**PROJECT NO.** 170599501
LOCATION Brooklyn, NY	**GROUND ELEVATION (ft NAVD88)** 7.6
DRILLING AGENCY ADT	**DATE STARTED** 2/6/2020 **DATE FINISHED** 2/6/2020
DRILLING EQUIPMENT Geoprobe 7822 DT	**DRILLER** Luke Caballero
SIZE AND TYPE OF BIT 4-inch Hollow Stem Auger	**LANGAN REP.** Patrick Stovall

METHOD OF INSTALLATION

ADT drilled SB-8 to 15' bgs. Borehole was backfilled with a combination of IDW and Filpro #2 sand. ADT advanced a 4-inch hollow stem auger to 12 feet bgs. After the PVC well screen and riser were installed, the annulus was backfilled with Fipro #2 clean sand and sealed with bentonite above the well pack. A flushmount manhole was concrete installed at ground surface.

METHOD OF WELL DEVELOPMENT

ADT used a whale pump to purge up to 3 well volumes into a 55-gallon drum.
Groundwater was purged until clear of sediment.

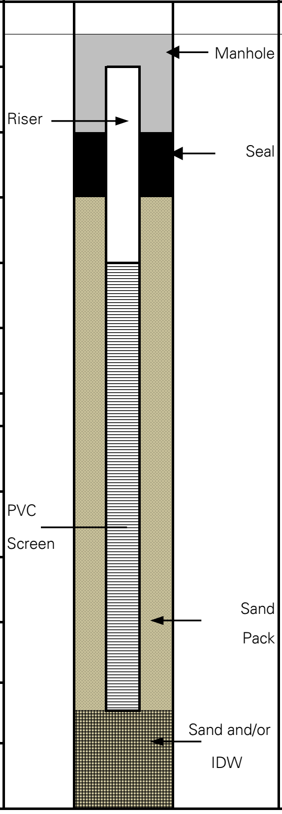
TYPE OF CASING Solid Schedule 40 PVC	**DIAMETER** 2-inch	**TYPE OF BACKFILL MATERIAL** Combination of non-impacted IDW and Filpro #2 Sand
TYPE OF SCREEN Schedule 40 0.01-inch slotted PVC	**DIAMETER** 2-inch	**TYPE OF SEAL MATERIAL** Hydrated bentonite chips
BOREHOLE DIAMETER 4-inch		**TYPE OF FILTER MATERIAL** Filpro #2 Sand

	ELEVATION (ft NAVD88)	**DEPTH (ft bgs)**
TOP OF CASING	7.10	0.50
TOP OF SEAL	6.60	1.00
TOP OF FILTER	6.10	1.50
TOP OF SCREEN	5.60	2.00
BOTTOM OF BORING	-7.40	15.00
SCREEN LENGTH		10 feet
SLOT SIZE		0.01-inch

GROUNDWATER ELEVATIONS

ELEVATION (ft NAVD88)	**DATE**	**DEPTH TO WATER (ft bgs)**
0.81	2/20/2020	6.29

WELL DETAILS | **SUMMARY SOIL CLASSIFICATION** | **DEPTH (ft bgs)**



DEPTH (ft bgs)
0.00
0.50
1.00
1.50
2.00
12.00
15.00

Notes:

NAVD88 = North American Vertical Datum of 1988

IDW = Investigation Derived Waste

bgs = below ground surface

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. MW-6

PROJECT 1607 Surf Avenue	**PROJECT NO.** 170599501
LOCATION Brooklyn, NY	**GROUND ELEVATION (ft NAVD88)** 7.71
DRILLING AGENCY ADT	**DATE STARTED** 2/11/2020 **DATE FINISHED** 2/11/2020
DRILLING EQUIPMENT Geoprobe 7822 DT	**DRILLER** Luke Caballero
SIZE AND TYPE OF BIT 4-inch Hollow Stem Auger	**LANGAN REP.** Patrick Stovall

METHOD OF INSTALLATION

ADT drilled SB-9 to 15' bgs. Borehole was backfilled with a combination of IDW and Filpro #2 sand. ADT advanced a 4-inch hollow stem auger to 12 feet bgs. After the PVC well screen and riser were installed, the annulus was backfilled with Fipro #2 clean sand and sealed with bentonite above the well pack. A flushmount manhole was concrete installed at ground surface.

METHOD OF WELL DEVELOPMENT

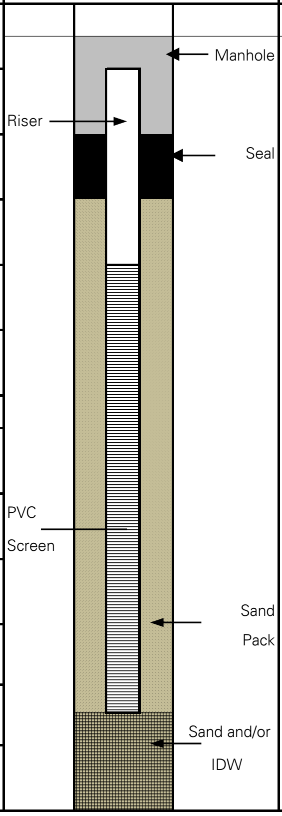
ADT used a whale pump to purge up to 3 well volumes into a 55-gallon drum.
Groundwater was purged until clear of sediment.

TYPE OF CASING Solid Schedule 40 PVC	**DIAMETER** 2-inch	**TYPE OF BACKFILL MATERIAL** Combination of non-impacted IDW and Filpro #2 Sand
TYPE OF SCREEN Schedule 40 0.01-inch slotted PVC	**DIAMETER** 2-inch	**TYPE OF SEAL MATERIAL** Hydrated bentonite chips
BOREHOLE DIAMETER 4-inch		**TYPE OF FILTER MATERIAL** Filpro #2 Sand

	ELEVATION (ft NAVD88)	DEPTH (ft bgs)
TOP OF CASING	7.36	0.35
TOP OF SEAL	6.71	1.00
TOP OF FILTER	6.21	1.50
TOP OF SCREEN	5.71	2.00
BOTTOM OF BORING	-7.29	15.00
SCREEN LENGTH		10 feet
SLOT SIZE		0.01-inch

GROUNDWATER ELEVATIONS

ELEVATION (ft NAVD88)	DATE	DEPTH TO WATER (ft bgs)
0.58	2/20/2020	6.78

WELL DETAILS	SUMMARY SOIL CLASSIFICATION	DEPTH (ft bgs)
		0.00 0.35 1.00 1.50 2.00 12.00 15.00

Notes:

NAVD88 = North American Vertical Datum of 1988

IDW = Investigation Derived Waste

bgs = below ground surface

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. MW-7

PROJECT 1607 Surf Avenue	**PROJECT NO.** 170599501
LOCATION Brooklyn, NY	**GROUND ELEVATION (ft NAVD88)** 7.31
DRILLING AGENCY ADT	**DATE STARTED** 2/6/2020 **DATE FINISHED** 2/6/2020
DRILLING EQUIPMENT Geoprobe 7822 DT	**DRILLER** Luke Caballero
SIZE AND TYPE OF BIT 4-inch Hollow Stem Auger	**LANGAN REP.** Patrick Stovall

METHOD OF INSTALLATION

ADT drilled SB-10 to 15' bgs. Borehole was backfilled with a combination of IDW and Filpro #2 sand. ADT advanced a 4-inch hollow stem auger to 12 feet bgs. After the PVC well screen and riser were installed, the annulus was backfilled with Fipro #2 clean sand and sealed with bentonite above the well pack. A flushmount manhole was concrete installed at ground surface.

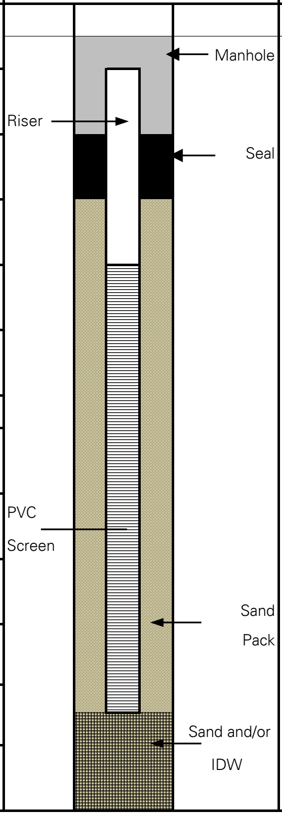
METHOD OF WELL DEVELOPMENT

ADT used a whale pump to purge up to 3 well volumes into a 55-gallon drum.
Groundwater was purged until clear of sediment.

TYPE OF CASING Solid Schedule 40 PVC	**DIAMETER** 2-inch	**TYPE OF BACKFILL MATERIAL** Combination of non-impacted IDW and Filpro #2 Sand
TYPE OF SCREEN Schedule 40 0.01-inch slotted PVC	**DIAMETER** 2-inch	**TYPE OF SEAL MATERIAL** Hydrated bentonite chips
BOREHOLE DIAMETER 4-inch		**TYPE OF FILTER MATERIAL** Filpro #2 Sand

	ELEVATION (ft NAVD88)	DEPTH (ft bgs)
TOP OF CASING	7.05	0.26
TOP OF SEAL	6.31	1.00
TOP OF FILTER	5.81	1.50
TOP OF SCREEN	5.31	2.00
BOTTOM OF BORING	-7.69	15.00
SCREEN LENGTH		10 feet
SLOT SIZE		0.01-inch

WELL DETAILS



SUMMARY SOIL CLASSIFICATION	DEPTH (ft bgs)
	0.00
	0.26
	1.00
	1.50
	2.00
	12.00
	15.00

GROUNDWATER ELEVATIONS

ELEVATION (ft NAVD88)	DATE	DEPTH TO WATER (ft bgs)
0.77	2/20/2020	6.28

Notes:

NAVD88 = North American Vertical Datum of 1988

IDW = Investigation Derived Waste

bgs = below ground surface

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. MW-8

PROJECT 1607 Surf Avenue	**PROJECT NO.** 170599501
LOCATION Brooklyn, NY	**GROUND ELEVATION (ft NAVD88)** 7.32
DRILLING AGENCY ADT	**DATE STARTED** 2/10/2020 **DATE FINISHED** 2/10/2020
DRILLING EQUIPMENT Geoprobe 7822 DT	**DRILLER** Luke Caballero
SIZE AND TYPE OF BIT 4-inch Hollow Stem Auger	**LANGAN REP.** Patrick Stovall

METHOD OF INSTALLATION

ADT drilled SB-13 to 15' bgs. Borehole was backfilled with a combination of IDW and Filpro #2 sand. ADT advanced a 4-inch hollow stem auger to 12 feet bgs. After the PVC well screen and riser were installed, the annulus was backfilled with Fipro #2 clean sand and sealed with bentonite above the well pack. A flushmount manhole was concrete installed at ground surface.

METHOD OF WELL DEVELOPMENT

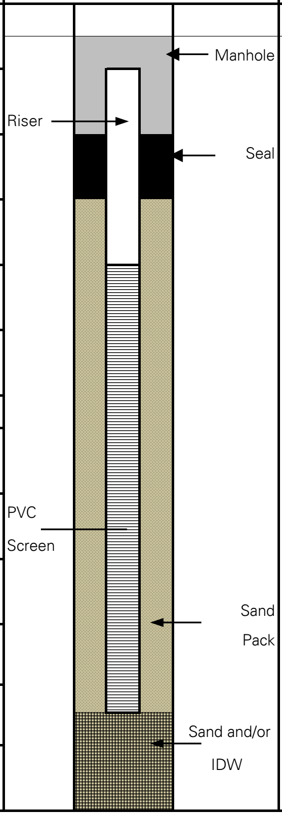
ADT used a whale pump to purge up to 3 well volumes into a 55-gallon drum.
Groundwater was purged until clear of sediment.

TYPE OF CASING Solid Schedule 40 PVC	**DIAMETER** 2-inch	**TYPE OF BACKFILL MATERIAL** Combination of non-impacted IDW and Filpro #2 Sand
TYPE OF SCREEN Schedule 40 0.01-inch slotted PVC	**DIAMETER** 2-inch	**TYPE OF SEAL MATERIAL** Hydrated bentonite chips
BOREHOLE DIAMETER 4-inch		**TYPE OF FILTER MATERIAL** Filpro #2 Sand

	ELEVATION (ft NAVD88)	DEPTH (ft bgs)
TOP OF CASING	6.87	0.45
TOP OF SEAL	6.32	1.00
TOP OF FILTER	5.82	1.50
TOP OF SCREEN	5.32	2.00
BOTTOM OF BORING	-7.68	15.00
SCREEN LENGTH		10 feet
SLOT SIZE		0.01-inch

GROUNDWATER ELEVATIONS

ELEVATION (ft NAVD88)	DATE	DEPTH TO WATER (ft bgs)
0.24	2/20/2020	6.63

WELL DETAILS	SUMMARY SOIL CLASSIFICATION	DEPTH (ft bgs)
		0.00 0.45 1.00 1.50 2.00 12.00 15.00

Notes:

NAVD88 = North American Vertical Datum of 1988

IDW = Investigation Derived Waste

bgs = below ground surface

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. MW-9

PROJECT 1607 Surf Avenue	**PROJECT NO.** 170599501
LOCATION Brooklyn, NY	**GROUND ELEVATION (ft NAVD88)** 7.55
DRILLING AGENCY ADT	**DATE STARTED** 2/10/2020 **DATE FINISHED** 2/10/2020
DRILLING EQUIPMENT Geoprobe 7822 DT	**DRILLER** Luke Caballero
SIZE AND TYPE OF BIT 4-inch Hollow Stem Auger	**LANGAN REP.** Patrick Stovall

METHOD OF INSTALLATION

ADT drilled SB-15 to 15' bgs. Borehole was backfilled with a combination of IDW and Filpro #2 sand. ADT advanced a 4-inch hollow stem auger to 12 feet bgs. After the PVC well screen and riser were installed, the annulus was backfilled with Fipro #2 clean sand and sealed with bentonite above the well pack. A flushmount manhole was concrete installed at ground surface.

METHOD OF WELL DEVELOPMENT

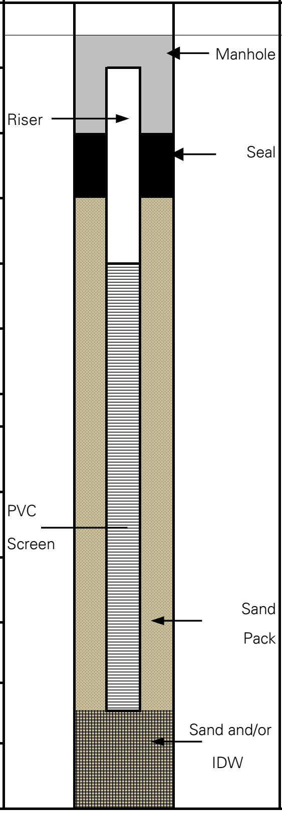
ADT used a whale pump to purge up to 3 well volumes into a 55-gallon drum.
Groundwater was purged until clear of sediment.

TYPE OF CASING Solid Schedule 40 PVC	**DIAMETER** 2-inch	**TYPE OF BACKFILL MATERIAL** Combination of non-impacted IDW and Filpro #2 Sand
TYPE OF SCREEN Schedule 40 0.01-inch slotted PVC	**DIAMETER** 2-inch	**TYPE OF SEAL MATERIAL** Hydrated bentonite chips
BOREHOLE DIAMETER 4-inch		**TYPE OF FILTER MATERIAL** Filpro #2 Sand

	ELEVATION (ft NAVD88)	DEPTH (ft bgs)
TOP OF CASING	7.22	0.33
TOP OF SEAL	6.55	1.00
TOP OF FILTER	6.05	1.50
TOP OF SCREEN	5.55	2.00
BOTTOM OF BORING	-7.45	15.00
SCREEN LENGTH		10 feet
SLOT SIZE		0.01-inch

GROUNDWATER ELEVATIONS

ELEVATION (ft NAVD88)	DATE	DEPTH TO WATER (ft bgs)
0.50	2/20/2020	6.72

WELL DETAILS	SUMMARY SOIL CLASSIFICATION	DEPTH (ft bgs)
		0.00 0.33 1.00 1.50 2.00 12.00 15.00

Notes:

NAVD88 = North American Vertical Datum of 1988

IDW = Investigation Derived Waste

bgs = below ground surface

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. MW-10

PROJECT 1607 Surf Avenue	**PROJECT NO.** 170599501
LOCATION Brooklyn, NY	**GROUND ELEVATION (ft NAVD88)** 7.94
DRILLING AGENCY ADT	**DATE STARTED** 2/5/2020 **DATE FINISHED** 2/5/2020
DRILLING EQUIPMENT Geoprobe 7822 DT	**DRILLER** Luke Caballero
SIZE AND TYPE OF BIT 4-inch Hollow Stem Auger	**LANGAN REP.** Patrick Stovall

METHOD OF INSTALLATION

ADT drilled SB-17 to 15' bgs. Borehole was backfilled with a combination of IDW and Filpro #2 sand. ADT advanced a 4-inch hollow stem auger to 12 feet bgs. After the PVC well screen and riser were installed, the annulus was backfilled with Fipro #2 clean sand and sealed with bentonite above the well pack. A flushmount manhole was concrete installed at ground surface.

METHOD OF WELL DEVELOPMENT

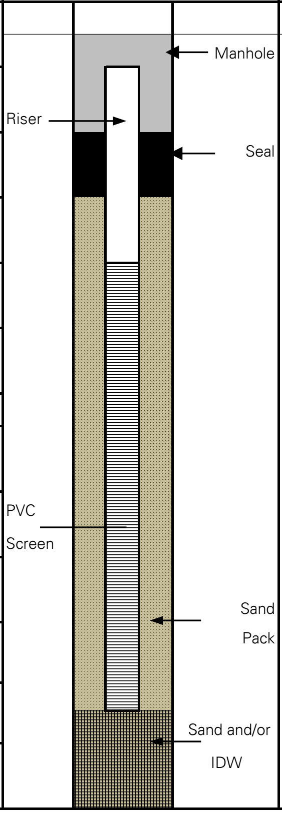
ADT used a whale pump to purge up to 3 well volumes into a 55-gallon drum.
Groundwater was purged until clear of sediment.

TYPE OF CASING Solid Schedule 40 PVC	**DIAMETER** 2-inch	**TYPE OF BACKFILL MATERIAL** Combination of non-impacted IDW and Filpro #2 Sand
TYPE OF SCREEN Schedule 40 0.01-inch slotted PVC	**DIAMETER** 2-inch	**TYPE OF SEAL MATERIAL** Hydrated bentonite chips
BOREHOLE DIAMETER 4-inch		**TYPE OF FILTER MATERIAL** Filpro #2 Sand

TOP OF CASING	**ELEVATION (ft NAVD88)** 7.62	**DEPTH (ft bgs)** 0.32
TOP OF SEAL	**ELEVATION (ft NAVD88)** 6.94	**DEPTH (ft bgs)** 1.00
TOP OF FILTER	**ELEVATION (ft NAVD88)** 6.44	**DEPTH (ft bgs)** 1.50
TOP OF SCREEN	**ELEVATION (ft NAVD88)** 5.94	**DEPTH (ft bgs)** 2.00
BOTTOM OF BORING	**ELEVATION (ft NAVD88)** -7.06	**DEPTH (ft bgs)** 15.00
SCREEN LENGTH		10 feet
SLOT SIZE		0.01-inch

GROUNDWATER ELEVATIONS

ELEVATION (ft NAVD88)	DATE	DEPTH TO WATER (ft bgs)
0.79	2/20/2020	6.83

WELL DETAILS	SUMMARY SOIL CLASSIFICATION	DEPTH (ft bgs)
		0.00 0.32 1.00 1.50 2.00 12.00 15.00

Notes:

NAVD88 = North American Vertical Datum of 1988

IDW = Investigation Derived Waste

bgs = below ground surface

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. MW-11

PROJECT 1607 Surf Avenue	**PROJECT NO.** 170599501	
LOCATION Brooklyn, NY	**GROUND ELEVATION (ft NAVD88)** 7.28	
DRILLING AGENCY ADT	**DATE STARTED** 2/5/2020	**DATE FINISHED** 2/5/2020
DRILLING EQUIPMENT Geoprobe 7822 DT	**DRILLER** Luke Caballero	
SIZE AND TYPE OF BIT 4-inch Hollow Stem Auger	**LANGAN REP.** Patrick Stovall	

METHOD OF INSTALLATION

ADT drilled SB-18 to 15' bgs. Borehole was backfilled with a combination of IDW and Filpro #2 sand. ADT advanced a 4-inch hollow stem auger to 12 feet bgs. After the PVC well screen and riser were installed, the annulus was backfilled with Fipro #2 clean sand and sealed with bentonite above the well pack. A flushmount manhole was concrete installed at ground surface.

METHOD OF WELL DEVELOPMENT

ADT used a whale pump to purge up to 3 well volumes into a 55-gallon drum.
Groundwater was purged until clear of sediment.

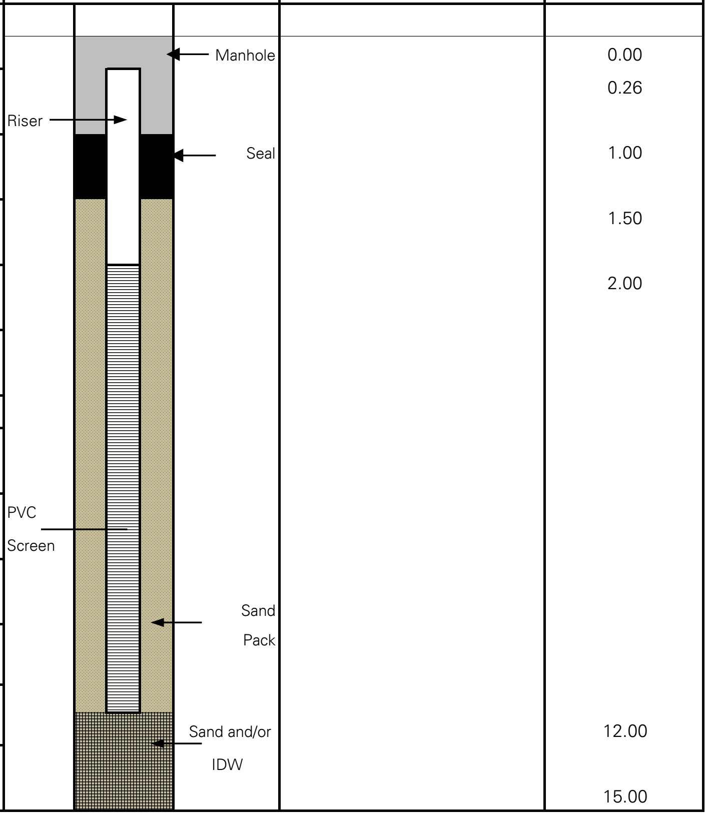
TYPE OF CASING Solid Schedule 40 PVC	**DIAMETER** 2-inch	**TYPE OF BACKFILL MATERIAL** Combination of non-impacted IDW and Filpro #2 Sand
TYPE OF SCREEN Schedule 40 0.01-inch slotted PVC	**DIAMETER** 2-inch	**TYPE OF SEAL MATERIAL** Hydrated bentonite chips
BOREHOLE DIAMETER 4-inch		**TYPE OF FILTER MATERIAL** Filpro #2 Sand

	ELEVATION (ft NAVD88)	DEPTH (ft bgs)
TOP OF CASING	7.02	0.26
TOP OF SEAL	6.28	1.00
TOP OF FILTER	5.78	1.50
TOP OF SCREEN	5.28	2.00
BOTTOM OF BORING	-7.72	15.00
SCREEN LENGTH		10 feet
SLOT SIZE		0.01-inch

GROUNDWATER ELEVATIONS

ELEVATION (ft NAVD88)	DATE	DEPTH TO WATER (ft bgs)
0.63	2/20/2020	6.39

WELL DETAILS	SUMMARY SOIL CLASSIFICATION	DEPTH (ft bgs)



Notes:

NAVD88 = North American Vertical Datum of 1988

IDW = Investigation Derived Waste

bgs = below ground surface

LANGAN

WELL CONSTRUCTION SUMMARY

Well No. MW-12

PROJECT 1607 Surf Avenue	**PROJECT NO.** 170599501
LOCATION Brooklyn, NY	**GROUND ELEVATION (ft NAVD88)** 7.11
DRILLING AGENCY ADT	**DATE STARTED** 2/5/2020 **DATE FINISHED** 2/5/2020
DRILLING EQUIPMENT Geoprobe 7822 DT	**DRILLER** Luke Caballero
SIZE AND TYPE OF BIT 4-inch Hollow Stem Auger	**LANGAN REP.** Patrick Stovall

METHOD OF INSTALLATION

ADT drilled SB-20 to 12' bgs. ADT advanced a 4-inch hollow stem auger to 12 feet bgs. After the PVC well screen and riser were installed, the annulus was backfilled with Fipro #2 clean sand and sealed with bentonite above the well pack. A flushmount manhole was concrete installed at ground surface.

METHOD OF WELL DEVELOPMENT

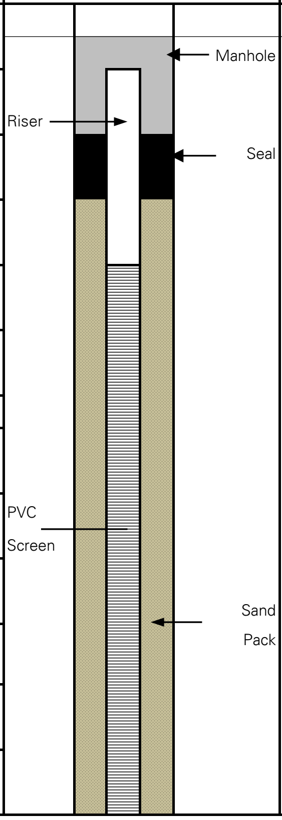
ADT used a whale pump to purge up to 3 well volumes into a 55-gallon drum.
Groundwater was purged until clear of sediment.

TYPE OF CASING Solid Schedule 40 PVC	**DIAMETER** 2-inch	**TYPE OF BACKFILL MATERIAL** None
TYPE OF SCREEN Schedule 40 0.01-inch slotted PVC	**DIAMETER** 2-inch	**TYPE OF SEAL MATERIAL** Hydrated bentonite chips
BOREHOLE DIAMETER 4-inch		**TYPE OF FILTER MATERIAL** Filpro #2 Sand

	ELEVATION (ft NAVD88)	DEPTH (ft bgs)
TOP OF CASING	6.89	0.22
TOP OF SEAL	6.11	1.00
TOP OF FILTER	5.61	1.50
TOP OF SCREEN	5.11	2.00
BOTTOM OF BORING	-4.89	12.00
SCREEN LENGTH		10 feet
SLOT SIZE		0.01-inch

GROUNDWATER ELEVATIONS

ELEVATION (ft NAVD88)	DATE	DEPTH TO WATER (ft bgs)
0.04	2/20/2020	6.85

WELL DETAILS	SUMMARY SOIL CLASSIFICATION	DEPTH (ft bgs)
		0.00 0.22 1.00 1.50 2.00 12.00

Notes:

NAVD88 = North American Vertical Datum of 1988

IDW = Investigation Derived Waste

bgs = below ground surface

APPENDIX E

GROUNDWATER SAMPLING LOGS

GROUNDWATER SAMPLING FIELD LOG

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	1607 Surf Avenue	**Well No:**	MW-1	**Water Quality Device Model:**	Horiba U-52	**Weather:**	40s F, Cloudy	**Sample(s):**	MW-1_021820 MS/MSD
Project Number:	170599501	**Well Depth:**	12	**Pine Number:**	32096	**Background PID (ppm):**	0.0		
Site Location:	Brooklyn, NY	**Well Diameter:**	2	**Pump Make and Model:**	Peri Pump	**PID Beneath Inner Cap (ppm):**	1.6		
Sampling Personnel:	Patrick Stovall	**Well Screen Interval:**	2 to 12	**Pine Number:**	10966	**Pump Intake Depth (ft bgs):**	8.00	**Sample Date:**	2/18/2020
				Tubing Diameter:	1/4 ID x 3/8 OD	**Depth to Water Before Purge:**	—	**Sample Time:**	9:45

STABILIZATION = 3 successive readings within limits

Start at 15:00 TIME	**TEMP** ^{o}Celsius (+/- 3%)	**PH** (+/- 0.1)	**ORP** mV (+/- 10mV)	**CONDUCTIVITY** mS/cm (+/- 3%)	**TURBIDITY** ntu (+/- 10%) above 5 NTU	**DO** mg/l (+/- 10%) above 0.5 mg/l	**DTW** ft Drawdown < 0.33 ft	**Flow Rate** (gpm) <0.13 gpm)	**Cumulative Discharge Volume (Gal)**	**NOTES** color, odor etc.	**Stabilized?**
BEGIN PURGING											
9:15	10.37	6.33	2	0.660	170.0	0.00	—	0.05	0.25	no color, no odor	**N/A**
9:20	11.62	6.63	-41	0.617	97.3	0.00	—	0.05	0.5	no color, no odor	**N/A**
9:25	11.79	6.69	-49	0.609	56.6	0.00	—	0.1	1	no color, no odor	**N**
9:30	11.67	6.72	-51	0.610	7.7	0.00	—	0.1	1.25	no color, no odor	**N**
9:35	11.69	6.73	-53	0.608	2.3	0.00	—	0.1	1.5	no color, no odor	**N**
9:40	11.78	6.75	-54	0.605	0.3	0.00	—	0.05	1.75	no color, no odor	**N**
9:45	11.81	6.75	-54	0.603	0.0	0.00	—	0.05	2	no color, no odor	**Y**

Notes:

1. Depth to water readings not taken due to PFAS sampling.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit
11. Samples were collected eafter parameter stabilization. If parameters did not reach stabliziation, samples were collected after one hour of purging.

GROUNDWATER SAMPLING FIELD LOG

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	1607 Surf Avenue	**Well No:**	MW-2	**Water Quality Device Model:**	Horiba U-52	**Weather:**	30s F, Clear	**Sample(s):**	MW-2_021420
Project Number:	170599501	**Well Depth:**	12	**Pine Number:**	32096	**Background PID (ppm):**	0.0		
Site Location:	Brooklyn, NY	**Well Diameter:**	2	**Pump Make and Model:**	Peri Pump	**PID Beneath Inner Cap (ppm):**	0.0		
Sampling Personnel:	Patrick Stovall	**Well Screen Interval:**	2 to 12	**Pine Number:**	10966	**Pump Intake Depth (ft bgs):**	8.00	**Sample Date:**	2/14/2020
				Tubing Diameter:	1/4 ID x 3/8 OD	**Depth to Water Before Purge:**	—	**Sample Time:**	10:25

STABILIZATION = 3 successive readings within limits

Start at 15:00 TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
9:25	8.86	6.46	93	0.621	34.1	0.33	—	0.05	0.25	no color, no odor	**N/A**
9:30	10.95	6.83	-32	0.716	146.0	0.00	—	0.05	0.5	no color, no odor	**N/A**
9:35	11.48	7.10	-62	0.734	124.0	0.00	—	0.05	0.75	no color, no odor	**N**
9:40	11.51	7.13	-66	0.786	19.1	0.00	—	0.1	1.25	no color, no odor	**N**
9:45	11.83	7.17	-66	0.815	3.3	0.00	—	0.1	1.75	no color, no odor	**N**
9:50	11.71	7.22	-68	0.859	1.3	0.00	—	0.1	2.25	no color, no odor	**N**
9:55	11.83	7.23	-66	0.877	0.8	0.00	—	0.1	2.75	no color, no odor	**N**
10:00	11.80	7.24	-66	0.895	0.5	0.00	—	0.1	3.25	no color, no odor	**N**
10:05	11.90	7.25	-66	0.908	0.3	0.00	—	0.1	3.75	no color, no odor	**N**
10:10	11.76	7.32	-66	0.950	0.3	0.00	—	0.1	4.25	no color, no odor	**N**
10:15	12.10	7.27	-67	0.986	0.3	0.00	—	0.05	4.5	no color, no odor	**N**
10:20	12.24	7.28	-67	1.000	0.4	0.00	—	0.05	4.75	no color, no odor	**N**
10:25	12.45	7.29	-70	1.500	1.2	0.00	—	0.1	5.25	no color, no odor	**N**

Notes:

1. Depth to water readings not taken due to PFAS sampling.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit
11. Samples were collected eafter parameter stabilization. If parameters did not reach stabliziation, samples were collected after one hour of purging.

GROUNDWATER SAMPLING FIELD LOG

Project Information		**Well Information**		**Equipment Information**		**Sampling Conditions**		**Sampling Information**	
Project Name:	1607 Surf Avenue	**Well No:**	MW-3	**Water Quality Device Model:**	Horiba U-52	**Weather:**	40s F, Cloudy	**Sample(s):**	MW-3_021820
Project Number:	170599501	**Well Depth:**	12	**Pine Number:**	32096	**Background PID (ppm):**	0.0		
Site Location:	Brooklyn, NY	**Well Diameter:**	2	**Pump Make and Model:**	Peri Pump	**PID Beneath Inner Cap (ppm):**	0.0		
Sampling Personnel:	Patrick Stovall	**Well Screen Interval:**	2 to 12	**Pine Number:**	10966	**Pump Intake Depth (ft bgs):**	8.00	**Sample Date:**	2/18/2020
				Tubing Diameter:	1/4 ID x 3/8 OD	**Depth to Water Before Purge:**	---	**Sample Time:**	12:20

STABILIZATION = 3 successive readings within limits

Start at 15:00 TIME	**TEMP °Celsius (+/- 3%)**	**PH (+/- 0.1)**	**ORP mV (+/- 10mV)**	**CONDUCTIVITY mS/cm (+/- 3%)**	**TURBIDITY ntu (+/- 10%) above 5 NTU**	**DO mg/l (+/- 10%) above 0.5 mg/l**	**DTW ft Drawdown < 0.33 ft**	**Flow Rate (gpm) <0.13 gpm)**	**Cumulative Discharge Volume (Gal)**	**NOTES color, odor etc.**	**Stabilized?**
BEGIN PURGING											
11:50	12.18	7.30	-65	2.220	80.0	0.00	---	0.05	0.25	no color, no odor	**N/A**
11:55	12.49	7.41	-79	2.170	58.2	0.00	---	0.05	0.5	no color, no odor	**N/A**
12:00	12.79	7.46	-88	2.100	22.5	0.00	---	0.05	0.75	no color, no odor	**N**
12:05	13.00	7.46	-94	2.120	5.1	0.00	---	0.05	1.1	no color, no odor	**N**
12:10	13.13	7.46	-97	2.120	1.9	0.00	---	0.05	1.5	no color, no odor	**N**
12:15	13.12	7.46	-100	2.100	0.3	0.00	---	0.05	1.75	no color, no odor	**N**
12:20	13.12	7.46	-103	2.110	0.0	0.00	---	0.1	2.25	no color, no odor	**Y**

Notes:

1. Depth to water readings not taken due to PFAS sampling.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit
11. Samples were collected eafter parameter stabilization. If parameters did not reach stabliziation, samples were collected after one hour of purging.

GROUNDWATER SAMPLING FIELD LOG

Project Information		**Well Information**		**Equipment Information**		**Sampling Conditions**		**Sampling Information**	
Project Name:	1607 Surf Avenue	**Well No:**	MW-4	**Water Quality Device Model:**	Horiba U-52	**Weather:**	30s F, Clear	**Sample(s):**	MW-4_021420
Project Number:	170599501	**Well Depth:**	12	**Pine Number:**	32096	**Background PID (ppm):**	0.0		
Site Location:	Brooklyn, NY	**Well Diameter:**	2	**Pump Make and Model:**	Peri Pump	**PID Beneath Inner Cap (ppm):**	0.2		
Sampling Personnel:	Patrick Stovall	**Well Screen Interval:**	2 to 12	**Pine Number:**	10966	**Pump Intake Depth (ft bgs):**	8.00	**Sample Date:**	2/14/2020
				Tubing Diameter:	1/4 ID x 3/8 OD	**Depth to Water Before Purge:**	---	**Sample Time:**	11:25

STABILIZATION = 3 successive readings within limits

Start at 15:00 TIME	**TEMP** °Celsius (+/- 3%)	**PH** (+/- 0.1)	**ORP** mV (+/- 10mV)	**CONDUCTIVITY** mS/cm (+/- 3%)	**TURBIDITY** ntu (+/- 10%) above 5 NTU	**DO** mg/l (+/- 10%) above 0.5 mg/l	**DTW** ft Drawdown < 0.33 ft	**Flow Rate** (gpm) <0.13 gpm)	**Cumulative Discharge Volume (Gal)**	**NOTES** color, odor etc.	
BEGIN PURGING											
11:05	11.30	7.90	-90	2.130	3.5	0.69	---	---	0	no color, no odor	**N/A**
11:10	11.87	7.82	-104	2.210	3.3	0.00	---	0.05	0.25	no color, no odor	**N/A**
11:15	12.12	7.83	-115	2.260	2.8	0.00	---	0.1	0.75	no color, no odor	**N**
11:20	12.05	7.84	-119	2.300	1.9	0.00	---	0.1	1.25	no color, no odor	**N**
11:25	11.95	7.84	-121	2.320	1.2	0.00	---	0.1	1.5	no color, no odor	**Y**

Notes:

1. Depth to water readings not taken due to PFAS sampling.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit
11. Samples were collected eafter parameter stabilization. If parameters did not reach stabliziation, samples were collected after one hour of purging.

GROUNDWATER SAMPLING FIELD LOG

Project Information		**Well Information**		**Equipment Information**		**Sampling Conditions**		**Sampling Information**	
Project Name:	1607 Surf Avenue	**Well No:**	MW-5	**Water Quality Device Model:**	Horiba U-52	**Weather:**	40s F, Cloudy	**Sample(s):**	MW-5_021820
Project Number:	170599501	**Well Depth:**	12	**Pine Number:**	32096	**Background PID (ppm):**	0.0		
Site Location:	Brooklyn, NY	**Well Diameter:**	2	**Pump Make and Model:**	Peri Pump	**PID Beneath Inner Cap (ppm):**	0.8		
Sampling Personnel:	Patrick Stovall	**Well Screen Interval:**	2 to 12	**Pine Number:**	10966	**Pump Intake Depth (ft bgs):**	8.00	**Sample Date:**	2/18/2020
				Tubing Diameter:	1/4 ID x 3/8 OD	**Depth to Water Before Purge:**	—	**Sample Time:**	13:45

STABILIZATION = 3 successive readings within limits

Start at 15:00 TIME	**TEMP °Celsius (+/- 3%)**	**PH (+/- 0.1)**	**ORP mV (+/- 10mV)**	**CONDUCTIVITY mS/cm (+/- 3%)**	**TURBIDITY ntu (+/- 10%) above 5 NTU**	**DO mg/l (+/- 10%) above 0.5 mg/l**	**DTW ft Drawdown < 0.33 ft**	**Flow Rate (gpm) <0.13 gpm)**	**Cumulative Discharge Volume (Gal)**	**NOTES color, odor etc.**	**Stabilized?**
BEGIN PURGING											
13:25	12.10	7.58	-159	0.745	13.3	0.00	—	0.05	0.25	no color, no odor	**N/A**
13:30	12.13	7.48	-160	0.734	3.3	0.00	—	0.1	0.75	no color, no odor	**N/A**
13:35	12.15	7.45	-160	0.710	1.6	0.00	—	0.05	1	no color, no odor	**N**
13:40	12.22	7.41	-158	0.695	2.0	0.00	—	0.05	1.5	no color, no odor	**N**
13:45	12.23	7.40	-157	0.695	0.0	0.00	—	0.05	1.75	no color, no odor	**Y**

Notes:

1. Depth to water readings not taken due to PFAS sampling.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit
11. Samples were collected eafter parameter stabilization. If parameters did not reach stabliziation, samples were collected after one hour of purging.

