131-10 AVERY AVENUE

QUEENS COUNTY

FLUSHING, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: [C241228]

Prepared for:

Avery Group, LLC

P.O. Box 527559

Flushing, NY 11352

Prepared by:

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201-791-0075

Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

DECEMBER 2020

CERTIFICATION STATEMENT

I ANDREW LEUNG certify that I am currently a NYS registered professional engineer as in defined in 6 NYCRR Part 375 and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).



_____ P.E.

12/16/2020 DATE

I SIXUAN WANG certify that I am currently a Qualified Environmental Professional as in defined in 6 NYCRR Part 375 and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Sixuan Wang

_____ QEP

12/16/2020

_____ DATE

TABLE OF CONTENTS

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SITE MANAGEMENT PLAN

Table of Contents

Section	Description	Page
LIST OF ACRONYMS		
ES	**EXECUTIVE SUMMARY**	ix
1.0	**INTRODUCTION**	1
1.1	General	1
1.2	Revisions	2
1.3	Notifications	2
2.0	**SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS**	4
2.1	Site Location and Description	4
2.2	Physical Setting	4
2.2.1	Land Use	4
2.2.2	Geology	5
2.2.3	Hydrogeology	6
2.3	Investigation and Remedial History	6
2.3.1	Investigation History	6
2.3.2	Remedial History	9
2.4	Remedial Action Objectives	11
2.5	Remaining Contamination	12
2.5.1	Groundwater	12

TABLE OF CONTENTS (Continued)

Section	Description	Page
3.0	**INSTITUTIONAL AND ENGINEERING CONTROL PLAN**	13
3.1	General	13
3.2	Institutional Controls	13
3.3	Engineering Controls	15
3.3.1	Groundwater Chemical Treatment	15
3.3.2	Vapor Barrier Membrane	15
3.3.3	Sub-grade Parking Ventilation System	16
3.3.4	Criteria for Completion of Remediation/Termination of Remedial Systems	16
4.0	**MONITORING AND SAMPLING PLAN**	17
4.1	General	17
4.2	Site-wide Inspection	18
4.3	Post-Remediation Media Monitoring and Sampling	19
4.3.1	Groundwater Sampling	20
4.3.2	Monitoring and Sampling Protocol	21
4.3.3	Soil Vapor Intrusion Evaluation	22
5.0	**OPERATION AND MAINTENANCE PLAN**	23
5.1	General	23
6.0	**PERIODIC ASSESSMENTS/EVALUATIONS**	24
6.1	Climate Change Vulnerability Assessment	24
7.0	**REPORTING REQUIREMENTS**	26
7.1	Site Management Reports	26
7.2	Periodic Review Report	28
7.2.1	Certification of Institutional and Engineering Controls	29
7.3	Corrective Measures Work Plan	30
8.0	**REFERENCES**	32

List of Tables

1. Notifications
2. Groundwater Elevation Measurements
3. Remaining Groundwater Sample Exceedances
4. Post Remediation Sampling Requirements and Schedule
5. Post Remediation Groundwater Monitoring Well Construction Details
6. Interim Reporting Summary/Schedule

List of Figures

1. Site Location Map
2. Site Layout Map
3. Geologic Cross Section
4. Groundwater Contour Maps
5. Remaining Groundwater Sample Exceedances
6. Institutional Control Boundaries
7. Groundwater Network Map
8. Groundwater Monitoring/Injection Well Construction Details

List of Appendices

A. Environmental Easement
B. List of Site Contacts
C. Site Specific Boring Logs
D. Groundwater Monitoring Well Installation Logs
E. Remedial Investigation Sample Results Figure and Table
F. Excavation Work Plan
G. Health and Safety Plan/Community Air Monitoring Plan
H. Quality Assurance Project Plan
I. Site Management Forms
J. Field Sampling Plan

List of Acronyms

AS	Air Sparging
ASP	Analytical Services Protocol
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CAMP	Community Air Monitoring Plan
C/D	Construction and Demolition
CFR	Code of Federal Regulation
CLP	Contract Laboratory Program
COC	Certificate of Completion
CO2	Carbon Dioxide
CP	Commissioner Policy
DER	Division of Environmental Remediation
EC	Engineering Control
ECL	Environmental Conservation Law
ELAP	Environmental Laboratory Approval Program
ERP	Environmental Restoration Program
EWP	Excavation Work Plan
GHG	Green House Gas
GWE&T	Groundwater Extraction and Treatment
HASP	Health and Safety Plan
IC	Institutional Control
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
O&M	Operation and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PID	Photoionization Detector
PRP	Potentially Responsible Party
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RP	Remedial Party
RSO	Remedial System Optimization
SAC	State Assistance Contract
SCG	Standards, Criteria and Guidelines

SCO	Soil Cleanup Objective
SMP	Site Management Plan
SOP	Standard Operating Procedures
SOW	Statement of Work
SPDES	State Pollutant Discharge Elimination System
SSD	Sub-slab Depressurization
SVE	Soil Vapor Extraction
SVI	Soil Vapor Intrusion
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VCA	Voluntary Cleanup Agreement
VCP	Voluntary Cleanup Program

ES EXECUTIVE SUMMARY

The Remediation had been performed at the Site in accordance with the NYSDEC approved RAWP and a conditional Track 1 cleanup was achieved. End-point soil sample results indicated that soil had been remediated and meet Track 1 Unrestricted Use SCOs, but residual chlorinated volatile organic compound (CVOC) impacts remained in groundwater and soil vapor. If the remedial goals for groundwater are achieved within 5 years of the issuance of the Certificate of Completion (CoC) as required in 6 NYCRR Part 375-3.8(e)(1)(iv), then a Track 1 cleanup will be achieved. If these goals are not achieved within five years, Track 2 Restricted Residential Use will apply and the CoC shall be modified. CVOCs in soil vapor are sufficiently addressed by the sub-grade ventilation system.

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan. These controls are applicable until targeted groundwater contaminant reduction, thereby removing the condition imposed upon the Track 1 cleanup already achieved.

Site Identification: C241228 131-10 Avery Avenue

Institutional Controls:	1. The property may be used for restricted-residential, commercial, and industrial use;
	2. All ECs must be operated and maintained as specified in the SMP;
	3. All ECs must be inspected at a frequency and in a manner defined in the SMP;
	4. The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the New York City Department of Health and Mental Hygiene to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;
	5. Groundwater monitoring must be performed as defined in this SMP;
	6. Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP;

Site Identification: C241228 131-10 Avery Avenue

	7. All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;	
	8. Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;	
	9. Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;	
	10. Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.	
Engineering Controls:	1. Groundwater Chemical Treatment and Monitoring	
Inspections:		Frequency
1. Monitoring Wells Inspection		Quarterly
Monitoring:		
1. Groundwater Monitoring Wells A-MW-1 through A-MW-9		Quarterly
Reporting:		
1. Groundwater and Treatment System Data		Quarterly
2. Periodic Review Report		Annually

Further descriptions of the above requirements are provided in detail in the latter sections of this Site Management Plan.

1.0 INTRODUCTION

1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the 131-10 Avery Ave Site located in 131-10 to 131-18 Avery Avenue in Flushing , New York (hereinafter referred to as the "Site"). See Figure 1. The Site is currently in the New York State (NYS) Brownfield Cleanup Program (BCP) Site No. C241228 which is administered by New York State Department of Environmental Conservation (NYSDEC).

Avery Group, LLC entered into a Brownfield Cleanup Agreement (BCA) on January 2019 with the NYSDEC to remediate the site. A figure showing the site location and boundaries of this site is provided in Figure 2. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement provided in Appendix A.

After completion of the remedial work, some contamination was left at this site, which is hereafter referred to as "remaining contamination". Institutional and Engineering Controls (ICs and ECs) have been incorporated into the site remedy to control exposure to remaining contamination to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Queens County Clerk, requires compliance with this SMP and all ECs and ICs placed on the site.

This SMP was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC);

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the BCA (Site #C241228) for the site, and thereby subject to applicable penalties.

All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the site is provided in Appendix B of this SMP.

This SMP was prepared by YU & Associates Engineers, P.C., on behalf of Avery Group, LLC, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 3, 2010, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and/or ECs that are required by the Environmental Easement for the site.

1.2 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shut-down of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the site conditions. In accordance with the Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.3 Notifications

Notifications will be submitted by the property owner to the NYSDEC, as needed, in accordance with NYSDEC's DER – 10 for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the BCA, 6NYCRR Part 375 and/or Environmental Conservation Law.

- 7-day advance notice of any field activity associated with the remedial program.

- 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan.

- Notice within 48-hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.

- Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/Remedial Party has been provided with a copy of Brownfield Cleanup Agreement (BCA), and all approved work plans and reports, including this SMP.

- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

Table 1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix B.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The site is located in Flushing, Queens County, New York and is identified as Block 5076 and Lot 61 (formerly known as Lot 61 and 65) on the New York City Tax Map (see Figure 2). The site is an approximately 0.298-acre area and is bounded by Avery Avenue and commercial properties to the north, manufactural, commercial/residential property and Fowler Avenue to the south, commercial and residential property under construction to the east, and 131st Street and the Van Wyck Expressway to the west (see Figure 2 – Site Layout Map). The boundaries of the site are more fully described in Appendix A – Environmental Easement. The owner of the site parcel at the time of issuance of this SMP is: Avery Group, LLC.

2.2 Physical Setting

2.2.1 Land Use

The Site consists of the following: a commercial building with a including a below-grade garage in the basement. The Site is zoned C2-6A (commercial district predominantly residential in character) and is currently under redevelopment.

The properties adjoining the Site and in the neighborhood surrounding the Site primarily include manufactural, industrial, commercial, and residential properties. The properties immediately south of the Site include commercial and residential properties; the properties immediately north of the Site include commercial properties; the properties immediately east of the Site include commercial and residential properties under construction; and the properties to the west of the Site include public transportation properties.

2.2.2 Geology

The following geologic information refers to the general site conditions prior to the remediation. A geologic cross section is shown in Figure 3. Site specific boring logs are provided in Appendix C.

Lithology

Based on the soil investigation technical report prepared by Professional Solutions Group Inc. (PSG) on May 18, 2014, the site subsurface lithology is described below.

Fill

Existing fill material was encountered in each boring. It generally consisted of sand with varying amounts of silt and gravel and brick and glass and occasional asphalt. This material extended to depths ranging between approximately 4 feet to 9 feet below existing site grades.

Sand

Underlying the existing fill material, each boring encountered a naturally occurring sand stratum which generally consisted of medium to fine sand with variable amounts of gravel, silt and clay. Boring B-1, B-2, and B-4 were terminated in this stratum at depths of approximately 32 feet below existing site grades. B-3 penetrated this stratum at the depth of approximately 70 feet below existing site grades.

Silt

Beneath the sand, boring B-3 encountered a natural massive silt stratum that generally consisted of clayey silt. Boring B-3 was terminated this stratum at a depth of approximately 102 feet below existing site grades.

2.2.3 Hydrogeology

The groundwater level ranges from el. -1.89 to el. -2.25 based on the field gauging information in June 2020, and the groundwater flow direction is inconclusive. The nearest surface water bodies are Flushing Creek, Meadow and Willow Lakes, and Kissena Lake.

A groundwater contour map is shown in Figure 4. Groundwater elevation data is provided in Table 2. Groundwater monitoring well construction logs are provided in Appendix D.

2.3 Investigation and Remedial History

The Site was initially developed in the 1980s as two separate 1-story commercial retail stores. The building at formerly Lot 61 featured a basement. Past tenants included a lighting product retail store and a furniture store. The initial owners of the Site were Bernard Scharf in year 1995. The ownership of current owner, Avery Group LLC, started from year 2013 until present.

The following narrative provides a remedial history timeline and a brief summary of the available project records to document key investigative and remedial milestones for the Site. Full titles for each of the reports referenced below are provided in Section 8.0 - References.

2.3.1 Investigation History

Four environmental investigations had been conducted at the Site prior to remediation, the following reports were prepared:

- Phase I Environmental Site Assessment (ESA) prepared by National Environmental Services, Inc. (NES) dated August 23, 2013;
- Focused Phase II Subsurface Investigation prepared by Athenica Environmental Services dated May 21, 2014;
- Remedial Investigation Report prepared by Athenica dated February 2015;

- Supplemental Remedial Investigation Report prepared by Airtek dated December 2015;
- Self-Implementing Plan for Onsite Cleanup and disposal of PCB Remediation Waste prepared by Airtek dated September 2016

Phase I Environmental Site Assessment (ESA) prepared by National Environmental Services, Inc. (NES) dated August 23, 2013

A Phase I Environmental Site Assessment was prepared by NES dated August 23, 2013. No recognized environmental conditions (RECs) were identified at the Site.

Focused Phase II Subsurface Investigation prepared by Athenica dated May 21, 2014

A focused Phase II Subsurface Investigation was completed by Athenica on May 21, 2014. One direct-push soil boring (SB-2) with termination depth of 18 feet below ground surface (ft bgs) was installed in formerly Lot 65 and one temporary groundwater monitoring well (GW-1) was also installed at the location of soil boring. A representative soil sample was collected at depth of 4ft – 6ft (comprised of historic fill) and 13ft – 15ft for laboratory analysis. Based on the soil sample results, the soil on site was contaminated with metals (Copper, Lead, and Zinc) with concentrations exceeding the NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives (UUSCOs). Groundwater sample results indicated that 1,1-Dichloroethane, TCE and PCE were the major contaminant detected, several metals are also detected in groundwater while their concentrations appeared to be the results of naturally-occurring groundwater conditions at the Site.

Remedial Investigation Report prepared by Athenica dated February 2015

This Remedial Investigation (RI) was completed in February 2015. Three (3) soil borings, two (2) wells, and two (2) soil vapor probes were installed in formerly Lot 65. The findings from this investigation are summarized below:

Soil

Based upon the RI results, surface and sub-surface soils are contaminated with PCBs, pesticides, and metals. Data results from soil sampling reported exceedance of PCBs

(Aroclor-1254), pesticides (4,4'- DDT and 4,4'-DDE) and metals (copper, lead, barium, zinc, and selenium). Ranges of primary contaminant concentrations and comparison are included in Appendix E.

Groundwater

Groundwater samples results indicate groundwater are contaminated with Chlorinated VOCs, SVOCs, and metals. Data results reported Chlorinated VOCs (1,2-Dichloroethane, TCE, and PCE) and metals (barium, beryllium, chromium, lead, magnesium, manganese, nickel, selenium, and sodium) contamination above Class GA groundwater criteria. Ranges of primary contaminant concentrations and comparison are included in Appendix E.

Soil Vapor

Soil Vapor sampling results collected during the RI reported high levels of Chlorinated VOCs (TCE and PCE). Concentrations for PCE and TCE were above the monitoring level ranges established within the NYSDOH soil vapor guidance matrix. One Chlorinated VOCs (cis-1,2-Dichloroethylene) was also found at elevated concentrations. Ranges of primary contaminant concentrations and comparison are included in Appendix E.

Supplemental Remedial Investigation Report prepared by Airtek dated December 2015

A Supplemental Remedial Investigation (SRI) was performed by Airtek at the Site in December 2015 and was included in the Remedial Action Work Plan prepared by Airtek dated November 2016. Three soil borings were advanced to the depth of groundwater level, which is approximately 8 ft below basement slab (bbs) in formerly Lot 61. A total of six soil samples were collected from each of the borings at the surface (0-2 ft bbs interval) and at the groundwater level. PCBs detected in soil samples collected from formerly Lot 61 exceeded RRSCO. Two groundwater samples were collected. Chlorinated VOCs (PCE and TCE), other VOCs (cis-1,2-Dichloroethylene and Freon 113), PCBs and metals (barium, beryllium, chromium, lead, magnesium, manganese, nickel, selenium, and sodium) detected in one of groundwater exceeded the NYSDEC TOGS Class GA Criteria. Three

sub-slab vapor samples were collected. TCE and PCE detected in soil vapor exceeded the respective NYSDOH Air Guideline Values.

Self-Implementing Plan for Onsite Cleanup and disposal of PCB Remediation Waste prepared by Airtek dated September 2016

Additional Site characterization was performed by Airtek in May and September 2016 to delineate and characterize PCB contamination in soils, in accordance with the TSCA regulations set forth in 40 C.F.R. 761.61. In formerly Lot 61, the PCBs detected in soil samples at concentrations exceeding the TSCA hazardous level ranged from 6-inch below basement surface (bbs) to 36-inch bbs. In formerly Lot 65, depths of PCB hazardous area varied from 6-inch below ground surface (bgs) to approximately 18 ft bgs.

2.3.2 Remedial History

Remedial actions were completed in June 2020 in accordance with the NYSDEC-approved RAWP and the Department-issued Decision Document. Details of the completed remedial activities are documented in the FER and a summary of the remedial actions implemented at the Site is as follows:

1. Prior to the commencement of remedial measures, existing buildings were demolished and removed from the Site in accordance with New York City permit requirements.

2. On-site soil impacted by contaminants (to the depth of the water table, up to 18 ft bgs) above Unrestricted Use SCOs was excavated and transported for off-site disposal at an appropriately permitted facility. Approximately 8,040 cubic yards of soil was removed from the Site.

3. On-site soil impacted by PCBs above 0.1 parts per million (ppm) was excavated and transported for off-site disposal at a properly approved facility.