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GROUNDWATER SAMPLING FIELD LOG

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	1607 Surf Avenue	**Well No:**	MW-6	**Water Quality Device Model:**	Horiba U-52	**Weather:**	30s F, Clear	**Sample(s):**	MW-6_021420
Project Number:	170599501	**Well Depth:**	12	**Pine Number:**	32096	**Background PID (ppm):**	0.0		
Site Location:	Brooklyn, NY	**Well Diameter:**	2	**Pump Make and Model:**	Peri Pump	**PID Beneath Inner Cap (ppm):**	0.0		
Sampling Personnel:	Patrick Stovall	**Well Screen Interval:**	2 to 12	**Pine Number:**	10966	**Pump Intake Depth (ft bgs):**	8.00	**Sample Date:**	2/14/2020
				Tubing Diameter:	1/4 ID x 3/8 OD	**Depth to Water Before Purge:**	---	**Sample Time:**	13:30

STABILIZATION = 3 successive readings within limits

Start at 15:00 TIME	**TEMP °Celsius (+/- 3%)**	**PH (+/- 0.1)**	**ORP mV (+/- 10mV)**	**CONDUCTIVITY mS/cm (+/- 3%)**	**TURBIDITY ntu (+/- 10%) above 5 NTU**	**DO mg/l (+/- 10%) above 0.5 mg/l**	**DTW ft Drawdown < 0.33 ft**	**Flow Rate (gpm) <0.13 gpm**	**Cumulative Discharge Volume (Gal)**	**NOTES color, odor etc.**	**Stabilized?**
BEGIN PURGING											
12:30	11.36	8.22	-55	0.676	152.0	1.02	---	0.05	0.25	no color, no odor	**N/A**
12:35	12.13	7.80	-119	0.820	106.0	0.00	---	0.1	0.75	no color, no odor	**N/A**
12:40	12.21	7.80	-122	0.854	78.3	0.00	---	0.1	1.25	no color, no odor	**N**
12:45	12.31	7.76	-126	0.874	69.6	0.00	---	0.05	1.5	no color, no odor	**N**
12:50	12.37	7.74	-127	0.884	41.2	0.00	---	0.1	2	no color, no odor	**N**
12:55	12.31	7.72	-127	0.895	23.3	0.00	---	0.1	2.5	no color, no odor	**N**
13:00	12.31	7.72	-129	0.897	19.7	0.00	---	0.1	3	no color, no odor	**N**
13:05	12.33	7.72	-129	0.900	8.3	0.00	---	0.05	3.25	no color, no odor	**N**
13:10	12.47	7.71	-129	0.900	6.7	0.00	---	0.1	3.75	no color, no odor	**N**
13:15	12.28	7.71	-130	0.900	6.1	0.00	---	0.1	4.25	no color, no odor	**N**
13:20	12.40	7.70	-130	0.900	5.6	0.00	---	0.1	4.75	no color, no odor	**N**
13:25	12.22	7.69	-131	0.910	6.1	0.00	---	0.1	5.25	no color, no odor	**Y**

Notes:

1. Depth to water readings not taken due to PFAS sampling.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit
11. Samples were collected eafter parameter stabilization. If parameters did not reach stabliziation, samples were collected after one hour of purging.

GROUNDWATER SAMPLING FIELD LOG

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	1607 Surf Avenue	**Well No:**	MW-7	**Water Quality Device Model:**	Horiba U-52	**Weather:**	40s F, Cloudy	**Sample(s):**	MW-7_021820
Project Number:	170599501	**Well Depth:**	12	**Pine Number:**	32096	**Background PID (ppm):**	0.0		
Site Location:	Brooklyn, NY	**Well Diameter:**	2	**Pump Make and Model:**	Peri Pump	**PID Beneath Inner Cap (ppm):**	0.3		
Sampling Personnel:	Patrick Stovall	**Well Screen Interval:**	2 to 12	**Pine Number:**	10966	**Pump Intake Depth (ft bgs):**	8.00	**Sample Date:**	2/18/2020
				Tubing Diameter:	1/4 ID x 3/8 OD	**Depth to Water Before Purge:**	---	**Sample Time:**	15:10

STABILIZATION = 3 successive readings within limits

Start at 15:00 TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
14:50	11.49	7.57	-69	0.621	40.4	0.00	---	0.05	0.25	no color, no odor	**N/A**
14:55	11.44	7.39	-87	0.679	7.4	0.00	---	0.05	0.5	no color, no odor	**N/A**
15:00	11.37	7.37	-91	0.680	4.9	0.00	---	0.05	0.75	no color, no odor	**N**
15:05	11.33	7.35	-95	0.680	2.5	0.00	---	0.05	1	no color, no odor	**N**
15:10	11.48	7.36	-96	0.682	4.9	0.00	---	0.05	1.25	no color, no odor	**Y**

Notes:

1. Depth to water readings not taken due to PFAS sampling.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit
11. Samples were collected eafter parameter stabilization. If parameters did not reach stabliziation, samples were collected after one hour of purging.

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GROUNDWATER SAMPLING FIELD LOG

Project Information		**Well Information**		**Equipment Information**		**Sampling Conditions**		**Sampling Information**	
Project Name:	1607 Surf Avenue	**Well No:**	MW-8	**Water Quality Device Model:**	Horiba U-52	**Weather:**	40s F, Clear	**Sample(s):**	MW-8_021920 GWDUP01_021920
Project Number:	170599501	**Well Depth:**	12	**Pine Number:**	32096	**Background PID (ppm):**	0.0		
Site Location:	Brooklyn, NY	**Well Diameter:**	2	**Pump Make and Model:**	Peri Pump	**PID Beneath Inner Cap (ppm):**	0.0		
Sampling Personnel:	Patrick Stovall	**Well Screen Interval:**	2 to 12	**Pine Number:**	10966	**Pump Intake Depth (ft bgs):**	8.00	**Sample Date:**	2/19/2020
				Tubing Diameter:	1/4 ID x 3/8 OD	**Depth to Water Before Purge:**	—	**Sample Time:**	9:30

STABILIZATION = 3 successive readings within limits

Start at 15:00 TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
9:05	11.63	5.40	-41	1.330	126.0	0.00	—	0.05	0.25	no color, no odor	**N/A**
9:10	12.14	5.35	-56	1.290	5.0	0.00	—	0.1	0.75	no color, no odor	**N/A**
9:15	12.11	5.32	-48	1.250	1.9	0.00	—	0.1	1.25	no color, no odor	**N**
9:20	12.17	5.29	-49	1.420	0.0	0.00	—	0.1	1.75	no color, no odor	**N**
9:25	12.24	5.28	-50	1.420	0.0	0.00	—	0.1	2.25	no color, no odor	**N**
9:30	12.27	5.27	-52	1.410	0.0	0.00	—	0.05	2.5	no color, no odor	**Y**

Notes:

1. Depth to water readings not taken due to PFAS sampling.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit
11. Samples were collected eafter parameter stabilization. If parameters did not reach stabliziation, samples were collected after one hour of purging.

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GROUNDWATER SAMPLING FIELD LOG

Project Information		**Well Information**		**Equipment Information**		**Sampling Conditions**		**Sampling Information**	
Project Name:	1607 Surf Avenue	**Well No:**	MW-9	**Water Quality Device Model:**	Horiba U-52	**Weather:**	30s F, Clear	**Sample(s):**	MW-9_021420
Project Number:	170599501	**Well Depth:**	12	**Pine Number:**	32096	**Background PID (ppm):**	0.0		
Site Location:	Brooklyn, NY	**Well Diameter:**	2	**Pump Make and Model:**	Peri Pump	**PID Beneath Inner Cap (ppm):**	0.0		
Sampling Personnel:	Patrick Stovall	**Well Screen Interval:**	2 to 12	**Pine Number:**	10966	**Pump Intake Depth (ft bgs):**	8.00	**Sample Date:**	2/14/2020
				Tubing Diameter:	1/4 ID x 3/8 OD	**Depth to Water Before Purge:**	—	**Sample Time:**	14:50

STABILIZATION = 3 successive readings within limits

Start at 15:00 **TIME**	**TEMP** **^{o}Celsius** **(+/- 3%)**	**PH** **(+/- 0.1)**	**ORP** **mV** **(+/- 10mV)**	**CONDUCTIVITY** **mS/cm** **(+/- 3%)**	**TURBIDITY** **ntu** **(+/- 10%) above 5 NTU**	**DO** **mg/l** **(+/- 10%) above 0.5 mg/l**	**DTW** **ft** **Drawdown < 0.33 ft**	**Flow Rate** **(gpm)** **<0.13 gpm)**	**Cumulative Discharge Volume (Gal)**	**NOTES** **color, odor etc.**	**Stabilized?**
BEGIN PURGING											
14:05	11.43	7.66	-86	1.240	123.0	0.00	—	0.05	0.25	no color, no odor	**N/A**
14:10	11.31	7.60	-101	1.180	50.7	0.00	—	0.1	0.75	no color, no odor	**N/A**
14:15	11.56	7.57	-113	1.130	23.0	0.00	—	0.1	1.25	no color, no odor	**N**
14:20	11.45	7.55	-114	1.150	15.1	0.00	—	0.1	1.5	no color, no odor	**N**
14:25	11.64	7.54	-115	1.140	6.5	0.00	—	0.1	1.75	no color, no odor	**N**
14:30	11.43	7.49	-113	1.300	5.4	0.00	—	0.1	2.25	no color, no odor	**N**
14:35	11.66	7.53	-113	1.310	4.3	0.00	—	0.05	2.5	no color, no odor	**N**
14:40	11.80	7.53	-112	1.370	3.5	0.00	—	0.1	3	no color, no odor	**N**
14:45	11.71	7.53	-112	1.390	3.2	0.00	—	0.05	3.25	no color, no odor	**N**
14:50	11.74	7.52	-111	1.370	2.9	0.00	—	0.1	3.75	no color, no odor	**Y**

Notes:

1. Depth to water readings not taken due to PFAS sampling.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit
11. Samples were collected eafter parameter stabilization. If parameters did not reach stabliziation, samples were collected after one hour of purging.

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GROUNDWATER SAMPLING FIELD LOG

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	1607 Surf Avenue	**Well No:**	MW-10	**Water Quality Device Model:**	Horiba U-52	**Weather:**	40s F, Clear	**Sample(s):**	MW-10_021920
Project Number:	170599501	**Well Depth:**	12	**Pine Number:**	32096	**Background PID (ppm):**	0.0		
Site Location:	Brooklyn, NY	**Well Diameter:**	2	**Pump Make and Model:**	Peri Pump	**PID Beneath Inner Cap (ppm):**	0.0		
Sampling Personnel:	Patrick Stovall	**Well Screen Interval:**	2 to 12	**Pine Number:**	10966	**Pump Intake Depth (ft bgs):**	8.00	**Sample Date:**	2/19/2020
				Tubing Diameter:	1/4 ID x 3/8 OD	**Depth to Water Before Purge:**	—	**Sample Time:**	14:25

STABILIZATION = 3 successive readings within limits

Start at 15:00 TIME	**TEMP ^{o}Celsius (+/- 3%)**	**PH (+/- 0.1)**	**ORP mV (+/- 10mV)**	**CONDUCTIVITY mS/cm (+/- 3%)**	**TURBIDITY ntu (+/- 10%) above 5 NTU**	**DO mg/l (+/- 10%) above 0.5 mg/l**	**DTW ft Drawdown < 0.33 ft**	**Flow Rate (gpm) <0.13 gpm**	**Cumulative Discharge Volume (Gal)**	**NOTES color, odor etc.**	**Stabilized?**
BEGIN PURGING											
14:00	12.57	4.99	50	0.473	7.6	0.00	—	0.05	0.25	no color, no odor	**N/A**
14:05	12.31	4.77	58	0.481	3.6	0.00	—	0.1	0.75	no color, no odor	**N/A**
14:10	12.21	4.71	48	0.483	1.9	0.00	—	0.05	1	no color, no odor	**N**
14:15	12.11	4.65	38	0.485	1.2	0.00	—	0.05	1.25	no color, no odor	**N**
14:20	12.12	4.63	31	0.482	0.0	0.00	—	0.05	1.75	no color, no odor	**N**
14:25	12.05	4.61	29	0.484	0.0	0.00	—	0.1	2.25	no color, no odor	**Y**

Notes:

1. Depth to water readings not taken due to PFAS sampling.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit
11. Samples were collected eafter parameter stabilization. If parameters did not reach stabliziation, samples were collected after one hour of purging.

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GROUNDWATER SAMPLING FIELD LOG

Project Information		**Well Information**		**Equipment Information**		**Sampling Conditions**		**Sampling Information**	
Project Name:	1607 Surf Avenue	**Well No:**	MW-11	**Water Quality Device Model:**	Horiba U-52	**Weather:**	40s F, Clear	**Sample(s):**	MW-11_021920
Project Number:	170599501	**Well Depth:**	12	**Pine Number:**	32096	**Background PID (ppm):**	0.0		
Site Location:	Brooklyn, NY	**Well Diameter:**	2	**Pump Make and Model:**	Peri Pump	**PID Beneath Inner Cap (ppm):**	0.0		
Sampling Personnel:	Patrick Stovall	**Well Screen Interval:**	2 to 12	**Pine Number:**	10966	**Pump Intake Depth (ft bgs):**	8.00	**Sample Date:**	2/19/2020
				Tubing Diameter:	1/4 ID x 3/8 OD	**Depth to Water Before Purge:**	---	**Sample Time:**	13:00

STABILIZATION = 3 successive readings within limits

Start at 15:00 TIME	**TEMP ^{o}Celsius (+/- 3%)**	**PH (+/- 0.1)**	**ORP mV (+/- 10mV)**	**CONDUCTIVITY mS/cm (+/- 3%)**	**TURBIDITY ntu (+/- 10%) above 5 NTU**	**DO mg/l (+/- 10%) above 0.5 mg/l**	**DTW ft Drawdown < 0.33 ft**	**Flow Rate (gpm) <0.13 gpm)**	**Cumulative Discharge Volume (Gal)**	**NOTES color, odor etc.**	**Stabilized?**
BEGIN PURGING											
12:10	12.20	5.87	69	0.186	95.2	0.00	---	0.05	0.25	no color, no odor	**N/A**
12:15	12.60	5.47	59	0.178	72.5	0.00	---	0.05	0.5	no color, no odor	**N/A**
12:20	12.21	5.19	37	0.181	46.5	0.00	---	0.05	0.75	no color, no odor	**N**
12:25	12.86	5.09	22	0.190	27.5	0.00	---	0.05	1.25	no color, no odor	**N**
12:30	12.89	5.04	16	0.193	21.5	0.00	---	0.05	1.5	no color, no odor	**N**
12:35	12.81	5.02	13	0.199	15.3	0.00	---	0.1	2	no color, no odor	**N**
12:40	12.45	5.02	10	0.210	0.4	0.00	---	0.05	2.25	no color, no odor	**N**
12:45	12.64	4.99	6	0.213	0.2	0.00	---	0.1	2.75	no color, no odor	**N**
12:50	12.73	4.96	5	0.223	0.0	0.00	---	0.05	3	no color, no odor	**N**
12:55	12.89	4.96	3	0.229	0.0	0.00	---	0.1	3.5	no color, no odor	**N**
13:00	12.81	4.95	1	0.228	0.0	0.00	---	0.05	3.75	no color, no odor	**Y**

Notes:

1. Depth to water readings not taken due to PFAS sampling.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit
11. Samples were collected eafter parameter stabilization. If parameters did not reach stabliziation, samples were collected after one hour of purging.

GROUNDWATER SAMPLING FIELD LOG

Project Information		**Well Information**		**Equipment Information**		**Sampling Conditions**		**Sampling Information**	
Project Name:	1607 Surf Avenue	**Well No:**	MW-12	**Water Quality Device Model:**	Horiba U-52	**Weather:**	40s F, Clear	**Sample(s):**	MW-12_021920
Project Number:	170599501	**Well Depth:**	12	**Pine Number:**	32096	**Background PID (ppm):**	0.0		
Site Location:	Brooklyn, NY	**Well Diameter:**	2	**Pump Make and Model:**	Peri Pump	**PID Beneath Inner Cap (ppm):**	0.0		
Sampling Personnel:	Patrick Stovall	**Well Screen Interval:**	2 to 12	**Pine Number:**	10966	**Pump Intake Depth (ft bgs):**	8.00	**Sample Date:**	2/19/2020
				Tubing Diameter:	1/4 ID x 3/8 OD	**Depth to Water Before Purge:**	—	**Sample Time:**	11:05

STABILIZATION = 3 successive readings within limits

Start at 15:00 TIME	**TEMP ^{o}Celsius (+/- 3%)**	**PH (+/- 0.1)**	**ORP mV (+/- 10mV)**	**CONDUCTIVITY mS/cm (+/- 3%)**	**TURBIDITY ntu (+/- 10%) above 5 NTU**	**DO mg/l (+/- 10%) above 0.5 mg/l**	**DTW ft Drawdown < 0.33 ft**	**Flow Rate (gpm) <0.13 gpm)**	**Cumulative Discharge Volume (Gal)**	**NOTES color, odor etc.**	**Stabilized?**
BEGIN PURGING											
10:45	12.52	5.34	-4	1.010	270.0	0.00	—	0.05	0.25	no color, no odor	**N/A**
10:50	12.61	5.25	-57	1.120	94.5	0.00	—	0.05	0.5	no color, no odor	**N/A**
10:55	12.56	5.20	-70	1.200	4.8	0.00	—	0.15	1.25	no color, no odor	**N**
11:00	12.59	5.19	-72	1.210	4.9	0.00	—	0.15	1.5	no color, no odor	**N**
11:05	12.64	5.18	-76	1.230	1.2	0.00	—	0.15	1.75	no color, no odor	**Y**

Notes:
1. Depth to water readings not taken due to PFAS sampling.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit
11. Samples were collected eafter parameter stabilization. If parameters did not reach stabliziation, samples were collected after one hour of purging.

APPENDIX F

SOIL VAPOR CONSTRUCTION AND SAMPLING LOGS

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-1

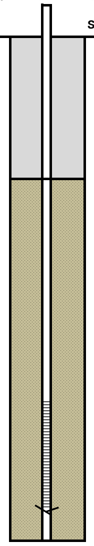
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: ADT	**INSTALLATION DATE STARTED:** 2/6/2020 **DATE FINISHED:** 2/6/2020
INSTALLATION FOREMAN: Luke Caballero	**SAMPLE DATE STARTED:** 2/12/2020 **DATE FINISHED:** 2/12/2020
INSTALLATION EQUIPMENT: Geoprobe 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Patrick Stovall	**SAMPLER:** Patrick Stovall
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-6 mph Precipitation: None Pressure: 29.99 inHg

METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0
HELIUM TEST IN BUCKET(%):	22.4%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/12/2020 9:37
SAMPLE STOP DATE/TIME:	2/12/2020 11:27
TOTAL SAMPLE TIME (MIN):	110
FLOW RATE (L/MIN):	0.055
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	2950
REGULATOR SERIAL NUMBER:	979
CAN START VACUUM PRESS. (" HG):	-30.28
CAN STOP VACUUM PRESS. (" HG):	-3.83

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH** (FEET FROM SURFACE)	**NOTES**
SURFACE SURFACE 		
Top of Seal	0	
Top of Pack	0.5	
	5	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-2

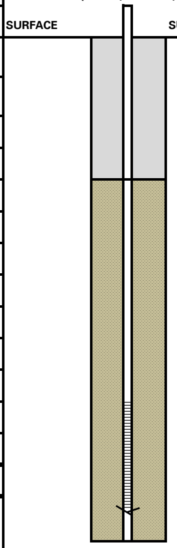
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: ADT	**INSTALLATION DATE STARTED:** 2/6/2020 **DATE FINISHED:** 2/6/2020
INSTALLATION FOREMAN: Luke Caballero	**SAMPLE DATE STARTED:** 2/13/2020 **DATE FINISHED:** 2/13/2020
INSTALLATION EQUIPMENT: Geoprobe 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Patrick Stovall	**SAMPLER:** Patrick Stovall
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-4 mph Precipitation: Drizzle Pressure: 29.65 inHg

METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	21.9%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/13/2020 8:45
SAMPLE STOP DATE/TIME:	2/13/2020 10:43
TOTAL SAMPLE TIME (MIN):	118
FLOW RATE (L/MIN):	0.051
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	2572
REGULATOR SERIAL NUMBER:	778
CAN START VACUUM PRESS. (" HG):	-30.21
CAN STOP VACUUM PRESS. (" HG):	-3.58



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	0	
Top of Pack	0.5	
	5	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-3

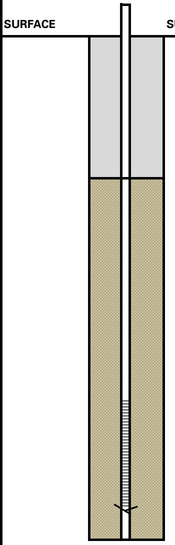
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: ADT	**INSTALLATION DATE STARTED:** 2/6/2020 **DATE FINISHED:** 2/6/2020
INSTALLATION FOREMAN: Luke Caballero	**SAMPLE DATE STARTED:** 2/12/2020 **DATE FINISHED:** 2/12/2020
INSTALLATION EQUIPMENT: Geoprobe 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Patrick Stovall	**SAMPLER:** Patrick Stovall
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-6 mph Precipitation: None Pressure: 29.99 inHg

METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	22.1%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/12/2020 12:17
SAMPLE STOP DATE/TIME:	2/12/2020 14:17
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.05
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	1586
REGULATOR SERIAL NUMBER:	753
CAN START VACUUM PRESS. (" HG):	-30.6
CAN STOP VACUUM PRESS. (" HG):	-3.76



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
Top of Seal	0	
Top of Pack	0.5	
	5	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-4

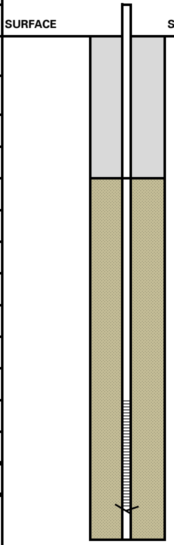
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: ADT	**INSTALLATION DATE STARTED:** 2/11/2020 **DATE FINISHED:** 2/11/2020
INSTALLATION FOREMAN: Luke Caballero	**SAMPLE DATE STARTED:** 2/12/2020 **DATE FINISHED:** 2/12/2020
INSTALLATION EQUIPMENT: Geoprobe 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Patrick Stovall	**SAMPLER:** Patrick Stovall
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-6 mph Precipitation: None Pressure: 29.99 inHg

METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	21.3%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/12/2020 9:55
SAMPLE STOP DATE/TIME:	2/12/2020 11:55
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.05
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	1800
REGULATOR SERIAL NUMBER:	352
CAN START VACUUM PRESS. (" HG):	-30.54
CAN STOP VACUUM PRESS. (" HG):	-3.42



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	0	
Top of Pack	0.5	
	5	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-5

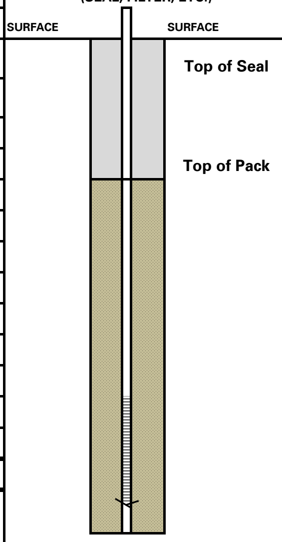
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501	
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA	
DRILLING FIRM OR LANGAN INSTALLER: ADT	**INSTALLATION DATE STARTED:** 2/7/2020	**DATE FINISHED:** 2/7/2020
INSTALLATION FOREMAN: Luke Caballero	**SAMPLE DATE STARTED:** 2/12/2020	**DATE FINISHED:** 2/12/2020
INSTALLATION EQUIPMENT: Geoprobe 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister	
INSPECTOR: Patrick Stovall	**SAMPLER:** Patrick Stovall	
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-6 mph Precipitation: None Pressure: 29.99 inHg	

METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	22.1%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/12/2020 11:00
SAMPLE STOP DATE/TIME:	2/12/2020 12:53
TOTAL SAMPLE TIME (MIN):	113
FLOW RATE (L/MIN):	0.053
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	3327
REGULATOR SERIAL NUMBER:	1132
CAN START VACUUM PRESS. (" HG):	-30.41
CAN STOP VACUUM PRESS. (" HG):	-3.3



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	0	
Top of Pack	0.5	
	5	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-6

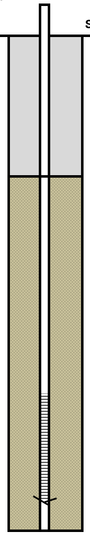
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: ADT	**INSTALLATION DATE STARTED:** 2/6/2020 **DATE FINISHED:** 2/6/2020
INSTALLATION FOREMAN: Luke Caballero	**SAMPLE DATE STARTED:** 2/13/2020 **DATE FINISHED:** 2/13/2020
INSTALLATION EQUIPMENT: Geoprobe 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Patrick Stovall	**SAMPLER:** Patrick Stovall
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-4 mph Precipitation: Drizzle Pressure: 29.65 inHg

METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	25.1%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/13/2020 9:36
SAMPLE STOP DATE/TIME:	2/13/2020 11:36
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.05
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	3079
REGULATOR SERIAL NUMBER:	252
CAN START VACUUM PRESS. (" HG):	-29.21
CAN STOP VACUUM PRESS. (" HG):	-4.05



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.) SURFACE SURFACE	**DEPTH (FEET FROM SURFACE)**	**NOTES**
Top of Seal	0	
Top of Pack	0.5	
	5	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-7

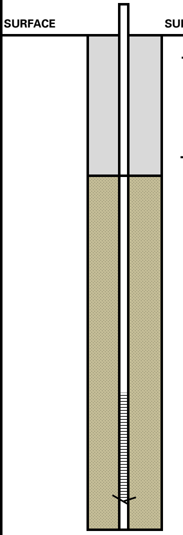
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: ADT	**INSTALLATION DATE STARTED:** 2/11/2020 **DATE FINISHED:** 2/11/2020
INSTALLATION FOREMAN: Luke Caballero	**SAMPLE DATE STARTED:** 2/12/2020 **DATE FINISHED:** 2/12/2020
INSTALLATION EQUIPMENT: Geoprobe 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Patrick Stovall	**SAMPLER:** Patrick Stovall
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-6 mph Precipitation: None Pressure: 29.99 inHg

METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	23.1%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/12/2020 8:55
SAMPLE STOP DATE/TIME:	2/12/2020 10:46
TOTAL SAMPLE TIME (MIN):	111
FLOW RATE (L/MIN):	0.054
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	3369
REGULATOR SERIAL NUMBER:	1013
CAN START VACUUM PRESS. (" HG):	-30.49
CAN STOP VACUUM PRESS. (" HG):	-3.34



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	0	
Top of Pack	0.5	
	5	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-8

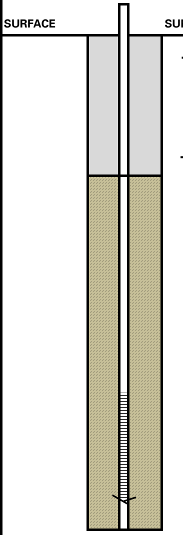
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: ADT	**INSTALLATION DATE STARTED:** 2/11/2020 **DATE FINISHED:** 2/11/2020
INSTALLATION FOREMAN: Luke Caballero	**SAMPLE DATE STARTED:** 2/12/2020 **DATE FINISHED:** 2/12/2020
INSTALLATION EQUIPMENT: Geoprobe 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Patrick Stovall	**SAMPLER:** Patrick Stovall
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-6 mph Precipitation: None Pressure: 29.99 inHg

METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	22.9%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/12/2020 8:41
SAMPLE STOP DATE/TIME:	2/12/2020 10:41
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.05
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	1981
REGULATOR SERIAL NUMBER:	1746
CAN START VACUUM PRESS. (" HG):	-30.58
CAN STOP VACUUM PRESS. (" HG):	-4.63



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	0	
Top of Pack	0.5	
	5	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-9

PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: ADT	**INSTALLATION DATE STARTED:** 2/7/2020 **DATE FINISHED:** 2/7/2020
INSTALLATION FOREMAN: Luke Caballero	**SAMPLE DATE STARTED:** 2/12/2020 **DATE FINISHED:** 2/12/2020
INSTALLATION EQUIPMENT: Geoprobe 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Patrick Stovall	**SAMPLER:** Patrick Stovall
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-6 mph Precipitation: None Pressure: 29.99 inHg

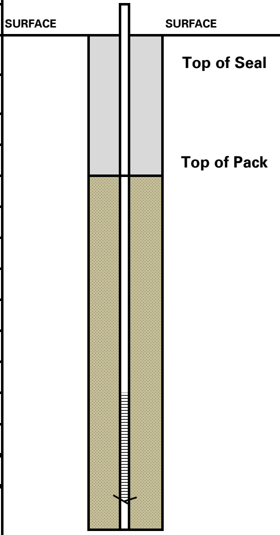
METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	22.5%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/12/2020 9:16
SAMPLE STOP DATE/TIME:	2/12/2020 11:15
TOTAL SAMPLE TIME (MIN):	119
FLOW RATE (L/MIN):	0.050
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	1905
REGULATOR SERIAL NUMBER:	1453
CAN START VACUUM PRESS. (" HG):	-30.33
CAN STOP VACUUM PRESS. (" HG):	-3.37

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	0	
Top of Pack	0.5	
	5	



SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-10

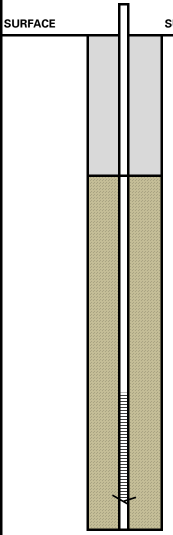
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: ADT	**INSTALLATION DATE STARTED:** 2/11/2020 **DATE FINISHED:** 2/11/2020
INSTALLATION FOREMAN: Luke Caballero	**SAMPLE DATE STARTED:** 2/13/2020 **DATE FINISHED:** 2/13/2020
INSTALLATION EQUIPMENT: Geoprobe 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Patrick Stovall	**SAMPLER:** Patrick Stovall
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-4 mph Precipitation: Drizzle Pressure: 29.65 inHg

METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	23.1%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/13/2020 10:33
SAMPLE STOP DATE/TIME:	2/13/2020 12:27
TOTAL SAMPLE TIME (MIN):	114
FLOW RATE (L/MIN):	0.053
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	790
REGULATOR SERIAL NUMBER:	798
CAN START VACUUM PRESS. (" HG):	-30.22
CAN STOP VACUUM PRESS. (" HG):	-2.89

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
 **Top of Seal**	0	
Top of Pack	0.5	
	5	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-11

PROJECT: 1607 Surf Avenue

PROJECT NO.: 170599501

LOCATION: Brooklyn, NY

SURFACE ELEVATION AND DATUM: NA

DRILLING FIRM OR LANGAN INSTALLER: ADT

INSTALLATION DATE STARTED: 2/10/2020 **DATE FINISHED:** 2/10/2020

INSTALLATION FOREMAN: Luke Caballero

SAMPLE DATE STARTED: 2/12/2020 **DATE FINISHED:** 2/12/2020

INSTALLATION EQUIPMENT: Geoprobe 7822 DT

TYPE OF SAMPLING DEVICE: 6-Liter Summa Canister

INSPECTOR: Patrick Stovall

SAMPLER: Patrick Stovall

POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.

WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):

Temp:	40s F
Wind:	N 0-6 mph
Precipitation:	None
Pressure:	29.99 inHg

METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing

TYPE OF MATERIAL ABOVE SEAL: NA

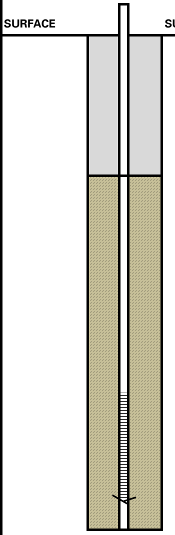
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long

SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.): Hydrated Bentonite Chips

BOREHOLE DIAMETER: 2-inches

FILTER PACK MATERIAL (Sand or Glass Beads): Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	24.2%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/12/2020 11:36
SAMPLE STOP DATE/TIME:	2/12/2020 13:36
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.05
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	3356
REGULATOR SERIAL NUMBER:	1450
CAN START VACUUM PRESS. (" HG):	-30.48
CAN STOP VACUUM PRESS. (" HG):	-3.72



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	0	
Top of Pack	0.5	
	5	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-12

PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501	
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA	
DRILLING FIRM OR LANGAN INSTALLER: ADT	**INSTALLATION DATE STARTED:** 2/11/2020	**DATE FINISHED:** 2/11/2020
INSTALLATION FOREMAN: Luke Caballero	**SAMPLE DATE STARTED:** 2/12/2020	**DATE FINISHED:** 2/12/2020
INSTALLATION EQUIPMENT: Geoprobe 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister	
INSPECTOR: Patrick Stovall	**SAMPLER:** Patrick Stovall	
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-6 mph Precipitation: None Pressure: 29.99 inHg	

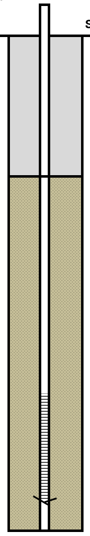
METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	20.1%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/12/2020 11:14
SAMPLE STOP DATE/TIME:	2/12/2020 13:14
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.05
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	3386
REGULATOR SERIAL NUMBER:	1828
CAN START VACUUM PRESS. (" HG):	-30.69
CAN STOP VACUUM PRESS. (" HG):	-4.77

IMPLANT/PROBE DETAILS **(SEAL, FILTER, ETC.)**	**DEPTH** **(FEET FROM SURFACE)**	**NOTES**
SURFACE **SURFACE**		
Top of Seal	0	
Top of Pack	0.5	
	5	



SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.

21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-13

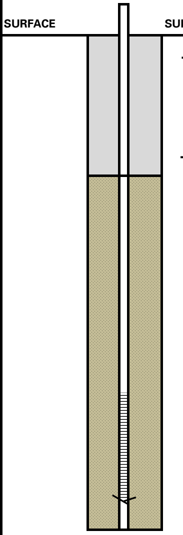
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: ADT	**INSTALLATION DATE STARTED:** 2/5/2020 **DATE FINISHED:** 2/5/2020
INSTALLATION FOREMAN: Luke Caballero	**SAMPLE DATE STARTED:** 2/13/2020 **DATE FINISHED:** 2/13/2020
INSTALLATION EQUIPMENT: Geoprobe 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Patrick Stovall	**SAMPLER:** Patrick Stovall
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-4 mph Precipitation: Drizzle Pressure: 29.65 inHg

METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	20.9%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/13/2020 8:26
SAMPLE STOP DATE/TIME:	2/13/2020 10:26
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.05
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	934
REGULATOR SERIAL NUMBER:	1171
CAN START VACUUM PRESS. (" HG):	-30.58
CAN STOP VACUUM PRESS. (" HG):	-4.46



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	0	
Top of Pack	0.5	
	5	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.

21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-14

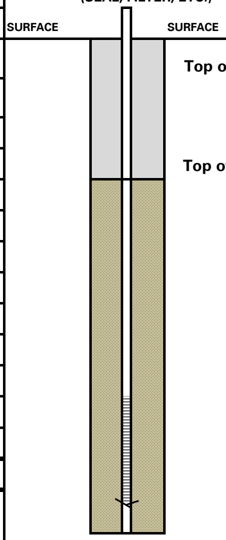
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: ADT	**INSTALLATION DATE STARTED:** 2/5/2020 **DATE FINISHED:** 2/5/2020
INSTALLATION FOREMAN: Luke Caballero	**SAMPLE DATE STARTED:** 2/13/2020 **DATE FINISHED:** 2/13/2020
INSTALLATION EQUIPMENT: Geoprobe 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Patrick Stovall	**SAMPLER:** Patrick Stovall
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-4 mph Precipitation: Drizzle Pressure: 29.65 inHg

METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	24.1%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/13/2020 11:12
SAMPLE STOP DATE/TIME:	2/13/2020 13:00
TOTAL SAMPLE TIME (MIN):	108
FLOW RATE (L/MIN):	0.056
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	1978
REGULATOR SERIAL NUMBER:	1462
CAN START VACUUM PRESS. (" HG):	-30.08
CAN STOP VACUUM PRESS. (" HG):	-2.76



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
Top of Seal	0	
Top of Pack	0.5	
	5	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.

21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-15

PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: ADT	**INSTALLATION DATE STARTED:** 2/5/2020 **DATE FINISHED:** 2/5/2020
INSTALLATION FOREMAN: Luke Caballero	**SAMPLE DATE STARTED:** 2/13/2020 **DATE FINISHED:** 2/13/2020
INSTALLATION EQUIPMENT: Geoprobe 7822 DT	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Patrick Stovall	**SAMPLER:** Patrick Stovall
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-4 mph Precipitation: Drizzle Pressure: 29.65 inHg

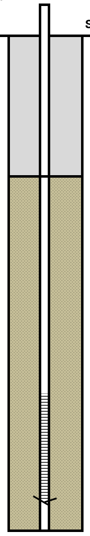
METHOD OF INSTALLATION AND PURGING:

ADT advanced Geoprobe drill bit to to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfill with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	10
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	22.9%
HELIUM TEST IN TUBE (PPM):	0%
SAMPLE START DATE/TIME:	2/13/2020 8:14
SAMPLE STOP DATE/TIME:	2/13/2020 10:14
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.05
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	2973
REGULATOR SERIAL NUMBER:	1821
CAN START VACUUM PRESS. (" HG):	-30.11
CAN STOP VACUUM PRESS. (" HG):	-4.41

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
SURFACE SURFACE		
Top of Seal	0	
Top of Pack	0.5	
	5	



SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.