4. End-point sampling was conducted following soil excavations to demonstrate that the remedy has achieved Unrestricted Use SCOs criteria. Over excavation was performed at locations where the end-point sample results indicate exceedances of

Unrestricted Use SCOs criteria and additional end-point samples were collected at the bottom of the over-excavated area to demonstrate that Unrestricted Use SCOs were achieved.

5. In-Situ chemical treatment of on-site groundwater was implemented to treat the onsite chlorinated VOCs groundwater contamination. A chemical reduction reagent (Zero Valent Iron powder) was directly applied on the saturated soil at the bottom of the excavation and mixed with the 2 feet of soils using conventional moving equipment (e.g. backhoe).

6. Permeable reactive barriers (PRB) were installed as continuous trenches with reduction reagent (Zero Valent Iron powder) along each perimeter of the property boundary to prevent potential off-site groundwater contamination migration.

7. Follow up quarterly groundwater monitoring have been performed to confirm the effectiveness of the groundwater treatment. Based on groundwater monitoring results from June 2020, the groundwater samples collected at several locations of the Site indicated CVOCs levels slightly exceeding the TOGS Class GA criteria. In-situ chemical injection is scheduled to be conducted in the end of 2020 or as per NYSDEC's approval. Groundwater sampling will be performed to demonstrate bulk reduction in groundwater contamination within 5 years in order to attain the Track 1 cleanup as required in 6 NYCRR Part 375-3.8(e)(1)(iv).

8. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, and (3) reporting;

9. Periodic certification of the institutional and engineering controls listed above.

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site as listed in the Decision Document dated March 22, 2019 are as follows:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of, volatiles from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

2.5 Remaining Contamination

Based on the soil end-point sample results, the Track 1 Unrestricted Use Soil Cleanup Objectives were achieved. Remaining contamination at the Site includes the groundwater located beneath the building slab, of which the elevation ranges from el. -1.89 to el. -2.25.

2.5.1 Groundwater

Based on the most recent groundwater sample results on June 23, 2020, CVOCs including trichloroethene (TCE), tetrachloroethene (PCE), 1,1-Dichloroethane, and cis-1,2-Dichloroethene were detected at several locations at the concentrations exceeding the TOGS Class GA criteria. The concentrations of PCBs (Maximum PCBs concentration of 0.152 ppb µg/L) detected in two groundwater samples collected from the south portion of the Site were slightly exceeding the TOGS Class GA criteria of 0.09 µg/L. The concentrations of CVOCs detected in groundwater samples collected site-wide were slightly exceeding the TOGS Class GA criteria of 5 ppb (Maximum PCE concentration of 31 ppb; Maximum TCE concentration of 10 ppb; Maximum 1,1-Dichloroethane concentration of 10 ppb; Maximum cis-1,2-Dichloroethene concentration of 5.1 ppb).

Table 3 and Figure 5 summarize the results of all samples of groundwater that exceed the SCGs after completion of the remedial action. Future groundwater monitoring will be implemented in accordance with Section 4.4.1 of this SMP. Groundwater monitoring will be completed after a bulk reduction in groundwater contamination to asymptotic levels have been demonstrated to the NYSDEC's satisfaction.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

The Site has achieved a conditional Track 1 cleanup pending a pending groundwater sampling. Since remaining contamination exists at the site, Institutional Controls (ICs) and Engineering Controls (ECs) are required to protect human health and the environment. Per the NYSDEC Decision Document (March 2019), in the event that the groundwater remedial action objectives are not achieved, contingent remedial elements will be required. If bulk reduction of groundwater contamination is not achieved within 5 years, the Institutional Controls and this SMP will become a permanent element of the remedy.

This plan provides:

- A description of all IC/ECs on the site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP) (as provided in Appendix F) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the site remedy, as determined by the NYSDEC.

3.2 Institutional Controls

A series of ICs is required by the Decision Document to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining

contamination; and, (3) limit the use and development of the site to restricted residential; commercial, industrial uses only. Adherence to these ICs on the site is required by the Environmental Easement and will be implemented under this SMP. ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement. The IC boundaries are shown on Figure 6. These ICs are:

- The property may be used for : restricted residential; commercial, industrial use;
- All ECs must be operated and maintained as specified in this SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Queens Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP;
- Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 6, and any potential impacts that are identified must be monitored or mitigated; and

- Vegetable gardens and farming on the site are prohibited;

3.3 Engineering Controls

3.3.1 Groundwater Chemical Treatment

Chlorinated VOCs (CVOCs) and PCBs levels in groundwater have been monitored quarterly after mixing the ZVI powder into the groundwater and the installation of permeable reactive barriers (PRB) along the perimeters of the Site. A network of five new groundwater monitoring wells are used to monitor up-gradient, on-site, side-gradient, and down-gradient groundwater conditions at the Site. The location of the five monitoring wells is shown in Figure 7. A monitoring plan for groundwater is included in the section 4 of the SMP.

Based on the groundwater monitoring results from June 2020, the residue CVOCs levels slightly exceed NYSDEC TOGS Class GA Criteria. If groundwater monitoring does not reveal bulk reduction of groundwater contaminant, in-situ chemical injection will be conducted to achieve groundwater RAOs. The scope of any future remedial work (e.g., chemical injections) will require NYSDEC and NYSDOH review and approval.

3.3.2 Vapor Barrier Membrane

Though not an element of the remedy, a continuous vapor barrier membrane was installed along the subsurface foundation walls and beneath the entire mat foundation slab by DREX in between July 11, 2019 and August 26, 2020. GCP Applied Technologies (GCP) Preprufe® 300R was installed along the elevator pit and underneath the foundation slab and GCP Preprufe® 160R and GCP Bituthene® 3000 Membrane were installed on the exterior of the foundation walls from bottom of excavation to the street level. Approximately 12,975 square feet (sq ft) of Grace Preprufe® 300R, 4,486 sq ft of Grace Preprufe® 160R and 4,813 sq ft of Bituthene® 3000 have been installed at the Site. Penetrations including pipes and groundwater monitoring wells have been sealed with 6-inch overlap. The vapor barrier membrane was installed to protect against VOC intrusion to the site building from residual on-site and potential off-site sources.

3.3.3 Sub-grade Parking Ventilation System

Though not an element of the remedy, the sub-grade parking ventilation system will be constructed in the cellar garage and operated in accordance with the New York Mechanical Code Section 404.2 for parking garage. The ventilated garage provides a level of protection from potential accumulation of vapors migrating from underlying soil in the cellar areas in the unlikely event of a breach of the building slab. The garage fans will be installed, operated, and maintained in accordance with New York City Mechanical Code.

3.3.4 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.4 of NYSDEC DER-10.

3.3.4.1 - Monitoring Wells associated with Monitored Natural Attenuation

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC with consultation with NYSDOH, until residual groundwater concentrations are found to be consistently below ambient water quality standards, the site SCGs, or have become asymptotic at an acceptable level over an extended period. In the event that monitoring data indicates that monitoring for natural attenuation may no longer be required, a proposal to discontinue the system will be submitted by the remedial party. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

4.0 MONITORING AND SAMPLING PLAN

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected as part of site management for the site are included in the Quality Assurance Project Plan provided in Appendix H.

This Monitoring and Sampling Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly groundwater standards and Part 375 SCOs for soil; and
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment;

To adequately address these issues, this Monitoring and Sampling Plan provides information on:

- Sampling locations, protocol and frequency;
- Information on all designed monitoring systems;
- Analytical sampling program requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site – wide Inspection

Site-wide inspections will be performed once per year. Modification to the frequency or duration of the inspections will require approval from the NYSDEC. Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or monitoring devices. During these inspections, an inspection form will be completed as provided in Appendix I – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that site records are up to date.

Inspections of all remedial components installed at the site will be conducted. A comprehensive site-wide inspection will be conducted and documented according to the SMP schedule, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria; and
- If site records are complete and up to date; and

Reporting requirements are outlined in Section 7.0 of this plan.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at the site, verbal notice to the NYSDEC must be given by noon of the following day. In addition, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the site by a qualified environmental professional, as determined by the NYSDEC. Written confirmation must be provided to the NYSDEC within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

4.3 Post-Remediation Media Monitoring and Sampling

Remediation had been completed at the Site in accordance with the NYSDEC - approved RAWP and a conditional Track 1 cleanup was achieved. Soil has been remediated and meets Track 1 Unrestricted Use SCOs, but residual chlorinated volatile organic compound (CVOC) impacts remain in groundwater and soil vapor. After the remediation, soil vapor RAOs have been achieved and soil vapor intrusion evaluation is not required. Samples shall be collected from the groundwater on a routine basis. Sampling locations, required analytical parameters and schedule are provided in Table 4 – Post Remediation Sampling Requirements and Schedule. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

Groundwater sampling will be done in compliance with DER-10 (NYSDEC, May 2010). Immediately prior to the groundwater sampling, the depth to water in each monitoring well will be gauged to provide information on groundwater flow in the vicinity of the Site. Prior to sampling, approximately three to five times the volume of standing water within the wells will be purged. Groundwater samples will be collected in laboratory supplied pre-cleaned sampling container, placed in storage/transportation coolers,

preserved with ice, and shipped under proper chain of custody procedures to a certified laboratory. Purged water will be contained in 55-gallon drums or 5-gallon buckets labeled as non-hazardous waste and staged at Site for disposal.

Detailed sample collection and analytical procedures and protocols are provided in Appendix J – Field Sampling Plan and Appendix H – Quality Assurance Project Plan.

4.3.1 Groundwater Sampling

Groundwater monitoring will be performed quarterly to assess the performance of the remedy. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

The network of monitoring wells has been installed to monitor upgradient, on-site and downgradient groundwater conditions at the site. The network of on-site and off-site wells has been designed based on the following criteria:

Table 5 summarizes the wells identification number, as well as the purpose, location, depths, diameter and screened intervals of the wells. As part of the groundwater monitoring, 2 upgradient wells, 5 on-site wells and 2 downgradient wells are sampled to evaluate the effectiveness of the remedial system.

All monitoring wells are also constructed as injection wells. The construction detail of the monitoring well is shown in Figure 8. Typically, the monitoring/injection well is consisted of a 5-foot long 2-inch continuous wrap well screening, a 5-foot long PVC riser, and a 6-foot long stainless-steel welded tubing. Monitoring well construction logs are included in Appendix D of this document. Monitoring well network is shown in Figure 7. Based on the well gauging data, the groundwater elevation at the Site ranges from el. -1.89 to el. -2.25, and the groundwater flow is inconclusive.

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced, if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of any monitoring well for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent Periodic Review Report. Well decommissioning without replacement will be done only with the prior approval of the NYSDEC. Well abandonment will be performed in accordance with NYSDEC's guidance entitled "CP-43: Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be replaced in kind in the nearest available location, unless otherwise approved by the NYSDEC.

The sampling frequency may only be modified with the approval of the NYSDEC. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC.

Deliverables for the groundwater monitoring program are specified in Section 7.0 – Reporting Requirements.

4.3.2 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix I - Site Management Forms. Other observations (e.g., groundwater monitoring well integrity, etc.) will be noted on the sampling log. The sampling log will serve as the inspection form for the monitoring network. Additional

detail regarding monitoring and sampling protocols are provided in the site-specific Field Sampling Plan provided as Appendix J of this document.

4.3.3 Soil Vapor Intrusion Evaluation

The source of soil vapor had been removed through on-site soil removal to the groundwater level. Groundwater was treated by mixing with chemical reduction reagent ZVI powder. Permeable reactive barriers (PRB) were installed as continuous trenches with ZVI powder along each perimeter of the property boundary to prevent potential off-site groundwater contamination migration. The vapor barrier membrane was installed to protect against VOC intrusion to the site building from residual on-site and potential off-site sources, and the sub-grade ventilation system will be constructed in the cellar garage to provide a level of protection from potential accumulation of vapors migrating from underlying soil in the garage areas in the unlikely event of a breach of the building slab. A soil vapor intrusion evaluation will be completed in any future building on the site prior to occupancy and actions taken to address exposures, if necessary.

5.0 OPERATION AND MAINTENANCE PLAN

5.1 General

The site remedy does not rely on any mechanical systems, such as groundwater treatment systems, sub-slab depressurization systems or air sparge/soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts, shifting precipitation patterns and wide temperature fluctuation, resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given site and associated remedial systems. Vulnerability assessments provide information so that the site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

This section provides a summary of vulnerability assessments that will be conducted for the site during periodic assessments, and briefly summarizes the vulnerability of the site and/or engineering controls to severe storms/weather events and associated flooding.

- Flood Plain: According to the Federal Emergency Management Agency (FEMA) Preliminary Work Map Flood Zones maps dated September 5, 2007, the Site is immediately adjacent to the 100-year floodplain where a base flood elevation of approximately el 13 ft. The selected remedy will not negatively impact the floodplain.

- Site Drainage and Storm Water Management: Drainage pipes were installed onsite and connected to a detention tank in the cellar floor to promote stormwater drainage. Erosion: The Site is located in the urban area and the entire site is covered with concrete capping, therefore soil erosion is not anticipated.

- Erosion: The Site is located in the urban area and the entire site is covered with concrete capping, therefore soil erosion is not anticipated

- High Wind: There is no trees or utility structures nearby the remedial system, and wind will not cause damage to the system as all remedial structures are located at ground or cellar level.

- Electricity: Electricity will not be used for the remedial system.

- Spill/Contaminant Release: The purged water generated from groundwater sampling will be stored in secured drums and will not be susceptible to a spill or other contaminant release. Spill/Contaminant Release: Identify areas of the site and/or remedial system which may be susceptible to a spill or other contaminant release due to storm-related damage caused by flooding, erosion, high winds, loss of power etc.

7.0. REPORTING REQUIREMENTS

7.1 Site Management Reports

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in Appendix I. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Table 6 and summarized in the Periodic Review Report.

All interim monitoring/inspections reports will include, at a minimum:

- Date of event or reporting period;
- Name, company, and position of person(s) conducting monitoring/inspection activities;
- Description of the activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet);
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and

- A determination as to whether contaminant conditions have changed since the last reporting event.

Routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting maintenance activities;
- Description of maintenance activities performed;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and,
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

Non-routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Description of non-routine activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

Data will be reported in digital format as determined by the NYSDEC. Currently, data is to be supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link http://www.dec.ny.gov/chemical/62440.html.

7.2 Periodic Review Report

A Periodic Review Report (PRR) will be submitted to the Department beginning sixteen (16) months after the Certificate of Completion is issued. After submittal of the initial Periodic Review Report, the next PRR shall be submitted annually to the Department or at another frequency as may be required by the Department. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix A -Environmental Easement. The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site.
- Results of the required annual site inspections and severe condition inspections, if applicable.
- All applicable site management forms and other records generated for the site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends.
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS^{TM} database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.
- A site evaluation, which includes the following:

- The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;
- The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
- Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring and Sampling Plan for the media being monitored;
- Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan; and
- Trends in contaminant levels in the affected media will be evaluated to determine if the remedy continues to be effective in achieving remedial goals as specified by the Decision Document.
- The overall performance and effectiveness of the remedy.

7.2.1 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a qualified environmental professional or Professional Engineer licensed to practice in New York State will prepare, and include in the Periodic Review Report, the following certification as per the requirements of NYSDEC DER-10:

"*For each institutional or engineering control identified for the site, I certify that all of the following statements are true:*

- *The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;*
- *The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;*

- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*
- *If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the site is compliant with the environmental easement;*
- *The engineering control systems are performing as designed and are effective;*
- *To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices; and*
- *The information presented in this report is accurate and complete.*

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner/Remedial Party or Owner's/Remedial Party's Designated Site Representative] for the site."

The signed certification will be included in the Periodic Review Report.

The Periodic Review Report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located and the NYSDOH Bureau of Environmental Exposure Investigation. The Periodic Review Report may need to be submitted in hard-copy format, as requested by the NYSDEC project manager.

7.3 Corrective Measures Work Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a Corrective Measures Work Plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be

performed pursuant to the Corrective Measures Work Plan until it has been approved by the NYSDEC.

8.0 REFERENCES

6NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.

NYSDEC DER-10 – "Technical Guidance for Site Investigation and Remediation".

NYSDEC, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

National Environmental Services, Inc. (NES), Phase I Environmental Site Assessment (ESA) 131-10 to 131-18 Avery Avenue – Queens, New York, August 23, 2013

Athenica Environmental Services, Inc., Focused Phase II Subsurface Site Investigation 131-18 to 131-24 Avery Avenue – Queens, New York, June 9, 2014.

Athenica Environmental Services, Inc., Remedial Investigation Report 131-10 to 131-18 Avery Avenue & 131-24 to 131-32 Avery Avenue – Queens, New York, February 2015.

Airtek Environmental Corporation, Remedial Action Work Plan 131-10 to 131-18 Avery Avenue & 131-24 to 131-32 Avery Avenue – Queens, New York, May 2015 revised November 2016.

Airtek Environmental Corporation, Notification and Request for Approval of Self-Implementing Plan for Onsite Cleanup and disposal of PCB Remediation Waste 131-10/18/24/32 Avery Avenue – Queens, New York, May 17, 2016 updated September 2, 2016 final September 8, 2016.

YU & Associates Engineers, P.C., Remedial Action Work Plan 131-10 Avery Ave – Queens, New York, March 2019.