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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-16

PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services Corp.	**INSTALLATION DATE STARTED:** 12/3/2020 **DATE FINISHED:** 12/3/2020
INSTALLATION FOREMAN: Jose Garcia	**SAMPLE DATE STARTED:** 12/3/2020 **DATE FINISHED:** 12/3/2020
INSTALLATION EQUIPMENT: Geoprobe 6610 DT	**TYPE OF SAMPLING DEVICE:** 2.7-Liter Summa Canister
INSPECTOR: Jack Donelan	**SAMPLER:** Jack Donelan
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: SW 0-9 mph Precipitation: None Pressure: 29.95 inHg

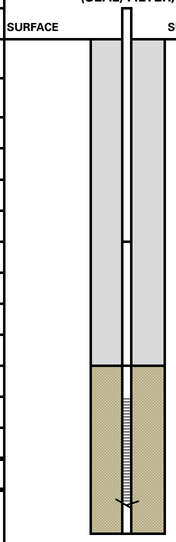
METHOD OF INSTALLATION AND PURGING:

AARCO Environmental Services Corp. advanced Geoprobe drill bit to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfilled with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	200
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	13.2%
HELIUM TEST IN TUBE (PPM):	0
SAMPLE START DATE/TIME:	11:43:00 AM
SAMPLE STOP DATE/TIME:	1:43:00 PM
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.023
VOLUME OF SAMPLE (LITERS):	2.7
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	144
REGULATOR SERIAL NUMBER:	1088
CAN START VACUUM PRESS. (" HG):	-30.90
CAN STOP VACUUM PRESS. (" HG):	-7.32

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	0	
Top of Pack	4.5	
	5	



SAMPLE LOCATION SKETCH

NOTES

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-18

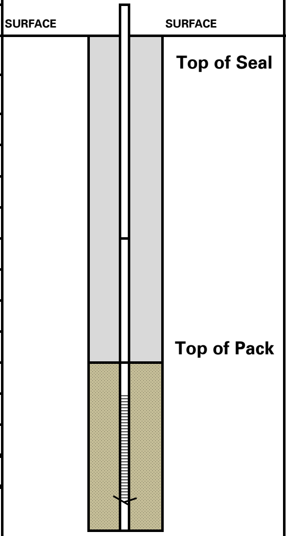
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services Corp.	**INSTALLATION DATE STARTED:** 12/3/2020 **DATE FINISHED:** 12/3/2020
INSTALLATION FOREMAN: Jose Garcia	**SAMPLE DATE STARTED:** 12/3/2020 **DATE FINISHED:** 12/3/2020
INSTALLATION EQUIPMENT: Geoprobe 6610 DT	**TYPE OF SAMPLING DEVICE:** 2.7-Liter Summa Canister
INSPECTOR: Jack Donelan	**SAMPLER:** Jack Donelan
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: SW 0-9 mph Precipitation: None Pressure: 29.95 inHg

METHOD OF INSTALLATION AND PURGING:

AARCO Environmental Services Corp. advanced Geoprobe drill bit to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfilled with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	200
PID AFTER PURGE (PPM):	0.1
HELIUM TEST IN BUCKET(%):	24.7%
HELIUM TEST IN TUBE (PPM):	0
SAMPLE START DATE/TIME:	10:12:00 AM
SAMPLE STOP DATE/TIME:	12:12:00 PM
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.018
VOLUME OF SAMPLE (LITERS):	2.7
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	3119
REGULATOR SERIAL NUMBER:	1143
CAN START VACUUM PRESS. (" HG):	-30.87
CAN STOP VACUUM PRESS. (" HG):	-7.27



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	0	
Top of Pack	4.5	
	5	

SAMPLE LOCATION SKETCH

NOTES

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-17

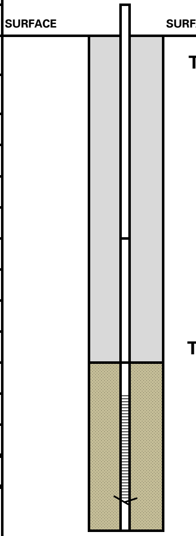
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501	
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA	
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services Corp.	**INSTALLATION DATE STARTED:** 12/3/2020	**DATE FINISHED:** 12/3/2020
INSTALLATION FOREMAN: Jose Garcia	**SAMPLE DATE STARTED:** 12/3/2020	**DATE FINISHED:** 12/3/2020
INSTALLATION EQUIPMENT: Geoprobe 6610 DT	**TYPE OF SAMPLING DEVICE:** 2.7-Liter Summa Canister	
INSPECTOR: Jack Donelan	**SAMPLER:** Jack Donelan	
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: SW 0-9 mph Precipitation: None Pressure: 29.95 inHg	

METHOD OF INSTALLATION AND PURGING:

AARCO Environmental Services Corp. advanced Geoprobe drill bit to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfilled with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	200
PID AFTER PURGE (PPM):	0.1
HELIUM TEST IN BUCKET(%):	15.0%
HELIUM TEST IN TUBE (PPM):	0
SAMPLE START DATE/TIME:	10:34:00 AM
SAMPLE STOP DATE/TIME:	12:34:00 PM
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.023
VOLUME OF SAMPLE (LITERS):	2.7
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	3422
REGULATOR SERIAL NUMBER:	1335
CAN START VACUUM PRESS. (" HG):	-30.61
CAN STOP VACUUM PRESS. (" HG):	-6.48



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
Top of Seal	0	
Top of Pack	4.5	
	5	

SAMPLE LOCATION SKETCH

NOTES

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-19

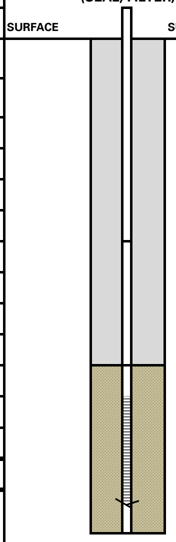
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services Corp.	**INSTALLATION DATE STARTED:** 12/3/2020 **DATE FINISHED:** 12/3/2020
INSTALLATION FOREMAN: Jose Garcia	**SAMPLE DATE STARTED:** 12/3/2020 **DATE FINISHED:** 12/3/2020
INSTALLATION EQUIPMENT: Geoprobe 6610 DT	**TYPE OF SAMPLING DEVICE:** 2.7-Liter Summa Canister
INSPECTOR: Jack Donelan	**SAMPLER:** Jack Donelan
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: SW 0-9 mph Precipitation: None Pressure: 29.95 inHg

METHOD OF INSTALLATION AND PURGING:

AARCO Environmental Services Corp. advanced Geoprobe drill bit to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfilled with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	200
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	12.9%
HELIUM TEST IN TUBE (PPM):	0
SAMPLE START DATE/TIME:	10:05:00 AM
SAMPLE STOP DATE/TIME:	12:01:00 PM
TOTAL SAMPLE TIME (MIN):	116
FLOW RATE (L/MIN):	0.023
VOLUME OF SAMPLE (LITERS):	2.7
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	2855
REGULATOR SERIAL NUMBER:	0854
CAN START VACUUM PRESS. (" HG):	-30.89
CAN STOP VACUUM PRESS. (" HG):	-5.00



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
Top of Seal	0	
Top of Pack	4.5	
	5	

SAMPLE LOCATION SKETCH

NOTES

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-20

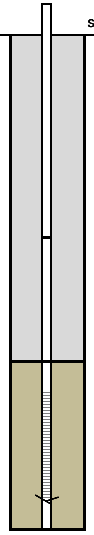
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501	
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA	
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services Corp.	**INSTALLATION DATE STARTED:** 12/3/2020	**DATE FINISHED:** 12/3/2020
INSTALLATION FOREMAN: Jose Garcia	**SAMPLE DATE STARTED:** 12/3/2020	**DATE FINISHED:** 12/3/2020
INSTALLATION EQUIPMENT: Geoprobe 6610 DT	**TYPE OF SAMPLING DEVICE:** 2.7-Liter Summa Canister	
INSPECTOR: Jack Donelan	**SAMPLER:** Jack Donelan	
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: SW 0-9 mph Precipitation: None Pressure: 29.95 inHg	

METHOD OF INSTALLATION AND PURGING:

AARCO Environmental Services Corp. advanced Geoprobe drill bit to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfilled with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	200
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	22.1%
HELIUM TEST IN TUBE (PPM):	0
SAMPLE START DATE/TIME:	9:57:00 AM
SAMPLE STOP DATE/TIME:	11:57:00 PM
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.017
VOLUME OF SAMPLE (LITERS):	2.7
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	2373
REGULATOR SERIAL NUMBER:	1265
CAN START VACUUM PRESS. (" HG):	-30.95
CAN STOP VACUUM PRESS. (" HG):	-6.14



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	0	
Top of Pack	4.5	
	5	

SAMPLE LOCATION SKETCH

NOTES

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-21

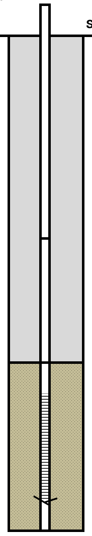
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services Corp.	**INSTALLATION DATE STARTED:** 12/3/2020 **DATE FINISHED:** 12/3/2020
INSTALLATION FOREMAN: Jose Garcia	**SAMPLE DATE STARTED:** 12/3/2020 **DATE FINISHED:** 12/3/2020
INSTALLATION EQUIPMENT: Geoprobe 6610 DT	**TYPE OF SAMPLING DEVICE:** 2.7-Liter Summa Canister
INSPECTOR: Jack Donelan	**SAMPLER:** Jack Donelan
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: SW 0-9 mph Precipitation: None Pressure: 29.95 inHg

METHOD OF INSTALLATION AND PURGING:

AARCO Environmental Services Corp. advanced Geoprobe drill bit to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfilled with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	200
PID AFTER PURGE (PPM):	0.2
HELIUM TEST IN BUCKET(%):	14.2%
HELIUM TEST IN TUBE (PPM):	0
SAMPLE START DATE/TIME:	12:01:00 PM
SAMPLE STOP DATE/TIME:	2:01:00 PM
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.023
VOLUME OF SAMPLE (LITERS):	2.7
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	205
REGULATOR SERIAL NUMBER:	1150
CAN START VACUUM PRESS. (" HG):	-30.74
CAN STOP VACUUM PRESS. (" HG):	-4.89

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.) SURFACE SURFACE	**DEPTH (FEET FROM SURFACE)**	**NOTES**
 **Top of Seal**	0	
Top of Pack	4.5	
	5	

SAMPLE LOCATION SKETCH

NOTES

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-22

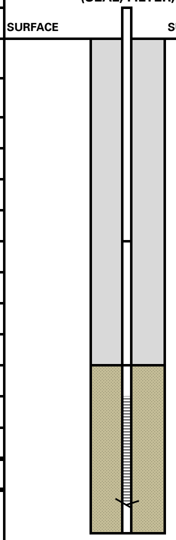
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: AARCO Environmental Services Corp.	**INSTALLATION DATE STARTED:** 12/3/2020 **DATE FINISHED:** 12/3/2020
INSTALLATION FOREMAN: Jose Garcia	**SAMPLE DATE STARTED:** 12/3/2020 **DATE FINISHED:** 12/3/2020
INSTALLATION EQUIPMENT: Geoprobe 6610 DT	**TYPE OF SAMPLING DEVICE:** 2.7-Liter Summa Canister
INSPECTOR: Jack Donelan	**SAMPLER:** Jack Donelan
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: SW 0-9 mph Precipitation: None Pressure: 29.95 inHg

METHOD OF INSTALLATION AND PURGING:

AARCO Environmental Services Corp. advanced Geoprobe drill bit to 5-feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfilled with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	200
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	21.3%
HELIUM TEST IN TUBE (PPM):	0
SAMPLE START DATE/TIME:	11:33:00 AM
SAMPLE STOP DATE/TIME:	1:33:00 PM
TOTAL SAMPLE TIME (MIN):	120
FLOW RATE (L/MIN):	0.023
VOLUME OF SAMPLE (LITERS):	2.7
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	2554
REGULATOR SERIAL NUMBER:	1263
CAN START VACUUM PRESS. (" HG):	-30.80
CAN STOP VACUUM PRESS. (" HG):	-6.38



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	0	
Top of Pack	4.5	
	5	

SAMPLE LOCATION SKETCH

NOTES

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-23_030221

PROJECT: 1607 Surf Avenue

PROJECT NO.: 170599501

LOCATION: Brooklyn, NY

SURFACE ELEVATION AND DATUM: NA

DRILLING FIRM OR LANGAN INSTALLER: Lakewood Environmental Services Corp.

INSTALLATION DATE STARTED: 3/2/2021 **DATE FINISHED:** 3/2/2021

INSTALLATION FOREMAN: John Vice

SAMPLE DATE STARTED: 3/2/2021 **DATE FINISHED:** 3/2/2021

INSTALLATION EQUIPMENT: Hand Auger

TYPE OF SAMPLING DEVICE: 6-Liter Summa Canister

INSPECTOR: Tomas Monti

SAMPLER: Tomas Monti

POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.

WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):

Temp: 30s F
Wind: WNW 15-20 mph
Precipitation: None
Pressure: 30.1 inHg

METHOD OF INSTALLATION AND PURGING:

Lakewood Environmental Services Corp. advanced a hand auger to refusal (2 feet below grade surface [bgs]). Six-inch soil vapor probe installed and borehole backfilled with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing

TYPE OF MATERIAL ABOVE SEAL: NA

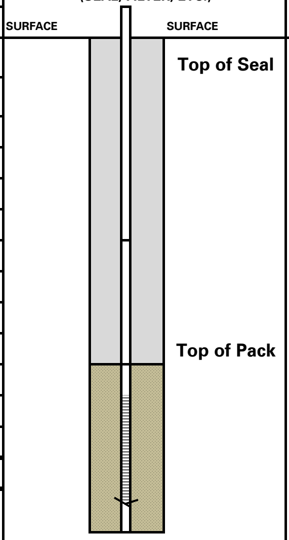
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long

SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.): Hydrated Bentonite Chips

BOREHOLE DIAMETER: 2-inches

FILTER PACK MATERIAL (Sand or Glass Beads): Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	200
PID AFTER PURGE (PPM):	0.0
HELIUM TEST IN BUCKET(%):	16.9%
HELIUM TEST IN TUBE (PPM):	0
SAMPLE START DATE/TIME:	1:38:00 PM
SAMPLE STOP DATE/TIME:	3:36:00 PM
TOTAL SAMPLE TIME (MIN):	118
FLOW RATE (L/MIN):	0.051
VOLUME OF SAMPLE (LITERS):	6.0
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	650
REGULATOR SERIAL NUMBER:	1798
CAN START VACUUM PRESS. (" HG):	-30.76
CAN STOP VACUUM PRESS. (" HG):	-4.92



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	DEPTH (FEET FROM SURFACE)	NOTES
Top of Seal	0	
Top of Pack	1.5	
	2	

SAMPLE LOCATION SKETCH

NOTES

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
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SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-24_030221

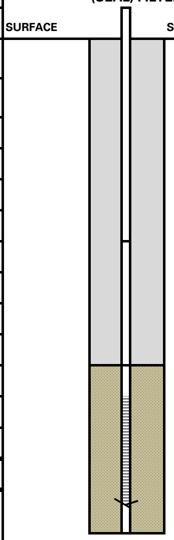
PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: Lakewood Environmental Services Corp.	**INSTALLATION DATE STARTED:** 3/2/2021 **DATE FINISHED:** 3/2/2021
INSTALLATION FOREMAN: John Vice	**SAMPLE DATE STARTED:** 3/2/2021 **DATE FINISHED:** 3/2/2021
INSTALLATION EQUIPMENT: Hand Auger	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Tomas Monti	**SAMPLER:** Tomas Monti
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 30s F Wind: WNW 15-20 mph Precipitation: None Pressure: 30.1 inHg

METHOD OF INSTALLATION AND PURGING:

Lakewood Environmental Services Corp. advanced a hand auger to 5 feet below grade surface (bgs). Six-inch soil vapor probe installed and borehole backfilled with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	200
PID AFTER PURGE (PPM):	0.1
HELIUM TEST IN BUCKET(%):	15.2%
HELIUM TEST IN TUBE (PPM):	0
SAMPLE START DATE/TIME:	1:36:00 PM
SAMPLE STOP DATE/TIME:	5:12:00 PM
TOTAL SAMPLE TIME (MIN):	216
FLOW RATE (L/MIN):	0.028
VOLUME OF SAMPLE (LITERS):	6.0
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	1621
REGULATOR SERIAL NUMBER:	1334
CAN START VACUUM PRESS. (" HG):	-30.93
CAN STOP VACUUM PRESS. (" HG):	-12.97



IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
SURFACE SURFACE		
Top of Seal	0	
Top of Pack	4.5	
	5	

SAMPLE LOCATION SKETCH

NOTES

SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SV-25_030221

PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: Lakewood Environmental Services Corp.	**INSTALLATION DATE STARTED:** 3/2/2021 **DATE FINISHED:** 3/2/2021
INSTALLATION FOREMAN: John Vice	**SAMPLE DATE STARTED:** 3/2/2021 **DATE FINISHED:** 3/2/2021
INSTALLATION EQUIPMENT: Hand Auger	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
INSPECTOR: Tomas Monti	**SAMPLER:** Tomas Monti
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 30s F Wind: WNW 15-20 mph Precipitation: None Pressure: 30.1 inHg

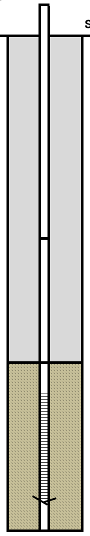
METHOD OF INSTALLATION AND PURGING:

Lakewood Environmental Services Corp. advanced a hand auger to refusal (2 feet below grade surface [bgs]). Six-inch soil vapor probe installed and borehole backfilled with FilPro #2 Sand. Probe sealed with bentonite to ground surface.

TUBING TYPE/DIAMETER: 3/8-inch polyethylene tubing	**TYPE OF MATERIAL ABOVE SEAL:** NA
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: 6-inch-long	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Hydrated Bentonite Chips
BOREHOLE DIAMETER: 2-inches	**FILTER PACK MATERIAL (Sand or Glass Beads):** Filpro #2 sand

PURGE VOLUME (L):	0.02
PURGE FLOW RATE (ML/MIN):	200
PID AFTER PURGE (PPM):	0
HELIUM TEST IN BUCKET(%):	17.7%
HELIUM TEST IN TUBE (PPM):	0
SAMPLE START DATE/TIME:	1:49:00 PM
SAMPLE STOP DATE/TIME:	3:48:00 PM
TOTAL SAMPLE TIME (MIN):	119
FLOW RATE (L/MIN):	0.050
VOLUME OF SAMPLE (LITERS):	6.0
PID AFTER SAMPLE (PPM):	0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	2574
REGULATOR SERIAL NUMBER:	944
CAN START VACUUM PRESS. (" HG):	-31.31
CAN STOP VACUUM PRESS. (" HG):	-5.80

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
SURFACE SURFACE		
Top of Seal	0	
Top of Pack	1.5	
	2	



SAMPLE LOCATION SKETCH

NOTES

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
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AIR SAMPLING LOG SHEET

Sample Number: AA-01

PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** N/A
SAMPLER: Patrick Stovall	**SAMPLE DATE STARTED:** 2/12/2020 **DATE FINISHED:** 2/12/2020
INSPECTOR: Patrick Stovall	**TYPE OF SAMPLING DEVICE:** 6-Liter Summa Canister
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-6 mph Precipitation: None Pressure: 29.99 inHg

METHOD OF INSTALLATION AND SAMPLING:

Langan field screened the sample location with a MultiRAE photoionization detector prior to sampling. Sample consisted of 6-L Summa canister fitted with an 2-hour flow control valve. The flow controller was zeroed and valve opened to initiate the 2-hour sample collection. The sample and flow controller were checked each hour during sampling to ensure proper operation.

SAMPLE DETAILS

HEIGHT ABOVE GROUND (FT):	40"
PID BEFORE SAMPLE (PPM):	0.0
SAMPLE START TIME:	10:00
SAMPLE STOP TIME:	13:07
TOTAL SAMPLE TIME (MIN):	187
REGULATOR FLOW RATE (L/MIN):	0.032
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	N/A
CAN SERIAL NUMBER:	1892
REGULATOR SERIAL NUMBER:	1477
CAN START VACUUM PRESS. (" HG):	-30.87
CAN STOP VACUUM PRESS. (" HG):	-21.73

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Ambient air summa canisters were lab calibrated for an 8-hour sample collection period. Sample collection ceased at the duration of approximatley 2-hours.

Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology D.P.C.
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AIR SAMPLING LOG SHEET

Sample Number: AA-02

PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** N/A
SAMPLER: Patrick Stovall	**SAMPLE DATE STARTED:** 2/13/2020 **DATE FINISHED:** 2/13/2020
INSPECTOR: Patrick Stovall	**TYPE OF SAMPLING DEVICE:** 6-Liter Summar Canister
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: N 0-4 mph Precipitation: Drizzle Pressure: 29.65 inHg

METHOD OF INSTALLATION AND SAMPLING:

Langan field screened the sample location with a MultiRAE photoionization detector prior to sampling. Sample consisted of 6-L Summa canister fitted with an 2-hour flow control valve. The flow controller was zeroed and valve opened to initiate the 2-hour sample collection. The sample and flow controller were checked each hour during sampling to ensure proper operation.

SAMPLE DETAILS

HEIGHT ABOVE GROUND (FT):	40"
PID BEFORE SAMPLE (PPM):	0.0
SAMPLE START TIME:	9:41
SAMPLE STOP TIME:	11:45
TOTAL SAMPLE TIME (MIN):	124
REGULATOR FLOW RATE (L/MIN):	0.048
VOLUME OF SAMPLE (LITERS):	6
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	N/A
CAN SERIAL NUMBER:	1568
REGULATOR SERIAL NUMBER:	918
CAN START VACUUM PRESS. (" HG):	-30.35
CAN STOP VACUUM PRESS. (" HG):	-23.58

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Ambient air summa canisters were lab calibrated for an 8-hour sample collection period. Sample collection ceased at the duration of approximatley 2-hours.

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AIR SAMPLING LOG SHEET

Sample Number: AA-01

PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** N/A
SAMPLER: AARCO Environmental Services Corp.	**SAMPLE DATE STARTED:** 12/3/2020 **DATE FINISHED:** 12/3/2020
INSPECTOR: Jose Garcia	**TYPE OF SAMPLING DEVICE:** 2.7-Liter Summa Canister
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 40s F Wind: SW 0-9 mph Precipitation: None Pressure: 29.95 inHg

METHOD OF INSTALLATION AND SAMPLING:

Langan field screened the sample location with a MultiRAE photoionization detector prior to sampling. Sample consisted of a 2.7-L Summa canister fitted with a 2-hour flow control valve. The flow controller was zeroed and the valve was opened to initiate the 2-hour sample collection. The sample and flow controller were checked each hour during sampling to ensure proper operation.

SAMPLE DETAILS

HEIGHT ABOVE GROUND (FT):	4
PID BEFORE SAMPLE (PPM):	0.0
SAMPLE START TIME:	11:27
SAMPLE STOP TIME:	13:27
TOTAL SAMPLE TIME (MIN):	120
REGULATOR FLOW RATE (L/MIN):	0.023
VOLUME OF SAMPLE (LITERS):	2.7
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	2018
REGULATOR SERIAL NUMBER:	1716
CAN START VACUUM PRESS. (" HG):	-30.59
CAN STOP VACUUM PRESS. (" HG):	-6.87

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology D.P.C.

21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

AIR SAMPLING LOG SHEET

Sample Number: AA-01

PROJECT: 1607 Surf Avenue	**PROJECT NO.:** 170599501
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** N/A
SAMPLER: Lakewood Environmental Services Corp.	**SAMPLE DATE STARTED:** 3/2/2021 **DATE FINISHED:** 3/2/2021
INSPECTOR: John Vice	**TYPE OF SAMPLING DEVICE:** 6-L Summa Canister
POTENTIAL SAMPLE INTERFERENCES: Gasoline emissions associated with parking lot operations.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 30s F Wind: WNW 15-20 mph Precipitation: None Pressure: 30.1 inHg

METHOD OF INSTALLATION AND SAMPLING:

Langan field screened the sample location with a MultiRAE photoionization detector prior to sampling. Sample consisted of 6-L Summa canister fitted with an 2-hour flow control valve. The flow controller was zeroed and valve opened to initiate the 2-hour sample collection. The sample and flow controller were checked each hour during sampling to ensure proper operation.

SAMPLE DETAILS

HEIGHT ABOVE GROUND (FT):	4
PID BEFORE SAMPLE (PPM):	0.0
SAMPLE START TIME:	13:39
SAMPLE STOP TIME:	15:37
TOTAL SAMPLE TIME (MIN):	118
REGULATOR FLOW RATE (L/MIN):	0.051
VOLUME OF SAMPLE (LITERS):	6.0
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	NA
CAN SERIAL NUMBER:	3462
REGULATOR SERIAL NUMBER:	1439
CAN START VACUUM PRESS. (" HG):	-31.40
CAN STOP VACUUM PRESS. (" HG):	-5.50

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology D.P.C.

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APPENDIX G

DATA USABILITY SUMMARY REPORTS

Technical Memorandum

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Allyson Kritzer, Langan Senior Staff Engineer

From: Emily Strake, Langan Senior Project Chemist

Date: March 9, 2020

Re: Data Usability Summary Report
For 1607 Surf Avenue
February 2020 Soil Samples
Langan Project No.: 170599501

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of soil samples collected in February 2020 by Langan Engineering and Environmental Services ("Langan") at the 1607 Surf Avenue site ("the site"). The samples were analyzed by Alpha Analytical Laboratories, Inc. (NYSDOH NELAP registration # 11148) for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), per- and polyfluoroalkyl substances (PFAS), herbicides, polychlorinated biphenyls (PCBs), pesticides, metals including mercury (Hg), cyanide (CN), hexavalent chromium (CrVI), trivalent chromium (CrIII), and total solids (%S) by the methods specified below.

- VOCs by SW-846 Method 8260C
- SVOCs by SW-846 Method 8270D and 8270D SIM
- PFAS by USEPA Method 537M
- Herbicides by SW-846 Method 8151A
- PCBs by SW-846 Method 8082A
- Pesticides by SW-846 Method 8081B
- Metals by SW-846 Method 6010D
- Mercury by SW-846 Method 7470A
- Cyanide by SW-846 Method 9012B
- Hexavalent Chromium by SW-846 Method 7196A
- Trivalent Chromium (calculated)
- Total Solids by Standard Method 2540G

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	***Lab Sample ID***	***Client Sample ID***	***Sample Date***	***Analytical Parameters***
L2005543	L2005543-30	FB01_020620	2/6/2020	VOCs, SVOC, SVOC SIM, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide,
L2005543	L2005543-16	SB-1_0-2_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-17	SB-1_2-4_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-18	SB-1_6-8_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-25	SB-10_0-2_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-27	SB-10_10-12_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-26	SB-10_5-7_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-10	SB-17_0-2_020520	2/5/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-11	SB-17_5-7_020520	2/5/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-12	SB-17_9-11_020520	2/5/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-07	SB-18_0-2_020520	2/5/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-09	SB-18_10-12_020520	2/5/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-08	SB-18_2-4_020520	2/5/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
L2005543	L2005543-04	SB-19_0-2_020520	2/5/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-05	SB-19_2-4_020520	2/5/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-06	SB-19_6-8_020520	2/5/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-01	SB-20_0-2_020520	2/5/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-02	SB-20_2-4_020520	2/5/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-03	SB-20_6-8_020520	2/5/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-19	SB-4_0-2_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-21	SB-4_10-12_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-20	SB-4_6-8_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-13	SB-5_0-2_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-15	SB-5_10-12_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-14	SB-5_5-7_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-22	SB-8_0-2_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
L2005543	L2005543-24	SB-8_10-12_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-23	SB-8_5-7_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-28	SODUP01_020620	2/6/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005543	L2005543-29	TB01_020620	2/6/2020	VOCs
L2005791	L2005791-07	SB-12_0-2_020720	2/7/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005791	L2005791-09	SB-12_10-12_020720	2/7/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005791	L2005791-08	SB-12_5-7_020720	2/7/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005791	L2005791-01	SB-3_0-2_020720	2/7/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005791	L2005791-02	SB-3_6-8_020720	2/7/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005791	L2005791-03	SB-3_9-11_020720	2/7/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005791	L2005791-04	SB-7_0-2_020720	2/7/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005791	L2005791-05	SB-7_5-7_020720	2/7/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005791	L2005791-06	SB-7_9-11_020720	2/7/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005791	L2005791-10	TB02_020720	2/7/2020	VOCs
L2005961	L2005961-07	FB02_021020	2/10/2020	VOCs, SVOC, SVOC SIM, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide,

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
L2005961	L2005961-01	SB-13_0-2_021020	2/10/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005961	L2005961-02	SB-13_4-6_021020	2/10/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005961	L2005961-03	SB-13_9-11_021020	2/10/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005961	L2005961-04	SB-15_0-2_021020	2/10/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005961	L2005961-06	SB-15_10-12_021020	2/10/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005961	L2005961-05	SB-15_6-8_021020	2/10/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005961	L2005961-09	SODUP02_021020	2/10/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2005961	L2005961-08	TB02_021020	2/10/2020	VOCs
L2006176	L2006176-18	FB03_021120	2/11/2020	VOCs, SVOC, SVOC SIM, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide,
L2006176	L2006176-07	SB-11_0-2_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-08	SB-11_6-8_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-09	SB-11_9-11_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-10	SB-14_0-2_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-11	SB-14_6-8_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
L2006176	L2006176-12	SB-14_9-11_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-04	SB-16_0-2_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-05	SB-16_5-7_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-06	SB-16_9-11_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-16	SB-2_0-2_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-17	SB-2_6-8_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-01	SB-6_0-2_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-02	SB-6_5-7_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-03	SB-6_9-11_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-13	SB-9_0-2_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-14	SB-9_6-8_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-15	SB-9_9-11_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-20	SODUP03_021120	2/11/2020	VOCs, SVOC, Pests, PCBs, Herbs, PFAS, Metals, Mercury, CrVI, CrIII, Cyanide, %Solids
L2006176	L2006176-19	TB04_021120	2/11/2020	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-34A, "Trace Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-33A, "Low/Medium Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-35A, "Semivolatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-17, "Validating Chlorinated Herbicides" (December 2010, Revision 3.1), USEPA Region II SOP #HW-37A, "Polychlorinated Biphenyl (PCB) Aroclor Data Validation" (June 2015, Revision 0), USEPA Region II SOP #HW-36A, "Pesticide Data Validation" (October 2016, Revision 1), USEPA Region II SOP #HW-3a, "ICP-AES Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-3c, "Mercury and Cyanide Data Validation" (September 2016, Revision 1), the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017), the USEPA Contract Laboratory Program "National Functional Guidelines for Inorganic Superfund Methods Data Review" (EPA-540-R-2017-001, January 2017) and the specifics of the methods employed.

EPA Method 537 was developed and validated for the analysis of finished drinking water from surface water and groundwater sources. Laboratories have modified Method 537 to enable the analysis of groundwater and soil, and to incorporate PFAS analytes not currently addressed by the promulgated method. NYSDOH offers certification for PFOA and PFOS in the drinking water category. Non-potable water and soil certification is not available; however, the method describes acceptable modifications. EPA recommends that modified methods be assessed relative to project goals and data quality objectives.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, sample extraction and digestion, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, internal standard area counts, isotope dilution recoveries, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, overall system performance, serial dilutions, dual column performance, field duplicate, trip blank and field blank sample results.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's 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.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as “R” are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
FB01_020620	SW8081B	1031-07-8	Endosulfan Sulfate	UJ
FB01_020620	SW8081B	7421-93-4	Endrin Aldehyde	UJ
FB01_020620	SW8081B	53494-70-5	Endrin Ketone	UJ
FB01_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
FB01_020620	SW8260C	78-93-3	2-Butanone	UJ
FB01_020620	SW8260C	108-10-1	4-Methyl-2-pentanone	UJ
FB01_020620	SW8260C	67-64-1	Acetone	UJ
FB01_020620	SW8260C	107-13-1	Acrylonitrile	UJ
FB01_020620	SW8260C	74-83-9	Bromomethane	UJ
FB01_020620	SW8260C	74-87-3	Chloromethane	UJ
FB01_020620	SW8260C	75-01-4	Vinyl chloride	UJ
FB01_020620	SW8270D	65-85-0	Benzoic Acid	UJ
FB01_020620	E537(M)	307-24-4	Perfluorohexanoic acid (PFHXA)	U (1.82)
FB02_021020	6010D	7439-96-5	Manganese, Total	U (0.01)

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
FB02_021020	SW8260C	95-93-2	1,2,4,5-Tetramethylbenzene	UJ
FB02_021020	SW8260C	123-91-1	1,4-Dioxane	UJ
FB02_021020	SW8260C	67-64-1	Acetone	UJ
FB02_021020	SW8260C	75-15-0	Carbon Disulfide	UJ
FB02_021020	SW8260C	87-68-3	Hexachlorobutadiene	UJ
FB02_021020	SW8260C	91-20-3	Naphthalene	UJ
FB02_021020	SW8260C	75-69-4	Trichlorofluoromethane	UJ
FB02_021020	SW8260C	104-51-8	N-Butylbenzene	UJ
FB02_021020	SW8270D	100-02-7	4-Nitrophenol	UJ
FB02_021020	SW8270D	65-85-0	Benzoic Acid	UJ
FB03_021120	SW8081B	319-85-7	Beta-BHC	UJ
FB03_021120	SW8081B	7421-93-4	Endrin aldehyde	UJ
FB03_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
FB03_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
FB03_021120	SW8260C	95-93-2	1,2,4,5-Tetramethylbenzene	UJ
FB03_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
FB03_021120	SW8260C	56-23-5	Carbon tetrachloride	UJ
FB03_021120	SW8260C	74-87-3	Chloromethane	UJ
FB03_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
FB03_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
FB03_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
FB03_021120	SW8260C	108-05-4	Vinyl acetate	UJ
FB03_021120	SW8270D	105-67-9	2,4-Dimethylphenol	UJ
FB03_021120	SW8270D	106-47-8	4-Chloroaniline	UJ
FB03_021120	SW8270D	100-02-7	4-Nitrophenol	UJ
FB03_021120	SW8270D	65-85-0	Benzoic Acid	UJ
FB03_021120	SW8270D	108-60-1	Bis(2-chloroisopropyl)ether	UJ
FB03_021120	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
FB03_021120	SW9012B	57-12-5	Cyanide, Total	UJ
FB03_021120	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
FB03_021120	E537(M)	307-24-4	Perfluorohexanoic acid (PFHXA)	U (1.84)
SB-1_0-2_020620	SW8260C	79-34-5	1,1,2,2-Tetrachloroethane	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-1_0-2_020620	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-1_0-2_020620	SW8260C	87-61-6	1,2,3-Trichlorobenzene	UJ
SB-1_0-2_020620	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-1_0-2_020620	SW8260C	95-93-2	1,2,4,5-Tetramethylbenzene	UJ
SB-1_0-2_020620	SW8260C	120-82-1	1,2,4-Trichlorobenzene	UJ
SB-1_0-2_020620	SW8260C	95-63-6	1,2,4-Trimethylbenzene	UJ
SB-1_0-2_020620	SW8260C	96-12-8	1,2-Dibromo-3-chloropropane	UJ
SB-1_0-2_020620	SW8260C	95-50-1	1,2-Dichlorobenzene	UJ
SB-1_0-2_020620	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-1_0-2_020620	SW8260C	541-73-1	1,3-Dichlorobenzene	UJ
SB-1_0-2_020620	SW8260C	106-46-7	1,4-Dichlorobenzene	UJ
SB-1_0-2_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-1_0-2_020620	SW8260C	108-86-1	Bromobenzene	UJ
SB-1_0-2_020620	SW8260C	75-25-2	Bromoform	UJ
SB-1_0-2_020620	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-1_0-2_020620	SW8260C	75-00-3	Chloroethane	UJ
SB-1_0-2_020620	SW8260C	67-66-3	Chloroform	J
SB-1_0-2_020620	SW8260C	74-87-3	Chloromethane	UJ
SB-1_0-2_020620	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-1_0-2_020620	SW8260C	100-41-4	Ethylbenzene	UJ
SB-1_0-2_020620	SW8260C	87-68-3	Hexachlorobutadiene	UJ
SB-1_0-2_020620	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-1_0-2_020620	SW8260C	91-20-3	Naphthalene	UJ
SB-1_0-2_020620	SW8260C	127-18-4	Tetrachloroethene	J
SB-1_0-2_020620	SW8260C	108-88-3	Toluene	J
SB-1_0-2_020620	SW8260C	75-01-4	Vinyl chloride	UJ
SB-1_0-2_020620	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-1_0-2_020620	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-1_0-2_020620	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-1_0-2_020620	SW8260C	99-87-6	P-Isopropyltoluene	UJ
SB-1_0-2_020620	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-1_0-2_020620	SW8260C	98-06-6	Tert-Butylbenzene	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
SB-1_0-2_020620	SW8260C	110-57-6	Trans-1,4-dichloro-2-butene	UJ
SB-1_0-2_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-1_0-2_020620	E537(M)	2991-50-6	N-Ethyl perfluorooctanesulfonamidoacetic acid (Netfosaa)	J
SB-1_0-2_020620	E537(M)	375-22-4	Perfluorobutanoic acid (PFBA)	U (0.994)
SB-1_0-2_020620	E537(M)	2706-90-3	Perfluoropentanoic acid (PFPEA)	J
SB-1_2-4_020620	6010D	7440-23-5	Sodium, Total	U (181)
SB-1_2-4_020620	SW8081B	72-43-5	Methoxychlor	UJ
SB-1_2-4_020620	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-1_2-4_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-1_2-4_020620	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-1_2-4_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-1_2-4_020620	E537(M)	375-22-4	Perfluorobutanoic acid (PFBA)	U (1.03)
SB-1_2-4_020620	E537(M)	2706-90-3	Perfluoropentanoic acid (PFPEA)	J
SB-1_6-8_020620	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-1_6-8_020620	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-1_6-8_020620	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-1_6-8_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-1_6-8_020620	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-1_6-8_020620	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-1_6-8_020620	6010D	7440-38-2	Arsenic, Total	J
SB-1_6-8_020620	6010D	7440-39-3	Barium, Total	J
SB-1_6-8_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-1_6-8_020620	6010D	7440-41-7	Beryllium, Total	J
SB-1_6-8_020620	6010D	7440-43-9	Cadmium, Total	J
SB-1_6-8_020620	6010D	7440-70-2	Calcium, Total	J
SB-1_6-8_020620	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-1_6-8_020620	SW8260C	75-00-3	Chloroethane	UJ
SB-1_6-8_020620	6010D	7440-47-3	Chromium, Total	J
SB-1_6-8_020620	CALC	16065-83-1	Chromium, Trivalent	J
SB-1_6-8_020620	6010D	7440-50-8	Copper, Total	J
SB-1_6-8_020620	SW8260C	100-41-4	Ethylbenzene	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
SB-1_6-8_020620	6010D	7439-89-6	Iron, Total	J
SB-1_6-8_020620	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-1_6-8_020620	6010D	7439-92-1	Lead, Total	J
SB-1_6-8_020620	6010D	7439-95-4	Magnesium, Total	J
SB-1_6-8_020620	6010D	7439-96-5	Manganese, Total	J
SB-1_6-8_020620	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-1_6-8_020620	6010D	7440-02-0	Nickel, Total	UJ (2.2)
SB-1_6-8_020620	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-1_6-8_020620	SW8270D	129-00-0	Pyrene	J
SB-1_6-8_020620	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-1_6-8_020620	6010D	7782-49-2	Selenium, Total	UJ
SB-1_6-8_020620	6010D	7440-23-5	Sodium, Total	UJ (176)
SB-1_6-8_020620	SW8260C	127-18-4	Tetrachloroethene	J
SB-1_6-8_020620	SW8260C	108-88-3	Toluene	UJ
SB-1_6-8_020620	SW8260C	75-01-4	Vinyl chloride	UJ
SB-10_0-2_020620	SW8081B	50-29-3	4,4'-DDT	UJ
SB-10_0-2_020620	SW8082A	12674-11-2	Aroclor 1016	UJ
SB-10_0-2_020620	SW8082A	11104-28-2	Aroclor 1221	UJ
SB-10_0-2_020620	SW8082A	11141-16-5	Aroclor 1232	UJ
SB-10_0-2_020620	SW8082A	53469-21-9	Aroclor 1242	UJ
SB-10_0-2_020620	SW8082A	12672-29-6	Aroclor 1248	UJ
SB-10_0-2_020620	SW8082A	11097-69-1	Aroclor 1254	UJ
SB-10_0-2_020620	SW8082A	11096-82-5	Aroclor 1260	UJ
SB-10_0-2_020620	SW8082A	37324-23-5	Aroclor 1262	UJ
SB-10_0-2_020620	SW8082A	11100-14-4	Aroclor 1268	UJ
SB-10_0-2_020620	SW8082A	1336-36-3	PCBs, Total	UJ
SB-10_0-2_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-10_0-2_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-10_10-12_020620	SW8081B	72-54-8	4,4'-DDD	UJ
SB-10_10-12_020620	SW8081B	72-55-9	4,4'-DDE	J
SB-10_10-12_020620	SW8081B	319-86-8	Delta-BHC	UJ
SB-10_10-12_020620	SW8081B	60-57-1	Dieldrin	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-10_10-12_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-10_10-12_020620	SW8260C	74-87-3	Chloromethane	UJ
SB-10_10-12_020620	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-10_10-12_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-10_5-7_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-10_5-7_020620	SW8260C	74-87-3	Chloromethane	UJ
SB-10_5-7_020620	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-10_5-7_020620	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-10_5-7_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-10_5-7_020620	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SB-11_0-2_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-11_0-2_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-11_0-2_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-11_0-2_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-11_0-2_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-11_0-2_021120	SW8260C	594-20-7	2,2-Dichloropropane	UJ
SB-11_0-2_021120	SW8260C	56-23-5	Carbon Tetrachloride	UJ
SB-11_0-2_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-11_0-2_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-11_0-2_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-11_0-2_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-11_0-2_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-11_0-2_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-11_0-2_021120	SW8270D	606-20-2	2,6-Dinitrotoluene	UJ
SB-11_0-2_021120	SW8270D	88-75-5	2-Nitrophenol	UJ
SB-11_0-2_021120	SW8270D	534-52-1	4,6-Dinitro-o-cresol	UJ
SB-11_0-2_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-11_0-2_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SB-11_0-2_021120	E537(M)	375-22-4	Perfluorobutanoic acid (PFBA)	U (0.966)
SB-11_0-2_021120	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-11_6-8_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-11_6-8_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-11_6-8_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-11_6-8_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-11_6-8_021120	SW8260C	56-23-5	Carbon Tetrachloride	UJ
SB-11_6-8_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-11_6-8_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-11_6-8_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-11_6-8_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-11_6-8_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-11_6-8_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-11_6-8_021120	SW8270D	606-20-2	2,6-Dinitrotoluene	UJ
SB-11_6-8_021120	SW8270D	88-75-5	2-Nitrophenol	UJ
SB-11_6-8_021120	SW8270D	534-52-1	4,6-Dinitro-o-cresol	UJ
SB-11_6-8_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-11_6-8_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SB-11_6-8_021120	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-11_9-11_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-11_9-11_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-11_9-11_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-11_9-11_021120	SW8260C	56-23-5	Carbon Tetrachloride	UJ
SB-11_9-11_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-11_9-11_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-11_9-11_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-11_9-11_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-11_9-11_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-11_9-11_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-11_9-11_021120	SW8270D	606-20-2	2,6-Dinitrotoluene	UJ
SB-11_9-11_021120	SW8270D	88-75-5	2-Nitrophenol	UJ
SB-11_9-11_021120	SW8270D	534-52-1	4,6-Dinitro-o-cresol	UJ
SB-11_9-11_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-11_9-11_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SB-11_9-11_021120	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-12_0-2_020720	SW8081B	72-54-8	4,4'-DDD	UJ
SB-12_0-2_020720	SW8081B	72-55-9	4,4'-DDE	UJ
SB-12_0-2_020720	SW8081B	50-29-3	4,4'-DDT	J
SB-12_0-2_020720	SW8081B	319-84-6	Alpha-BHC	UJ
SB-12_0-2_020720	SW8081B	319-86-8	Delta-BHC	UJ
SB-12_0-2_020720	SW8081B	60-57-1	Dieldrin	J
SB-12_0-2_020720	SW8081B	959-98-8	Endosulfan I	UJ
SB-12_0-2_020720	SW8081B	33213-65-9	Endosulfan II	UJ
SB-12_0-2_020720	SW8081B	1031-07-8	Endosulfan Sulfate	UJ
SB-12_0-2_020720	SW8081B	72-20-8	Endrin	UJ
SB-12_0-2_020720	SW8081B	76-44-8	Heptachlor	UJ
SB-12_0-2_020720	SW8081B	58-89-9	Lindane	UJ
SB-12_0-2_020720	SW8081B	5103-74-2	Trans-chlordane	UJ
SB-12_0-2_020720	SW8260C	79-34-5	1,1,2,2-Tetrachloroethane	UJ
SB-12_0-2_020720	SW8260C	87-61-6	1,2,3-Trichlorobenzene	UJ
SB-12_0-2_020720	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-12_0-2_020720	SW8260C	95-93-2	1,2,4,5-Tetramethylbenzene	UJ
SB-12_0-2_020720	SW8260C	120-82-1	1,2,4-Trichlorobenzene	UJ
SB-12_0-2_020720	SW8260C	95-63-6	1,2,4-Trimethylbenzene	UJ
SB-12_0-2_020720	SW8260C	95-50-1	1,2-Dichlorobenzene	UJ
SB-12_0-2_020720	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-12_0-2_020720	SW8260C	541-73-1	1,3-Dichlorobenzene	UJ
SB-12_0-2_020720	SW8260C	106-46-7	1,4-Dichlorobenzene	UJ
SB-12_0-2_020720	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-12_0-2_020720	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-12_0-2_020720	SW8260C	67-64-1	Acetone	UJ
SB-12_0-2_020720	SW8260C	108-86-1	Bromobenzene	UJ
SB-12_0-2_020720	SW8260C	75-25-2	Bromoform	UJ
SB-12_0-2_020720	SW8260C	74-83-9	Bromomethane	UJ
SB-12_0-2_020720	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-12_0-2_020720	SW8260C	75-00-3	Chloroethane	UJ
SB-12_0-2_020720	SW8260C	74-87-3	Chloromethane	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-12_0-2_020720	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-12_0-2_020720	SW8260C	60-29-7	Ethyl Ether	UJ
SB-12_0-2_020720	SW8260C	87-68-3	Hexachlorobutadiene	UJ
SB-12_0-2_020720	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-12_0-2_020720	SW8260C	91-20-3	Naphthalene	UJ
SB-12_0-2_020720	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-12_0-2_020720	SW8260C	75-01-4	Vinyl chloride	UJ
SB-12_0-2_020720	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-12_0-2_020720	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-12_0-2_020720	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-12_0-2_020720	SW8260C	99-87-6	P-Isopropyltoluene	UJ
SB-12_0-2_020720	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-12_0-2_020720	SW8260C	98-06-6	Tert-Butylbenzene	UJ
SB-12_0-2_020720	SW8260C	110-57-6	Trans-1,4-dichloro-2-butene	UJ
SB-12_0-2_020720	SW8270D	65-85-0	Benzoic Acid	UJ
SB-12_0-2_020720	SW8270D	111-44-4	Bis(2-Chloroethyl)Ether	UJ
SB-12_0-2_020720	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
SB-12_0-2_020720	SW9012B	57-12-5	Cyanide, Total	UJ
SB-12_0-2_020720	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-12_10-12_020720	SW8081B	72-54-8	4,4'-DDD	UJ
SB-12_10-12_020720	SW8081B	72-55-9	4,4'-DDE	UJ
SB-12_10-12_020720	SW8081B	50-29-3	4,4'-DDT	UJ
SB-12_10-12_020720	SW8081B	319-84-6	Alpha-BHC	UJ
SB-12_10-12_020720	SW8081B	319-86-8	Delta-BHC	UJ
SB-12_10-12_020720	SW8081B	60-57-1	Dieldrin	UJ
SB-12_10-12_020720	SW8081B	959-98-8	Endosulfan I	UJ
SB-12_10-12_020720	SW8081B	33213-65-9	Endosulfan II	UJ
SB-12_10-12_020720	SW8081B	1031-07-8	Endosulfan Sulfate	UJ
SB-12_10-12_020720	SW8081B	72-20-8	Endrin	UJ
SB-12_10-12_020720	SW8081B	76-44-8	Heptachlor	UJ
SB-12_10-12_020720	SW8081B	58-89-9	Lindane	UJ
SB-12_10-12_020720	SW8081B	5103-74-2	Trans-chlordane	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-12_10-12_020720	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-12_10-12_020720	SW8260C	67-64-1	Acetone	UJ
SB-12_10-12_020720	SW8260C	74-83-9	Bromomethane	UJ
SB-12_10-12_020720	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-12_10-12_020720	SW8260C	74-87-3	Chloromethane	UJ
SB-12_10-12_020720	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-12_10-12_020720	SW8270D	65-85-0	Benzoic Acid	UJ
SB-12_10-12_020720	SW8270D	111-44-4	Bis(2-Chloroethyl)Ether	UJ
SB-12_10-12_020720	SW8270D	117-84-0	Di-N-Octylphthalate	UJ
SB-12_10-12_020720	SW9012B	57-12-5	Cyanide, Total	UJ
SB-12_10-12_020720	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-12_5-7_020720	SW8081B	72-54-8	4,4'-DDD	UJ
SB-12_5-7_020720	SW8081B	72-55-9	4,4'-DDE	UJ
SB-12_5-7_020720	SW8081B	50-29-3	4,4'-DDT	UJ
SB-12_5-7_020720	SW8081B	319-84-6	Alpha-BHC	UJ
SB-12_5-7_020720	SW8081B	319-86-8	Delta-BHC	UJ
SB-12_5-7_020720	SW8081B	60-57-1	Dieldrin	UJ
SB-12_5-7_020720	SW8081B	959-98-8	Endosulfan I	UJ
SB-12_5-7_020720	SW8081B	33213-65-9	Endosulfan II	UJ
SB-12_5-7_020720	SW8081B	1031-07-8	Endosulfan Sulfate	UJ
SB-12_5-7_020720	SW8081B	72-20-8	Endrin	UJ
SB-12_5-7_020720	SW8081B	76-44-8	Heptachlor	UJ
SB-12_5-7_020720	SW8081B	58-89-9	Lindane	UJ
SB-12_5-7_020720	SW8081B	5103-74-2	Trans-chlordane	UJ
SB-12_5-7_020720	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-12_5-7_020720	SW8260C	67-64-1	Acetone	UJ
SB-12_5-7_020720	SW8260C	74-83-9	Bromomethane	UJ
SB-12_5-7_020720	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-12_5-7_020720	SW8260C	74-87-3	Chloromethane	UJ
SB-12_5-7_020720	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-12_5-7_020720	SW8270D	65-85-0	Benzoic Acid	UJ
SB-12_5-7_020720	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-12_5-7_020720	SW8270D	87-86-5	Pentachlorophenol	UJ
SB-12_5-7_020720	SW9012B	57-12-5	Cyanide, Total	UJ
SB-12_5-7_020720	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-13_0-2_021020	6010D	7440-23-5	Sodium, Total	U (168)
SB-13_0-2_021020	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-13_0-2_021020	SW8260C	107-06-2	1,2-Dichloroethane	UJ
SB-13_0-2_021020	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-13_0-2_021020	SW8260C	78-93-3	2-Butanone	UJ
SB-13_0-2_021020	SW8260C	591-78-6	2-Hexanone	UJ
SB-13_0-2_021020	SW8260C	67-64-1	Acetone	UJ
SB-13_0-2_021020	SW8260C	74-87-3	Chloromethane	UJ
SB-13_0-2_021020	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-13_0-2_021020	SW8260C	75-01-4	Vinyl chloride	UJ
SB-13_0-2_021020	SW8270D	65-85-0	Benzoic Acid	UJ
SB-13_0-2_021020	SW9012B	57-12-5	Cyanide, Total	UJ
SB-13_0-2_021020	E537(M)	307-24-4	Perfluorohexanoic acid (PFHXA)	U (0.999)
SB-13_4-6_021020	6010D	7440-23-5	Sodium, Total	U (163)
SB-13_4-6_021020	SW7196A	18540-29-9	Chromium, Hexavalent	U (0.838)
SB-13_4-6_021020	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-13_4-6_021020	SW8260C	107-06-2	1,2-Dichloroethane	UJ
SB-13_4-6_021020	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-13_4-6_021020	SW8260C	78-93-3	2-Butanone	UJ
SB-13_4-6_021020	SW8260C	591-78-6	2-Hexanone	UJ
SB-13_4-6_021020	SW8260C	67-64-1	Acetone	UJ
SB-13_4-6_021020	SW8260C	74-87-3	Chloromethane	UJ
SB-13_4-6_021020	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-13_4-6_021020	SW8260C	75-01-4	Vinyl chloride	UJ
SB-13_4-6_021020	SW8270D	65-85-0	Benzoic Acid	UJ
SB-13_4-6_021020	SW9012B	57-12-5	Cyanide, Total	UJ
SB-13_9-11_021020	6010D	7440-23-5	Sodium, Total	U (183)
SB-13_9-11_021020	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-13_9-11_021020	SW8260C	107-06-2	1,2-Dichloroethane	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
SB-13_9-11_021020	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-13_9-11_021020	SW8260C	78-93-3	2-Butanone	UJ
SB-13_9-11_021020	SW8260C	591-78-6	2-Hexanone	UJ
SB-13_9-11_021020	SW8260C	67-64-1	Acetone	UJ
SB-13_9-11_021020	SW8260C	74-87-3	Chloromethane	UJ
SB-13_9-11_021020	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-13_9-11_021020	SW8260C	75-01-4	Vinyl chloride	UJ
SB-13_9-11_021020	SW8270D	65-85-0	Benzoic Acid	UJ
SB-13_9-11_021020	SW9012B	57-12-5	Cyanide, Total	UJ
SB-14_0-2_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-14_0-2_021120	SW8151A	93-76-5	2,4,5-T	UJ
SB-14_0-2_021120	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-14_0-2_021120	SW8151A	94-75-7	2,4-D	UJ
SB-14_0-2_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-14_0-2_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-14_0-2_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-14_0-2_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-14_0-2_021120	SW8260C	594-20-7	2,2-Dichloropropane	UJ
SB-14_0-2_021120	SW8260C	78-93-3	2-Butanone	J
SB-14_0-2_021120	SW8260C	67-64-1	Acetone	J
SB-14_0-2_021120	SW8260C	67-64-1	Acetone	J
SB-14_0-2_021120	SW8260C	56-23-5	Carbon Tetrachloride	UJ
SB-14_0-2_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-14_0-2_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-14_0-2_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-14_0-2_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-14_0-2_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-14_0-2_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-14_0-2_021120	SW8270D	606-20-2	2,6-Dinitrotoluene	UJ
SB-14_0-2_021120	SW8270D	88-75-5	2-Nitrophenol	UJ
SB-14_0-2_021120	SW8270D	534-52-1	4,6-Dinitro-o-cresol	UJ
SB-14_0-2_021120	SW8270D	65-85-0	Benzoic Acid	UJ