TABLE

Table 1
Notifications
131-10 Avery Avenue
Queens, NY 11355
Project No. 17116

Name	Contact Information
NYSDEC Project Manager: Javier Perez-Maldonado	(518) 402-8172 javier.perez-maldonado@dec.ny.gov
NYSDEC BURB Section B, Section Chief: John Grathwol	(518)402-9767 john.grathwol@dec.ny.gov
NYSDOH Public Health Specialist: Sarita Wagh	(518)402-7860 beei@health.ny.gov
NYSDEC Site Control Section Chief: Kelly Lewandowski	(518)402-9553 kelly.lewandowski@dec.ny.gov
NYSDEC Regional Remediation Engineer Jane O'Connell	(718)482-4599 jane.oconnell@dec.ny.gov

Note:
Notifications are subject to change and will be updated as necessary.

Table 2
Groundwater Elevation Measurements
131-10 Avery Ave
Flushing, Queens, New York
Project No. 17116

Well	Date	Outer Casing Elevation (ft)	Inner Casing Elevation (ft)	Depth to water (ft btoc)	Water Elevation (ft)
A-MW-1	6/23/2020	13.15	12.67	15.35	-2.2
A-MW-2	6/23/2020	14.48	14.24	16.61	-2.13
A-MW-3	6/23/2020	2.19	2.14	4.33	-2.14
A-MW-4	6/23/2020	2.20	2.04	4.45	-2.25
A-MW-5	6/23/2020	2.22	2.15	4.3	-2.08
A-MW-6	6/23/2020	2.20	2.09	4.45	-2.25
A-MW-7	6/23/2020	2.16	2.05	4.35	-2.19
A-MW-8	6/23/2020	2.21	2.11	4.1	-1.89
A-MW-9	6/23/2020	2.21	2.05	4.33	-2.12

Note:
1. Casing elevation obtained from survey performed by Perfect Point Land Surveying Rt on July 20, 2020
2. Ft. btoc = feet below top of casing

Table 3
Remaining Groundwater Sample Exceedances
131-10 Avery Avenue, Queens, New York
Project No. 17116

Sample ID: Sampling Date: Sample Matrix		New York TOGS Standards and Guidance Values -	A-MW-1 6/23/2020 WATER	A-MW-2 6/23/2020 WATER	A-MW-52 6/23/2020 WATER	A-MW-3 6/23/2020 WATER	A-MW-4 6/23/2020 WATER	A-MW-5 6/23/2020 WATER	A-MW-6 6/23/2020 WATER	A-MW-7 6/23/2020 WATER	A-MW-8 6/23/2020 WATER	A-MW-9 6/23/2020 WATER	EB062320 6/23/2020 WATER	TB062320 6/23/2020 WATER
Compound	**CAS**	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
VOLATILE ORGANICS														
Methylene chloride	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	5	ND	ND	ND	ND	ND	2.7	ND	**10**	**5.3**	0.87 J	ND	ND
Chloroform	67-66-3	7	0.76 J	0.7 J	0.75 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	124-48-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	127-18-4	5	**11**	**31**	**31**	**5.7**	**23**	**8**	1.5	**5.2**	4.4	3.4	ND	ND
Chlorobenzene	108-90-7	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	75-69-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	71-55-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	75-27-4	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02-6	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	563-58-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	74-87-3		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	75-35-4	5	ND	ND	ND	ND	ND	0.74	ND	2.2	1.3	ND	ND	ND
trans-1,2-Dichloroethene	156-60-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	79-01-6	5	2.4	3	3	**10**	2.5	1.4	0.21 J	1.3	1	0.92	ND	ND
1,2-Dichlorobenzene	95-50-1	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	5	3.4	**5.1**	4.9	2.4 J	3.4	3	0.73 J	2.6	2.4 J	1.7	ND	ND
1,2,3-Trichloropropane	96-18-4	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	75-71-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	108-05-4		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	74-97-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	594-20-7	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	142-28-9	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	630-20-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Chlorotoluene	95-49-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Chlorotoluene	106-43-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	96-12-8	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	87-68-3	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	87-61-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	120-82-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon-113	76-13-1	5	ND	ND	ND	ND	ND	1.7 J	ND	3.1	1.1 J	ND	ND	ND
1,4 DIOXANE														
1,4-Dioxane	123-91-1		ND	0.147 J	0.119 J	ND	0.427	1.94	0.264	5.76	3.42	2.17	ND	NA
PERFLUORINATED ALKYL ACIDS														
Perfluorobutanoic Acid (PFBA)	375-22-4		0.00348	0.0058	0.00608	0.0026	0.0089	0.00438	0.00868	0.00506	0.00535	0.00781	ND	NA
Perfluoropentanoic Acid (PFPeA)	2706-90-3		0.00715	0.0114	0.0117	0.00452	0.0176	0.006	0.0137	0.00608	0.00686	0.0132	ND	NA
Perfluorobutanesulfonic Acid (PFBS)	375-73-5		0.00187 J	0.0055	0.00521	0.00117 J	0.00329	0.0017 J	0.0104	0.00176 J	0.00179 J	0.00358	ND	NA

Table 3
Remaining Groundwater Sample Exceedances
131-10 Avery Avenue, Queens, New York
Project No. 17116

Sample ID: Sampling Date: Sample Matrix		New York TOGS Standards and Guidance Values -	A-MW-1 6/23/2020 WATER	A-MW-2 6/23/2020 WATER	A-MW-52 6/23/2020 WATER	A-MW-3 6/23/2020 WATER	A-MW-4 6/23/2020 WATER	A-MW-5 6/23/2020 WATER	A-MW-6 6/23/2020 WATER	A-MW-7 6/23/2020 WATER	A-MW-8 6/23/2020 WATER	A-MW-9 6/23/2020 WATER	EB062320 6/23/2020 WATER	TB062320 6/23/2020 WATER
Compound	**CAS**	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Perfluorohexanoic Acid (PFHxA)	307-24-4		0.0064	0.0109	0.0112	0.00403	0.0164	0.00531	0.0133	0.00511	0.00628	0.0119	ND	NA
Perfluoroheptanoic Acid (PFHpA)	375-85-9		0.00396	0.00816	0.00825	0.00244	0.00918	0.00342	0.00888	0.0033	0.0042	0.00771	ND	NA
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4		0.00508	0.00691	0.00712	0.0034	0.00625	0.00368	0.00572	0.00312	0.00385	0.00505	ND	NA
Perfluorooctanoic Acid (PFOA)	335-67-1		0.0125	0.0259	0.0274	0.0088	0.0285	0.0162	0.0332	0.0191	0.0216	0.0306	ND	NA
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Perfluorononanoic Acid (PFNA)	375-95-1		ND	0.000772 J	0.000872 J	ND	0.00141 J	0.000652 J	0.0014 J	0.00162 J	0.00139 J	0.00206	ND	NA
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1		0.00426	0.00775	0.00881	0.00315	0.0137	0.00738	0.0132	0.00985	0.0144	0.0176	0.00526	NA
Perfluorodecanoic Acid (PFDA)	335-76-2		ND	ND	ND	ND	ND	ND	0.000428 J	ND	ND	0.000373 J	ND	NA
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Perfluoroundecanoic Acid (PFUnA)	2058-94-8		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Perfluorodecanesulfonic Acid (PFDS)	335-77-3		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Perfluorooctanesulfonamide (FOSA)	754-91-6		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Perfluorododecanoic Acid (PFDoA)	307-55-1		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Perfluorotetradecanoic Acid (PFTA)	376-06-7		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
PFOA/PFOS, Total			0.0168	0.0337	0.0362	0.012	0.0422	0.0236	0.0464	0.029	0.036	0.0482	0.00526	NA
POLYCHLORINATED BIPHENYLS														
Aroclor 1016	12674-11-2	0.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Aroclor 1221	11104-28-2	0.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Aroclor 1232	11141-16-5	0.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Aroclor 1242	53469-21-9	0.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Aroclor 1248	12672-29-6	0.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Aroclor 1254	11097-69-1	0.09	ND	ND	ND	ND	ND	ND	ND	ND	**0.098**	**0.152**	ND	NA
Aroclor 1260	11096-82-5	0.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Aroclor 1262	37324-23-5	0.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Aroclor 1268	11100-14-4	0.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
PCBs, Total	1336-36-3		ND	ND	ND	ND	ND	ND	ND	ND	0.098	0.152	ND	NA

Key
J: Estimated Values
ND: Not Detected
NA: Not Available
Shading indicates NYSDEC TOGS Guidance Value exceedance

Table 4
Post Remediation Sampling Requirements and Schedule
131-10 Avery Avenue
Queens, NY 11355
Project No. 17116