Client Sample ID	**Analysis**	**CAS #**	**Analyte**	**Validator Qualifier**
SB-14_0-2_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SB-14_0-2_021120	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-14_6-8_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-14_6-8_021120	SW8151A	93-76-5	2,4,5-T	UJ
SB-14_6-8_021120	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-14_6-8_021120	SW8151A	94-75-7	2,4-D	UJ
SB-14_6-8_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-14_6-8_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-14_6-8_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-14_6-8_021120	SW8260C	56-23-5	Carbon Tetrachloride	UJ
SB-14_6-8_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-14_6-8_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-14_6-8_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-14_6-8_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-14_6-8_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-14_6-8_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-14_6-8_021120	SW8270D	606-20-2	2,6-Dinitrotoluene	UJ
SB-14_6-8_021120	SW8270D	88-75-5	2-Nitrophenol	UJ
SB-14_6-8_021120	SW8270D	534-52-1	4,6-Dinitro-o-cresol	UJ
SB-14_6-8_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-14_6-8_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SB-14_9-11_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-14_9-11_021120	SW8151A	93-76-5	2,4,5-T	UJ
SB-14_9-11_021120	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-14_9-11_021120	SW8151A	94-75-7	2,4-D	UJ
SB-14_9-11_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-14_9-11_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-14_9-11_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-14_9-11_021120	SW8260C	56-23-5	Carbon tetrachloride	UJ
SB-14_9-11_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-14_9-11_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-14_9-11_021120	SW8260C	127-18-4	Tetrachloroethene	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-14_9-11_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-14_9-11_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-14_9-11_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-14_9-11_021120	SW8270D	606-20-2	2,6-Dinitrotoluene	UJ
SB-14_9-11_021120	SW8270D	88-75-5	2-Nitrophenol	UJ
SB-14_9-11_021120	SW8270D	534-52-1	4,6-Dinitro-o-cresol	UJ
SB-14_9-11_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-14_9-11_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SB-15_0-2_021020	6010D	7440-23-5	Sodium, Total	U (163)
SB-15_0-2_021020	SW7196A	18540-29-9	Chromium, Hexavalent	U (0.847)
SB-15_0-2_021020	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-15_0-2_021020	SW8260C	107-06-2	1,2-Dichloroethane	UJ
SB-15_0-2_021020	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-15_0-2_021020	SW8260C	78-93-3	2-Butanone	UJ
SB-15_0-2_021020	SW8260C	591-78-6	2-Hexanone	UJ
SB-15_0-2_021020	SW8260C	67-64-1	Acetone	J
SB-15_0-2_021020	SW8260C	74-87-3	Chloromethane	UJ
SB-15_0-2_021020	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-15_0-2_021020	SW8260C	75-01-4	Vinyl chloride	UJ
SB-15_0-2_021020	SW9012B	57-12-5	Cyanide, Total	UJ
SB-15_10-12_021020	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-15_10-12_021020	SW8260C	107-06-2	1,2-Dichloroethane	UJ
SB-15_10-12_021020	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-15_10-12_021020	SW8260C	78-93-3	2-Butanone	UJ
SB-15_10-12_021020	SW8260C	591-78-6	2-Hexanone	UJ
SB-15_10-12_021020	SW8260C	67-64-1	Acetone	UJ
SB-15_10-12_021020	6010D	7429-90-5	Aluminum, Total	J
SB-15_10-12_021020	6010D	7440-39-3	Barium, Total	J
SB-15_10-12_021020	SW8270D	65-85-0	Benzoic Acid	UJ
SB-15_10-12_021020	6010D	7440-70-2	Calcium, Total	J
SB-15_10-12_021020	SW8260C	74-87-3	Chloromethane	UJ
SB-15_10-12_021020	SW7196A	18540-29-9	Chromium, Hexavalent	U (0.978)

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
SB-15_10-12_021020	6010D	7440-47-3	Chromium, Total	J
SB-15_10-12_021020	CALC	16065-83-1	Chromium, Trivalent	J
SB-15_10-12_021020	6010D	7440-48-4	Cobalt, Total	J
SB-15_10-12_021020	6010D	7440-50-8	Copper, Total	J
SB-15_10-12_021020	SW9012B	57-12-5	Cyanide, Total	UJ
SB-15_10-12_021020	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-15_10-12_021020	6010D	7439-89-6	Iron, Total	J
SB-15_10-12_021020	6010D	7439-95-4	Magnesium, Total	J
SB-15_10-12_021020	6010D	7439-96-5	Manganese, Total	J
SB-15_10-12_021020	6010D	7440-02-0	Nickel, Total	J
SB-15_10-12_021020	6010D	7440-09-7	Potassium, Total	J
SB-15_10-12_021020	6010D	7440-23-5	Sodium, Total	U (194)
SB-15_10-12_021020	6010D	7440-62-2	Vanadium, Total	J
SB-15_10-12_021020	SW8260C	75-01-4	Vinyl chloride	UJ
SB-15_6-8_021020	6010D	7440-23-5	Sodium, Total	U (175)
SB-15_6-8_021020	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-15_6-8_021020	SW8260C	107-06-2	1,2-Dichloroethane	UJ
SB-15_6-8_021020	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-15_6-8_021020	SW8260C	78-93-3	2-Butanone	UJ
SB-15_6-8_021020	SW8260C	591-78-6	2-Hexanone	UJ
SB-15_6-8_021020	SW8260C	67-64-1	Acetone	UJ
SB-15_6-8_021020	SW8260C	74-87-3	Chloromethane	UJ
SB-15_6-8_021020	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-15_6-8_021020	SW8260C	75-01-4	Vinyl chloride	UJ
SB-15_6-8_021020	SW8270D	65-85-0	Benzoic Acid	UJ
SB-15_6-8_021020	SW9012B	57-12-5	Cyanide, Total	UJ
SB-16_0-2_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-16_0-2_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-16_0-2_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-16_0-2_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-16_0-2_021120	SW8260C	56-23-5	Carbon Tetrachloride	UJ
SB-16_0-2_021120	SW8260C	74-87-3	Chloromethane	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-16_0-2_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-16_0-2_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-16_0-2_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-16_0-2_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-16_0-2_021120	SW8270D	123-91-1	1,4-Dioxane	UJ
SB-16_0-2_021120	SW8270D	88-06-2	2,4,6-Trichlorophenol	UJ
SB-16_0-2_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-16_0-2_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-16_0-2_021120	SW8270D	108-60-1	Bis(2-Chloroisopropyl)Ether	UJ
SB-16_0-2_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SB-16_0-2_021120	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-16_5-7_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-16_5-7_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-16_5-7_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-16_5-7_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-16_5-7_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-16_5-7_021120	SW8260C	594-20-7	2,2-Dichloropropane	UJ
SB-16_5-7_021120	SW8260C	56-23-5	Carbon Tetrachloride	UJ
SB-16_5-7_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-16_5-7_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-16_5-7_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-16_5-7_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-16_5-7_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-16_5-7_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-16_5-7_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-16_5-7_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SB-16_5-7_021120	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-16_9-11_021120	6010D	7440-09-7	Potassium, Total	J
SB-16_9-11_021120	SW7196A	18540-29-9	Chromium, Hexavalent	UJ
SB-16_9-11_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-16_9-11_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-16_9-11_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-16_9-11_021120	SW8260C	56-23-5	Carbon Tetrachloride	UJ
SB-16_9-11_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-16_9-11_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-16_9-11_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-16_9-11_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-16_9-11_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-16_9-11_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-16_9-11_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-16_9-11_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SB-16_9-11_021120	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-17_0-2_020520	SW8081B	5103-74-2	Trans-chlordane	J
SB-17_0-2_020520	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-17_0-2_020520	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-17_0-2_020520	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-17_0-2_020520	SW8260C	108-67-8	1,3,5-Trimethylbenzene	J
SB-17_0-2_020520	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-17_0-2_020520	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-17_0-2_020520	SW8260C	75-00-3	Chloroethane	UJ
SB-17_0-2_020520	SW8260C	100-41-4	Ethylbenzene	J
SB-17_0-2_020520	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-17_0-2_020520	SW8260C	108-88-3	Toluene	UJ
SB-17_0-2_020520	SW8260C	75-01-4	Vinyl chloride	UJ
SB-17_0-2_020520	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-17_0-2_020520	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-17_0-2_020520	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-17_0-2_020520	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-17_0-2_020520	SW8270D	65-85-0	Benzoic Acid	UJ
SB-17_0-2_020520	E537(M)	2355-31-9	N-Methyl perfluorooctanesulfonamidoacetic acid (Nmefosaa)	UJ
SB-17_0-2_020520	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-17_5-7_020520	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-17_5-7_020520	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-17_5-7_020520	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-17_5-7_020520	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-17_5-7_020520	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-17_5-7_020520	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-17_5-7_020520	SW8260C	75-00-3	Chloroethane	UJ
SB-17_5-7_020520	SW8260C	100-41-4	Ethylbenzene	UJ
SB-17_5-7_020520	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-17_5-7_020520	SW8260C	108-88-3	Toluene	UJ
SB-17_5-7_020520	SW8260C	75-01-4	Vinyl chloride	UJ
SB-17_5-7_020520	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-17_5-7_020520	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-17_5-7_020520	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-17_5-7_020520	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-17_5-7_020520	SW8270D	65-85-0	Benzoic Acid	UJ
SB-17_5-7_020520	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-17_9-11_020520	6010D	7440-47-3	Chromium, Total	U (2.12)
SB-17_9-11_020520	6010D	7440-02-0	Nickel, Total	U (2.34)
SB-17_9-11_020520	6010D	7440-23-5	Sodium, Total	U (187)
SB-17_9-11_020520	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-17_9-11_020520	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-17_9-11_020520	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-17_9-11_020520	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-17_9-11_020520	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-17_9-11_020520	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-17_9-11_020520	SW8260C	75-00-3	Chloroethane	UJ
SB-17_9-11_020520	SW8260C	100-41-4	Ethylbenzene	UJ
SB-17_9-11_020520	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-17_9-11_020520	SW8260C	108-88-3	Toluene	UJ
SB-17_9-11_020520	SW8260C	75-01-4	Vinyl chloride	UJ
SB-17_9-11_020520	SW8260C	104-51-8	N-Butylbenzene	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-17_9-11_020520	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-17_9-11_020520	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-17_9-11_020520	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-17_9-11_020520	SW8270D	65-85-0	Benzoic Acid	UJ
SB-17_9-11_020520	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-18_0-2_020520	6010D	7440-23-5	Sodium, Total	U (160)
SB-18_0-2_020520	SW8260C	79-34-5	1,1,2,2-Tetrachloroethane	UJ
SB-18_0-2_020520	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-18_0-2_020520	SW8260C	87-61-6	1,2,3-Trichlorobenzene	UJ
SB-18_0-2_020520	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-18_0-2_020520	SW8260C	95-93-2	1,2,4,5-Tetramethylbenzene	UJ
SB-18_0-2_020520	SW8260C	120-82-1	1,2,4-Trichlorobenzene	UJ
SB-18_0-2_020520	SW8260C	95-63-6	1,2,4-Trimethylbenzene	UJ
SB-18_0-2_020520	SW8260C	96-12-8	1,2-Dibromo-3-chloropropane	UJ
SB-18_0-2_020520	SW8260C	95-50-1	1,2-Dichlorobenzene	UJ
SB-18_0-2_020520	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-18_0-2_020520	SW8260C	541-73-1	1,3-Dichlorobenzene	UJ
SB-18_0-2_020520	SW8260C	106-46-7	1,4-Dichlorobenzene	UJ
SB-18_0-2_020520	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-18_0-2_020520	SW8260C	67-64-1	Acetone	J
SB-18_0-2_020520	SW8260C	108-86-1	Bromobenzene	UJ
SB-18_0-2_020520	SW8260C	75-25-2	Bromoform	UJ
SB-18_0-2_020520	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-18_0-2_020520	SW8260C	75-00-3	Chloroethane	UJ
SB-18_0-2_020520	SW8260C	74-87-3	Chloromethane	UJ
SB-18_0-2_020520	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-18_0-2_020520	SW8260C	100-41-4	Ethylbenzene	UJ
SB-18_0-2_020520	SW8260C	87-68-3	Hexachlorobutadiene	UJ
SB-18_0-2_020520	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-18_0-2_020520	SW8260C	91-20-3	Naphthalene	UJ
SB-18_0-2_020520	SW8260C	108-88-3	Toluene	UJ
SB-18_0-2_020520	SW8260C	75-01-4	Vinyl chloride	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-18_0-2_020520	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-18_0-2_020520	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-18_0-2_020520	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-18_0-2_020520	SW8260C	99-87-6	P-Isopropyltoluene	UJ
SB-18_0-2_020520	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-18_0-2_020520	SW8260C	98-06-6	Tert-Butylbenzene	UJ
SB-18_0-2_020520	SW8260C	110-57-6	Trans-1,4-dichloro-2-butene	UJ
SB-18_0-2_020520	SW8270D	65-85-0	Benzoic Acid	UJ
SB-18_0-2_020520	E537(M)	375-22-4	Perfluorobutanoic acid (PFBA)	U (1.02)
SB-18_10-12_020520	6010D	7440-47-3	Chromium, Total	U (3.3)
SB-18_10-12_020520	6010D	7440-02-0	Nickel, Total	U (2.41)
SB-18_10-12_020520	6010D	7440-23-5	Sodium, Total	U (193)
SB-18_10-12_020520	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-18_10-12_020520	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-18_10-12_020520	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-18_10-12_020520	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-18_10-12_020520	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-18_10-12_020520	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-18_10-12_020520	SW8260C	75-00-3	Chloroethane	UJ
SB-18_10-12_020520	SW8260C	100-41-4	Ethylbenzene	UJ
SB-18_10-12_020520	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-18_10-12_020520	SW8260C	108-88-3	Toluene	UJ
SB-18_10-12_020520	SW8260C	75-01-4	Vinyl chloride	UJ
SB-18_10-12_020520	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-18_10-12_020520	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-18_10-12_020520	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-18_10-12_020520	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-18_10-12_020520	SW8270D	65-85-0	Benzoic Acid	UJ
SB-18_10-12_020520	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-18_2-4_020520	SW8081B	72-54-8	4,4'-DDD	J
SB-18_2-4_020520	SW8081B	72-55-9	4,4'-DDE	J
SB-18_2-4_020520	SW8081B	50-29-3	4,4'-DDT	J

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-18_2-4_020520	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-18_2-4_020520	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-18_2-4_020520	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-18_2-4_020520	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-18_2-4_020520	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-18_2-4_020520	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-18_2-4_020520	SW8260C	75-00-3	Chloroethane	UJ
SB-18_2-4_020520	SW8260C	100-41-4	Ethylbenzene	UJ
SB-18_2-4_020520	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-18_2-4_020520	SW8260C	108-88-3	Toluene	UJ
SB-18_2-4_020520	SW8260C	75-01-4	Vinyl chloride	UJ
SB-18_2-4_020520	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-18_2-4_020520	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-18_2-4_020520	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-18_2-4_020520	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-18_2-4_020520	SW8270D	65-85-0	Benzoic Acid	UJ
SB-18_2-4_020520	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-19_0-2_020520	6010D	7440-47-3	Chromium, Total	U (3.61)
SB-19_0-2_020520	6010D	7440-23-5	Sodium, Total	U (154)
SB-19_0-2_020520	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-19_0-2_020520	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-19_0-2_020520	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-19_0-2_020520	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-19_0-2_020520	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-19_0-2_020520	SW8260C	78-93-3	2-Butanone	U (18)
SB-19_0-2_020520	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-19_0-2_020520	SW8260C	75-00-3	Chloroethane	UJ
SB-19_0-2_020520	SW8260C	100-41-4	Ethylbenzene	UJ
SB-19_0-2_020520	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-19_0-2_020520	SW8260C	108-88-3	Toluene	UJ
SB-19_0-2_020520	SW8260C	75-01-4	Vinyl chloride	UJ
SB-19_0-2_020520	SW8260C	104-51-8	N-Butylbenzene	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-19_0-2_020520	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-19_0-2_020520	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-19_0-2_020520	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-19_0-2_020520	SW8270D	65-85-0	Benzoic Acid	UJ
SB-19_0-2_020520	SW9012B	57-12-5	Cyanide, Total	UJ
SB-19_0-2_020520	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-19_2-4_020520	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-19_2-4_020520	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-19_2-4_020520	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-19_2-4_020520	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-19_2-4_020520	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-19_2-4_020520	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-19_2-4_020520	SW8260C	75-00-3	Chloroethane	UJ
SB-19_2-4_020520	SW8260C	100-41-4	Ethylbenzene	UJ
SB-19_2-4_020520	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-19_2-4_020520	SW8260C	108-88-3	Toluene	UJ
SB-19_2-4_020520	SW8260C	75-01-4	Vinyl chloride	UJ
SB-19_2-4_020520	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-19_2-4_020520	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-19_2-4_020520	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-19_2-4_020520	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-19_2-4_020520	SW8270D	65-85-0	Benzoic Acid	UJ
SB-19_2-4_020520	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-19_6-8_020520	6010D	7440-47-3	Chromium, Total	U (3.45)
SB-19_6-8_020520	6010D	7440-02-0	Nickel, Total	U (2.2)
SB-19_6-8_020520	6010D	7440-23-5	Sodium, Total	U (176)
SB-19_6-8_020520	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-19_6-8_020520	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-19_6-8_020520	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-19_6-8_020520	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-19_6-8_020520	SW8260C	123-91-1	1,4-Dioxane	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-19_6-8_020520	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-19_6-8_020520	SW8260C	75-00-3	Chloroethane	UJ
SB-19_6-8_020520	SW8260C	100-41-4	Ethylbenzene	UJ
SB-19_6-8_020520	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-19_6-8_020520	SW8260C	108-88-3	Toluene	UJ
SB-19_6-8_020520	SW8260C	75-01-4	Vinyl chloride	UJ
SB-19_6-8_020520	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-19_6-8_020520	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-19_6-8_020520	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-19_6-8_020520	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-19_6-8_020520	SW8270D	65-85-0	Benzoic Acid	UJ
SB-19_6-8_020520	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-2_0-2_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-2_0-2_021120	SW8151A	93-76-5	2,4,5-T	UJ
SB-2_0-2_021120	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-2_0-2_021120	SW8151A	94-75-7	2,4-D	UJ
SB-2_0-2_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-2_0-2_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-2_0-2_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-2_0-2_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-2_0-2_021120	SW8260C	594-20-7	2,2-Dichloropropane	UJ
SB-2_0-2_021120	SW8260C	67-64-1	Acetone	J
SB-2_0-2_021120	SW8260C	67-64-1	Acetone	J
SB-2_0-2_021120	SW8260C	56-23-5	Carbon tetrachloride	UJ
SB-2_0-2_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-2_0-2_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-2_0-2_021120	SW8260C	127-18-4	Tetrachloroethene	J
SB-2_0-2_021120	SW8260C	127-18-4	Tetrachloroethene	J
SB-2_0-2_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-2_0-2_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-2_0-2_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-2_0-2_021120	SW8270D	606-20-2	2,6-Dinitrotoluene	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-2_0-2_021120	SW8270D	88-75-5	2-Nitrophenol	UJ
SB-2_0-2_021120	SW8270D	534-52-1	4,6-Dinitro-o-cresol	UJ
SB-2_0-2_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-2_0-2_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SB-2_0-2_021120	E537(M)	375-22-4	Perfluorobutanoic acid (PFBA)	U (1.04)
SB-2_6-8_021120	SW8081B	72-55-9	4,4'-DDE	J
SB-2_6-8_021120	SW8081B	50-29-3	4,4'-DDT	J
SB-2_6-8_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-2_6-8_021120	SW8151A	93-76-5	2,4,5-T	UJ
SB-2_6-8_021120	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-2_6-8_021120	SW8151A	94-75-7	2,4-D	UJ
SB-2_6-8_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-2_6-8_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-2_6-8_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-2_6-8_021120	SW8260C	56-23-5	Carbon tetrachloride	UJ
SB-2_6-8_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-2_6-8_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-2_6-8_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-2_6-8_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-2_6-8_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-2_6-8_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-2_6-8_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-2_6-8_021120	SW9012B	57-12-5	Cyanide, Total	J
SB-20_0-2_020520	6010D	7440-38-2	Arsenic, Total	J
SB-20_0-2_020520	6010D	7440-39-3	Barium, Total	J
SB-20_0-2_020520	6010D	7439-89-6	Iron, Total	J
SB-20_0-2_020520	6010D	7439-92-1	Lead, Total	J
SB-20_0-2_020520	6010D	7439-96-5	Manganese, Total	J
SB-20_0-2_020520	6010D	7782-49-2	Selenium, Total	J
SB-20_0-2_020520	6010D	7440-66-6	Zinc, Total	J
SB-20_0-2_020520	SW8151A	93-72-1	2,4,5-TP (Silvex)	UJ
SB-20_0-2_020520	SW8260C	563-58-6	1,1-Dichloropropene	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-20_0-2_020520	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-20_0-2_020520	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-20_0-2_020520	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-20_0-2_020520	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-20_0-2_020520	SW8260C	75-00-3	Chloroethane	UJ
SB-20_0-2_020520	SW8260C	100-41-4	Ethylbenzene	J
SB-20_0-2_020520	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-20_0-2_020520	SW8260C	108-88-3	Toluene	UJ
SB-20_0-2_020520	SW8260C	75-01-4	Vinyl chloride	UJ
SB-20_0-2_020520	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-20_0-2_020520	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-20_0-2_020520	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-20_0-2_020520	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-20_0-2_020520	SW8270D	65-85-0	Benzoic Acid	UJ
SB-20_0-2_020520	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-20_2-4_020520	6010D	7440-23-5	Sodium, Total	U (170)
SB-20_2-4_020520	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-20_2-4_020520	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-20_2-4_020520	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-20_2-4_020520	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-20_2-4_020520	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-20_2-4_020520	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-20_2-4_020520	SW8260C	75-00-3	Chloroethane	UJ
SB-20_2-4_020520	SW8260C	100-41-4	Ethylbenzene	UJ
SB-20_2-4_020520	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-20_2-4_020520	SW8260C	108-88-3	Toluene	J
SB-20_2-4_020520	SW8260C	75-01-4	Vinyl chloride	UJ
SB-20_2-4_020520	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-20_2-4_020520	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-20_2-4_020520	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-20_2-4_020520	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-20_2-4_020520	SW8270D	65-85-0	Benzoic Acid	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-20_2-4_020520	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	J
SB-20_6-8_020520	6010D	7440-02-0	Nickel, Total	U (2.33)
SB-20_6-8_020520	6010D	7440-23-5	Sodium, Total	U (186)
SB-20_6-8_020520	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-20_6-8_020520	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-20_6-8_020520	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-20_6-8_020520	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-20_6-8_020520	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-20_6-8_020520	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-20_6-8_020520	SW8260C	75-00-3	Chloroethane	UJ
SB-20_6-8_020520	SW8260C	100-41-4	Ethylbenzene	UJ
SB-20_6-8_020520	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-20_6-8_020520	SW8260C	108-88-3	Toluene	UJ
SB-20_6-8_020520	SW8260C	75-01-4	Vinyl chloride	UJ
SB-20_6-8_020520	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-20_6-8_020520	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-20_6-8_020520	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-20_6-8_020520	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-20_6-8_020520	SW8270D	65-85-0	Benzoic Acid	UJ
SB-20_6-8_020520	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-3_0-2_020720	SW8081B	72-54-8	4,4'-DDD	UJ
SB-3_0-2_020720	SW8081B	72-55-9	4,4'-DDE	J
SB-3_0-2_020720	SW8081B	50-29-3	4,4'-DDT	UJ
SB-3_0-2_020720	SW8081B	319-84-6	Alpha-BHC	UJ
SB-3_0-2_020720	SW8081B	319-86-8	Delta-BHC	UJ
SB-3_0-2_020720	SW8081B	60-57-1	Dieldrin	UJ
SB-3_0-2_020720	SW8081B	959-98-8	Endosulfan I	UJ
SB-3_0-2_020720	SW8081B	33213-65-9	Endosulfan II	UJ
SB-3_0-2_020720	SW8081B	1031-07-8	Endosulfan Sulfate	UJ
SB-3_0-2_020720	SW8081B	72-20-8	Endrin	UJ
SB-3_0-2_020720	SW8081B	76-44-8	Heptachlor	UJ

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SB-3_0-2_020720	SW8081B	58-89-9	Lindane	UJ
SB-3_0-2_020720	SW8081B	5103-74-2	Trans-chlordane	UJ
SB-3_0-2_020720	SW8260C	79-34-5	1,1,2,2-Tetrachloroethane	UJ
SB-3_0-2_020720	SW8260C	87-61-6	1,2,3-Trichlorobenzene	UJ
SB-3_0-2_020720	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-3_0-2_020720	SW8260C	95-93-2	1,2,4,5-Tetramethylbenzene	UJ
SB-3_0-2_020720	SW8260C	120-82-1	1,2,4-Trichlorobenzene	UJ
SB-3_0-2_020720	SW8260C	95-63-6	1,2,4-Trimethylbenzene	UJ
SB-3_0-2_020720	SW8260C	95-50-1	1,2-Dichlorobenzene	UJ
SB-3_0-2_020720	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-3_0-2_020720	SW8260C	541-73-1	1,3-Dichlorobenzene	UJ
SB-3_0-2_020720	SW8260C	106-46-7	1,4-Dichlorobenzene	UJ
SB-3_0-2_020720	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-3_0-2_020720	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-3_0-2_020720	SW8260C	67-64-1	Acetone	UJ
SB-3_0-2_020720	SW8260C	108-86-1	Bromobenzene	UJ
SB-3_0-2_020720	SW8260C	75-25-2	Bromoform	UJ
SB-3_0-2_020720	SW8260C	74-83-9	Bromomethane	UJ
SB-3_0-2_020720	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-3_0-2_020720	SW8260C	75-00-3	Chloroethane	UJ
SB-3_0-2_020720	SW8260C	67-66-3	Chloroform	J
SB-3_0-2_020720	SW8260C	74-87-3	Chloromethane	UJ
SB-3_0-2_020720	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-3_0-2_020720	SW8260C	60-29-7	Ethyl Ether	UJ
SB-3_0-2_020720	SW8260C	87-68-3	Hexachlorobutadiene	UJ
SB-3_0-2_020720	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-3_0-2_020720	SW8260C	91-20-3	Naphthalene	UJ
SB-3_0-2_020720	SW8260C	127-18-4	Tetrachloroethene	J
SB-3_0-2_020720	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-3_0-2_020720	SW8260C	75-01-4	Vinyl chloride	UJ
SB-3_0-2_020720	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-3_0-2_020720	SW8260C	103-65-1	N-Propylbenzene	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-3_0-2_020720	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-3_0-2_020720	SW8260C	99-87-6	P-Isopropyltoluene	UJ
SB-3_0-2_020720	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-3_0-2_020720	SW8260C	98-06-6	Tert-Butylbenzene	UJ
SB-3_0-2_020720	SW8260C	110-57-6	Trans-1,4-dichloro-2-butene	UJ
SB-3_0-2_020720	SW8270D	65-85-0	Benzoic Acid	UJ
SB-3_0-2_020720	SW9012B	57-12-5	Cyanide, Total	UJ
SB-3_0-2_020720	E537(M)	375-22-4	Perfluorobutanoic acid (PFBA)	U (1.04)
SB-3_0-2_020720	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-3_0-2_020720	E537(M)	1763-23-1	Perfluorooctanesulfonic acid (PFOS)	J
SB-3_6-8_020720	SW8081B	72-54-8	4,4'-DDD	UJ
SB-3_6-8_020720	SW8081B	72-55-9	4,4'-DDE	UJ
SB-3_6-8_020720	SW8081B	50-29-3	4,4'-DDT	UJ
SB-3_6-8_020720	SW8081B	319-84-6	Alpha-BHC	UJ
SB-3_6-8_020720	SW8081B	319-86-8	Delta-BHC	UJ
SB-3_6-8_020720	SW8081B	60-57-1	Dieldrin	UJ
SB-3_6-8_020720	SW8081B	959-98-8	Endosulfan I	UJ
SB-3_6-8_020720	SW8081B	33213-65-9	Endosulfan II	UJ
SB-3_6-8_020720	SW8081B	1031-07-8	Endosulfan Sulfate	UJ
SB-3_6-8_020720	SW8081B	72-20-8	Endrin	UJ
SB-3_6-8_020720	SW8081B	76-44-8	Heptachlor	UJ
SB-3_6-8_020720	SW8081B	58-89-9	Lindane	UJ
SB-3_6-8_020720	SW8081B	5103-74-2	Trans-chlordane	UJ
SB-3_6-8_020720	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-3_6-8_020720	SW8260C	67-64-1	Acetone	UJ
SB-3_6-8_020720	SW8260C	74-83-9	Bromomethane	UJ
SB-3_6-8_020720	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-3_6-8_020720	SW8260C	74-87-3	Chloromethane	UJ
SB-3_6-8_020720	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-3_6-8_020720	SW8270D	65-85-0	Benzoic Acid	UJ
SB-3_6-8_020720	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-3_6-8_020720	SW8270D	87-86-5	Pentachlorophenol	UJ
SB-3_6-8_020720	SW9012B	57-12-5	Cyanide, Total	UJ
SB-3_6-8_020720	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-3_9-11_020720	SW8081B	72-54-8	4,4'-DDD	UJ
SB-3_9-11_020720	SW8081B	72-55-9	4,4'-DDE	UJ
SB-3_9-11_020720	SW8081B	50-29-3	4,4'-DDT	UJ
SB-3_9-11_020720	SW8081B	319-84-6	Alpha-BHC	UJ
SB-3_9-11_020720	SW8081B	319-86-8	Delta-BHC	UJ
SB-3_9-11_020720	SW8081B	60-57-1	Dieldrin	UJ
SB-3_9-11_020720	SW8081B	959-98-8	Endosulfan I	UJ
SB-3_9-11_020720	SW8081B	33213-65-9	Endosulfan II	UJ
SB-3_9-11_020720	SW8081B	1031-07-8	Endosulfan Sulfate	UJ
SB-3_9-11_020720	SW8081B	72-20-8	Endrin	UJ
SB-3_9-11_020720	SW8081B	76-44-8	Heptachlor	UJ
SB-3_9-11_020720	SW8081B	58-89-9	Lindane	UJ
SB-3_9-11_020720	SW8081B	5103-74-2	Trans-chlordane	UJ
SB-3_9-11_020720	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-3_9-11_020720	SW8260C	67-64-1	Acetone	UJ
SB-3_9-11_020720	SW8260C	74-83-9	Bromomethane	UJ
SB-3_9-11_020720	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-3_9-11_020720	SW8260C	74-87-3	Chloromethane	UJ
SB-3_9-11_020720	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-3_9-11_020720	SW8270D	65-85-0	Benzoic Acid	UJ
SB-3_9-11_020720	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SB-3_9-11_020720	SW8270D	87-86-5	Pentachlorophenol	UJ
SB-3_9-11_020720	SW9012B	57-12-5	Cyanide, Total	UJ
SB-3_9-11_020720	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-4_0-2_020620	6010D	7440-47-3	Chromium, Total	U (3.4)
SB-4_0-2_020620	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-4_0-2_020620	SW8260C	79-34-5	1,1,2,2-Tetrachloroethane	UJ
SB-4_0-2_020620	SW8260C	563-58-6	1,1-Dichloropropene	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-4_0-2_020620	SW8260C	87-61-6	1,2,3-Trichlorobenzene	UJ
SB-4_0-2_020620	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-4_0-2_020620	SW8260C	95-93-2	1,2,4,5-Tetramethylbenzene	UJ
SB-4_0-2_020620	SW8260C	120-82-1	1,2,4-Trichlorobenzene	UJ
SB-4_0-2_020620	SW8260C	95-63-6	1,2,4-Trimethylbenzene	UJ
SB-4_0-2_020620	SW8260C	96-12-8	1,2-Dibromo-3-chloropropane	UJ
SB-4_0-2_020620	SW8260C	95-50-1	1,2-Dichlorobenzene	UJ
SB-4_0-2_020620	SW8260C	540-59-0	1,2-Dichloroethene (Total)	J
SB-4_0-2_020620	SW8260C	540-59-0	1,2-Dichloroethene (Total)	J
SB-4_0-2_020620	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-4_0-2_020620	SW8260C	541-73-1	1,3-Dichlorobenzene	UJ
SB-4_0-2_020620	SW8260C	106-46-7	1,4-Dichlorobenzene	UJ
SB-4_0-2_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-4_0-2_020620	SW8260C	78-93-3	2-Butanone	U (10)
SB-4_0-2_020620	SW8260C	67-64-1	Acetone	J
SB-4_0-2_020620	SW8260C	108-86-1	Bromobenzene	UJ
SB-4_0-2_020620	SW8260C	75-25-2	Bromoform	UJ
SB-4_0-2_020620	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-4_0-2_020620	SW8260C	75-00-3	Chloroethane	UJ
SB-4_0-2_020620	SW8260C	100-41-4	Ethylbenzene	UJ
SB-4_0-2_020620	SW8260C	87-68-3	Hexachlorobutadiene	UJ
SB-4_0-2_020620	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-4_0-2_020620	SW8260C	91-20-3	Naphthalene	UJ
SB-4_0-2_020620	SW8260C	127-18-4	Tetrachloroethene	J
SB-4_0-2_020620	SW8260C	127-18-4	Tetrachloroethene	J
SB-4_0-2_020620	SW8260C	108-88-3	Toluene	UJ
SB-4_0-2_020620	SW8260C	79-01-6	Trichloroethene	J
SB-4_0-2_020620	SW8260C	75-01-4	Vinyl chloride	UJ
SB-4_0-2_020620	SW8260C	75-01-4	Vinyl chloride	J
SB-4_0-2_020620	SW8260C	156-59-2	Cis-1,2-Dichloroethene	J
SB-4_0-2_020620	SW8260C	156-59-2	Cis-1,2-Dichloroethene	J
SB-4_0-2_020620	SW8260C	104-51-8	N-Butylbenzene	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-4_0-2_020620	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-4_0-2_020620	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-4_0-2_020620	SW8260C	99-87-6	P-Isopropyltoluene	UJ
SB-4_0-2_020620	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-4_0-2_020620	SW8260C	98-06-6	Tert-Butylbenzene	UJ
SB-4_0-2_020620	SW8260C	156-60-5	Trans-1,2-dichloroethene	J
SB-4_0-2_020620	SW8260C	110-57-6	Trans-1,4-dichloro-2-butene	UJ
SB-4_0-2_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-4_0-2_020620	E537(M)	375-22-4	Perfluorobutanoic acid (PFBA)	U (0.964)
SB-4_10-12_020620	6010D	7440-70-2	Calcium, Total	J
SB-4_10-12_020620	SW7196A	18540-29-9	Chromium, Hexavalent	UJ
SB-4_10-12_020620	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-4_10-12_020620	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-4_10-12_020620	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-4_10-12_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-4_10-12_020620	SW8260C	78-93-3	2-Butanone	U (10)
SB-4_10-12_020620	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-4_10-12_020620	SW8260C	75-00-3	Chloroethane	UJ
SB-4_10-12_020620	SW8260C	100-41-4	Ethylbenzene	UJ
SB-4_10-12_020620	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-4_10-12_020620	SW8260C	108-88-3	Toluene	UJ
SB-4_10-12_020620	SW8260C	75-01-4	Vinyl chloride	UJ
SB-4_10-12_020620	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-4_10-12_020620	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-4_10-12_020620	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-4_10-12_020620	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-4_10-12_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-4_6-8_020620	6010D	7440-47-3	Chromium, Total	U (3.64)
SB-4_6-8_020620	6010D	7440-02-0	Nickel, Total	U (2.35)
SB-4_6-8_020620	6010D	7440-23-5	Sodium, Total	U (188)
SB-4_6-8_020620	SW8081B	72-43-5	Methoxychlor	UJ
SB-4_6-8_020620	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-4_6-8_020620	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-4_6-8_020620	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-4_6-8_020620	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-4_6-8_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-4_6-8_020620	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-4_6-8_020620	SW8260C	75-00-3	Chloroethane	UJ
SB-4_6-8_020620	SW8260C	100-41-4	Ethylbenzene	UJ
SB-4_6-8_020620	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-4_6-8_020620	SW8260C	108-88-3	Toluene	UJ
SB-4_6-8_020620	SW8260C	75-01-4	Vinyl chloride	UJ
SB-4_6-8_020620	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-4_6-8_020620	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-4_6-8_020620	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-4_6-8_020620	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-4_6-8_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-5_0-2_020620	6010D	7440-47-3	Chromium, Total	U (2.45)
SB-5_0-2_020620	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-5_0-2_020620	SW8260C	79-34-5	1,1,2,2-Tetrachloroethane	UJ
SB-5_0-2_020620	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-5_0-2_020620	SW8260C	87-61-6	1,2,3-Trichlorobenzene	UJ
SB-5_0-2_020620	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-5_0-2_020620	SW8260C	95-93-2	1,2,4,5-Tetramethylbenzene	UJ
SB-5_0-2_020620	SW8260C	120-82-1	1,2,4-Trichlorobenzene	UJ
SB-5_0-2_020620	SW8260C	95-63-6	1,2,4-Trimethylbenzene	UJ
SB-5_0-2_020620	SW8260C	96-12-8	1,2-Dibromo-3-chloropropane	UJ
SB-5_0-2_020620	SW8260C	95-50-1	1,2-Dichlorobenzene	UJ
SB-5_0-2_020620	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-5_0-2_020620	SW8260C	541-73-1	1,3-Dichlorobenzene	UJ
SB-5_0-2_020620	SW8260C	106-46-7	1,4-Dichlorobenzene	UJ
SB-5_0-2_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-5_0-2_020620	SW8260C	78-93-3	2-Butanone	U (12)
SB-5_0-2_020620	SW8260C	108-86-1	Bromobenzene	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-5_0-2_020620	SW8260C	75-25-2	Bromoform	UJ
SB-5_0-2_020620	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-5_0-2_020620	SW8260C	75-00-3	Chloroethane	UJ
SB-5_0-2_020620	SW8260C	74-87-3	Chloromethane	UJ
SB-5_0-2_020620	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-5_0-2_020620	SW8260C	100-41-4	Ethylbenzene	UJ
SB-5_0-2_020620	SW8260C	87-68-3	Hexachlorobutadiene	UJ
SB-5_0-2_020620	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-5_0-2_020620	SW8260C	91-20-3	Naphthalene	UJ
SB-5_0-2_020620	SW8260C	108-88-3	Toluene	UJ
SB-5_0-2_020620	SW8260C	75-01-4	Vinyl chloride	UJ
SB-5_0-2_020620	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-5_0-2_020620	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-5_0-2_020620	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-5_0-2_020620	SW8260C	99-87-6	P-Isopropyltoluene	UJ
SB-5_0-2_020620	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-5_0-2_020620	SW8260C	98-06-6	Tert-Butylbenzene	UJ
SB-5_0-2_020620	SW8260C	110-57-6	Trans-1,4-dichloro-2-butene	UJ
SB-5_0-2_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-5_0-2_020620	E537(M)	375-22-4	Perfluorobutanoic acid (PFBA)	U (0.974)
SB-5_0-2_020620	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-5_10-12_020620	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-5_10-12_020620	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-5_10-12_020620	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-5_10-12_020620	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-5_10-12_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-5_10-12_020620	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-5_10-12_020620	SW8260C	75-00-3	Chloroethane	UJ
SB-5_10-12_020620	SW8260C	100-41-4	Ethylbenzene	UJ
SB-5_10-12_020620	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-5_10-12_020620	SW8260C	108-88-3	Toluene	UJ
SB-5_10-12_020620	SW8260C	75-01-4	Vinyl chloride	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-5_10-12_020620	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-5_10-12_020620	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-5_10-12_020620	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-5_10-12_020620	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-5_10-12_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-5_5-7_020620	6010D	7440-23-5	Sodium, Total	U (180)
SB-5_5-7_020620	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-5_5-7_020620	SW8260C	563-58-6	1,1-Dichloropropene	UJ
SB-5_5-7_020620	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-5_5-7_020620	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-5_5-7_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-5_5-7_020620	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-5_5-7_020620	SW8260C	75-00-3	Chloroethane	UJ
SB-5_5-7_020620	SW8260C	100-41-4	Ethylbenzene	UJ
SB-5_5-7_020620	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-5_5-7_020620	SW8260C	108-88-3	Toluene	UJ
SB-5_5-7_020620	SW8260C	75-01-4	Vinyl chloride	UJ
SB-5_5-7_020620	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-5_5-7_020620	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-5_5-7_020620	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-5_5-7_020620	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-5_5-7_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-5_5-7_020620	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-6_0-2_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-6_0-2_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-6_0-2_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-6_0-2_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-6_0-2_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-6_0-2_021120	SW8260C	594-20-7	2,2-Dichloropropane	UJ
SB-6_0-2_021120	SW8260C	67-64-1	Acetone	J
SB-6_0-2_021120	SW8260C	67-64-1	Acetone	J
SB-6_0-2_021120	SW8260C	71-43-2	Benzene	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-6_0-2_021120	SW8260C	71-43-2	Benzene	J
SB-6_0-2_021120	SW8260C	56-23-5	Carbon Tetrachloride	UJ
SB-6_0-2_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-6_0-2_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-6_0-2_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-6_0-2_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-6_0-2_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-6_0-2_021120	SW8270D	123-91-1	1,4-Dioxane	UJ
SB-6_0-2_021120	SW8270D	88-06-2	2,4,6-Trichlorophenol	UJ
SB-6_0-2_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-6_0-2_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-6_0-2_021120	SW8270D	108-60-1	Bis(2-Chloroisopropyl)Ether	UJ
SB-6_0-2_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SB-6_0-2_021120	E537(M)	375-22-4	Perfluorobutanoic acid (PFBA)	U (1.07)
SB-6_0-2_021120	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-6_5-7_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-6_5-7_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-6_5-7_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-6_5-7_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-6_5-7_021120	SW8260C	56-23-5	Carbon Tetrachloride	UJ
SB-6_5-7_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-6_5-7_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-6_5-7_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-6_5-7_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-6_5-7_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-6_5-7_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-6_5-7_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-6_5-7_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SB-6_5-7_021120	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-6_9-11_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-6_9-11_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-6_9-11_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-6_9-11_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-6_9-11_021120	SW8260C	78-93-3	2-Butanone	UJ
SB-6_9-11_021120	SW8260C	67-64-1	Acetone	J
SB-6_9-11_021120	6010D	7429-90-5	Aluminum, Total	J
SB-6_9-11_021120	6010D	7440-39-3	Barium, Total	J
SB-6_9-11_021120	SW8270D	205-99-2	Benzo(b)fluoranthene	J
SB-6_9-11_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-6_9-11_021120	6010D	7440-41-7	Beryllium, Total	UJ
SB-6_9-11_021120	6010D	7440-70-2	Calcium, Total	J
SB-6_9-11_021120	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-6_9-11_021120	SW8260C	56-23-5	Carbon Tetrachloride	UJ
SB-6_9-11_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-6_9-11_021120	6010D	7440-47-3	Chromium, Total	J
SB-6_9-11_021120	CALC	16065-83-1	Chromium, Trivalent	J
SB-6_9-11_021120	SW8270D	218-01-9	Chrysene	J
SB-6_9-11_021120	6010D	7440-50-8	Copper, Total	J
SB-6_9-11_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SB-6_9-11_021120	SW8270D	53-70-3	Dibenzo(a,h)anthracene	UJ
SB-6_9-11_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-6_9-11_021120	6010D	7439-89-6	Iron, Total	J
SB-6_9-11_021120	6010D	7439-95-4	Magnesium, Total	J
SB-6_9-11_021120	6010D	7439-96-5	Manganese, Total	J
SB-6_9-11_021120	SW7471B	7439-97-6	Mercury, Total	UJ
SB-6_9-11_021120	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-6_9-11_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-6_9-11_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-6_9-11_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-6_9-11_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-7_0-2_020720	SW8081B	72-54-8	4,4'-DDD	J
SB-7_0-2_020720	SW8081B	72-55-9	4,4'-DDE	J
SB-7_0-2_020720	SW8081B	50-29-3	4,4'-DDT	J

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-7_0-2_020720	SW8081B	319-84-6	Alpha-BHC	UJ
SB-7_0-2_020720	SW8081B	319-86-8	Delta-BHC	UJ
SB-7_0-2_020720	SW8081B	60-57-1	Dieldrin	UJ
SB-7_0-2_020720	SW8081B	959-98-8	Endosulfan I	UJ
SB-7_0-2_020720	SW8081B	33213-65-9	Endosulfan II	UJ
SB-7_0-2_020720	SW8081B	1031-07-8	Endosulfan Sulfate	UJ
SB-7_0-2_020720	SW8081B	72-20-8	Endrin	UJ
SB-7_0-2_020720	SW8081B	76-44-8	Heptachlor	UJ
SB-7_0-2_020720	SW8081B	58-89-9	Lindane	UJ
SB-7_0-2_020720	SW8081B	5103-74-2	Trans-chlordane	UJ
SB-7_0-2_020720	SW8260C	79-34-5	1,1,2,2-Tetrachloroethane	UJ
SB-7_0-2_020720	SW8260C	87-61-6	1,2,3-Trichlorobenzene	UJ
SB-7_0-2_020720	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-7_0-2_020720	SW8260C	95-93-2	1,2,4,5-Tetramethylbenzene	UJ
SB-7_0-2_020720	SW8260C	120-82-1	1,2,4-Trichlorobenzene	UJ
SB-7_0-2_020720	SW8260C	95-63-6	1,2,4-Trimethylbenzene	UJ
SB-7_0-2_020720	SW8260C	95-50-1	1,2-Dichlorobenzene	UJ
SB-7_0-2_020720	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-7_0-2_020720	SW8260C	541-73-1	1,3-Dichlorobenzene	UJ
SB-7_0-2_020720	SW8260C	106-46-7	1,4-Dichlorobenzene	UJ
SB-7_0-2_020720	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-7_0-2_020720	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-7_0-2_020720	SW8260C	67-64-1	Acetone	UJ
SB-7_0-2_020720	SW8260C	108-86-1	Bromobenzene	UJ
SB-7_0-2_020720	SW8260C	75-25-2	Bromoform	UJ
SB-7_0-2_020720	SW8260C	74-83-9	Bromomethane	UJ
SB-7_0-2_020720	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-7_0-2_020720	SW8260C	75-00-3	Chloroethane	UJ
SB-7_0-2_020720	SW8260C	74-87-3	Chloromethane	UJ
SB-7_0-2_020720	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-7_0-2_020720	SW8260C	60-29-7	Ethyl Ether	UJ
SB-7_0-2_020720	SW8260C	87-68-3	Hexachlorobutadiene	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SB-7_0-2_020720	SW8260C	98-82-8	Isopropylbenzene	UJ
SB-7_0-2_020720	SW8260C	91-20-3	Naphthalene	J
SB-7_0-2_020720	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-7_0-2_020720	SW8260C	75-01-4	Vinyl chloride	UJ
SB-7_0-2_020720	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-7_0-2_020720	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-7_0-2_020720	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-7_0-2_020720	SW8260C	99-87-6	P-Isopropyltoluene	UJ
SB-7_0-2_020720	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-7_0-2_020720	SW8260C	98-06-6	Tert-Butylbenzene	UJ
SB-7_0-2_020720	SW8260C	110-57-6	Trans-1,4-dichloro-2-butene	UJ
SB-7_0-2_020720	SW8270D	65-85-0	Benzoic Acid	UJ
SB-7_0-2_020720	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SB-7_0-2_020720	SW8270D	87-86-5	Pentachlorophenol	UJ
SB-7_0-2_020720	SW9012B	57-12-5	Cyanide, Total	UJ
SB-7_0-2_020720	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-7_5-7_020720	SW8081B	72-54-8	4,4'-DDD	UJ
SB-7_5-7_020720	SW8081B	72-55-9	4,4'-DDE	UJ
SB-7_5-7_020720	SW8081B	50-29-3	4,4'-DDT	UJ
SB-7_5-7_020720	SW8081B	319-84-6	Alpha-BHC	UJ
SB-7_5-7_020720	SW8081B	319-86-8	Delta-BHC	UJ
SB-7_5-7_020720	SW8081B	60-57-1	Dieldrin	UJ
SB-7_5-7_020720	SW8081B	959-98-8	Endosulfan I	UJ
SB-7_5-7_020720	SW8081B	33213-65-9	Endosulfan II	UJ
SB-7_5-7_020720	SW8081B	1031-07-8	Endosulfan Sulfate	UJ
SB-7_5-7_020720	SW8081B	72-20-8	Endrin	UJ
SB-7_5-7_020720	SW8081B	76-44-8	Heptachlor	UJ
SB-7_5-7_020720	SW8081B	58-89-9	Lindane	UJ
SB-7_5-7_020720	SW8081B	5103-74-2	Trans-chlordane	UJ
SB-7_5-7_020720	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-7_5-7_020720	SW8260C	67-64-1	Acetone	UJ
SB-7_5-7_020720	SW8260C	74-83-9	Bromomethane	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-7_5-7_020720	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-7_5-7_020720	SW8260C	74-87-3	Chloromethane	UJ
SB-7_5-7_020720	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-7_5-7_020720	SW8270D	65-85-0	Benzoic Acid	UJ
SB-7_5-7_020720	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SB-7_5-7_020720	SW8270D	87-86-5	Pentachlorophenol	UJ
SB-7_5-7_020720	SW9012B	57-12-5	Cyanide, Total	UJ
SB-7_5-7_020720	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-7_9-11_020720	SW8081B	72-54-8	4,4'-DDD	UJ
SB-7_9-11_020720	SW8081B	72-55-9	4,4'-DDE	J
SB-7_9-11_020720	SW8081B	50-29-3	4,4'-DDT	UJ
SB-7_9-11_020720	SW8081B	319-84-6	Alpha-BHC	UJ
SB-7_9-11_020720	SW8081B	319-86-8	Delta-BHC	UJ
SB-7_9-11_020720	SW8081B	60-57-1	Dieldrin	UJ
SB-7_9-11_020720	SW8081B	959-98-8	Endosulfan I	UJ
SB-7_9-11_020720	SW8081B	33213-65-9	Endosulfan II	UJ
SB-7_9-11_020720	SW8081B	1031-07-8	Endosulfan Sulfate	UJ
SB-7_9-11_020720	SW8081B	72-20-8	Endrin	UJ
SB-7_9-11_020720	SW8081B	76-44-8	Heptachlor	UJ
SB-7_9-11_020720	SW8081B	58-89-9	Lindane	UJ
SB-7_9-11_020720	SW8081B	5103-74-2	Trans-chlordane	UJ
SB-7_9-11_020720	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-7_9-11_020720	SW8260C	67-64-1	Acetone	UJ
SB-7_9-11_020720	SW8260C	74-83-9	Bromomethane	UJ
SB-7_9-11_020720	SW8260C	75-15-0	Carbon Disulfide	UJ
SB-7_9-11_020720	SW8260C	74-87-3	Chloromethane	UJ
SB-7_9-11_020720	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-7_9-11_020720	SW8270D	65-85-0	Benzoic Acid	UJ
SB-7_9-11_020720	SW8270D	77-47-4	Hexachlorocyclopentadiene	UJ
SB-7_9-11_020720	SW8270D	87-86-5	Pentachlorophenol	UJ
SB-7_9-11_020720	SW9012B	57-12-5	Cyanide, Total	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-7_9-11_020720	E537(M)	355-46-4	Perfluorohexanesulfonic acid (PFHXS)	UJ
SB-8_0-2_020620	SW8082A	12674-11-2	Aroclor 1016	UJ
SB-8_0-2_020620	SW8082A	11104-28-2	Aroclor 1221	UJ
SB-8_0-2_020620	SW8082A	11141-16-5	Aroclor 1232	UJ
SB-8_0-2_020620	SW8082A	53469-21-9	Aroclor 1242	UJ
SB-8_0-2_020620	SW8082A	12672-29-6	Aroclor 1248	UJ
SB-8_0-2_020620	SW8082A	11097-69-1	Aroclor 1254	UJ
SB-8_0-2_020620	SW8082A	11096-82-5	Aroclor 1260	UJ
SB-8_0-2_020620	SW8082A	37324-23-5	Aroclor 1262	UJ
SB-8_0-2_020620	SW8082A	11100-14-4	Aroclor 1268	UJ
SB-8_0-2_020620	SW8082A	1336-36-3	PCBs, Total	UJ
SB-8_0-2_020620	SW8260C	79-34-5	1,1,2,2-Tetrachloroethane	UJ
SB-8_0-2_020620	SW8260C	87-61-6	1,2,3-Trichlorobenzene	UJ
SB-8_0-2_020620	SW8260C	96-18-4	1,2,3-Trichloropropane	UJ
SB-8_0-2_020620	SW8260C	95-93-2	1,2,4,5-Tetramethylbenzene	UJ
SB-8_0-2_020620	SW8260C	120-82-1	1,2,4-Trichlorobenzene	UJ
SB-8_0-2_020620	SW8260C	95-63-6	1,2,4-Trimethylbenzene	UJ
SB-8_0-2_020620	SW8260C	96-12-8	1,2-Dibromo-3-chloropropane	UJ
SB-8_0-2_020620	SW8260C	95-50-1	1,2-Dichlorobenzene	UJ
SB-8_0-2_020620	SW8260C	108-67-8	1,3,5-Trimethylbenzene	UJ
SB-8_0-2_020620	SW8260C	541-73-1	1,3-Dichlorobenzene	UJ
SB-8_0-2_020620	SW8260C	106-46-7	1,4-Dichlorobenzene	UJ
SB-8_0-2_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-8_0-2_020620	SW8260C	78-93-3	2-Butanone	J
SB-8_0-2_020620	SW8260C	591-78-6	2-Hexanone	J
SB-8_0-2_020620	SW8260C	67-64-1	Acetone	J
SB-8_0-2_020620	SW8260C	108-86-1	Bromobenzene	UJ
SB-8_0-2_020620	SW8260C	75-25-2	Bromoform	UJ
SB-8_0-2_020620	SW8260C	74-87-3	Chloromethane	UJ
SB-8_0-2_020620	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-8_0-2_020620	SW8260C	87-68-3	Hexachlorobutadiene	UJ
SB-8_0-2_020620	SW8260C	98-82-8	Isopropylbenzene	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-8_0-2_020620	SW8260C	91-20-3	Naphthalene	UJ
SB-8_0-2_020620	SW8260C	104-51-8	N-Butylbenzene	UJ
SB-8_0-2_020620	SW8260C	103-65-1	N-Propylbenzene	UJ
SB-8_0-2_020620	SW8260C	622-96-8	4-Ethyltoluene	UJ
SB-8_0-2_020620	SW8260C	99-87-6	P-Isopropyltoluene	UJ
SB-8_0-2_020620	SW8260C	135-98-8	Sec-Butylbenzene	UJ
SB-8_0-2_020620	SW8260C	98-06-6	Tert-Butylbenzene	UJ
SB-8_0-2_020620	SW8260C	110-57-6	Trans-1,4-dichloro-2-butene	UJ
SB-8_0-2_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-8_0-2_020620	E537(M)	375-22-4	Perfluorobutanoic acid (PFBA)	U (1.02)
SB-8_10-12_020620	SW8081B	72-54-8	4,4'-DDD	UJ
SB-8_10-12_020620	SW8081B	72-55-9	4,4'-DDE	UJ
SB-8_10-12_020620	SW8081B	319-86-8	Delta-BHC	UJ
SB-8_10-12_020620	SW8081B	60-57-1	Dieldrin	UJ
SB-8_10-12_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-8_10-12_020620	SW8260C	74-87-3	Chloromethane	UJ
SB-8_10-12_020620	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-8_10-12_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-8_5-7_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-8_5-7_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SB-9_0-2_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-9_0-2_021120	SW8151A	93-76-5	2,4,5-T	UJ
SB-9_0-2_021120	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-9_0-2_021120	SW8151A	94-75-7	2,4-D	UJ
SB-9_0-2_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-9_0-2_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-9_0-2_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-9_0-2_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-9_0-2_021120	SW8260C	594-20-7	2,2-Dichloropropane	UJ
SB-9_0-2_021120	SW8260C	67-64-1	Acetone	J
SB-9_0-2_021120	SW8260C	67-64-1	Acetone	J
SB-9_0-2_021120	SW8260C	56-23-5	Carbon tetrachloride	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-9_0-2_021120	SW8260C	67-66-3	Chloroform	J
SB-9_0-2_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-9_0-2_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-9_0-2_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-9_0-2_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-9_0-2_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-9_0-2_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-9_0-2_021120	SW8270D	606-20-2	2,6-Dinitrotoluene	UJ
SB-9_0-2_021120	SW8270D	88-75-5	2-Nitrophenol	UJ
SB-9_0-2_021120	SW8270D	534-52-1	4,6-Dinitro-o-cresol	UJ
SB-9_0-2_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-9_0-2_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SB-9_0-2_021120	E537(M)	375-22-4	Perfluorobutanoic acid (PFBA)	U (0.988)
SB-9_6-8_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-9_6-8_021120	SW8151A	93-76-5	2,4,5-T	UJ
SB-9_6-8_021120	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-9_6-8_021120	SW8151A	94-75-7	2,4-D	UJ
SB-9_6-8_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-9_6-8_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-9_6-8_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-9_6-8_021120	SW8260C	56-23-5	Carbon tetrachloride	UJ
SB-9_6-8_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-9_6-8_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-9_6-8_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-9_6-8_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-9_6-8_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-9_6-8_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-9_6-8_021120	SW8270D	606-20-2	2,6-Dinitrotoluene	UJ
SB-9_6-8_021120	SW8270D	88-75-5	2-Nitrophenol	UJ
SB-9_6-8_021120	SW8270D	534-52-1	4,6-Dinitro-o-cresol	UJ
SB-9_6-8_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-9_6-8_021120	SW9012B	57-12-5	Cyanide, Total	UJ

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SB-9_9-11_021120	SW8081B	8001-35-2	Toxaphene	UJ
SB-9_9-11_021120	SW8151A	93-76-5	2,4,5-T	UJ
SB-9_9-11_021120	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SB-9_9-11_021120	SW8151A	94-75-7	2,4-D	UJ
SB-9_9-11_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SB-9_9-11_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SB-9_9-11_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
SB-9_9-11_021120	SW8260C	56-23-5	Carbon tetrachloride	UJ
SB-9_9-11_021120	SW8260C	74-87-3	Chloromethane	UJ
SB-9_9-11_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SB-9_9-11_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SB-9_9-11_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SB-9_9-11_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-9_9-11_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SB-9_9-11_021120	SW8270D	606-20-2	2,6-Dinitrotoluene	UJ
SB-9_9-11_021120	SW8270D	88-75-5	2-Nitrophenol	UJ
SB-9_9-11_021120	SW8270D	534-52-1	4,6-Dinitro-o-cresol	UJ
SB-9_9-11_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SB-9_9-11_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SODUP01_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
SODUP01_020620	6010D	7440-38-2	Arsenic, Total	UJ
SODUP01_020620	6010D	7440-39-3	Barium, Total	J
SODUP01_020620	SW8270D	65-85-0	Benzoic Acid	UJ
SODUP01_020620	6010D	7440-41-7	Beryllium, Total	UJ
SODUP01_020620	6010D	7440-43-9	Cadmium, Total	UJ
SODUP01_020620	6010D	7440-70-2	Calcium, Total	J
SODUP01_020620	SW8260C	74-87-3	Chloromethane	UJ
SODUP01_020620	6010D	7440-47-3	Chromium, Total	J
SODUP01_020620	CALC	16065-83-1	Chromium, Trivalent	J
SODUP01_020620	6010D	7440-50-8	Copper, Total	J
SODUP01_020620	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SODUP01_020620	6010D	7439-89-6	Iron, Total	J

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SODUP01_020620	6010D	7439-92-1	Lead, Total	J
SODUP01_020620	6010D	7439-95-4	Magnesium, Total	J
SODUP01_020620	6010D	7439-96-5	Manganese, Total	J
SODUP01_020620	SW8081B	72-43-5	Methoxychlor	UJ
SODUP01_020620	6010D	7440-02-0	Nickel, Total	J
SODUP01_020620	SW8270D	129-00-0	Pyrene	J
SODUP01_020620	6010D	7782-49-2	Selenium, Total	J
SODUP01_020620	6010D	7440-23-5	Sodium, Total	J
SODUP01_020620	SW8260C	127-18-4	Tetrachloroethene	J
SODUP02_021020	SW8260C	123-91-1	1,4-Dioxane	UJ
SODUP02_021020	6010D	7429-90-5	Aluminum, Total	J
SODUP02_021020	6010D	7440-39-3	Barium, Total	J
SODUP02_021020	SW8270D	65-85-0	Benzoic Acid	UJ
SODUP02_021020	6010D	7440-70-2	Calcium, Total	J
SODUP02_021020	SW8260C	74-87-3	Chloromethane	UJ
SODUP02_021020	SW7196A	18540-29-9	Chromium, Hexavalent	U (0.934)
SODUP02_021020	6010D	7440-47-3	Chromium, Total	J
SODUP02_021020	CALC	16065-83-1	Chromium, Trivalent	J
SODUP02_021020	6010D	7440-48-4	Cobalt, Total	J
SODUP02_021020	6010D	7440-50-8	Copper, Total	J
SODUP02_021020	SW9012B	57-12-5	Cyanide, Total	UJ
SODUP02_021020	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SODUP02_021020	6010D	7439-89-6	Iron, Total	J
SODUP02_021020	6010D	7439-95-4	Magnesium, Total	J
SODUP02_021020	6010D	7439-96-5	Manganese, Total	J
SODUP02_021020	6010D	7440-02-0	Nickel, Total	J
SODUP02_021020	6010D	7440-09-7	Potassium, Total	J
SODUP02_021020	6010D	7440-23-5	Sodium, Total	U (180)
SODUP02_021020	6010D	7440-62-2	Vanadium, Total	J
SODUP03_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
SODUP03_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
SODUP03_021120	SW8260C	123-91-1	1,4-Dioxane	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SODUP03_021120	SW8151A	93-76-5	2,4,5-T	UJ
SODUP03_021120	SW8151A	93-72-1	2,4,5-Tp (Silvex)	UJ
SODUP03_021120	SW8151A	94-75-7	2,4-D	UJ
SODUP03_021120	SW8270D	51-28-5	2,4-Dinitrophenol	UJ
SODUP03_021120	SW8270D	606-20-2	2,6-Dinitrotoluene	UJ
SODUP03_021120	SW8260C	78-93-3	2-Butanone	J
SODUP03_021120	SW8270D	88-75-5	2-Nitrophenol	UJ
SODUP03_021120	SW8270D	534-52-1	4,6-Dinitro-o-cresol	UJ
SODUP03_021120	SW8260C	67-64-1	Acetone	J
SODUP03_021120	6010D	7429-90-5	Aluminum, Total	J
SODUP03_021120	6010D	7440-39-3	Barium, Total	J
SODUP03_021120	SW8270D	205-99-2	Benzo(b)fluoranthene	J
SODUP03_021120	SW8270D	65-85-0	Benzoic Acid	UJ
SODUP03_021120	6010D	7440-41-7	Beryllium, Total	J
SODUP03_021120	6010D	7440-70-2	Calcium, Total	J
SODUP03_021120	SW8260C	75-15-0	Carbon Disulfide	J
SODUP03_021120	SW8260C	56-23-5	Carbon Tetrachloride	UJ
SODUP03_021120	SW8260C	74-87-3	Chloromethane	UJ
SODUP03_021120	6010D	7440-47-3	Chromium, Total	J
SODUP03_021120	CALC	16065-83-1	Chromium, Trivalent	J
SODUP03_021120	SW8270D	218-01-9	Chrysene	J
SODUP03_021120	6010D	7440-50-8	Copper, Total	J
SODUP03_021120	SW9012B	57-12-5	Cyanide, Total	UJ
SODUP03_021120	SW8270D	53-70-3	Dibenzo(a,h)anthracene	J
SODUP03_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
SODUP03_021120	6010D	7439-89-6	Iron, Total	J
SODUP03_021120	6010D	7439-95-4	Magnesium, Total	J
SODUP03_021120	6010D	7439-96-5	Manganese, Total	J
SODUP03_021120	SW7471B	7439-97-6	Mercury, Total	J
SODUP03_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
SODUP03_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
SODUP03_021120	SW8260C	108-05-4	Vinyl acetate	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
TB01_020620	SW8260C	123-91-1	1,4-Dioxane	UJ
TB01_020620	SW8260C	78-93-3	2-Butanone	UJ
TB01_020620	SW8260C	108-10-1	4-Methyl-2-pentanone	UJ
TB01_020620	SW8260C	67-64-1	Acetone	UJ
TB01_020620	SW8260C	107-13-1	Acrylonitrile	UJ
TB01_020620	SW8260C	74-83-9	Bromomethane	UJ
TB01_020620	SW8260C	74-87-3	Chloromethane	UJ
TB01_020620	SW8260C	75-01-4	Vinyl chloride	UJ
TB02_020720	SW8260C	95-93-2	1,2,4,5-Tetramethylbenzene	UJ
TB02_020720	SW8260C	123-91-1	1,4-Dioxane	UJ
TB02_020720	SW8260C	74-83-9	Bromomethane	UJ
TB02_020720	SW8260C	75-15-0	Carbon Disulfide	UJ
TB02_020720	SW8260C	74-87-3	Chloromethane	UJ
TB02_020720	SW8260C	75-71-8	Dichlorodifluoromethane	UJ
TB02_020720	SW8260C	108-05-4	Vinyl acetate	UJ
TB02_020720	SW8260C	75-01-4	Vinyl chloride	UJ
TB02_020720	SW8260C	110-57-6	Trans-1,4-dichloro-2-butene	UJ
TB02_021020	SW8260C	95-93-2	1,2,4,5-Tetramethylbenzene	UJ
TB02_021020	SW8260C	123-91-1	1,4-Dioxane	UJ
TB02_021020	SW8260C	67-64-1	Acetone	UJ
TB02_021020	SW8260C	75-15-0	Carbon Disulfide	UJ
TB02_021020	SW8260C	87-68-3	Hexachlorobutadiene	UJ
TB02_021020	SW8260C	91-20-3	Naphthalene	UJ
TB02_021020	SW8260C	75-69-4	Trichlorofluoromethane	UJ
TB02_021020	SW8260C	104-51-8	N-Butylbenzene	UJ
TB04_021120	SW8260C	71-55-6	1,1,1-Trichloroethane	UJ
TB04_021120	SW8260C	75-35-4	1,1-Dichloroethene	UJ
TB04_021120	SW8260C	95-93-2	1,2,4,5-Tetramethylbenzene	UJ
TB04_021120	SW8260C	123-91-1	1,4-Dioxane	UJ
TB04_021120	SW8260C	56-23-5	Carbon tetrachloride	UJ
TB04_021120	SW8260C	74-87-3	Chloromethane	UJ
TB04_021120	SW8260C	75-71-8	Dichlorodifluoromethane	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
TB04_021120	SW8260C	127-18-4	Tetrachloroethene	UJ
TB04_021120	SW8260C	75-69-4	Trichlorofluoromethane	UJ
TB04_021120	SW8260C	108-05-4	Vinyl acetate	UJ
SB-20_0-2_020520	SW8081B	72-55-9	4,4'-DDE	J
SB-20_0-2_020520	SW8081B	60-57-1	DIELDRIN	J
SB-20_0-2_020520	SW8081B	5103-71-9	CIS-CHLORDANE	J
SB-20_0-2_020520	SW8081B	5103-74-2	TRANS-CHLORDANE	J
SB-20_2-4_020520	SW8081B	5103-71-9	CIS-CHLORDANE	J
SB-20_2-4_020520	SW8081B	5103-74-2	TRANS-CHLORDANE	J
SB-17_0-2_020520	SW8081B	72-55-9	4,4'-DDE	J
SB-17_0-2_020520	SW8081B	5103-71-9	CIS-CHLORDANE	J
SB-16_0-2_021120	SW8081B	5103-74-2	TRANS-CHLORDANE	J
SB-2_6-8_021120	SW8081B	72-54-8	4,4'-DDD	J

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by SW-846 Method 8260C:

L2005543:

The sample SB-18_0-2_020520 exhibited a percent recovery above the UCL for the surrogate 4-bromofluorobenzene (134%). The associated results are qualified as "J" based on potential high bias.

The sample SB-1_0-2_020620 exhibited a percent recovery above the UCL for the surrogate 4-bromofluorobenzene (143%). The associated results are qualified as "J" based on potential high bias.

The sample SB-4_0-2_020620 exhibited a percent recovery above the UCL for the surrogate 4-bromofluorobenzene (157%). The associated results are qualified as "J" based on potential high bias.

The sample SB-8_0-2_020620 exhibited a percent recovery above the UCL for the surrogate 4-bromofluorobenzene (147%). The associated results are qualified as "J" based on potential high bias.

The MB for batch WG1339501-5 exhibited detections of 2-butanone (2.3 ug/kg) and bromomethane (1.4 ug/kg). The associated results in sample SB-19_0-2_020520, SB-5_0-2_020620, SB-4_0-2_020620, and SB-4_10-12_020620 are qualified as "U" at the reporting limit based on potential blank contamination.

The sample SB-18_0-2_020520 exhibited a percent recovery above the UCL for the internal standard 1,4-dichlorobenzene-d4 (38.06%). The associated results are qualified as "UJ" based on potential low bias.

The sample SB-5_0-2_020620 exhibited a percent recovery above the UCL for the internal standard 1,4-dichlorobenzene-d4 (47.51%). The associated results are qualified as "UJ" based on potential low bias.

The sample SB-1_0-2_020620 exhibited a percent recovery above the UCL for the internal standard 1,4-dichlorobenzene-d4 (30.1%). The associated results are qualified as "UJ" based on potential low bias.

The sample SB-8_0-2_020620 exhibited a percent recovery above the UCL for the internal standard 1,4-dichlorobenzene-d4 (26.51%). The associated results are qualified as "UJ" based on potential low bias.

The sample SB-4_0-2_020620 exhibited a percent recovery above the UCL for the internal standard 1,4-dichlorobenzene-d4 (26.5%). The associated results are qualified as "UJ" based on potential low bias.

The ICAL for instrument VOA123 exhibited a response factor (RF) below the control limit for 1,4-dioxane (0.002). The associated results in sample SB-20_0-2_020520, SB-20_2-4_020520, SB-20_6-8_020520, SB-19_0-2_020520, SB-19_2-4_020520, SB-19_6-8_020520, SB-18_0-2_020520, SB-18_2-4_020520, SB-18_10-12_020520, SB-17_0-2_020520, SB-17_5-7_020520, SB-17_9-11_020520, SB-5_0-2_020620, SB-5_5-7_020620, SB-5_10-12_020620, SB-1_0-2_020620, SB-1_6-8_020620, SB-4_0-2_020620, SB-4_6-8_020620, SB-4_10-12_020620, SB-8_0-2_020620, SB-8_5-7_020620, SB-8_10-12_020620, SB-10_0-2_020620, SB-10_5-7_020620, SB-10_10-12_020620, and SODUP01_020620 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument VOA104 exhibited a RF below the control limit for 1,4-dioxane (0.002). The associated results in sample SB-1_2-4_020620 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/10/2020 at 09:14 exhibited %Ds above the control limit for chloromethane (21.8%), vinyl chloride (-20.5%), bromomethane (23.2%), acetone (-40.5%), acrylonitrile (-29.2%), 2-butanone (-28.4%), 1,4-dioxane (-44.4%), and 4-methyl-2-pentanone (-21.3%). The associated results in sample TB01_020620 and FB01_020620 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/11/2020 at 05:36 exhibited %Ds above the control limit for vinyl chloride (20.8%), chloroethane (26.4%), carbon disulfide (20.2%), 1,1-dichloropropene (21.6%), toluene (21%), ethylbenzene (20.4%), isopropylbenzene (21.2%), n-propylbenzene (24.4%), 4-ethyltoluene (20.7%), 1,3,5-trimethylbenzene (21.4%), 1,2,3-trichloropropane (23.1%), sec-butylbenzene (23.2%), and n-butylbenzene (25.8%). The associated results in sample SB-20_0-2_020520, SB-20_2-4_020520, SB-20_6-8_020520, SB-19_0-2_020520, SB-19_2-4_020520, SB-19_6-8_020520, SB-18_0-2_020520, SB-18_2-4_020520, SB-18_10-12_020520, SB-17_0-2_020520, SB-17_5-7_020520, SB-17_9-11_020520, SB-5_0-2_020620, SB-5_5-7_020620, SB-5_10-12_020620, SB-1_0-2_020620, SB-1_6-8_020620, SB-4_0-2_020620, SB-4_6-8_020620, and SB-4_10-12_020620 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/11/2020 at 05:36 exhibited %Ds above the control limit for chloromethane (-36.8%) and dichlorodifluoromethane (-29.3%). The associated results in sample SB-18_0-2_020520, SB-5_0-2_020620, SB-1_0-2_020620, SB-8_0-2_020620, SB-8_10-12_020620, SB-10_5-7_020620, SB-10_10-12_020620, and SODUP01_020620 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/11/2020 at 17:48 exhibited a %D above the control limit for dichlorodifluoromethane (33.9%). The associated results in sample SB-1_2-4_020620 are qualified as "UJ" based on potential indeterminate bias.