Sampling Location	Analytical Parameters		Schedule
	CVOCs (EPA Method 8260)	PCBs (EPA Method 8082)	
A-MW-1	X	X	Quarterly
A-MW-2	X	X	Quarterly
A-MW-3	X	X	Quarterly
A-MW-4	X	X	Quarterly
A-MW-5	X	X	Quarterly
A-MW-6	X	X	Quarterly
A-MW-7	X	X	Quarterly
A-MW-8	X	X	Quarterly
A-MW-9	X	X	Quarterly

Table 5
Post Remediaiton Monitoring Well Construction Details
131-10 Avery Avenue
Queens, NY 11355
Project No. 17116

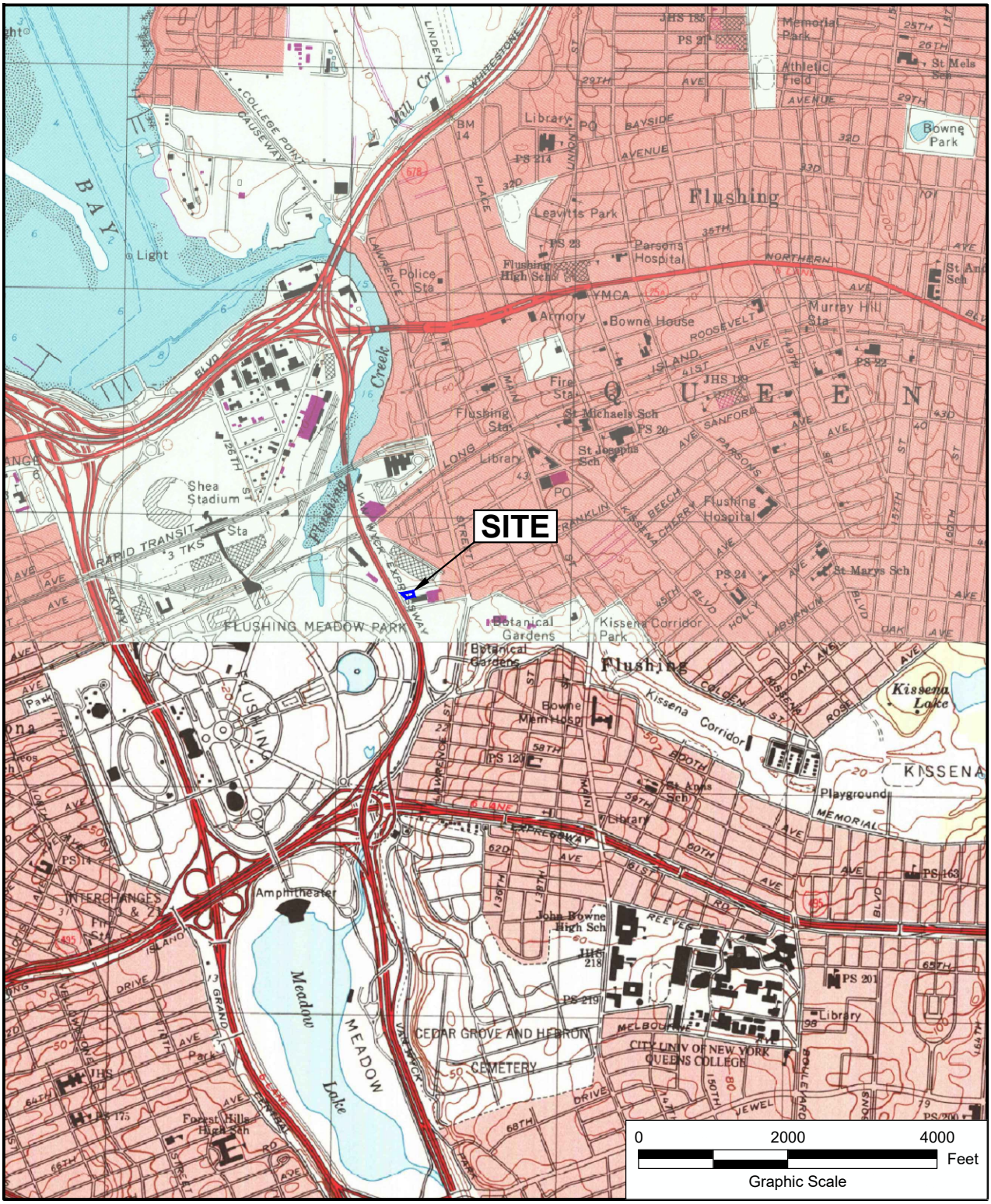
Monitoring Well ID	Well Location	Coordinates (longitude/ latitude)	Well Diameter (inches)	Elevation (above mean sea level)			
				Casing	Surface	Screen Top	Screen Bottom
A-MW-1	Up-gradient	40.751961° N, 73.835693° W	2	12.67	13.15	-8.75	-13.65
A-MW-2	Up-gradient	40.752029° N, 73.835287° W	2	14.24	14.48	-7.82	-12.82
A-MW-3	On-Site	40.751913° N, 73.835704° W	2	2.14	2.19	-8.11	-13.11
A-MW-4	On-Site	40.751974° N, 73.835279° W	2	2.04	2.20	-7.7	-12.7
A-MW-5	On-Site	40.751860° N, 73.835609° W	2	2.15	2.22	-8.28	-13.28
A-MW-6	On-Site	40.751904° N, 73.835120° W	2	2.09	2.20	-7.3	-12.3
A-MW-7	On-Site	40.751826° N, 73.835573° W	2	2.05	2.16	-7.94	-12.94
A-MW-8	Down-gradient	40.751788° N, 73.835616° W	2	2.11	2.21	-8.19	-13.19
A-MW-9	Down-gradient	40.751856° N, 73.835230° W	2	2.05	2.21	-7.19	-12.19

Table 6
Interim Reporting Summary/Schedule
131-10 Avery Avenue
Queens, NY 11355
Project No. 17116

Task/Report	Reporting Frequency
Groundwater Monitoring Report	Quarterly
Periodic Review Report	Annually, or as otherwise determined by the Department

Note:
The frequency of events will be conducted as specified until otherwise approved by the NYSDEC.

FIGURE



MAP REFERENCE: U.S. Geological Survey Topographic Map - Flushing Quadrangle 1995, Jamaica Quadrangle 1994.

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Geotechnical, Environmental and Civil Engineering