<u>L2005791:</u>

The sample SB-3_0-2_020720 exhibited a percent recovery above the UCL for the surrogate 4-bromofluorobenzene (145%). The associated results are qualified as "J" based on potential high bias.

The LCS/LCSD for batch WG1340532 exhibited percent recoveries below the LCL for trichlorofluoromethane (46%, 44%), bromomethane (35%, 35%), chloroethane (28%, 26%), and ethyl ether (30%, 31%). The associated results in sample SB-3_0-2_020720, SB-7_0-2_020720, and SB-12_0-2_020720 are qualified as "UJ" based on potential low bias.

The LCSD for batch WG1340532 exhibited a percent recovery below the LCL for vinyl chloride (64%). The associated results in sample SB-3_0-2_020720, SB-7_0-2_020720, and SB-12_0-2_020720 are qualified as "UJ" based on potential low bias.

The sample SB-3_0-2_020720 exhibited a percent recovery below the LCL for the internal standard 1,4-dichlorobenzene-d4 (33.5%). The associated results are qualified as "J" or "UJ" based on potential high bias or loss of instrument sensitivity.

The sample SB-7_0-2_020720 exhibited a percent recovery below the LCL for the internal standard 1,4-dichlorobenzene-d4 (46.69%). The associated results are qualified as "J" or "UJ" based on potential high bias or loss of instrument sensitivity.

The sample SB-12_0-2_020720 exhibited a percent recovery below the LCL for the internal standard 1,4-dichlorobenzene-d4 (31.17%). The associated results are qualified as "J" or "UJ" based on potential high bias or loss of instrument sensitivity.

The ICAL for instrument VOA108 exhibited a RF below the control limit for 1,4-dioxane (0.002). The associated results in sample TB02_020720 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument CHARLIE exhibited a RF below the control limit for 1,4-dioxane (0.005). The associated results in sample SB-3_0-2_020720, SB-7_0-2_020720, and SB-12_0-2_020720 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument VOA126 exhibited a RF below the control limit for 1,4-dioxane (0.002). The associated results in sample SB-3_0-2_020720, SB-3_6-8_020720, SB-3_9-11_020720, SB-7_0-2_020720, SB-7_5-7_020720, SB-7_9-11_020720, SB-12_0-2_020720, SB-12_5-7_020720, and SB-12_10-12_020720 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/13/2020 at 07:42 exhibited %Ds above the control limit for acetone (25.7%), bromomethane (23.1%), carbon disulfide (23.1%), chloromethane (43.7%), and dichlorodifluoromethane (32.7%). The associated results in sample SB-3_0-2_020720, SB-3_6-8_020720, SB-3_9-11_020720, SB-7_0-2_020720, SB-7_5-7_020720, SB-7_9-11_020720, SB-12_0-2_020720, SB-12_5-7_020720, and SB-12_10-12_020720 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/13/2020 at 17:10 exhibited %Ds above the control limit for dichlorodifluoromethane (-25.7%), chloromethane (-54.2%), vinyl chloride (-60.1%), bromomethane (42.3%), carbon disulfide (-32.3%), vinyl acetate (-28.8%), 1,4-dioxane (29.5%), trans-1,4-dichloro-2-butene (-26.6%), and 1,2,4,5-tetramethylbenzene (20.3%). The associated results in sample TB02_020720 are qualified as "UJ" based on potential indeterminate bias.

<u>L2005961:</u>

The LCS/LCSD for batch WG1340487 exhibited a percent recovery below the LCL for 2-butanone (60%, 65%). The associated results in sample SB-13_0-2_021020, SB-13_4-6_021020, SB-13_9-11_021020, SB-15_0-2_021020, SB-15_6-8_021020, and SB-15_10-12_021020 are qualified as "UJ" based on potential low bias.

The ICAL for instrument VOA100 exhibited a RF below the control limit for 1,4-dioxane (0.002). The associated results in sample SB-13_0-2_021020, SB-13_4-6_021020, SB-13_9-11_021020, SB-15_0-2_021020, SB-15_6-8_021020, and SB-15_10-12_021020 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument JACK exhibited a RF below the control limit for 1,4-dioxane (0.004). The associated results in sample FB02_021020 and TB02_021020 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument VOA123 exhibited a RF below the control limit for 1,4-dioxane (0.002). The associated results in sample SODUP02_021020 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/11/2020 at 04:12 exhibited %Ds above the control limit for 1,2,4,5-tetramethylbenzene (24.6%), acetone (22%), carbon disulfide (21.1%), hexachlorobutadiene (-20.7%), naphthalene (29.9%), trichlorofluoromethane (21.5%), and n-butylbenzene (23.8%). The associated results in sample FB02_021020 and TB02_021020 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/11/2020 at 04:12 exhibited a RF below the control limit for 1,4-dioxane (0.00332). The associated results in sample FB02_021020 and TB02_021020 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/13/2020 at 10:44 exhibited %Ds above the control limit for 1,1-dichloropropene (21.5%), 1,2-dichloroethane (25.5%), 2-butanone (40%), 2-hexanone (26.6%), acetone (23.3%), chloromethane (-27.2%), dichlorodifluoromethane (-143.6%), and vinyl chloride (-23.3%). The associated results in sample SB-13_0-2_021020, SB-13_4-6_021020, SB-13_9-

11_021020, SB-15_0-2_021020, SB-15_6-8_021020, and SB-15_10-12_021020 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/13/2020 at 17:50 exhibited %Ds above the control limit for 1,4-dioxane (-41.4%), chloromethane (-27.5%), and dichlorodifluoromethane (-24.9%). The associated results in sample SODUP02_021020 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/13/2020 at 17:50 exhibited a RF below the control limit for 1,4-dioxane (0.00297). The associated results in sample SODUP02_021020 are qualified as "UJ" based on potential indeterminate bias.

L2006176:

The sample SB-6_0-2_021120 exhibited a percent recovery above the UCL for the surrogate 4-bromofluorobenzene (153%). The associated results are qualified as "J" based on potential high bias.

The sample SB-11_0-2_021120 exhibited a percent recovery above the UCL for the surrogate 4-bromofluorobenzene (141%). The associated results are qualified as "J" based on potential high bias.

The sample SB-14_0-2_021120 exhibited a percent recovery above the UCL for the surrogate 4-bromofluorobenzene (145%). The associated results are qualified as "J" based on potential high bias.

The sample SB-9_0-2_021120 exhibited a percent recovery above the UCL for the surrogate 4-bromofluorobenzene (136%). The associated results are qualified as "J" based on potential high bias.

The sample SB-2_0-2_021120 exhibited a percent recovery above the UCL for the surrogate 4-bromofluorobenzene (144%). The associated results are qualified as "J" based on potential high bias.

The LCSD for batch WG1340525 exhibited a percent recovery below the LCL for 1,2,4,5-tetramethylbenzene (69%). The associated results in sample FB03_021120 and TB04_021120 are qualified as "UJ" based on potential low bias.

The sample SB-6_0-2_021120 exhibited a percent recovery below the LCL for the internal standard 1,4-dichlorobenzene-d4 (21.36%). The associated results are qualified as "J" or "UJ" based on potential high bias or loss of instrument sensitivity.

The sample SB-11_0-2_021120 exhibited a percent recovery below the LCL for the internal standard 1,4-dichlorobenzene-d4 (26.64%). The associated results are qualified as "J" or "UJ" based on potential high bias or loss of instrument sensitivity.

The sample SB-14_0-2_021120 exhibited a percent recovery below the LCL for the internal standard 1,4-dichlorobenzene-d4 (39.04%). The associated results are qualified as "J" or "UJ" based on potential high bias or loss of instrument sensitivity.

The sample SB-9_0-2_021120 exhibited a percent recovery below the LCL for the internal standard 1,4-dichlorobenzene-d4 (28.33%). The associated results are qualified as "J" or "UJ" based on potential high bias or loss of instrument sensitivity.

The sample SB-2_0-2_021120 exhibited a percent recovery below the LCL for the internal standard 1,4-dichlorobenzene-d4 (31.58%). The associated results are qualified as "J" or "UJ" based on potential high bias or loss of instrument sensitivity.

The ICAL for instrument voa108 exhibited a RF below the control limit for 1,4-dioxane (0.002). The associated results in sample FB03_021120 and TB04_021120 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument voa123 exhibited a RF below the control limit for 1,4-dioxane (0.002). The associated results in sample SB-6_0-2_021120, SB-6_5-7_021120, SB-6_9-11_021120, SB-16_0-2_021120, SB-16_5-7_021120, SB-16_9-11_021120, SB-11_0-2_021120, SB-11_6-8_021120, SB-11_9-11_021120, SB-14_0-2_021120, SB-14_6-8_021120, SB-14_9-11_021120, SB-9_0-2_021120, SB-9_6-8_021120, SB-9_9-11_021120, SB-2_0-2_021120, SB-2_6-8_021120, and SODUP03_021120 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/13/2020 at 07:13 exhibited %Ds above the control limit for chloromethane (-48.3%), vinyl chloride (-37.8%), trichlorofluoromethane (23.2%), vinyl acetate (-20.6%), tert-butylbenzene (24.1%), 1,2,4,5-tetramethylbenzene (29.8%), 1,2,4-trichlorobenzene (25.3%), naphthalene (25.6%), and 1,2,3-trichlorobenzene (24.9%). The associated results in sample FB03_021120 and TB04_021120 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/14/2020 at 06:41 exhibited %Ds above the control limit for dichlorodifluoromethane (-42.5%), chloromethane (-27.5%), trichlorofluoromethane (-25%), 1,,1-dichloroethene (-20.2%), vinyl acetate (-20.7%), carbon tetrachloride (-27%), 1,1,1-tetrachloroethane (-22.4%), 1,4-dioxane (-28.1%), and tetrachloroethene (-21.2%). The associated results in sample SB-6_0-2_021120, SB-6_5-7_021120, SB-6_9-11_021120, SB-16_0-2_021120, SB-16_5-7_021120, SB-16_9-11_021120, SB-11_0-2_021120, SB-11_6-8_021120, SB-

11_9-11_021120, SB-14_0-2_021120, SB-14_6-8_021120, SB-14_9-11_021120, SB-9_0-2_021120, SB-9_6-8_021120, SB-9_9-11_021120, SB-2_0-2_021120, and SODUP03_021120 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/15/2020 at 06:26 exhibited a RF below the control limit for 1,4-dioxane (0.00257). The associated results in sample SB-6_0-2_021120, SB-11_0-2_021120, SB-14_0-2_021120, SB-9_0-2_021120, SB-2_0-2_021120, and SB-16_5-7_021120 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/15/2020 at 06:26 exhibited %Ds above the control limit for dichlorodifluoromethane (-29.5%), chloromethane (-26.1%), trichlorofluoromethane (-23.4%), 1,,1-dichloroethene (-21.9%), 2,2-dichloropropane (-21.4%), carbon tetrachloride (-25.5%), 1,1,1-tetrachloroethane (-23.5%), 1,4-dioxane (-22.4%), and tetrachloroethene (-23.4%). The associated results in sample SB-6_0-2_021120, SB-11_0-2_021120, SB-14_0-2_021120, SB-9_0-2_021120, SB-2_0-2_021120, and SB-16_5-7_021120 are qualified as "UJ" based on potential indeterminate bias.

SVOCs by SW-846 Method 8270D and 8270D SIM:

L2005543:

The LCS/LCSD for batch WG1338586 exhibited a percent recovery below the LCL for benzoic acid (0%). The associated results in sample SB-20_0-2_020520, SB-20_2-4_020520, SB-20_6-8_020520, SB-19_0-2_020520, SB-19_2-4_020520, SB-19_6-8_020520, SB-18_0-2_020520, SB-18_2-4_020520, SB-18_10-12_020520, SB-17_0-2_020520, SB-17_5-7_020520, SB-17_9-11_020520, SB-5_0-2_020620, SB-5_5-7_020620, SB-5_10-12_020620, SB-1_0-2_020620, SB-1_2-4_020620, SB-4_6-8_020620, SB-4_10-12_020620, and SODUP01_020620 are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch WG1338598 exhibited a percent recovery below the LCL for benzoic acid (0%). The associated results in sample SB-1_6-8_020620, SB-4_0-2_020620, SB-8_0-2_020620, SB-8_5-7_020620, SB-8_10-12_020620, SB-10_0-2_020620, and SB-10_10-12_020620 are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch WG1338650 exhibited a percent recovery below the LCL for benzoic acid (0%). The associated results in sample FB01_020620 are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch WG1339693 exhibited a percent recovery below the LCL for benzoic acid (0%). The associated results in sample SB-10_5-7_020620 are qualified as "UJ" based on potential low bias.

The LCS for batch WG1339693 exhibited a percent recovery below the LCL for hexachlorocyclopentadiene (39%). The associated results in sample SB-10_5-7_020620 are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch WG1339693 exhibited a RPD above the control limit for 2,4-dinitrophenol (81%). The associated results in sample SB-10_5-7_020620 are qualified as "UJ" based on potential indeterminate bias.

L2005791:

The LCS/LCSD for batch WG1339001 exhibited a percent recovery below the LCL for benzoic acid (0%). The associated results in sample SB-3_6-8_020720, SB-3_9-11_020720, SB-7_0-2_020720, SB-7_5-7_020720, SB-7_9-11_020720, SB-12_0-2_020720, SB-12_5-7_020720, and SB-12_10-12_020720 are qualified as "UJ" based on potential low bias.

The CCV analyzed on 2/12/2020 at 23:53 exhibited %Ds above the control limit for hexachlorocyclopentadiene (35.2%) and pentachlorophenol (27.5%). The associated results in sample SB-3_6-8_020720, SB-3_9-11_020720, SB-12_5-7_020720, SB-7_0-2_020720, SB-7_5-7_020720, and SB-7_9-11_020720 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/13/2020 at 21:05 exhibited %Ds above the control limit for bis(2-chloroethyl)ether (36.9%) and di-n-octylphthalate (20.2%). The associated results in sample SB-12_10-12_020720 and SB-12_0-2_020720 are qualified as "UJ" based on potential indeterminate bias.

L2005961:

The LCS/LCSD for batch WG1339672 exhibited a percent recovery below the LCL for benzoic acid (0%). The associated results in sample SB-13_0-2_021020, SB-13_4-6_021020, SB-13_9-11_021020, SB-15_6-8_021020, SB-15_10-12_021020, and SODUP02_021020 are qualified as "UJ" based on potential low bias.

The CCV analyzed on 2/17/2020 at 14:09 exhibited %Ds above the control limit for benzoic acid (23.2%) and 4-nitrophenol (21.5%). The associated results in sample FB02_021020 are qualified as "UJ" based on potential indeterminate bias.

L2006176:

The LCS/LCSD for batch WG1340053 exhibited percent recoveries below the LCL for 2,4-dimethylphenol (19%, 11%), 4-chloroaniline (36%, 24%), and benzoic acid (0%). The associated results in sample FB03_021120 are qualified as "UJ" based on potential low bias.

The LCS for batch WG1340053 exhibited percent recoveries below the LCL for bis(2-chloroisopropyl)ether (39%) and hexachlorocyclopentadiene (37%). The associated results in sample FB03_021120 are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch WG1340096 exhibited a percent recovery below the LCL for benzoic acid (0%). The associated results in sample SB-6_0-2_021120, SB-6_5-7_021120, SB-6_9-11_021120, SB-16_0-2_021120, SB-16_5-7_021120, SB-16_9-11_021120, SB-11_0-2_021120, SB-11_6-8_021120, SB-11_9-11_021120, SB-14_0-2_021120, SB-14_6-8_021120, SB-14_9-11_021120, SB-9_0-2_021120, SB-9_6-8_021120, SB-9_9-11_021120, SB-2_0-2_021120, SB-2_6-8_021120, and SODUP03_021120 are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch WG1340096 exhibited a RPD above the control limit for 2,4-dinitrophenol (60%). The associated results in sample SB-6_0-2_021120, SB-6_5-7_021120, SB-6_9-11_021120, SB-16_0-2_021120, SB-16_5-7_021120, SB-16_9-11_021120, SB-11_0-2_021120, SB-11_6-8_021120, SB-11_9-11_021120, SB-14_0-2_021120, SB-14_6-8_021120, SB-14_9-11_021120, SB-9_0-2_021120, SB-9_6-8_021120, SB-9_9-11_021120, SB-2_0-2_021120, SB-2_6-8_021120, and SODUP03_021120 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/14/2020 at 21:30 exhibited %Ds above the control limit for 2-nitrophenol (-20.5%), 2,4-dinitrophenol (-20.8%), 4,6-dinitro-o-cresol (-24.3%), and 2,6-dinitrotoluene (-20.1%). The associated results in sample SB-14_6-8_021120, SB-14_9-11_021120, SB-11_9-11_021120, SB-9_9-11_021120, SODUP03_021120, SB-9_6-8_021120, SB-11_6-8_021120, SB-11_0-2_021120, SB-9_0-2_021120, SB-2_0-2_021120, and SB-14_0-2_021120 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/17/2020 at 14:09 exhibited %Ds above the control limit for benzoic acid (23.2%) and 4-nitrophenol (21.5%). The associated results in sample FB03_021120 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/17/2020 at 23:19 exhibited %Ds above the control limit for 2,4,6-trichlorophenol (-21.9%) and bis(2-chloroisopropyl)ether (37.6%). The associated results in sample SB-16_0-2_021120 and SB-6_0-2_021120 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/18/2020 at 00:08 exhibited a %D above the control limit for 1,4-dioxane (28%). The associated results in sample SB-16_0-2_021120 and SB-6_0-2_021120 are qualified as "UJ" based on potential indeterminate bias.

PFAS by USEPA Method 537M:

L2005543:

The MB for batch WG1339379-1 exhibited a detection of perfluorohexanoic acid (PFHxA) (0.708 ng/l). The associated results in sample FB01_020620 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch WG1339404-1 exhibited a detection of perfluorobutanoic acid (PFBA) (0.095 ug/kg). The associated results in samples SB-18_0-2_020520 and SB-5_0-2_020620 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch WG1339405-1 exhibited a detection of PFBA (0.077 ug/kg). The associated results in sample SB-5_10-12_020620, SB-1_0-2_020620, SB-1_2-4_020620, SB-4_0-2_020620, and SB-8_0-2_020620 are qualified as "U" at the reporting limit based on potential blank contamination.

The LCSD for batch WG1339405 exhibited percent recoveries above the UCL for 1h,1h,2h,2h-perfluorodecanesulfonic acid (8:2FTS) (142%), 1h,1h,2h,2h-perfluorooctanesulfonic acid (6:2FTS) (150%), perfluorooctanesulfonamide (FOSA) (141%), perfluoropentanoic acid (PFPeA) (133%), perfluorotetradecanoic acid (PFTA) (139%), and perfluorotridecanoic acid (PFTrDA) (144%). The associated results in sample SB-5_10-12_020620, SB-1_0-2_020620, SB-1_2-4_020620, SB-1_6-8_020620, SB-4_0-2_020620, SB-4_6-8_020620, SB-4_10-12_020620, SB-8_0-2_020620, SB-8_5-7_020620, SB-8_10-12_020620, SB-10_0-2_020620, SB-10_5-7_020620, SB-10_10-12_020620, and SODUP01_020620 are qualified as "J" based on potential high bias.

The sample SB-17_0-2_020520 exhibited a percent recovery below the LCL for the surrogate n-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid (d3-nmefosaa) (36%). The associated results are qualified as "UJ" based on potential low bias.

The sample SB-1_0-2_020620 exhibited percent recoveries above the UCL for the surrogates 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2FTS) (302%) and n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (153%). The associated results are qualified as "J" based on potential high bias.

The CCV analyzed on 2/26/2020 at 18:38 exhibited a %D above the control limit for perfluorohexanesulfonic acid-branched (br-PFHxS) (38.6%). The associated results in sample SB-20_0-2_020520, SB-20_6-8_020520, SB-19_0-2_020520, SB-19_2-4_020520, SB-19_6-8_020520, SB-20_2-4_020520, and SB-18_2-4_020520 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/27/2020 at 05:16 exhibited a %D above the control limit for br-PFHxS (41.9%). The associated results in sample SB-18_10-12_020520, SB-17_0-2_020520, SB-17_5-7_020520, SB-17_9-11_020520, SB-5_0-2_020620, and SB-5_5-7_020620 are qualified as "UJ" based on potential indeterminate bias.

L2005791:

The MB for batch WG1339105-1 exhibited a detection of PFBA (0.096 ug/kg). The associated results in sample SB-3_0-2_020720 are qualified as "U" at the reporting limit based on potential blank contamination.

The CCV analyzed on 2/28/2020 at 03:41 exhibited a %D above the control limit for br-PFHxS (44.1%). The associated results in sample SB-3_6-8_020720, SB-3_9-11_020720, SB-7_0-2_020720, SB-7_5-7_020720, SB-7_9-11_020720, SB-12_0-2_020720, SB-12_5-7_020720, and SB-12_10-12_020720 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/28/2020 at 13:17 exhibited %Ds above the control limit for br-PFHxS (36%) and perfluorooctanesulfonic acid-branched (br-PFOS) (40.5%). The associated results in sample SB-3_0-2_020720 are qualified as "J" or "UJ" based on potential indeterminate bias.

L2005961:

The FB (FB02_021020) exhibited a detection of perfluorohexanoic acid (PFHxA) (0.345 ng/l). The associated results in sample SB-13_0-2_021020 are qualified as "U" at the reporting limit based on potential blank contamination.

L2006176:

The MB for batch WG1340251 exhibited a detection of PFHxA (0.34 ng/l). The associated results in sample FB03_021120 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch WG1340330 exhibited a detection of PFBA (0.093 ug/kg). The associated results in sample SB-6_0-2_021120, SB-11_0-2_021120, SB-9_0-2_021120, and SB-2_0-2_021120 are qualified as "U" at the reporting limit based on potential blank contamination.

The CCV analyzed on 2/21/2020 at 07:32 exhibited a %D above the control limit for br-PFHxS (69.7%). The associated results in sample SB-6_0-2_021120, SB-6_5-7_021120, SB-6_9-11_021120, SB-16_0-2_021120, SB-16_5-7_021120, SB-16_9-11_021120, SB-11_0-2_021120, SB-11_6-8_021120, SB-11_9-11_021120, and SB-14_0-2_021120 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/21/2020 at 18:44 exhibited a %D above the control limit for br-PFHxS (49.1%). The associated results in sample FB03_021120 are qualified as "UJ" based on potential indeterminate bias.

Herbicides by SW-846 Method 8151A:

L2005543:

The CCV analyzed on 2/11/2020 at 16:13 exhibited a %D above the control limit for 2,4,5-TP (Silvex) (17.4%). The associated results in sample SB-20_0-2_020520, SB-20_2-4_020520, SB-20_6-8_020520, SB-19_0-2_020520, SB-19_2-4_020520, SB-19_6-8_020520, SB-18_2-4_020520, SB-18_10-12_020520, SB-17_0-2_020520, SB-17_5-7_020520, SB-17_9-11_020520, SB-5_0-2_020620, SB-5_5-7_020620, SB-5_10-12_020620, SB-1_2-4_020620, SB-1_6-8_020620, SB-4_0-2_020620, and SB-4_6-8_020620 are qualified as "UJ" based on potential indeterminate bias.

L2006176:

The LCS/LCSD for batch WG1341448 exhibited a RPD above the control limit for 2,4-D (35%). The associated results in sample SB-14_0-2_021120, SB-14_6-8_021120, SB-14_9-11_021120, SB-9_0-2_021120, SB-9_6-8_021120, SB-9_9-11_021120, SB-2_0-2_021120, SB-2_6-8_021120, and SODUP03_021120 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/18/2020 at 10:42 exhibited %Ds above the control limit for 2,4,5-T (-20.2%), 2,4,5-TP (-20.5%), and 2,4-D (-23.7%). The associated results in sample SB-14_0-2_021120, SB-14_6-8_021120, SB-14_9-11_021120, SB-9_0-2_021120, SB-9_6-8_021120, SB-9_9-11_021120, SB-2_0-2_021120, SB-2_6-8_021120, SODUP03_021120 are qualified as "UJ" based on potential indeterminate bias.

PCBs by SW-846 Method 8082A:

L2005543:

The sample SB-10_0-2_020620 exhibited a percent recovery below the LCL for the surrogate decachlorobiphenyl on the primary and secondary chromatography columns (27%, 26%). The associated results are qualified as "UJ" based on potential low bias.

Pesticides by SW-846 Method 8081B:

L2005543:

The sample SB-18_2-4_020520 exhibited a percent recovery above the UCL for the surrogate decachlorobiphenyl (181%). The associated results are qualified as "J" based on potential high bias.

The sample SB-10_0-2_020620 exhibited a percent recovery below the LCL for the surrogate decachlorobiphenyl (11%). The associated results are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch WG1338313 exhibited RPDs above the control limit for Endrin aldehyde (25%), Endrin ketone (22%), and Endosulfan sulfate (21%). The associated results in sample FB01_020620 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/9/2020 at 20:40 exhibited a %D above the control limit for trans-chlordane (20.3%). The associated results in sample SB-17_0-2_020520 are qualified as "J" based on potential indeterminate bias.

The CCV analyzed on 2/10/2020 at 12:58 exhibited %Ds above the control limit for delta-BHC (-20.8%), 4,4'-DDE (-34.1%), dieldrin (-20.4%), and 4,4'-DDD (-28.2%). The associated results in sample SB-8_10-12_020620, SB-10_10-12_020620 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/13/2020 at 08:23 exhibited a %D above the control limit for methoxychlor (-29.9%). The associated results in sample SB-1_2-4_020620, SB-4_6-8_020620, and SODUP01_020620 are qualified as "UJ" based on potential indeterminate bias.

The sample SB-20_0-2_020520 exhibited RPDs above the control limit between the primary and secondary GC columns for 4,4'-DDE (62%), dieldrin (64%), cis-chlordane (51%), and trans-chlordane (64%). The associated results are qualified as "J" based on potential indeterminate bias.

The sample SB-20_2-4_020520 exhibited RPDs above the control limit between the primary and secondary GC columns for cis-chlordane (62%) and trans-chlordane (42%). The associated results are qualified as "J" based on potential indeterminate bias.

The sample SB-17_0-2_020520 exhibited RPDs above the control limit between the primary and secondary GC columns for 4,4'-DDE (44%) and cis-chlordane (63%). The associated results are qualified as "J" based on potential indeterminate bias.

L2005791:

The LCS/LCSD for batch WG1338864 exhibited RPDs above the control limit for 4,4'-DDD (33%), 4,4'-DDE (31%), 4,4'-DDT (33%), alpha-BHC (41%), delta-BHC (39%), dieldrin (34%), Endosulfan I (33%), Endosulfan II (32%), Endosulfan sulfate (36%), Endrin (33%), heptachlor (34%), lindane (39%), and trans-chlordane (33%). The associated results in sample SB-3_0-2_020720, SB-3_6-8_020720, SB-3_9-11_020720, SB-7_0-2_020720, SB-7_5-7_020720, SB-7_9-11_020720, SB-12_0-2_020720, SB-12_5-7_020720, and SB-12_10-12_020720 are qualified as "J" or "UJ" based on potential indeterminate bias.

L2006176:

The sample SB-2_6-8_021120 exhibited a percent recovery above the UCL for the surrogate decachlorobiphenyl (426%). The associated results are qualified as "J" based on potential high bias.

The LCS/LCSD for batch WG1341017 exhibited RPDs above the control limit for beta-BHC (22%) and Endrin aldehyde (21%). The associated results in sample FB03_021120 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/14/2020 at 19:57 exhibited a %D above the control limit for Endrin aldehyde (30.7%). The associated results in sample SB-6_0-2_021120, SB-6_5-7_021120, SB-6_9-11_021120, SB-16_0-2_021120, SB-16_5-7_021120, SB-11_0-2_021120, SB-11_6-8_021120, SB-14_0-2_021120, SB-14_6-8_021120, SB-14_9-11_021120, SB-9_0-2_021120, SB-9_6-8_021120, SB-9_9-11_021120, SB-2_0-2_021120, and SB-2_6-8_021120 are qualified as "UJ" based on potential indeterminate bias.

The sample SB-16_0-2_021120 exhibited a RPD above the control limit between the primary and secondary GC columns for trans-chlordane (114%). The associated results are qualified as "J" based on potential indeterminate bias.

The sample SB-2_6-8_021120 exhibited a RPD above the control limit between the primary and secondary GC columns for 4,4'-DDD (48%). The associated results are qualified as "J" based on potential indeterminate bias.

Metals by SW-846 Method 6010D:

L2005543:

The MB for batch WG1338497-1 exhibited a detection of chromium, total (0.436 mg/kg). The associated results in samples SB-19_0-2_020520, SB-19_6-8_020520, SB-18_0-2_020520, SB-17_9-11_020520, SB-5_0-2_020620, SB-4_0-2_020620, and SB-4_6-8_020620 are qualified as "U" at the sample concentration based on potential blank contamination.

The MB for batch WG1338497-1 exhibited detections of nickel, total (0.156 mg/kg) and sodium, total (3.01 mg/kg). The associated results in samples SB-20_2-4_020520, SB-20_6-8_020520, SB-19_0-2_020520, SB-19_6-8_020520, SB-18_0-2_020520, SB-18_10-12_020520, SB-17_9-11_020520, SB-5_5-7_020620, SB-1_2-4_020620, and SB-4_6-8_020620 are qualified as "U" at the reporting limit based on potential blank contamination.

The MS/MSD for batch SB-4_10-12_020620 exhibited a percent recovery below the LCL for calcium, total (63%, 68%). The associated results in sample SB-4_10-12_020620 are qualified as "J" based on potential low bias.

The MS for batch SB-20_0-2_020520 exhibited a percent recovery below the LCL for barium, total (44%). The associated results in sample SB-20_0-2_020520 are qualified as "J" based on potential low bias.

The MS for batch SB-20_0-2_020520 exhibited a percent recovery above the UCL for manganese, total (137%). The associated results in sample SB-20_0-2_020520 are qualified as "J" based on potential high bias.

The laboratory duplicate and parent sample (SB-20_0-2_020520) exhibited RPDs above the control limit for arsenic, total (26%), barium, total (34%), iron, total (36%), lead, total (60%), selenium, total (34%), and zinc, total (68%). The associated results are qualified as "J" based on potential indeterminate bias.

L2005961:

The MB for batch WG1339689-1 exhibited a detection of sodium, total (1.97 mg/kg). The associated results in sample SB-13_0-2_021020, SB-13_4-6_021020, SB-13_9-11_021020, SB-

15_0-2_021020, SB-15_6-8_021020, SB-15_10-12_021020, and SODUP02_021020 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch WG1339931-1 exhibited detections of calcium, total (0.04 mg/l) and manganese, total (0.006 mg/l). The associated results in sample FB02_021020 are qualified as "U" at the reporting limit based on potential blank contamination.

L2006176:

The MSD for batch SB-16_9-11_021120 exhibited a percent recovery above the UCL for potassium, total (133%). The associated results in sample SB-16_9-11_021120 are qualified as "J" based on potential high bias.

Cyanide by SW-846 Method 9012B:

L2005543:

The MS/MSD for batch SB-19_0-2_020520 exhibited a percent recovery below the LCL for cyanide, total (47%, 45%). The associated results in sample SB-19_0-2_020520 are qualified as "UJ" based on potential low bias.

L2005961:

The LCS/LCSD for batch WG1339628 exhibited a percent recovery below the LCL for cyanide, total (75%, 76%). The associated results in sample SB-13_0-2_021020, SB-13_4-6_021020, SB-13_9-11_021020, SB-15_0-2_021020, SB-15_6-8_021020, SB-15_10-12_021020, and SODUP02_021020 are qualified as "UJ" based on potential low bias.

L2006176:

The LCS/LCSD for batch WG1340945 exhibited a percent recovery below the LCL for cyanide, total (75%, 71%). The associated results in sample SB-6_0-2_021120, SB-6_5-7_021120, SB-6_9-11_021120, SB-16_0-2_021120, SB-16_5-7_021120, and SB-16_9-11_021120 are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch WG1341015 exhibited a percent recovery below the LCL for cyanide, total (75%, 71%). The associated results in sample SB-11_0-2_021120, SB-11_6-8_021120, SB-11_9-11_021120, SB-14_0-2_021120, SB-14_6-8_021120, SB-14_9-11_021120, SB-9_0-2_021120, SB-9_6-8_021120, SB-9_9-11_021120, and SB-2_0-2_021120 are qualified as "UJ" based on potential low bias.

The LCS/LCSD for batch WG1341240 exhibited a percent recovery below the LCL for cyanide, total (67%, 37%). The associated results in sample SB-2_6-8_021120 and SODUP03_021120 are qualified as "J" or "UJ" based on potential low bias.

Hexavalent Chromium by SW-846 Method 7196A:

L2005543:

The MS/MSD for batch SB-4_10-12_020620 exhibited a RPD above the control limit for chromium, hexavalent (47%). The associated results in sample SB-4_10-12_020620 are qualified as "UJ" based on potential indeterminate bias.

L2005961:

The MB for batch WG1339433 exhibited a detection of chromium, hexavalent (0.26 mg/kg). The associated results in sample SB-13_4-6_021020, SB-15_0-2_021020, SB-15_10-12_021020, and SODUP02_021020 are qualified as "U" at the reporting limit based on potential blank contamination.

L2006176:

The MS for batch SB-16_9-11_021120 exhibited a percent recovery below the LCL for chromium, hexavalent (55%, 46%). The associated results in sample SB-16_9-11_021120 are qualified as "UJ" based on potential low bias.

The MS/MSD for batch SB-11_9-11_021120 exhibited a RPD above the control limit for chromium, hexavalent (34%). The associated results in sample SB-11_9-11_021120 are qualified as "UJ" based on potential indeterminate bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by SW-846 Method 8260C:

L2005543:

The MB for batch WG1339861-5 exhibited a detection of methyl tert butyl ether (13 ug/kg). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1340016-10 exhibited detections of bromomethane (1.1 ug/kg) and methyl tert butyl ether (0.2 ug/kg). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1340016-5 exhibited detections of 1,2,3-trichlorobenzene (0.64 ug/kg), 1,2,4-trichlorobenzene (0.36 ug/kg), and hexachlorobutadiene (0.26 ug/kg). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1340310-5 exhibited detections of bromomethane (56 ug/kg) and methyl tert butyl ether (10 ug/kg). The associated results are non-detections. No qualification is necessary.

The LCSD for batch WG1339276 exhibited a percent recovery above the UCL for 2-butanone (140%). The associated results are non-detections. No qualification is necessary.

The MS for batch SB-4_10-12_020620 exhibited percent recoveries outside of control limits for 1,2,3-trichlorobenzene (50%), 1,2,4,5-tetramethylbenzene (46%), 1,2,4-trichlorobenzene (47%), 1,2,4-trimethylbenzene (52%), 1,2-dichlorobenzene (60%), 1,3,5-trimethylbenzene (52%), 1,3-dichlorobenzene (54%), 1,4-dichlorobenzene (54%), bromobenzene (68%), dichlorodifluoromethane (162%), ethylbenzene (68%), hexachlorobutadiene (29%), isopropylbenzene (57%), naphthalene (62%), vinyl acetate (55%), n-butylbenzene (32%), n-propylbenzene (47%), o-chlorotoluene (54%), p-chlorotoluene (51%), 1,4-diethylbenzene (37%), 4-ethyltoluene (48%), p-isopropyltoluene (41%), p/m-xylene (67%), sec-butylbenzene (43%), and tert-butylbenzene (53%). Qualifications are not applied based solely on MS recoveries for VOCs. Associated LCS/LCSD recoveries were either within QC limits or previously qualified for LCS/LCSD recovery. No further action is necessary.

The CCV analyzed on 2/11/2020 at 05:36 exhibited a RF below the control limit for 1,4-dioxane (0.00234). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/11/2020 at 17:17 exhibited a RF below the control limit for 1,4-dioxane (0.00223). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/11/2020 at 17:48 exhibited a RF below the control limit for 1,4-dioxane (0.00158). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/12/2020 at 18:05 exhibited a RF below the control limit for 1,4-dioxane (0.00209). The associated results were previously qualified. No further action is necessary.

L2005791:

The LCS/LCSD for batch WG1340718 exhibited percent recoveries above the UCL for chloromethane (150%, 150%) and vinyl chloride (160%, 150%). The associated results are non-detections. No qualification is necessary.

The CCV analyzed on 2/13/2020 at 07:42 exhibited a RF below the control limit for 1,4-dioxane (0.00198). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/13/2020 at 14:49 exhibited %Ds above the control limit for chloromethane (-20.8%), vinyl chloride (29.5%), bromomethane (64.6%), chloroethane (71.6%), and ethyl ether (69.4%). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/13/2020 at 14:49 exhibited a RF below the control limit for 1,4-dioxane (0.00491). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/13/2020 at 17:10 exhibited a RF below the control limit for 1,4-dioxane (0.00141). The associated results were previously qualified. No further action is necessary.

<u>L2005961:</u>

The MB for batch WG1340584-5 exhibited a detection of bromomethane (1.5 ug/kg). The associated results are non-detections. No qualification is necessary.

The LCS/LCSD for batch WG1340487 exhibited a percent recovery above the UCL for dichlorodifluoromethane (242%, 237%). The associated results are non-detections. No qualification is necessary.

The LCS/LCSD for batch WG1340584 exhibited a percent recovery above the UCL for 1,4-dioxane (141%, 137%). The associated results are non-detections. No qualification is necessary.

The CCV analyzed on 2/13/2020 at 10:44 exhibited a RF below the control limit for 1,4-dioxane (0.00174). The associated results were previously qualified. No further action is necessary.

<u>L2006176:</u>

The MB for batch WG1340845 exhibited a detection of bromomethane (1.9 ug/kg). The associated results are non-detections. No qualification is necessary.

The LCS/LCSD for batch WG1340525 exhibited a percent recovery above the UCL for chloromethane (150%, 160%). The associated results are non-detections. No qualification is necessary.

Samples SB-16_9-11 and SB-11_9-11_021120 were used to perform matrix spike/matrix spike duplicate (MS/MSD) analyses for VOCs. While percent recoveries were outside of QC requirements, qualifications are not applied based solely on the findings of the MS/MSD. Since associated LCS/LCSD percent recoveries were within QC requirements, or sample results were previously qualified due to LCS/LCSD percent recoveries outside of QC requirements, no qualifications are applied based on MS/MSD results.

The CCV analyzed on 2/13/2020 at 07:13 exhibited a RF below the control limit for 1,4-dioxane (0.00165). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/14/2020 at 06:41 exhibited a RF below the control limit for 1,4-dioxane (0.00269). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/17/2020 at 14:38 exhibited a RF below the control limit for 1,4-dioxane (0.00241). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/17/2020 at 14:38 exhibited %Ds above the control limit for 1,4-dichlorobutane (20.6%) and 1,2,3-trichloropropane (20.9%). The associated results were previously qualified. No further action is necessary.

SVOCs by SW-846 Method 8270D and 8270D SIM:

L2005543:

The sample SB-19_0-2_020520 exhibited percent recoveries below the LCL for the surrogates 2,4,6-tribromophenol (0%), 2-fluorobiphenyl (0%), 2-fluorophenol (0%), 4-terphenyl-d14 (0%), nitrobenzene-d5 (0%), and phenol-d6 (0%). The sample was diluted >10X. No qualification is necessary.

The sample SB-19_0-2_020520 exhibited percent recoveries below the LCL for the surrogates 2,4,6-tribromophenol (0%), 2-fluorobiphenyl (0%), 2-fluorophenol (0%), 4-terphenyl-d14 (0%), nitrobenzene-d5 (0%), and phenol-d6 (0%). The sample was diluted >10X. No qualification is necessary.

The sample SB-1_0-2_020620 exhibited percent recoveries below the LCL for the surrogates 2,4,6-tribromophenol (0%), 2-fluorobiphenyl (0%), 2-fluorophenol (0%), 4-terphenyl-d14 (0%), nitrobenzene-d5 (0%), and phenol-d6 (0%). The sample was diluted >10X. No qualification is necessary.

The sample SB-4_0-2_020620 exhibited percent recoveries below the LCL for the surrogates 2,4,6-tribromophenol (0%), 2-fluorobiphenyl (0%), 2-fluorophenol (0%), 4-terphenyl-d14 (0%), nitrobenzene-d5 (0%), and phenol-d6 (0%). The sample was diluted >10X. No qualification is necessary.

The sample SB-8_0-2_020620 exhibited percent recoveries below the LCL for the surrogates 2,4,6-tribromophenol (0%), 2-fluorobiphenyl (0%), 2-fluorophenol (0%), 4-terphenyl-d14 (0%), nitrobenzene-d5 (0%), and phenol-d6 (0%). The sample was diluted >10X. No qualification is necessary.

The sample SB-10_0-2_020620 exhibited percent recoveries below the LCL for the surrogates 2,4,6-tribromophenol (0%), 2-fluorobiphenyl (0%), 2-fluorophenol (0%), 4-terphenyl-d14 (0%), nitrobenzene-d5 (0%), and phenol-d6 (0%). The sample was diluted >10X. No qualification is necessary.

The MS/MSD for batch SB-4_10-12_020620 exhibited a percent recovery below the LCL for benzoic acid (0%). The associated results were previously qualified. No further action is necessary.

The MS/MSD performed on sample SB-4_10-12_020620 exhibited percent recoveries outside of recovery criteria. Associated primary results are not qualified based solely on MS/MSD percent recoveries. Since associated LCS recoveries recovered within QC limits, no qualifications are required.

L2005791:

The sample SB-7_0-2_020720 exhibited a percent recovery below the LCL for the surrogate 2-fluorophenol (22%). The other five surrogates were recovered within the control limits. No qualification is necessary.

L2005961:

The FB (FB02_021020) exhibited a detection of benzyl alcohol (1.4 UG/L). The associated results are non-detections. No qualification is necessary.

The LCS/LCSD for batch WG1339462 exhibited a percent recovery below the LCL for benzoic acid (0%). The associated results were previously qualified. No further action is necessary.

L2006176:

The sample SB-6_5-7_021120 exhibited a percent recovery below the LCL for the surrogate 2-fluorophenol (20%). The other SB-6_5-7_021120 surrogates were recovered within the control limits. No qualification is necessary.

The FB (FB03_021120) exhibited a detection of benzyl alcohol (1.2 ug/l). The associated results are non-detections. No qualification is necessary.

The LCSD for batch WG1340096 exhibited percent recoveries above the UCL for phenol (96%) and p-chloro-m-cresol (106%). The associated results are non-detections. No qualification is necessary.

The MS/MSD for batch SB-11_9-11_021120 exhibited a percent recovery below the LCL for benzoic acid (0%). The associated results were previously qualified. No further action is necessary.

PFAS by USEPA Method 537M:

L2005543:

The FB (FB01_020620) exhibited a detection of 6:2FTS (1.36 ng/l). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1339379-1 exhibited detections of PFOA/PFOS, total (0.58 ng/l), perfluorooctanoic acid (PFOA) (0.58 ng/l), and PFPeA (0.676 ng/l). The associated results are non-detections. No qualification is necessary.

The LCS/LCSD for batch WG1339405 exhibited a RPD above the control limit for FOSA (33%). The associated results were previously qualified. No further action is necessary.

The MS for batch SB-4_10-12_020620 exhibited a percent recovery above the UCL for 8:2FTS (140%). The associated results were previously qualified. No further action is necessary.

The sample SB-18_0-2_020520 exhibited a percent recovery above the UCL for the surrogate 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2FTS) (238%). The associated results are non-detections. No qualification is necessary.

The sample SB-5_0-2_020620 exhibited percent recoveries above the UCL for the surrogates m2-8:2FTS (360%), 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2FTS) (272%), n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-NEtFOSAA) (171%), and n-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid (d3-NMeFOSAA) (147%). The associated results are non-detections. No qualification is necessary.

The sample SB-4_0-2_020620 exhibited percent recoveries above the UCL for the surrogates m2-8:2FTS (344%), m2-6:2FTS (198%), and d5-NEtFOSAA (152%). The associated results are non-detections. No qualification is necessary.

The sample SB-8_0-2_020620 exhibited percent recoveries above the UCL for the surrogates m2-8:2FTS (303%) and d5-NEtFOSAA (150%). The associated results are non-detections. No qualification is necessary.

The sample SB-10_0-2_020620 exhibited percent recoveries above the UCL for the surrogates m2-8:2FTS (249%) and d5-NEtFOSAA (150%). The associated results are non-detections. No qualification is necessary.

L2005791:

The LCS/LCSD for batch WG1339105 exhibited a percent recovery above the UCL for 8:2FTS (161%, 146%). The associated results are non-detections. No qualification is necessary.

The LCSD for batch WG1339105 exhibited a percent recovery above the UCL for 6:2FTS (144%). The associated results are non-detections. No qualification is necessary.

The sample SB-3_0-2_020720 exhibited a percent recovery above the UCL for the surrogate m2-8:2FTS (241%). The associated results are non-detections. No qualification is necessary.

The sample SB-3_0-2_020720 exhibited a percent recovery above the UCL for the surrogate d5-NEtFOSAA (143%). The associated results are non-detections. No qualification is necessary.

The sample SB-7_0-2_020720 exhibited a percent recovery above the UCL for the surrogate m2-8:2FTS (195%). The associated results are non-detections. No qualification is necessary.

The sample SB-12_0-2_020720 exhibited a percent recovery above the UCL for the surrogate m2-8:2FTS (193%). The associated results are non-detections. No qualification is necessary.

L2005961:

The sample SB-15_0-2_021020 exhibited percent recoveries above the UCL for the surrogates m2-6:2FTS (227%), d5-NEtFOSAA (177%), d3-NMeFOSAA (158%), and m2-8:2FTS (413%). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1339844-1 exhibited a detection of PFBA (0.099 ug/kg). The associated results are non-detections. No qualification is necessary.

The LCS/LCSD for batch WG1339931 exhibited a percent recovery above the UCL for 8:2FTS (138%, 154%). The associated results are non-detections. No qualification is necessary.

L2006176:

The sample SB-6_0-2_021120 exhibited percent recoveries above the UCL for the surrogates m2-8:2FTS (308%), m2-6:2FTS (183%), d5-NEtFOSAA (153%), and d3-NMeFOSAA (138%). The associated results are non-detections. No qualification is necessary.

The sample SB-11_0-2_021120 exhibited percent recoveries above the UCL for the surrogates m2-8:2FTS (244%) and d5-NEtFOSAA (143%). The associated results are non-detections. No qualification is necessary.

The sample SB-9_0-2_021120 exhibited percent recoveries above the UCL for the surrogates m2-8:2FTS (218%) and d5-NEtFOSAA (149%). The associated results are non-detections. No qualification is necessary.

The sample SB-2_0-2_021120 exhibited percent recoveries above the UCL for the surrogates m2-8:2FTS (270%) and d5-NEtFOSAA (158%). The associated results are non-detections. No qualification is necessary.

The MS for batch SB-16_9-11_021120 exhibited a percent recovery above the UCL for 8:2FTS (142%). The associated results are non-detections. No qualification is necessary.

The MS for batch SB-11_9-11_021120 exhibited a percent recovery above the UCL for 8:2FTS (141%). The associated results are non-detections. No qualification is necessary.

Herbicides by SW-846 Method 8151A:

L2005543:

The sample SB-20_0-2_020520 exhibited a percent recovery below the LCL for the surrogate DCAA (27%) in column 2. Associated primary results were reported from column 1. No further action is necessary.

L2005791:

The CCV analyzed on 2/12/2020 at 10:15 exhibited a %D above the control limit for 2,4-D (21.3%). The associated results were previously qualified. No further action is necessary.

L2005791:

The CCV analyzed on 2/13/2020 at 17:41 exhibited a %D above the control limit for 2,4-D (23.4%) on the secondary chromatography column. Associated primary results were reported from column 1. No further action is necessary.

The CCV analyzed on 2/17/2020 at 21:02 exhibited a %D above the control limit for 2,4-D (22.9%) on the secondary chromatography column. Associated primary results were reported from column 1. No further action is necessary.

PCBs by SW-846 Method 8082A:

L2005543:

The sample SB-8_0-2_020620 exhibited a percent recovery below the LCL for the surrogate decachlorobiphenyl (29%) from the secondary column. The associated results are reported from the primary column. No qualification is necessary.

Pesticides by SW-846 Method 8081B:

L2005543:

The sample SB-19_0-2_020520 exhibited a percent recovery below the LCL for the surrogate decachlorobiphenyl (29%). The sample was diluted >10X. No qualification is necessary.

The sample SB-18_10-12_020520 exhibited percent recoveries above the UCL for the surrogates 2,4,5,6-tetrachloro-m-xylene (161%) and decachlorobiphenyl (165%). The associated results are non-detections. No qualification is necessary.

The sample SB-17_5-7_020520 exhibited a percent recovery above the UCL for the surrogate decachlorobiphenyl (173%). The associated results are non-detections. No qualification is necessary.

The sample SB-5_10-12_020620 exhibited a percent recovery above the UCL for the surrogate 2,4,5,6-tetrachloro-m-xylene (650%). The associated results are non-detections. No qualification is necessary.

L2005791:

The CCV analyzed on 2/14/2020 at 08:15 exhibited a %D above the control limit for beta-BHC (20.3%). The associated results were previously qualified. No further action is necessary.

L2006176:

The sample SB-2_0-2_021120 exhibited a percent recovery above the UCL for the surrogate decachlorobiphenyl (152%). The associated results are non-detections. No qualification is necessary.

The sample SODUP03_021120 exhibited a percent recovery above the UCL for the surrogate decachlorobiphenyl (152%). The associated results are non-detections. No qualification is necessary.

Metals by SW-846 Method 6010D:

L2005543:

The MB for batch WG1338497-1 exhibited a detection of iron, total (2.11 mg/kg). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1338607-1 exhibited a detection of manganese, total (0.092 mg/kg). The associated results are >10X the contamination. No qualification is necessary.

The MB for batch WG1339783-1 exhibited a detection of chromium, total (0.04 mg/kg). The associated results are >10X the contamination. No qualification is necessary.

The MS/MSD for batch SB-4_10-12_020620 exhibited percent recoveries above the UCL for aluminum, total (173%, 163%) and iron, total (83%, 42%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

The MS/MSD for batch SB-20_0-2_020520 exhibited percent recoveries above the UCL for aluminum, total (985%), calcium, total (0%), iron, total (0%), lead, total (0%), magnesium, total (0%), and zinc, total (0%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

The MS/MSD for batch SB-20_2-4_020520 exhibited a percent recovery below the LCL for lead, total (0%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

L2005961:

The FB (FB02_021020) exhibited a detection of manganese, total (0.002 mg/l). The associated results are >10X the contamination. No qualification is necessary.

L2006176:

The MB for batch WG1340111 exhibited a detection of chromium, total (0.06 mg/kg). The associated results are >10X the contamination. No qualification is necessary.

The MS/MSD for batch SB-16_9-11_021120 exhibited percent recoveries above the UCL for aluminum, total (25%, 244%) and iron, total (0%, 420%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

The MS/MSD for batch SB-11_9-11_021120 exhibited percent recoveries below the LCL for aluminum, total (5%, 47%) and iron, total (0%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

Hexavalent Chromium by SW-846 Method 7196A:

L2005543:

The MS for batch SB-5_5-7_020620 exhibited a percent recovery above the UCL for chromium, hexavalent (154%). The associated results are non-detections. No qualification is necessary.

COMMENTS:

Three field duplicate and parent sample pairs were collected and analyzed for all parameters. For results less than 5X the RL, analytes meet the precision criteria if the absolute difference is less than ±2X the RL. For results greater than 5X the RL, analytes meet the precision criteria if the RPD is less than or equal to 50% for soil. The following field duplicate and parent sample pairs were compared to the precision criteria:

- SB-1_6-8_020620 and SODUP01_020620
- SB-15_10-12_021020 and SODUP02_021020
- SB-6_9-11_021120 and SODUP03_021120

The field duplicate and parent sample (SB-1_6-8_020620 and SODUP01_020620) exhibited absolute differences above the RL for barium, total (1.65 mg/kg), calcium, total (10 mg/kg), chromium, total (1.17 mg/kg), chromium, trivalent (1.2 mg/kg), copper, total (1.86 mg/kg), iron, total (20 mg/kg), lead, total (9.5 mg/kg), magnesium, total (15 mg/kg), manganese, total (1 mg/kg), and tetrachloroethene (6.2 ug/kg). The associated results are qualified as "J" based on potential indeterminate bias. The field duplicate and parent sample (SB-1_6-8_020620 and SODUP01_020620) also exhibited RPDs above the control limit for arsenic, total (86%), beryllium, total (171%), cadmium, total (165%), nickel, total (54%), pyrene (59%), selenium, total (146%), and sodium, total (136%). The associated results are qualified as "J" or "UJ" based on potential indeterminate bias.

The field duplicate and parent sample (SB-15_10-12_021020 and SODUP02_021020) exhibited absolute differences above the RL for aluminum, total (1253 mg/kg), barium, total (1.72 mg/kg), calcium, total (152 mg/kg), chromium, total (2.19 mg/kg), chromium, trivalent (2.1 mg/kg), copper, total (1.295 mg/kg), iron, total (2820 mg/kg), magnesium, total (596 mg/kg), manganese, total (18.1 mg/kg), nickel, total (5.063 mg/kg), solids, total (3.8 mg/kg), and vanadium, total (3.66 mg/kg). The associated results are qualified as "J" based on potential indeterminate bias. The field duplicate and parent sample (SB-15_10-12_021020 and SODUP02_021020) also exhibited RPDs above the control limit for cobalt, total (109%) and potassium, total (112%). The associated results are qualified as "J" based on potential indeterminate bias.

The field duplicate and parent sample (SB-6_9-11_021120 and SODUP03_021120) exhibited absolute differences above the RL for acetone (26 ug/kg), aluminum, total (132 mg/kg), barium, total (1.77 mg/kg), calcium, total (1990 mg/kg), carbon disulfide (24 ug/kg), chromium, total (1.45 mg/kg), chromium, trivalent (1.5 mg/kg), chrysene (144 ug/kg), copper, total (1.25 mg/kg), iron, total (370 mg/kg), magnesium, total (211 mg/kg), manganese, total (8.7 mg/kg), and mercury, total (0.366 mg/kg). The associated results are qualified as "J" or "UJ" based on potential indeterminate bias. The field duplicate and parent sample (SB-6_9-11_021120 and SODUP03_021120) also exhibited RPDs above the control limit for 2-butanone (51%), benzo(b)fluoranthene (56%), beryllium, total (169%), and dibenzo(a,h)anthracene (93%). The associated results are qualified as "J" or "UJ" based on potential indeterminate bias.

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Emily Strake

Emily Strake, CEP
Senior Project Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Allyson Kritzer, Langan Senior Staff Engineer

From: Emily Strake, Langan Senior Project Chemist

Date: March 10, 2020

Re: Data Usability Summary Report
For 1607 Surf Avenue
February 2020 Groundwater Samples
Langan Project No.: 170599501

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of groundwater samples collected in February 2020 by Langan Engineering and Environmental Services ("Langan") at the 1607 Surf Avenue site ("the site"). The samples were analyzed by Alpha Analytical Laboratories, Inc. (NYSDOH NELAP registration # 11148) for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), per- and polyfluoroalkyl substances (PFAS), herbicides, polychlorinated biphenyls (PCBs), pesticides, metals including mercury (Hg), cyanide (CN), hexavalent chromium (CrVI), and trivalent chromium (CrIII) by the methods specified below.

- VOCs by SW-846 Method 8260C
- SVOCs by SW-846 Method 8270D and 8270D SIM
- PFAS by USEPA Method 537M
- Herbicides by SW-846 Method 8151A
- PCBs by SW-846 Method 8082A
- Pesticides by SW-846 Method 8081B
- Metals by SW-846 Method 6020B
- Mercury by SW-846 Method 7470A
- Cyanide by SW-846 Method 9012B
- Hexavalent Chromium by SW-846 Method 7196A
- Trivalent Chromium (calculated)

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	***Lab Sample ID***	***Client Sample ID***	***Sample Date***	***Analytical Parameters***
L2006934	L2006934-05	GWTB01_021420	2/14/2020	VOCs
L2006934	L2006934-01	MW-2_021420	2/14/2020	VOCs, SVOC, SVOC SIM, Pesticides, PCBs, Herbicides, PFAS, Metals, Mercury, CrVI, CrIII, and Cyanide
L2006934	L2006934-02	MW-4_021420	2/14/2020	VOCs, SVOC, SVOC SIM, Pesticides, PCBs, Herbicides, PFAS, Metals, Mercury, CrVI, CrIII, and Cyanide
L2006934	L2006934-03	MW-6_021420	2/14/2020	VOCs, SVOC, SVOC SIM, Pesticides, PCBs, Herbicides, PFAS, Metals, Mercury, CrVI, CrIII, and Cyanide
L2006934	L2006934-04	MW-9_021420	2/14/2020	VOCs, SVOC, SVOC SIM, Pesticides, PCBs, Herbicides, PFAS, Metals, Mercury, CrVI, CrIII, and Cyanide
L2007256	L2007256-05	GWTB02_021820	2/18/2020	VOCs
L2007256	L2007256-01	MW-1_021820	2/18/2020	VOCs, SVOC, SVOC SIM, Pesticides, PCBs, Herbicides, PFAS, Metals, Mercury, CrVI, CrIII, and Cyanide
L2007256	L2007256-02	MW-3_021820	2/18/2020	VOCs, SVOC, SVOC SIM, Pesticides, PCBs, Herbicides, PFAS, Metals, Mercury, CrVI, CrIII, and Cyanide
L2007256	L2007256-03	MW-5_021820	2/18/2020	VOCs, SVOC, SVOC SIM, Pesticides, PCBs, Herbicides, PFAS, Metals, Mercury, CrVI, CrIII, and Cyanide
L2007256	L2007256-04	MW-7_021820	2/18/2020	VOCs, SVOC, SVOC SIM, Pesticides, PCBs, Herbicides, PFAS, Metals, Mercury, CrVI, CrIII, and Cyanide
L2007457	L2007457-05	GWDUP01_021920	2/19/2020	VOCs, SVOC, SVOC SIM, Pesticides, PCBs, Herbicides, PFAS, Metals, Mercury, CrVI, CrIII, and Cyanide

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
L2007457	L2007457-06	GWFB01_021920	2/19/2020	VOCs, SVOC, SVOC SIM, Pesticides, PCBs, Herbicides, PFAS, Metals, Mercury, CrVI, CrIII, and Cyanide
L2007457	L2007457-08	GWTB03_021920	2/19/2020	VOCs
L2007457	L2007457-04	MW-10_021920	2/19/2020	VOCs, SVOC, SVOC SIM, Pesticides, PCBs, Herbicides, PFAS, Metals, Mercury, CrVI, CrIII, and Cyanide
L2007457	L2007457-03	MW-11_021920	2/19/2020	VOCs, SVOC, SVOC SIM, Pesticides, PCBs, Herbicides, PFAS, Metals, Mercury, CrVI, CrIII, and Cyanide
L2007457	L2007457-02	MW-12_021920	2/19/2020	VOCs, SVOC, SVOC SIM, Pesticides, PCBs, Herbicides, PFAS, Metals, Mercury, CrVI, CrIII, and Cyanide
L2007457	L2007457-01	MW-8_021920	2/19/2020	VOCs, SVOC, SVOC SIM, Pesticides, PCBs, Herbicides, PFAS, Metals, Mercury, CrVI, CrIII, and Cyanide
L2006934	L2006934-05	GWTB01_021420	2/14/2020	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-34A, “Trace Volatile Data Validation” (September 2016, Revision 1), USEPA Region II SOP #HW-33A, “Low/Medium Volatile Data Validation” (September 2016, Revision 1), USEPA Region II SOP #HW-35A, “Semivolatile Data Validation” (September 2016, Revision 1), USEPA Region II SOP #HW-17, “Validating Chlorinated Herbicides” (December 2010, Revision 3.1), USEPA Region II SOP #HW-37A, “Polychlorinated Biphenyl (PCB) Aroclor Data Validation” (June 2015, Revision 0), USEPA Region II SOP #HW-36A, “Pesticide Data Validation” (October 2016, Revision 1), USEPA Region II SOP #HW-3a, “ICP-AES Data Validation” (September 2016, Revision 1), USEPA Region II SOP #HW-3c, “Mercury and Cyanide Data Validation” (September 2016, Revision 1), the USEPA Contract Laboratory Program “National Functional Guidelines for Organic Superfund Methods Data Review” (EPA-540-R-2017-002, January 2017), the USEPA Contract Laboratory Program “National Functional Guidelines for

Inorganic Superfund Methods Data Review" (EPA-540-R-2017-001, January 2017) and the specifics of the methods employed.

EPA Method 537 was developed and validated for the analysis of finished drinking water from surface water and groundwater sources. Laboratories have modified Method 537 to enable the analysis of groundwater and soil, and to incorporate PFAS analytes not currently addressed by the promulgated method. NYSDOH offers certification for PFOA and PFOS in the drinking water category. Non-potable water and soil certification is not available; however, the method describes acceptable modifications. EPA recommends that modified methods be assessed relative to project goals and data quality objectives.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, sample extraction and digestion, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, internal standard area counts, isotope dilution recoveries, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, overall system performance, serial dilutions, dual column performance, field duplicate, and field blank sample results.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's 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.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
MW-2_021420	SW6020	7429-90-5	ALUMINUM, TOTAL	U (0.0139)
MW-2_021420	SW6020	7440-28-0	THALLIUM, DISSOLVED	U (0.001)
MW-2_021420	SW6020	7440-28-0	THALLIUM, TOTAL	U (0.001)
MW-2_021420	SW8081B	72-54-8	4,4'-DDD	UJ
MW-2_021420	SW8081B	72-55-9	4,4'-DDE	UJ
MW-2_021420	SW8081B	50-29-3	4,4'-DDT	UJ
MW-2_021420	SW8081B	309-00-2	ALDRIN	UJ
MW-2_021420	SW8081B	319-84-6	ALPHA-BHC	UJ
MW-2_021420	SW8081B	319-85-7	BETA-BHC	UJ
MW-2_021420	SW8081B	57-74-9	CHLORDANE	UJ
MW-2_021420	SW8081B	319-86-8	DELTA-BHC	UJ
MW-2_021420	SW8081B	60-57-1	DIELDRIN	UJ
MW-2_021420	SW8081B	959-98-8	ENDOSULFAN I	UJ
MW-2_021420	SW8081B	33213-65-9	ENDOSULFAN II	UJ
MW-2_021420	SW8081B	1031-07-8	ENDOSULFAN SULFATE	UJ
MW-2_021420	SW8081B	72-20-8	ENDRIN	UJ
MW-2_021420	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
MW-2_021420	SW8081B	53494-70-5	ENDRIN KETONE	UJ
MW-2_021420	SW8081B	76-44-8	HEPTACHLOR	UJ
MW-2_021420	SW8081B	1024-57-3	HEPTACHLOR EPOXIDE	UJ
MW-2_021420	SW8081B	58-89-9	LINDANE	UJ
MW-2_021420	SW8081B	72-43-5	METHOXYCHLOR	UJ
MW-2_021420	SW8081B	8001-35-2	TOXAPHENE	UJ
MW-2_021420	SW8081B	5103-71-9	CIS-CHLORDANE	UJ
MW-2_021420	SW8081B	5103-74-2	TRANS-CHLORDANE	UJ
MW-2_021420	SW8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
MW-2_021420	SW8260C	95-93-2	1,2,4,5-TETRAMETHYLBENZENE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
MW-2_021420	SW8260C	123-91-1	1,4-DIOXANE	UJ
MW-2_021420	SW8260C	591-78-6	2-HEXANONE	UJ
MW-2_021420	SW8260C	75-15-0	CARBON DISULFIDE	UJ
MW-2_021420	SW8260C	74-87-3	CHLOROMETHANE	UJ
MW-2_021420	SW8260C	91-20-3	NAPHTHALENE	UJ
MW-2_021420	SW8260C	75-01-4	VINYL CHLORIDE	UJ
MW-2_021420	SW8270D	105-67-9	2,4-DIMETHYLPHENOL	UJ
MW-2_021420	SW8270D	106-47-8	4-CHLOROANILINE	UJ
MW-2_021420	SW8270D	100-02-7	4-NITROPHENOL	UJ
MW-2_021420	SW8270D	100-51-6	BENZYL ALCOHOL	UJ
MW-2_021420	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
MW-2_021420	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
MW-2_021420	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
MW-2_021420	E537(M)	355-46-4	PERFLUOROHEXANESULFONIC ACID (PFHXS)	J
MW-4_021420	SW6020	7429-90-5	ALUMINUM, TOTAL	U (0.0118)
MW-4_021420	SW6020	7440-28-0	THALLIUM, TOTAL	U (0.001)
MW-4_021420	SW8081B	72-54-8	4,4'-DDD	UJ
MW-4_021420	SW8081B	72-55-9	4,4'-DDE	UJ
MW-4_021420	SW8081B	50-29-3	4,4'-DDT	UJ
MW-4_021420	SW8081B	309-00-2	ALDRIN	UJ
MW-4_021420	SW8081B	319-84-6	ALPHA-BHC	UJ
MW-4_021420	SW8081B	319-85-7	BETA-BHC	UJ
MW-4_021420	SW8081B	57-74-9	CHLORDANE	UJ
MW-4_021420	SW8081B	319-86-8	DELTA-BHC	UJ
MW-4_021420	SW8081B	60-57-1	DIELDRIN	UJ
MW-4_021420	SW8081B	959-98-8	ENDOSULFAN I	UJ
MW-4_021420	SW8081B	33213-65-9	ENDOSULFAN II	UJ
MW-4_021420	SW8081B	1031-07-8	ENDOSULFAN SULFATE	UJ
MW-4_021420	SW8081B	72-20-8	ENDRIN	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
MW-4_021420	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
MW-4_021420	SW8081B	53494-70-5	ENDRIN KETONE	UJ
MW-4_021420	SW8081B	76-44-8	HEPTACHLOR	UJ
MW-4_021420	SW8081B	1024-57-3	HEPTACHLOR EPOXIDE	UJ
MW-4_021420	SW8081B	58-89-9	LINDANE	UJ
MW-4_021420	SW8081B	72-43-5	METHOXYCHLOR	UJ
MW-4_021420	SW8081B	8001-35-2	TOXAPHENE	UJ
MW-4_021420	SW8081B	5103-71-9	CIS-CHLORDANE	UJ
MW-4_021420	SW8081B	5103-74-2	TRANS-CHLORDANE	UJ
MW-4_021420	SW8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
MW-4_021420	SW8260C	95-93-2	1,2,4,5-TETRAMETHYLBENZENE	UJ
MW-4_021420	SW8260C	123-91-1	1,4-DIOXANE	UJ
MW-4_021420	SW8260C	591-78-6	2-HEXANONE	UJ
MW-4_021420	SW8260C	75-15-0	CARBON DISULFIDE	UJ
MW-4_021420	SW8260C	74-87-3	CHLOROMETHANE	UJ
MW-4_021420	SW8260C	91-20-3	NAPHTHALENE	UJ
MW-4_021420	SW8260C	75-01-4	VINYL CHLORIDE	UJ
MW-4_021420	SW8270D	105-67-9	2,4-DIMETHYLPHENOL	UJ
MW-4_021420	SW8270D	106-47-8	4-CHLOROANILINE	UJ
MW-4_021420	SW8270D	100-02-7	4-NITROPHENOL	UJ
MW-4_021420	SW8270D	100-51-6	BENZYL ALCOHOL	UJ
MW-4_021420	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
MW-4_021420	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
MW-4_021420	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
MW-4_021420	E537(M)	355-46-4	PERFLUOROHEXANESULFONIC ACID (PFHXS)	UJ
MW-6_021420	SW6020	7440-28-0	THALLIUM, TOTAL	U (0.001)
MW-6_021420	SW8081B	72-54-8	4,4'-DDD	UJ
MW-6_021420	SW8081B	72-55-9	4,4'-DDE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
MW-6_021420	SW8081B	50-29-3	4,4'-DDT	UJ
MW-6_021420	SW8081B	309-00-2	ALDRIN	UJ
MW-6_021420	SW8081B	319-84-6	ALPHA-BHC	UJ
MW-6_021420	SW8081B	319-85-7	BETA-BHC	UJ
MW-6_021420	SW8081B	57-74-9	CHLORDANE	UJ
MW-6_021420	SW8081B	319-86-8	DELTA-BHC	UJ
MW-6_021420	SW8081B	60-57-1	DIELDRIN	UJ
MW-6_021420	SW8081B	959-98-8	ENDOSULFAN I	UJ
MW-6_021420	SW8081B	33213-65-9	ENDOSULFAN II	UJ
MW-6_021420	SW8081B	1031-07-8	ENDOSULFAN SULFATE	UJ
MW-6_021420	SW8081B	72-20-8	ENDRIN	UJ
MW-6_021420	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
MW-6_021420	SW8081B	53494-70-5	ENDRIN KETONE	UJ
MW-6_021420	SW8081B	76-44-8	HEPTACHLOR	UJ
MW-6_021420	SW8081B	1024-57-3	HEPTACHLOR EPOXIDE	UJ
MW-6_021420	SW8081B	58-89-9	LINDANE	UJ
MW-6_021420	SW8081B	72-43-5	METHOXYCHLOR	UJ
MW-6_021420	SW8081B	8001-35-2	TOXAPHENE	UJ
MW-6_021420	SW8081B	5103-71-9	CIS-CHLORDANE	UJ
MW-6_021420	SW8081B	5103-74-2	TRANS-CHLORDANE	UJ
MW-6_021420	SW8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ
MW-6_021420	SW8260C	95-93-2	1,2,4,5-TETRAMETHYLBENZENE	UJ
MW-6_021420	SW8260C	123-91-1	1,4-DIOXANE	UJ
MW-6_021420	SW8260C	591-78-6	2-HEXANONE	UJ
MW-6_021420	SW8260C	75-15-0	CARBON DISULFIDE	UJ
MW-6_021420	SW8260C	74-87-3	CHLOROMETHANE	UJ
MW-6_021420	SW8260C	91-20-3	NAPHTHALENE	UJ
MW-6_021420	SW8260C	75-01-4	VINYL CHLORIDE	UJ
MW-6_021420	SW8270D	105-67-9	2,4-DIMETHYLPHENOL	UJ
MW-6_021420	SW8270D	106-47-8	4-CHLOROANILINE	UJ
MW-6_021420	SW8270D	100-02-7	4-NITROPHENOL	UJ
MW-6_021420	SW8270D	100-51-6	BENZYL ALCOHOL	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
MW-6_021420	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
MW-6_021420	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
MW-6_021420	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
MW-6_021420	E537(M)	355-46-4	PERFLUOROHEXANESULFONIC ACID (PFHXS)	UJ
MW-9_021420	SW6020	7429-90-5	ALUMINUM, TOTAL	U (0.01)
MW-9_021420	SW6020	7440-28-0	THALLIUM, TOTAL	U (0.001)
MW-9_021420	SW8081B	72-54-8	4,4'-DDD	UJ
MW-9_021420	SW8081B	72-55-9	4,4'-DDE	UJ
MW-9_021420	SW8081B	50-29-3	4,4'-DDT	UJ
MW-9_021420	SW8081B	309-00-2	ALDRIN	UJ
MW-9_021420	SW8081B	319-84-6	ALPHA-BHC	UJ
MW-9_021420	SW8081B	319-85-7	BETA-BHC	UJ
MW-9_021420	SW8081B	57-74-9	CHLORDANE	UJ
MW-9_021420	SW8081B	319-86-8	DELTA-BHC	UJ
MW-9_021420	SW8081B	60-57-1	DIELDRIN	UJ
MW-9_021420	SW8081B	959-98-8	ENDOSULFAN I	UJ
MW-9_021420	SW8081B	33213-65-9	ENDOSULFAN II	UJ
MW-9_021420	SW8081B	1031-07-8	ENDOSULFAN SULFATE	UJ
MW-9_021420	SW8081B	72-20-8	ENDRIN	UJ
MW-9_021420	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
MW-9_021420	SW8081B	53494-70-5	ENDRIN KETONE	UJ
MW-9_021420	SW8081B	76-44-8	HEPTACHLOR	UJ
MW-9_021420	SW8081B	1024-57-3	HEPTACHLOR EPOXIDE	UJ
MW-9_021420	SW8081B	58-89-9	LINDANE	UJ
MW-9_021420	SW8081B	72-43-5	METHOXYCHLOR	UJ
MW-9_021420	SW8081B	8001-35-2	TOXAPHENE	UJ
MW-9_021420	SW8081B	5103-71-9	CIS-CHLORDANE	UJ
MW-9_021420	SW8081B	5103-74-2	TRANS-CHLORDANE	UJ
MW-9_021420	SW8260C	87-61-6	1,2,3-TRICHLOROBENZENE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
MW-9_021420	SW8260C	95-93-2	1,2,4,5-TETRAMETHYLBENZENE	UJ
MW-9_021420	SW8260C	123-91-1	1,4-DIOXANE	UJ
MW-9_021420	SW8260C	591-78-6	2-HEXANONE	UJ
MW-9_021420	SW8260C	75-15-0	CARBON DISULFIDE	UJ
MW-9_021420	SW8260C	74-87-3	CHLOROMETHANE	UJ
MW-9_021420	SW8260C	91-20-3	NAPHTHALENE	UJ
MW-9_021420	SW8260C	75-01-4	VINYL CHLORIDE	UJ
MW-9_021420	SW8270D	105-67-9	2,4-DIMETHYLPHENOL	UJ
MW-9_021420	SW8270D	106-47-8	4-CHLOROANILINE	UJ
MW-9_021420	SW8270D	100-02-7	4-NITROPHENOL	UJ
MW-9_021420	SW8270D	100-51-6	BENZYL ALCOHOL	UJ
MW-9_021420	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
MW-9_021420	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
MW-9_021420	E537(M)	2355-31-9	N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSAA)	UJ
MW-9_021420	E537(M)	355-46-4	PERFLUOROHEXANESULFONIC ACID (PFHXS)	UJ
GWTB01_021420	SW8260C	123-91-1	1,4-DIOXANE	UJ
MW-1_021820	SW6020	7440-23-5	SODIUM, TOTAL	J
MW-1_021820	SW6020	7440-28-0	THALLIUM, DISSOLVED	U (0.001)
MW-1_021820	SW6020	7440-28-0	THALLIUM, TOTAL	U (0.001)
MW-1_021820	SW8260C	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	UJ
MW-1_021820	SW8260C	594-20-7	2,2-DICHLOROPROPANE	UJ
MW-1_021820	SW8260C	78-93-3	2-BUTANONE	UJ
MW-1_021820	SW8260C	591-78-6	2-HEXANONE	UJ
MW-1_021820	SW8260C	67-64-1	ACETONE	UJ
MW-1_021820	SW8260C	107-13-1	ACRYLONITRILE	UJ
MW-1_021820	SW8260C	74-83-9	BROMOMETHANE	UJ
MW-1_021820	SW8260C	75-00-3	CHLOROETHANE	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
MW-1_021820	SW8260C	75-71-8	DICHLORODIFLUOROMETHANE	UJ
MW-1_021820	SW8270D	95-48-7	2-METHYLPHENOL	UJ
MW-1_021820	SW8270D	88-75-5	2-NITROPHENOL	UJ
MW-1_021820	SW8270D	100-02-7	4-NITROPHENOL	UJ
MW-1_021820	SW8270D	65-85-0	BENZOIC ACID	UJ
MW-1_021820	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
MW-1_021820	E537(M)	27619-97-2	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	J
MW-1_021820	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	j
MW-3_021820	SW8260C	123-91-1	1,4-DIOXANE	UJ
MW-3_021820	SW8260C	107-13-1	ACRYLONITRILE	UJ
MW-3_021820	SW8260C	91-20-3	NAPHTHALENE	UJ
MW-3_021820	SW8270D	95-48-7	2-METHYLPHENOL	UJ
MW-3_021820	SW8270D	88-75-5	2-NITROPHENOL	UJ
MW-3_021820	SW8270D	100-02-7	4-NITROPHENOL	UJ
MW-3_021820	SW8270D	65-85-0	BENZOIC ACID	UJ
MW-3_021820	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
MW-3_021820	E537(M)	27619-97-2	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	J
MW-3_021820	E537(M)	375-92-8	PERFLUOROHEPTANESULFONIC ACID (PFHPS)	UJ
MW-3_021820	E537(M)	375-95-1	PERFLUORONONANOIC ACID (PFNA)	J
MW-3_021820	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J
MW-3_021820	E537(M)	335-67-1	PERFLUOROOCTANOIC ACID (PFOA)	J
MW-5_021820	SW8260C	123-91-1	1,4-DIOXANE	UJ
MW-5_021820	SW8260C	107-13-1	ACRYLONITRILE	UJ
MW-5_021820	SW8260C	91-20-3	NAPHTHALENE	UJ
MW-5_021820	SW8270D	95-48-7	2-METHYLPHENOL	UJ
MW-5_021820	SW8270D	88-75-5	2-NITROPHENOL	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
MW-5_021820	SW8270D	100-02-7	4-NITROPHENOL	UJ
MW-5_021820	SW8270D	65-85-0	BENZOIC ACID	UJ
MW-5_021820	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
MW-5_021820	E537(M)	27619-97-2	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	J
MW-5_021820	E537(M)	375-92-8	PERFLUOROHEPTANESULFONIC ACID (PFHPS)	UJ
MW-5_021820	E537(M)	375-95-1	PERFLUORONONANOIC ACID (PFNA)	J
MW-5_021820	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J
MW-5_021820	E537(M)	335-67-1	PERFLUOROOCTANOIC ACID (PFOA)	J
MW-7_021820	SW6020	7440-28-0	THALLIUM, DISSOLVED	U (0.001)
MW-7_021820	SW8260C	123-91-1	1,4-DIOXANE	UJ
MW-7_021820	SW8260C	107-13-1	ACRYLONITRILE	UJ
MW-7_021820	SW8260C	91-20-3	NAPHTHALENE	UJ
MW-7_021820	SW8270D	95-48-7	2-METHYLPHENOL	UJ
MW-7_021820	SW8270D	88-75-5	2-NITROPHENOL	UJ
MW-7_021820	SW8270D	100-02-7	4-NITROPHENOL	UJ
MW-7_021820	SW8270D	65-85-0	BENZOIC ACID	UJ
MW-7_021820	SW8270DSIM	87-86-5	PENTACHLOROPHENOL	UJ
MW-7_021820	E537(M)	27619-97-2	1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	J
MW-7_021820	E537(M)	375-92-8	PERFLUOROHEPTANESULFONIC ACID (PFHPS)	UJ
MW-7_021820	E537(M)	375-95-1	PERFLUORONONANOIC ACID (PFNA)	J
MW-7_021820	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J
MW-7_021820	E537(M)	335-67-1	PERFLUOROOCTANOIC ACID (PFOA)	J
GWTB02_021820	SW8260C	123-91-1	1,4-DIOXANE	UJ
MW-8_021920	SW6020	7429-90-5	ALUMINUM, DISSOLVED	J
MW-8_021920	SW6020	7429-90-5	ALUMINUM, TOTAL	U (0.01)

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
MW-8_021920	SW6020	7440-36-0	ANTIMONY, DISSOLVED	J
MW-8_021920	SW6020	7440-36-0	ANTIMONY, TOTAL	J
MW-8_021920	SW6020	7440-39-3	BARIUM, DISSOLVED	J
MW-8_021920	SW6020	7440-39-3	BARIUM, TOTAL	J
MW-8_021920	SW6020	7440-70-2	CALCIUM, DISSOLVED	J
MW-8_021920	SW6020	7440-70-2	CALCIUM, TOTAL	J
MW-8_021920	SW6020	7440-47-3	CHROMIUM, DISSOLVED	UJ
MW-8_021920	SW6020	7440-50-8	COPPER, DISSOLVED	J
MW-8_021920	SW6020	7439-89-6	IRON, DISSOLVED	J
MW-8_021920	SW6020	7439-89-6	IRON, TOTAL	J
MW-8_021920	SW6020	7439-95-4	MAGNESIUM, DISSOLVED	J
MW-8_021920	SW6020	7439-96-5	MANGANESE, DISSOLVED	J
MW-8_021920	SW6020	7439-96-5	MANGANESE, TOTAL	J
MW-8_021920	SW6020	7440-09-7	POTASSIUM, DISSOLVED	J
MW-8_021920	SW6020	7440-09-7	POTASSIUM, TOTAL	J
MW-8_021920	SW6020	7440-23-5	SODIUM, DISSOLVED	J
MW-8_021920	SW6020	7440-23-5	SODIUM, TOTAL	J
MW-8_021920	SW8081B	319-86-8	DELTA-BHC	UJ
MW-8_021920	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
MW-8_021920	SW8260C	123-91-1	1,4-DIOXANE	UJ
MW-8_021920	SW8260C	107-13-1	ACRYLONITRILE	UJ
MW-8_021920	SW8260C	91-20-3	NAPHTHALENE	UJ
MW-8_021920	SW8270D	95-94-3	1,2,4,5-TETRACHLOROBENZENE	UJ
MW-8_021920	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
MW-8_021920	SW8270DSIM	85-01-8	PHENANTHRENE	UJ
MW-8_021920	SW9012B	57-12-5	CYANIDE, TOTAL	J
MW-8_021920	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
MW-8_021920	E537(M)	TOTPFOAPFOS	PFOA/PFOS, TOTAL	J