200 Riverfront Blvd
Elmwood Park, NJ 07407

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SITE LOCATION MAP

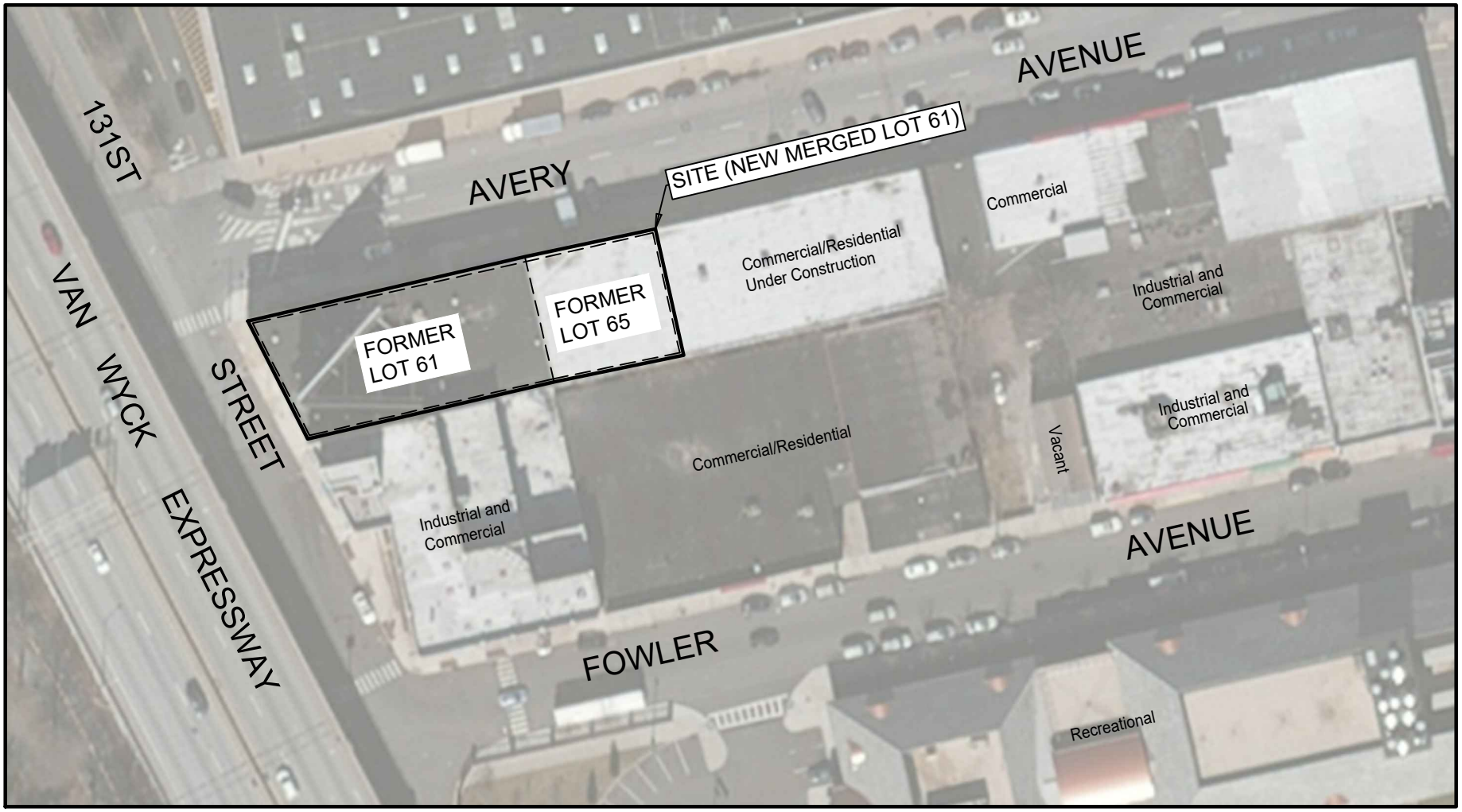
131-10 AVERY AVENUE
SITE ID: C241228

FLUSHING

QUEENS NEW YORK

JOB NO.: 17116	SCALE: As Shown	DATE: 05/18/2020	FIG. 1

P:\17\17116 Avery Avenue Site\Final Engineering Report\131-10 Avery Avenue\Appendix\O - Site Management Plan\Figure\dwg\ Figure 1 - Site Location Map.dwg May 18, 2020 - 12:12pm hluo



BASEMAP SOURCE: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

0 50 100 200 Feet

Graphic Scale

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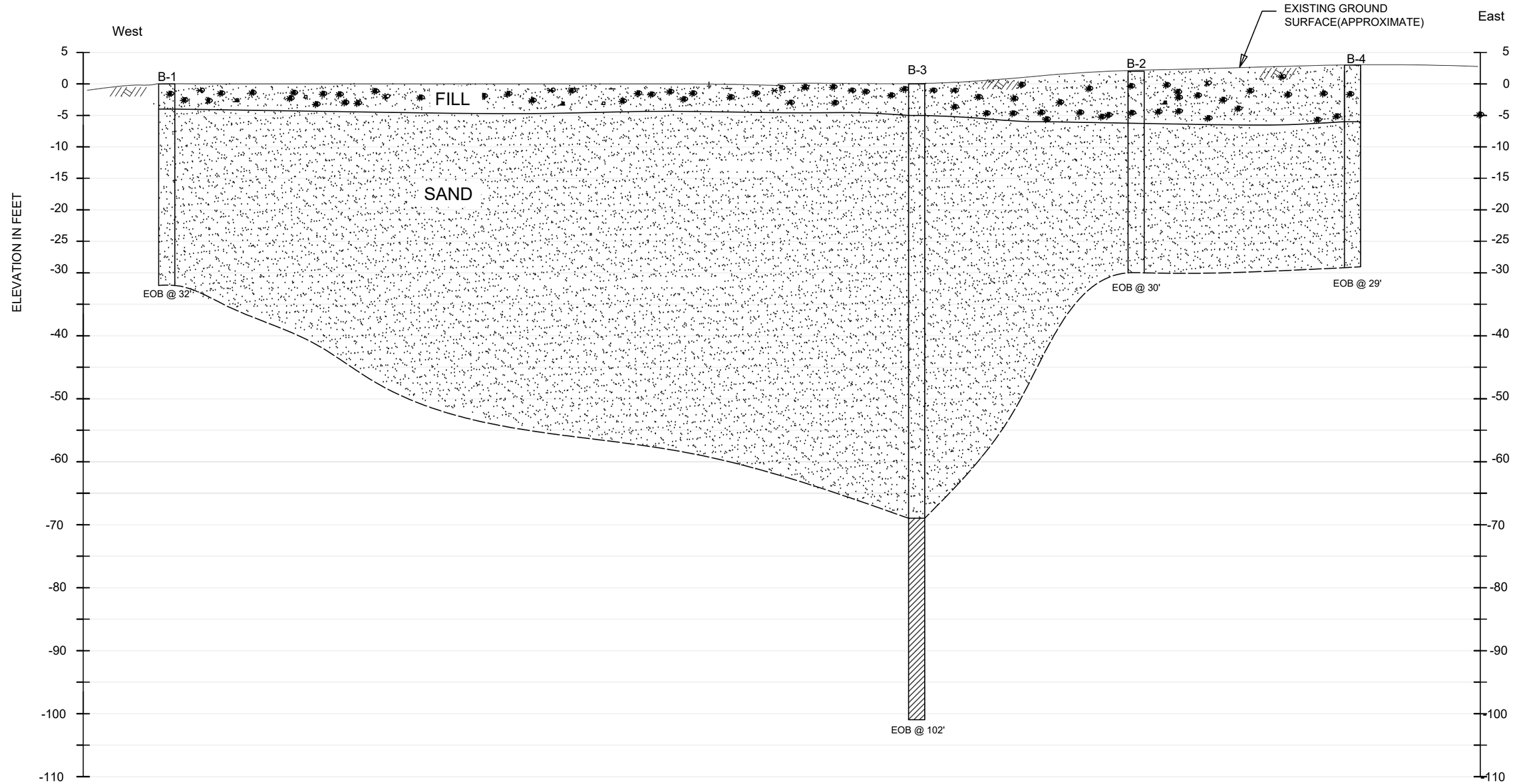
SITE LAYOUT MAP
131-10 AVERY AVENUE
SITE ID: C241228

QUEENS

FLUSHING NEW YORK

JOB NO.: 17116	SCALE: As Shown	DATE: 05/18/20	FIG. 2

C:\Users\hluo\Downloads\Final Engineering Report\131-10 Avery Avenue\Appendix\D - Site Management Plan\Figure\dwg\ Figure 2 - Site Plan Map.dwg Nov 28, 2020 - 11:22pm hluo



Legend:

- FILL
- SAND
- CLAYED SILT

Note:

1. Distances are based on the SITE PLAN dated April 24, 2015 prepared by Professional Solutions Group, Inc.
2. The boring locations, relevant elevations and geological section information is based on the boring logs in the Soil Investigation Technical Report prepared by Professional Solutions Group, Inc on May 18, 2014 which is attached as Appendix C.

Vertical: 0 16 32 Feet

Horizontal: 0 16 32 Feet

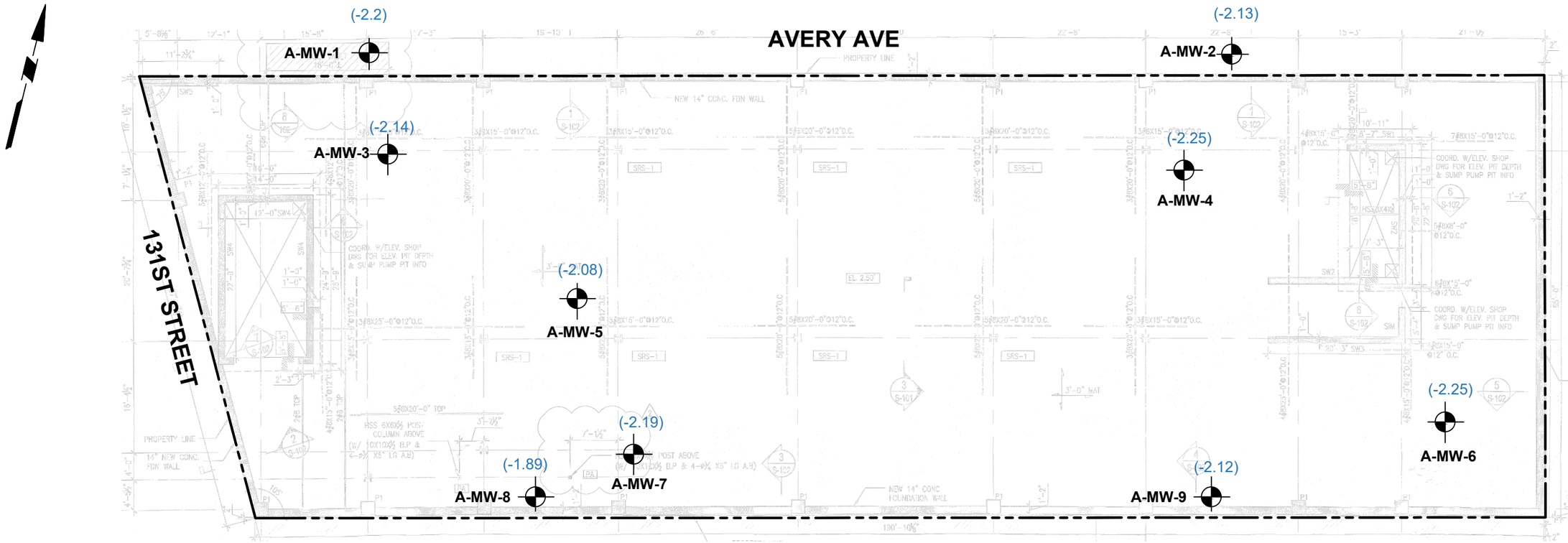
Approximate Horizontal Graphic Scale

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Elmwood Park, NJ 07407 *Fax: (201) 791-4533*