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
MW-8_021920	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J
MW-8_021920	E537(M)	335-67-1	PERFLUOROOCTANOIC ACID (PFOA)	J
MW-12_021920	SW6020	7429-90-5	ALUMINUM, TOTAL	U (0.0112)
MW-12_021920	SW8081B	319-86-8	DELTA-BHC	UJ
MW-12_021920	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
MW-12_021920	SW8260C	123-91-1	1,4-DIOXANE	UJ
MW-12_021920	SW8260C	107-13-1	ACRYLONITRILE	UJ
MW-12_021920	SW8260C	91-20-3	NAPHTHALENE	UJ
MW-12_021920	SW8270D	95-94-3	1,2,4,5-TETRACHLOROBENZENE	UJ
MW-12_021920	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
MW-12_021920	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
MW-11_021920	SW6020	7429-90-5	ALUMINUM, TOTAL	U (0.0124)
MW-11_021920	SW8081B	319-86-8	DELTA-BHC	UJ
MW-11_021920	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
MW-11_021920	SW8260C	123-91-1	1,4-DIOXANE	UJ
MW-11_021920	SW8260C	107-13-1	ACRYLONITRILE	UJ
MW-11_021920	SW8260C	91-20-3	NAPHTHALENE	UJ
MW-11_021920	SW8270D	95-94-3	1,2,4,5-TETRACHLOROBENZENE	UJ
MW-11_021920	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
MW-11_021920	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
MW-10_021920	SW6020	7429-90-5	ALUMINUM, TOTAL	U (0.01)
MW-10_021920	SW8081B	319-86-8	DELTA-BHC	UJ
MW-10_021920	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
MW-10_021920	SW8260C	123-91-1	1,4-DIOXANE	UJ
MW-10_021920	SW8260C	107-13-1	ACRYLONITRILE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
MW-10_021920	SW8260C	91-20-3	NAPHTHALENE	UJ
MW-10_021920	SW8270D	95-94-3	1,2,4,5-TETRACHLOROBENZENE	UJ
MW-10_021920	SW8270D	108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	UJ
MW-10_021920	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
GWDUP01_021920	SW6020	7429-90-5	ALUMINUM, DISSOLVED	UJ
GWDUP01_021920	SW6020	7429-90-5	ALUMINUM, TOTAL	U (0.01)
GWDUP01_021920	SW6020	7440-36-0	ANTIMONY, DISSOLVED	J
GWDUP01_021920	SW6020	7440-36-0	ANTIMONY, TOTAL	J
GWDUP01_021920	SW6020	7440-39-3	BARIUM, DISSOLVED	J
GWDUP01_021920	SW6020	7440-39-3	BARIUM, TOTAL	J
GWDUP01_021920	SW6020	7440-70-2	CALCIUM, DISSOLVED	J
GWDUP01_021920	SW6020	7440-70-2	CALCIUM, TOTAL	J
GWDUP01_021920	SW6020	7440-47-3	CHROMIUM, DISSOLVED	J
GWDUP01_021920	SW6020	7440-50-8	COPPER, DISSOLVED	J
GWDUP01_021920	SW6020	7439-89-6	IRON, DISSOLVED	J
GWDUP01_021920	SW6020	7439-89-6	IRON, TOTAL	J
GWDUP01_021920	SW6020	7439-95-4	MAGNESIUM, DISSOLVED	J
GWDUP01_021920	SW6020	7439-96-5	MANGANESE, DISSOLVED	J
GWDUP01_021920	SW6020	7439-96-5	MANGANESE, TOTAL	J
GWDUP01_021920	SW6020	7440-09-7	POTASSIUM, DISSOLVED	J
GWDUP01_021920	SW6020	7440-09-7	POTASSIUM, TOTAL	J
GWDUP01_021920	SW6020	7440-23-5	SODIUM, DISSOLVED	J
GWDUP01_021920	SW6020	7440-23-5	SODIUM, TOTAL	J
GWDUP01_021920	SW8081B	319-86-8	DELTA-BHC	UJ
GWDUP01_021920	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
GWDUP01_021920	SW8260C	123-91-1	1,4-DIOXANE	UJ
GWDUP01_021920	SW8260C	107-13-1	ACRYLONITRILE	UJ
GWDUP01_021920	SW8260C	91-20-3	NAPHTHALENE	UJ
GWDUP01_021920	SW8270D	100-02-7	4-NITROPHENOL	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
GWDUP01_021920	SW8270DSIM	85-01-8	PHENANTHRENE	J
GWDUP01_021920	SW9012B	57-12-5	CYANIDE, TOTAL	J
GWDUP01_021920	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
GWDUP01_021920	E537(M)	TOTPFOAPFOS	PFOA/PFOS, TOTAL	J
GWDUP01_021920	E537(M)	1763-23-1	PERFLUOROOCTANESULFONIC ACID (PFOS)	J
GWDUP01_021920	E537(M)	335-67-1	PERFLUOROOCTANOIC ACID (PFOA)	J
GWFB01_021920	SW6020	7440-70-2	CALCIUM, TOTAL	U (0.188)
GWFB01_021920	SW6020	7440-28-0	THALLIUM, DISSOLVED	U (0.001)
GWFB01_021920	SW8081B	319-86-8	DELTA-BHC	UJ
GWFB01_021920	SW8081B	7421-93-4	ENDRIN ALDEHYDE	UJ
GWFB01_021920	SW8260C	123-91-1	1,4-DIOXANE	UJ
GWFB01_021920	SW8260C	107-13-1	ACRYLONITRILE	UJ
GWFB01_021920	SW8260C	91-20-3	NAPHTHALENE	UJ
GWFB01_021920	SW8270D	100-02-7	4-NITROPHENOL	UJ
GWFB01_021920	E537(M)	2991-50-6	N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	UJ
GWFB01_021920	E537(M)	307-24-4	PERFLUOROHEXANOIC ACID (PFHXA)	U (1.82)
GWTB03_021920	SW8260C	123-91-1	1,4-DIOXANE	UJ
GWTB03_021920	SW8260C	107-13-1	ACRYLONITRILE	UJ
GWTB03_021920	SW8260C	91-20-3	NAPHTHALENE	UJ

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by SW-846 Method 8260C:

L2006934:

The initial calibration (ICAL) for instrument VOA108 exhibited a response factor (RF) below the control limit for 1,4-dioxane (0.002). The associated results in sample GWTB01_021420, MW-2_021420, MW-4_021420, MW-6_021420, and MW-9_021420 are qualified as "UJ" based on potential indeterminate bias.

The continuing calibration verification (CCV) analyzed on 2/19/2020 at 08:10 exhibited percent differences (%Ds) above the control limit for chloromethane (-62.7%), vinyl chloride (-31.5%), carbon disulfide (-27.3%), 2-hexanone (21.7%), 1,2,4,5-tetramethylbenzene (22.5%), naphthalene (26%), and 1,2,3-trichlorobenzene (22.3%). The associated results in sample MW-2_021420, MW-4_021420, MW-6_021420, and MW-9_021420 are qualified as "UJ" based on potential indeterminate bias.

L2007256:

The ICAL for instrument VOA101 exhibited a RF below the control limit for acrylonitrile (0.042). The associated results in sample MW-3_021820, MW-5_021820, and MW-7_021820 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/20/2020 at 18:19 exhibited a RF below the control limit for acrylonitrile (0.04). The associated results in sample MW-1_021820 are qualified as "UJ" based on potential indeterminate bias.

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) for batch WG1343290 exhibited a relative percent difference (RPD) above the control limit for 1,4-dioxane (23%). The associated results in sample MW-3_021820, MW-5_021820, and MW-7_021820 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument VOA108 exhibited a RF below the control limit for 1,4-dioxane (0.002). The associated results in sample GWTB02_021820 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument VOA122 exhibited a RF below the control limit for 1,4-dioxane (0.002). The associated results in sample MW-1_021820 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/20/2020 at 18:19 exhibited %Ds above the control limit for 1,2-dibromo-3-chloropropane (20.5%), 2,2-dichloropropane (-55.7%), 2-butanone (29.6%), 2-hexanone (23.8%), acetone (33.3%), acrylonitrile (24.5%), bromomethane (60%), chloroethane (29.9%), and dichlorodifluoromethane (-37.2%). The associated results in sample MW-1_021820 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/21/2020 at 07:01 exhibited a %D above the control limit for naphthalene (24.6%). The associated results in sample MW-3_021820, MW-5_021820, and MW-7_021820 are qualified as "UJ" based on potential indeterminate bias.

L2007457:

The LCS/LCSD for batch WG1343290 exhibited a RPD above the control limit for 1,4-dioxane (23%). The associated results in sample MW-8_021920, MW-12_021920, MW-11_021920, MW-10_021920, GWDUP01_021920, GWFB01_021920, and GWTB03_021920 are qualified as "UJ" based on potential indeterminate bias.

The ICAL for instrument VOA101 exhibited a RF below the control limit for acrylonitrile (0.042). The associated results in sample MW-3_021820, MW-5_021820, and MW-7_021820 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/21/2020 at 07:01 exhibited a %D above the control limit for naphthalene (24.6%). The associated results in sample MW-8_021920, MW-12_021920, MW-11_021920, MW-10_021920, GWDUP01_021920, GWFB01_021920, and GWTB03_021920 are qualified as "UJ" based on potential indeterminate bias.

SVOCs by SW-846 Method 8270D and 8270D SIM:

L2006934:

The LCS/LCSD for batch WG1341215 exhibited a percent recovery below the lower control limit (LCL) for 4-chloroaniline (37%, 36%). The associated results in sample MW-2_021420, MW-4_021420, MW-6_021420, and MW-9_021420 are qualified as "UJ" based on potential low bias.

The LCSD for batch WG1341215 exhibited percent recoveries below the LCL for 2,4-dimethylphenol (36%) and benzyl alcohol (32%). The associated results in sample MW-

2_021420, MW-4_021420, MW-6_021420, and MW-9_021420 are qualified as "UJ" based on potential low bias.

The CCV analyzed on 2/19/2020 at 00:27 exhibited %Ds above the control limit for bis(2-chloroisopropyl)ether (21.1) and 4-nitrophenol (28.7). The associated results in sample MW-2_021420, MW-4_021420, MW-6_021420, and MW-9_021420 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/17/2020 at 11:28 exhibited a %D above the control limit for pentachlorophenol (23.8%). The associated results in sample MW-2_021420, MW-4_021420, MW-6_021420, and MW-9_021420 are qualified as "UJ" based on potential indeterminate bias.

L2007256:

The LCS/LCSD for batch WG1342205 exhibited a percent recovery below the LCL for benzoic acid (0%). The associated results in sample MW-1_021820, MW-3_021820, MW-5_021820, and MW-7_021820 are qualified as "UJ" based on potential low bias.

The CCV analyzed on 2/20/2020 at 16:19 exhibited %Ds above the control limit for 2-methylphenol (-20.3%), 2-nitrophenol (-22%), and 4-nitrophenol (23.2%). The associated results in sample MW-1_021820, MW-3_021820, MW-5_021820, and MW-7_021820 are qualified as "UJ" based on potential indeterminate bias.

The LCSD for batch WG1342207 exhibited a percent recovery below the LCL for pentachlorophenol (33%). The associated results in sample MW-1_021820, MW-3_021820, MW-5_021820, and MW-7_021820 are qualified as "UJ" based on potential low bias.

L2007457:

The CCV analyzed on 2/21/2020 at 15:54 exhibited %Ds above the control limit for bis(2-chloroisopropyl)ether (31.1%) and 1,2,4,5-tetrachlorobenzene (-23%). The associated results in sample MW-8_021920, MW-12_021920, MW-11_021920, and MW-10_021920 are qualified as "UJ" based on potential indeterminate bias.

The CCV analyzed on 2/24/2020 at 12:52 exhibited a %D above the control limit for 4-nitrophenol (22.9%). The associated results in sample GWDUP01_021920 and GWFB01_021920 are qualified as "UJ" based on potential indeterminate bias.

PFAS by USEPA Method 537M:

L2006934:

The CCV analyzed on 2/27/2020 at 12:58 exhibited %Ds above the control limit for perfluorohexanesulfonic acid-branched (br-PFHxS) (46.7%) and n-methyl perfluorooctanesulfonamidoacetic acid-linear (l-NMeFOSAA) (171.6%). The associated results in sample MW-2_021420, MW-4_021420, MW-6_021420, and MW-9_021420 are qualified as "J" or "UJ" based on potential indeterminate bias.

L2007256:

The sample MW-1_021820 exhibited a percent recovery above the upper control limit (UCL) for the surrogate 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2FTS) (312%). The associated results are qualified as "J" based on potential high bias.

The sample MW-3_021820 exhibited a percent recovery above the UCL for the surrogate m2-6:2FTS (317%). The associated results are qualified as "J" based on potential high bias.

The sample MW-5_021820 exhibited a percent recovery above the UCL for the surrogate m2-6:2FTS (304%). The associated results are qualified as "J" based on potential high bias.

The sample MW-7_021820 exhibited a percent recovery above the UCL for the surrogate m2-6:2FTS (269%). The associated results are qualified as "J" based on potential high bias.

The sample MW-3_021820 exhibited a percent recovery above the UCL for the internal standard m2PFOA (43.16%). The associated results are qualified as "J" or "UJ" based on potential low bias.

The sample MW-5_021820 exhibited a percent recovery above the UCL for the internal standard m2PFOA (49.28%). The associated results are qualified as "J" or "UJ" based on potential low bias.

The sample MW-7_021820 exhibited a percent recovery above the UCL for the internal standard m2PFOA (44.21%). The associated results are qualified as "J" or "UJ" based on potential low bias.

The CCV analyzed on 2/27/2020 at 21:00 exhibited a %D above the control limit for perfluorooctanesulfonic acid-branched (br-PFOS) (159.3%). The associated results in sample MW-1_021820, MW-3_021820, MW-5_021820, and MW-7_021820 are qualified as "J" based on potential indeterminate bias.

L2007457:

The method blank (MB) for batch WG1342736-1 exhibited a detection of perfluorohexanoic acid (PFHxA) (0.34 ng/l). The associated results in sample GWFB01_021920 are qualified as "U" at the reporting limit based on potential blank contamination.

The LCS/LCSD for batch WG1342736 exhibited a RPD above the control limit for n-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) (38%). The associated results in sample MW-8_021920, MW-12_021920, MW-11_021920, MW-10_021920, GWDUP01_021920, and GWFB01_021920 are qualified as "UJ" based on potential indeterminate bias.

Pesticides by SW-846 Method 8081B:

L2006934:

The LCS/LCSD for batch WG1341204 exhibited RPDs above the control limit for 4,4'-DDD (41%), 4,4'-DDE (39%), 4,4'-DDT (42%), aldrin (37%), alpha-BHC (35%), beta-BHC (36%), delta-BHC (33%), dieldrin (38%), endosulfan I (40%), endosulfan II (28%), endosulfan sulfate (29%), endrin (38%), endrin aldehyde (39%), endrin ketone (36%), heptachlor (34%), heptachlor epoxide (38%), lindane (34%), methoxychlor (37%), cis-chlordane (40%), and trans-chlordane (37%). The associated results in sample MW-2_021420, MW-4_021420, MW-6_021420, and MW-9_021420 are qualified as "UJ" based on potential indeterminate bias.

L2007457:

The LCS/LCSD for batch WG1342981 exhibited RPDs above the control limit for delta-BHC (35%) and endrin aldehyde (21%). The associated results in sample MW-8_021920, MW-12_021920, MW-11_021920, MW-10_021920, GWDUP01_021920, and GWFB01_021920 are qualified as "UJ" based on potential indeterminate bias.

Metals by SW-846 Method 6020B:

L2006934:

The MB for batch WG1342335 exhibited detections of aluminum, total (0.00327 mg/L), manganese, total (0.00301 mg/L), and thallium, total (0.00035 mg/L). The associated results in sample MW-2_021420, MW-4_021420, MW-6_021420, and MW-9_021420 are qualified as "U" at the higher of the sample concentration and the reporting limit based on potential blank contamination.

The MB for batch WG1342675 exhibited a detection of thallium, dissolved (0.00037 mg/L). The associated results in sample MW-2_021420 are qualified as "U" at the reporting limit based on potential blank contamination.

L2007256:

The MS for sample MW-1_021820 exhibited a percent recovery below the LCL for magnesium, total (72%). The associated results in sample MW-1_021820 are qualified as "J" based on potential low bias.

The MS/MSD for sample MW-1_021820 exhibited RPDs above the control limit for magnesium, total (25%) and potassium, total (23%). The associated results in sample MW-1_021820 are qualified as "J" based on potential indeterminate bias.

The MB for batch WG1342799-1 exhibited a detection of thallium, dissolved (0.00031 mg/L). The associated results in sample MW-1_021820 and MW-7_021820 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch WG1343138-1 exhibited a detection of thallium, total (0.00014 mg/L). The associated results in sample MW-1_021820 are qualified as "U" at the reporting limit based on potential blank contamination.

The serial dilution for sample MW-1_021820 exhibited a percent difference above 10% for sodium, total (29%). Since the associated result was greater than 50x the MDL, associated sample results were qualified as "J".

L2007457:

The MB for batch WG1342799-1 exhibited a detection of thallium, dissolved (0.00031 mg/L). The associated results in sample GWFB01_021920 are qualified as "U" at the reporting limit based on potential blank contamination.

The MB for batch WG1343812-1 exhibited a detection of calcium, total (0.0687 mg/L). The associated results in sample GWFB01_021920 are qualified as "U" at the sample concentration based on potential blank contamination.

The FB (GWFB01_021920) exhibited a detection of aluminum, total (0.0106 mg/L). The associated results in sample MW-8_021920, MW-12_021920, MW-11_021920, MW-10_021920, and GWDUP01_021920 are qualified as "U" at the higher of the sample concentration and the reporting limit based on potential blank contamination.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by SW-846 Method 8260C:

L2006934:

The LCS/LCSD for batch WG1341510 exhibited a percent recovery above the UCL for chloromethane (160%, 150%). The associated results are non-detections. No qualification is necessary.

The LCS for batch WG1341510 exhibited a percent recovery above the UCL for vinyl chloride (150%). The associated results are non-detections. No qualification is necessary.

The LCS/LCSD for batch WG1342282 exhibited a percent recovery above the UCL for chloromethane (160%, 160%). The associated results are non-detections. No qualification is necessary.

The CCV analyzed on 2/19/2020 at 08:10 exhibited a RF below the control limit for 1,4-dioxane (0.00162). The associated results were previously qualified. No further action is necessary.

L2007256:

The LCS/LCSD for batch WG1342282 exhibited a percent recovery above the UCL for chloromethane (160%, 160%). The associated results are non-detections. No qualification is necessary.

The LCS/LCSD for batch WG1343199 exhibited a percent recovery above the UCL for 2,2-dichloropropane (160%, 170%). The associated results are non-detections. No qualification is necessary.

The matrix spike (MS) for batch MW-1_021820 exhibited percent recoveries below the LCL for 2,2-dichloropropane (54%), bromomethane (24%), and dichlorodifluoromethane (150%). Qualifications are not applied based solely on matrix spike/matrix spike duplicate (MS/MSD) recoveries. Results were associated with LCS/LCSD recoveries within quality control (QC) limits or previously qualified based on LCS/LCSD recoveries outside of control limits. No further action is necessary.

The ICAL for instrument VOA101 exhibited a RF below the control limit for 1,4-dioxane (0.001). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/20/2020 at 18:19 exhibited a RF below the control limit for 1,4-dioxane (0.00126). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/21/2020 at 07:01 exhibited a RF below the control limit for acrylonitrile (0.043). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/21/2020 at 07:01 exhibited a RF below the control limit for 1,4-dioxane (0.00072). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/21/2020 at 07:01 exhibited a %D above the control limit for 1,4-dioxane (22.6%). The associated results were previously qualified. No further action is necessary.

L2007457:

The ICAL for instrument VOA101 exhibited a RF below the control limit for 1,4-dioxane (0.001). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/21/2020 at 07:01 exhibited RFs below the control limit for acrylonitrile (0.043) and 1,4-dioxane (0.00072). The associated results were previously qualified. No further action is necessary.

The CCV analyzed on 2/21/2020 at 07:01 exhibited a %D above the control limit for 1,4-dioxane (22.6%). The associated results were previously qualified. No further action is necessary.

PFAS by USEPA Method 537M:

L2006934:

The sample MW-2_021420 exhibited percent recoveries above the UCL for the surrogates 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2 FTS) (269%) and 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2 FTS) (296%). The associated results are non-detections. No qualification is necessary.

The sample MW-4_021420 exhibited percent recoveries above the UCL for the surrogates 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2 FTS) (314%) and 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2 FTS) (288%). The associated results are non-detections. No qualification is necessary.

The sample MW-6_021420 exhibited percent recoveries above the UCL for the surrogates 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2 FTS) (336%) and 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2 FTS) (313%). The associated results are non-detections. No qualification is necessary.

The sample MW-9_021420 exhibited percent recoveries above the UCL for the surrogates 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2 FTS) (318%) and 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2 FTS) (329%). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1341235-1 exhibited a detection of perfluorohexanoic acid (PFHxA) (0.36 ng/L). The associated results are >10X the contamination. No qualification is necessary.

L2007256:

The sample MW-1_021820 exhibited a percent recovery above the UCL for the surrogate 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2 FTS) (218%). The associated results are non-detections. No qualification is necessary.

The sample MW-3_021820 exhibited a percent recovery above the UCL for the surrogate 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2 FTS) (319%). The associated results are non-detections. No qualification is necessary.

The sample MW-5_021820 exhibited a percent recovery above the UCL for the surrogate 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2 FTS) (274%). The associated results are non-detections. No qualification is necessary.

The sample MW-7_021820 exhibited a percent recovery above the UCL for the surrogate 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2 FTS) (269%). The associated results are non-detections. No qualification is necessary.

The MB for batch WG1342109-1 exhibited a detection of perfluorohexanoic acid (PFHxA) (0.408 ng/L). The associated results are >10X the contamination. No qualification is necessary.

L2007457:

The FB (GWFB01_021920) exhibited a detection of perfluoropentanoic acid (PFPeA) (0.364 ng/L). The associated results are >10X the contamination. No qualification is necessary.

The sample MW-8_021920 exhibited percent recoveries above the UCL for the surrogates 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2 FTS) (256%) and 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2 FTS) (294%). The associated results are non-detections. No qualification is necessary.

The sample MW-12_021920 exhibited percent recoveries above the UCL for the surrogates 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2 FTS) (275%) and 1h,1h,2h,2hperfluoro[1,2-13c2]octanesulfonic acid (m2-6:2 FTS) (296%). The associated results are non-detections. No qualification is necessary.

The sample MW-10_021920 exhibited a percent recovery above the UCL for the surrogate 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2 FTS) (253%). The associated results are non-detections. No qualification is necessary.

The sample GWDUP01_021920 exhibited percent recoveries above the UCL for the surrogates 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2 FTS) (254%) and 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2 FTS) (272%). The associated results are non-detections. No qualification is necessary.

Metals by SW-846 Method 6020B:

L2006934:

The MS/MSD for batch MW-2_021420 exhibited a percent recovery below the LCL for calcium, dissolved (20%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

The MS/MSD for batch MW-2_021420 exhibited a percent recovery above the UCL for sodium, dissolved (165%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

L2007256:

The MS/MSD for sample MW-1_021820 exhibited percent recoveries above the UCL for calcium, dissolved (134%) and iron, dissolved (173%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

The MS/MSD for sample MW-1_021820 exhibited a RPD above the control limit for sodium, dissolved (55%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

The MS/MSD for sample MW-1_021820 exhibited percent recoveries outside of control limits for calcium, total (44%, 72%), iron, total (154%, 116%), and sodium, total (0%). The associated results in the parent sample are >4X the spiked amount. No qualification is necessary.

The MB for sample WG1342799-1 exhibited a detection of manganese, dissolved (0.00052 mg/L). The associated results are >10X the contamination. No qualification is necessary.

L2007457:

The MB for batch WG1342799-1 exhibited a detection of manganese, dissolved (0.00052 mg/L). The associated results are >10X the contamination. No qualification is necessary.

The FB (GWFB01_021920) exhibited detections of barium, dissolved (0.00045 mg/L), barium, total (0.00058 mg/L), iron, total (0.0253 mg/L), magnesium, total (0.0729 mg/L), manganese, total (0.00067 mg/L), and sodium, total (0.0443 mg/L). The associated results are >10X the contamination. No qualification is necessary.

COMMENTS:

One field duplicate and parent sample pair was collected and analyzed for all parameters. For results less than 5X the RL, analytes meet the precision criteria if the absolute difference is less than ±2X the RL. For results greater than 5X the RL, analytes meet the precision criteria if the RPD is less than or equal to 30% for groundwater. The following field duplicate and parent sample pair was compared to the precision criteria:

- MW-8_021920 and GWDUP01_021920

The field duplicate and parent sample (MW-8_021920 and GWDUP01_021920) exhibited RPDs above the control limit for aluminum, dissolved (79%), antimony, dissolved (66%), antimony, total (52%), chromium, dissolved (139%), copper, dissolved (103%), cyanide, total (100%), and phenanthrene (133%). The associated results are qualified as "J" or "UJ" based on potential indeterminate bias. The field duplicate and parent sample (MW-8_021920 and GWDUP01_021920) also exhibited absolute differences above the RL for barium, dissolved (0.00332 mg/L), barium, total (0.00066 mg/L), calcium, dissolved (10 mg/L), calcium, total (3 mg/L), iron, dissolved (0.079 mg/L), iron, total (0.08 mg/L), magnesium, dissolved (1.5 mg/L), manganese, dissolved (0.00548 mg/L), manganese, total (0.00804 mg/L), perfluorooctanesulfonic acid (PFOS) (8.7 ng/L), perfluorooctanoic acid (PFOA) (2.2 ng/l), PFOA/PFOS, total (10.9 ng/L), potassium, dissolved (1.1 mg/L), potassium, total (0.1 mg/L), sodium, dissolved (6 mg/L), and sodium, total (2 mg/L). The associated results are qualified as "J" based on potential indeterminate bias.

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified, with the exception of the rejected results. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Emily Strake

Emily Strake, CEP
Senior Project Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

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To: Allyson Kritzer, Langan Senior Staff Engineer

From: Emily Strake, Langan Senior Project Chemist

Date: February 27, 2020

Re: Data Usability Summary Report
For 1607 Surf Avenue
February 2020 Soil Vapor and Ambient Air Samples
Langan Project No.: 170599501

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of air samples collected in February 2020 by Langan Engineering and Environmental Services ("Langan") at the 1607 Surf Avenue site ("the site"). The samples were analyzed by Alpha Analytical Laboratories, Inc. (NYSDOH NELAP registration # 11148) for volatile organic compounds (VOCs) by the methods specified below.

- VOCs by USEPA Method TO-15

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	*Lab Sample ID*	*Client Sample ID*	*Sample Date*	*Analytical Parameters*
L2006386	L2006386-01	SV-8_021220	2/12/2020	VOCs
L2006386	L2006386-02	SV-7_021220	2/12/2020	VOCs
L2006386	L2006386-03	SV-9_021220	2/12/2020	VOCs
L2006386	L2006386-04	SV-1_021220	2/12/2020	VOCs
L2006386	L2006386-05	SV-4_021220	2/12/2020	VOCs
L2006386	L2006386-06	SV-5_021220	2/12/2020	VOCs
L2006386	L2006386-07	AA01_021220	2/12/2020	VOCs
L2006386	L2006386-08	SV-12_021220	2/12/2020	VOCs
L2006386	L2006386-09	SV-3_021220	2/12/2020	VOCs
L2006386	L2006386-10	SV-11_021220	2/12/2020	VOCs
L2006636	L2006636-01	SV-15_021320	2/13/2020	VOCs

SDG	Lab Sample ID	Client Sample ID	Sample Date	Analytical Parameters
L2006636	L2006636-02	SV-13_021320	2/13/2020	VOCs
L2006636	L2006636-03	SV-2_021320	2/13/2020	VOCs
L2006636	L2006636-04	AA02_021320	2/13/2020	VOCs
L2006636	L2006636-05	SV-6_021320	2/13/2020	VOCs
L2006636	L2006636-06	SV-10_021320	2/13/2020	VOCs
L2006636	L2006636-07	SV-14_021320	2/13/2020	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-31, “Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15” (September 2016, Revision 6), the USEPA Contract Laboratory Program “National Functional Guidelines for Organic Superfund Methods Data Review” (EPA-540-R-2017-002, January 2017), and the specifics of the methods employed.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, internal standard area counts, target compound identification and quantification, chromatograms, and overall system performance.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA’s 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.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SV-15_021320	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SV-13_021320	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SV-2_021320	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
AA02_021320	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SV-6_021320	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SV-10_021320	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SV-14_021320	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SV-8_021220	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SV-7_021220	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SV-9_021220	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SV-1_021220	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SV-4_021220	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SV-5_021220	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
AA01_021220	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SV-12_021220	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SV-3_021220	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ
SV-11_021220	TO-15	120-82-1	1,2,4-TRICHLOROBENZENE	UJ

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by USEPA Method TO-15:

L2006386:

The initial calibration verification (ICV) analyzed on 2/17/2020 at 13:20 exhibited a percent difference (%D) above the control limit for 1,2,4-trichlorobenzene (-31.4%). The associated results in sample SV-8_021220, SV-7_021220, SV-9_021220, SV-1_021220, SV-4_021220, SV-5_021220, AA01_021220, SV-12_021220, SV-3_021220, and SV-11_021220 are qualified as "UJ" based on potential indeterminate bias.

L2006636:

The ICV analyzed on 2/14/2020 at 10:31 exhibited a %D above the control limit for 1,2,4-trichlorobenzene (-33.5%). The associated results in sample SV-8_021220, SV-7_021220, SV-9_021220, SV-1_021220, SV-4_021220, SV-5_021220, AA01_021220, SV-12_021220, SV-3_021220, and SV-11_021220 are qualified as "UJ" based on potential indeterminate bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by USEPA Method TO-15:

L2006386:

The laboratory control sample (LCS) for batch WG1341895 exhibited a percent recovery above the upper control limit (UCL) for 1,2,4-trichlorobenzene (136%). The associated results are non-detections. No qualification is necessary.

L2006636:

The LCS for batch WG1342331 exhibited a percent recovery above the UCL for 1,2,4-trichlorobenzene (144%). The associated results are non-detections. No qualification is necessary.

COMMENTS:

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified, with the exception of the rejected results. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Emily Strake

Emily Strake, CEP
Senior Project Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901
Mailing Address: 1818 Market Street, Suite 3300 Philadelphia, PA 19103

To: Lamees Esmail, Langan Senior Staff Engineer

From: Joe Conboy, Langan Staff Chemist

Date: December 14, 2020

Re: Data Usability Summary Report
For 1607 Surf Avenue
December Soil Vapor Samples
Langan Project No.: 170599501

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of air samples collected in December 2020 by Langan Engineering and Environmental Services ("Langan") at the 1607 Surf Avenue site ("the site"). The samples were analyzed by Alpha Analytical Laboratories, Inc. (NYSDOH NELAP registration # 11148) for volatile organic compounds (VOCs) by the methods specified below.

- VOCs by USEPA Method TO-15

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	*Lab Sample ID*	*Client Sample ID*	*Sample Date*	*Analytical Parameters*
L2053758	L2053758-01	SV-16_120320	12/3/2020	VOCs and VOC SIM by TO-15
L2053758	L2053758-02	SV-17_120320	12/3/2020	VOCs and VOC SIM by TO-15
L2053758	L2053758-03	SV-18_120320	12/3/2020	VOCs and VOC SIM by TO-15
L2053758	L2053758-04	SV-19_120320	12/3/2020	VOCs and VOC SIM by TO-15
L2053758	L2053758-05	SV-20_120320	12/3/2020	VOCs and VOC SIM by TO-15
L2053758	L2053758-06	SV-21_120320	12/3/2020	VOCs and VOC SIM by TO-15
L2053758	L2053758-07	SV-22_120320	12/3/2020	VOCs and VOC SIM by TO-15
L2053758	L2053758-08	DUP01_120320	12/3/2020	VOCs and VOC SIM by TO-15
L2053758	L2053758-09	AA01_120320	12/3/2020	VOCs and VOC SIM by TO-15

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-31, "Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15" (September 2016, Revision 6), the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017), and the specifics of the methods employed.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, internal standard area counts, target compound identification and quantification, chromatograms, and overall system performance.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's 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.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
SV-16_120320	TO15	120-82-1	1,2,4-Trichlorobenzene	UJ
SV-16_120320	TO15	100-44-7	Benzyl Chloride	UJ
SV-16_120320	TO15 SIM	75-65-0	Tert-Butyl Alcohol	UJ
SV-17_120320	TO15	120-82-1	1,2,4-Trichlorobenzene	UJ
SV-17_120320	TO15	591-78-6	2-Hexanone	J
SV-17_120320	TO15	100-44-7	Benzyl Chloride	UJ
SV-18_120320	TO15	120-82-1	1,2,4-Trichlorobenzene	UJ
SV-18_120320	TO15	100-44-7	Benzyl Chloride	UJ
SV-19_120320	TO15	120-82-1	1,2,4-Trichlorobenzene	UJ
SV-19_120320	TO15	100-44-7	Benzyl Chloride	UJ
SV-20_120320	TO15	120-82-1	1,2,4-Trichlorobenzene	UJ
SV-20_120320	TO15	100-44-7	Benzyl Chloride	UJ
SV-20_120320	TO15 SIM	75-65-0	Tert-Butyl Alcohol	UJ
SV-21_120320	TO15	120-82-1	1,2,4-Trichlorobenzene	UJ
SV-21_120320	TO15	100-44-7	Benzyl Chloride	UJ
SV-22_120320	TO15	120-82-1	1,2,4-Trichlorobenzene	UJ
SV-22_120320	TO15	100-44-7	Benzyl Chloride	UJ
DUP01_120320	TO15	120-82-1	1,2,4-Trichlorobenzene	UJ
DUP01_120320	TO15	591-78-6	2-Hexanone	J
DUP01_120320	TO15	100-44-7	Benzyl Chloride	UJ
AA01_120320	TO15	120-82-1	1,2,4-Trichlorobenzene	UJ
AA01_120320	TO15	100-44-7	Benzyl Chloride	UJ
AA01_120320	TO15	75-65-0	Tert-Butyl Alcohol	UJ
AA01_120320	TO15 SIM	75-65-0	Tert-Butyl Alcohol	UJ
WG1443036-4	TO15	75-65-0	Tert-Butyl Alcohol	UJ
WG1443037-4	TO15 SIM	75-65-0	Tert-Butyl Alcohol	UJ
SV-17_120320	TO15	67-63-0	Isopropanol	J
SV-17_120320	TO15 SIM	75-65-0	Tert-Butyl Alcohol	J
SV-18_120320	TO15 SIM	75-65-0	Tert-Butyl Alcohol	J
SV-19_120320	TO15 SIM	75-65-0	Tert-Butyl Alcohol	J
SV-21_120320	TO15 SIM	75-65-0	Tert-Butyl Alcohol	J

Client Sample ID	Analysis	CAS #	Analyte	Validator Qualifier
SV-22_120320	TO15 SIM	75-65-0	Tert-Butyl Alcohol	J
DUP01_120320	TO15	67-63-0	Isopropanol	J
DUP01_120320	TO15 SIM	75-65-0	Tert-Butyl Alcohol	J

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by USEPA Method TO-15:

L2053758

The laboratory control sample for batch WG1443036-3 exhibited a percent recovery below the lower control limit for tertiary butyl alcohol (67%). The associated results in sample AA01_120320 are qualified as "UJ" based on potential low bias.

The initial calibration for instrument AIRLAB16 exhibited relative standard deviations above the control limit for benzyl chloride (30.79%) and 1,2,4-trichlorobenzene (34.59%). The associated results in sample SV-16_120320, SV-17_120320, SV-18_120320, SV-19_120320, SV-20_120320, SV-21_120320, SV-22_120320, DUP01_120320, and AA01_120320 are qualified as "UJ" based on potential indeterminate bias.

The continuing calibration verification analyzed on 12/9/2020 at 13:14 exhibited a percent drift above the control limit for tertiary butyl alcohol (SIM) (30.1%). The associated results in sample SV-16_120320, SV-17_120320, SV-18_120320, SV-19_120320, SV-20_120320, SV-21_120320, SV-22_120320, DUP01_120320, and AA01_120320 are qualified as "J" or "UJ" based on potential indeterminate bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by USEPA Method TO-15:

L2053758

The laboratory control sample for batch WG1443036-3 exhibited a percent recovery above the upper control limit for bromoform (132%). The associated results are non-detections. No qualification is necessary.

Field Duplicate Summary:

One field duplicate and parent sample pair was collected and analyzed for all parameters. For results less than 5X the RL, analytes meet the precision criteria if the absolute difference is less than ±1X the RL. For results greater than 5X the RL, analytes meet the precision criteria if the relative percent difference is less than or equal to 30% for soil. The following field duplicate and parent sample pair was compared to the precision criteria:

- SV-17_120320 and DUP01_120320

The field duplicate and parent sample (SV-17_120320 and DUP01_120320) exhibited relative percent differences above the control limit for 2-hexanone (43.2%), isopropanol (55.3%), and tertiary butyl alcohol (SIM) (52.7%). The associated results are qualified as "J" based on potential indeterminate bias.

COMMENTS:

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Joe Conboy
Staff Chemist

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901
Mailing Address: 1818 Market Street, Suite 3300 Philadelphia, PA 19103

To: Lamees Esmail, Langan Senior Staff Engineer

From: Joe Conboy, Langan Staff Chemist

Date: March 10, 2021

Re: Data Usability Summary Report
For 1607 Surf Avenue
March 2021 Soil Vapor and Ambient Air Samples
Langan Project No.: 170599501

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of air samples collected in March 2021 by Langan Engineering and Environmental Services ("Langan") at the 1607 Surf Avenue site ("the site"). The samples were analyzed by Alpha Analytical Laboratories, Inc. (NYSDOH NELAP registration # 11148) for volatile organic compounds (VOCs) by the methods specified below.

- VOCs by USEPA Method TO-15

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	***Lab Sample ID***	***Client Sample ID***	***Sample Date***	***Analytical Parameters***
L2110268	L2110268-01	SV-23_030221	3/2/21	VOCs
L2110268	L2110268-02	SV-24_030221	3/2/21	VOCs
L2110268	L2110268-03	SV-25_030221	3/2/21	VOCs
L2110268	L2110268-04	AA-01_030221	3/2/21	VOCs
L2110268	L2110268-05	DUP-01_030221	3/2/21	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-31, "Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15" (September 2016, Revision 6), the USEPA Contract Laboratory Program

“National Functional Guidelines for Organic Superfund Methods Data Review” (EPA-540-R-2017-002, January 2017), and the specifics of the methods employed.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, internal standard area counts, target compound identification and quantification, chromatograms, and overall system performance.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA’s 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.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as “R” are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SV-23_030221	TO_15	120-82-1	1,2,4-Trichlorobenzene	UJ
SV-23_030221	TO_15	87-68-3	Hexachlorobutadiene	UJ
SV-24_030221	TO_15	120-82-1	1,2,4-Trichlorobenzene	UJ

Client Sample ID	***Analysis***	***CAS #***	***Analyte***	***Validator Qualifier***
SV-24_030221	TO_15	87-68-3	Hexachlorobutadiene	UJ
SV-25_030221	TO_15	120-82-1	1,2,4-Trichlorobenzene	UJ
SV-25_030221	TO_15	87-68-3	Hexachlorobutadiene	UJ
AA-01_030221	TO_15	120-82-1	1,2,4-Trichlorobenzene	UJ
AA-01_030221	TO_15	87-68-3	Hexachlorobutadiene	UJ
DUP-01_030221	TO_15	120-82-1	1,2,4-Trichlorobenzene	UJ
DUP-01_030221	TO_15	87-68-3	Hexachlorobutadiene	UJ
SV-24_030221	TO_15	78-93-3	2-Butanone	J
DUP-01_030221	TO_15	78-93-3	2-Butanone	J

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by USEPA Method TO-15:

The initial calibration verification (ICV) analyzed on 12/21/2020 at 10:29 exhibited percent differences (%Ds) above the control limit for 1,2,4-trichlorobenzene (-34.1%) and hexachlorobutadiene (-35.4%). The associated results in sample SV-23_030221, SV-24_030221, SV-25_030221, AA-01_030221, and DUP-01_030221 are qualified as "J" or "UJ" based on potential indeterminate bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. No other deficiencies were identified.

FIELD DUPLICATE:

One field duplicate and parent sample pair was collected and analyzed for all parameters. For results less than 5X the reporting limit (RL), analytes meet the precision criteria if the absolute difference is less than ±2X the RL. For results greater than 5X the RL, analytes meet the precision criteria if the relative percent difference (RPD) is less than or equal to 50% for air. The following field duplicate and parent sample pairs were compared to the precision criteria:

- DUP-01_030221 and SV-24_030221

The field duplicate and parent sample (SV-24_030221/DUP-01_030221) exhibited a RPD above the control limit for 2-butanone (92.4%). The associated results are qualified as "J" based on potential indeterminate bias.

CONCLUSIONS:

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified, with the exception of the rejected results. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:

Joe Conboy
Staff Chemist

APPENDIX H

LABORATORY REPORTS

(Submitted Under Separate Cover