GEOLOGIC CROSS SECTION
131-10 AVERY AVE
SITE ID: C241228
FLUSHING
QUEENS NEW YORK

JOB NO.: 17116	SCALE: As Shown	DATE: 05/18/20	FIG. 3

P:\17\17116 Avery Avenue Site\Final Engineering Report\131-10 Avery Avenue\Appendix\D - Site Management Plan\Figure\dwg\ Fig. 3 Subsurface profile.dwg Oct 02, 2020 - 3:01pm hluo



LEGEND:

A-MW-X	AS-BUILT MONITORING WELL LOCATIONS/GROUNDWATER INJECTION LOCATIONS AND DESIGNATION NUMBER
	BUILDING BOUNDARY
(-2.2)	GROUNDWATER ELEVATION (FEET)

0 8 16 32 Feet

Graphic Scale

NOTE:

1. THE BASE MAP IS EXTRACTED FROM THE FOUNDATION PLAN FOR 131-10 AVERY AVENUE PREPARED BY TIMES BUILDINGS PC ON AUGUST 2019.
2. GROUNDWATER ELEVATIONS ARE BASED ON THE GAUGING INFORMATION ON JUNE 23, 2020. THE GROUNDWATER FLOW DIRECTION IS INCONCLUSIVE.

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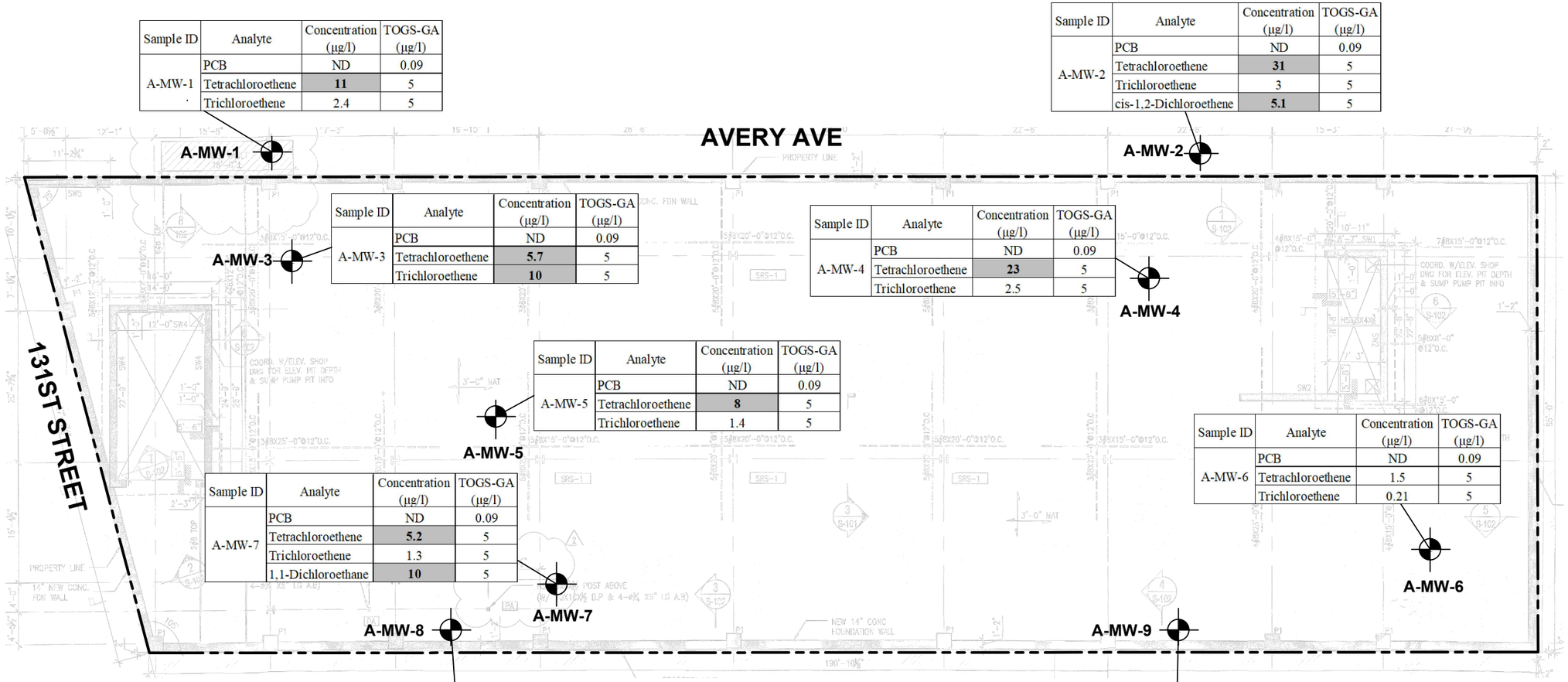
GROUNDWATER CONTOUR MAP

131-10 AVERY AVENUE
SITE ID: C241228
FLUSHING
QUEENS NEW YORK

JOB NO.: 17116	SCALE: AS SHOWN	DATE: 7/7/2020	FIG. 4

P:\17\17116 Avery Avenue Site\Final Engineering Report\131-10 Avery Avenue\Appendix\D - Site Management Plan\Figure\dwg\ 131-10 Avery Groundwater Sample Exceedance Map.dwg Sep 30, 2020 - 4:38pm hluo

P:\17\17116 Avery Avenue Site\Final Engineering Report\131-10 Avery Avenue\Appendix\D - Site Management Plan\Figure\dwg\ 131-10 Avery Groundwater Sample Exceedance Map.dwg Sep 30, 2020 - 4:36pm hluo



Sample ID	Analyte	Concentration (µg/l)	TOGS-GA (µg/l)
A-MW-1	PCB	ND	0.09
	Tetrachloroethene	**11**	5
	Trichloroethene	2.4	5

Sample ID	Analyte	Concentration (µg/l)	TOGS-GA (µg/l)
A-MW-2	PCB	ND	0.09
	Tetrachloroethene	**31**	5
	Trichloroethene	3	5
	cis-1,2-Dichloroethene	**5.1**	5

Sample ID	Analyte	Concentration (µg/l)	TOGS-GA (µg/l)
A-MW-3	PCB	ND	0.09
	Tetrachloroethene	**5.7**	5
	Trichloroethene	**10**	5

Sample ID	Analyte	Concentration (µg/l)	TOGS-GA (µg/l)
A-MW-4	PCB	ND	0.09
	Tetrachloroethene	**23**	5
	Trichloroethene	2.5	5

Sample ID	Analyte	Concentration (µg/l)	TOGS-GA (µg/l)
A-MW-5	PCB	ND	0.09
	Tetrachloroethene	**8**	5
	Trichloroethene	1.4	5

Sample ID	Analyte	Concentration (µg/l)	TOGS-GA (µg/l)
A-MW-6	PCB	ND	0.09
	Tetrachloroethene	1.5	5
	Trichloroethene	0.21	5

Sample ID	Analyte	Concentration (µg/l)	TOGS-GA (µg/l)
A-MW-7	PCB	ND	0.09
	Tetrachloroethene	**5.2**	5
	Trichloroethene	1.3	5
	1,1-Dichloroethane	**10**	5

Sample ID	Analyte	Concentration (µg/l)	TOGS-GA (µg/l)
A-MW-8	PCB	**0.098**	0.09
	Tetrachloroethene	**5.3**	5
	Trichloroethene	1	5
	1,1-Dichloroethane	**5.3**	5

Sample ID	Analyte	Concentration (µg/l)	TOGS-GA (µg/l)
A-MW-9	PCB	**0.152**	0.09
	Tetrachloroethene	3.4	5
	Trichloroethene	0.92	5

LEGEND:

AS-BUILT MONITORING WELL LOCATIONS/GROUNDWATER INJECTION
W-MW-X LOCATIONS AND DESIGNATION NUMBER

BUILDING BOUNDARY

11 EXCEEDANCE

0 8 16 32 Feet
Graphic Scale

NOTE:

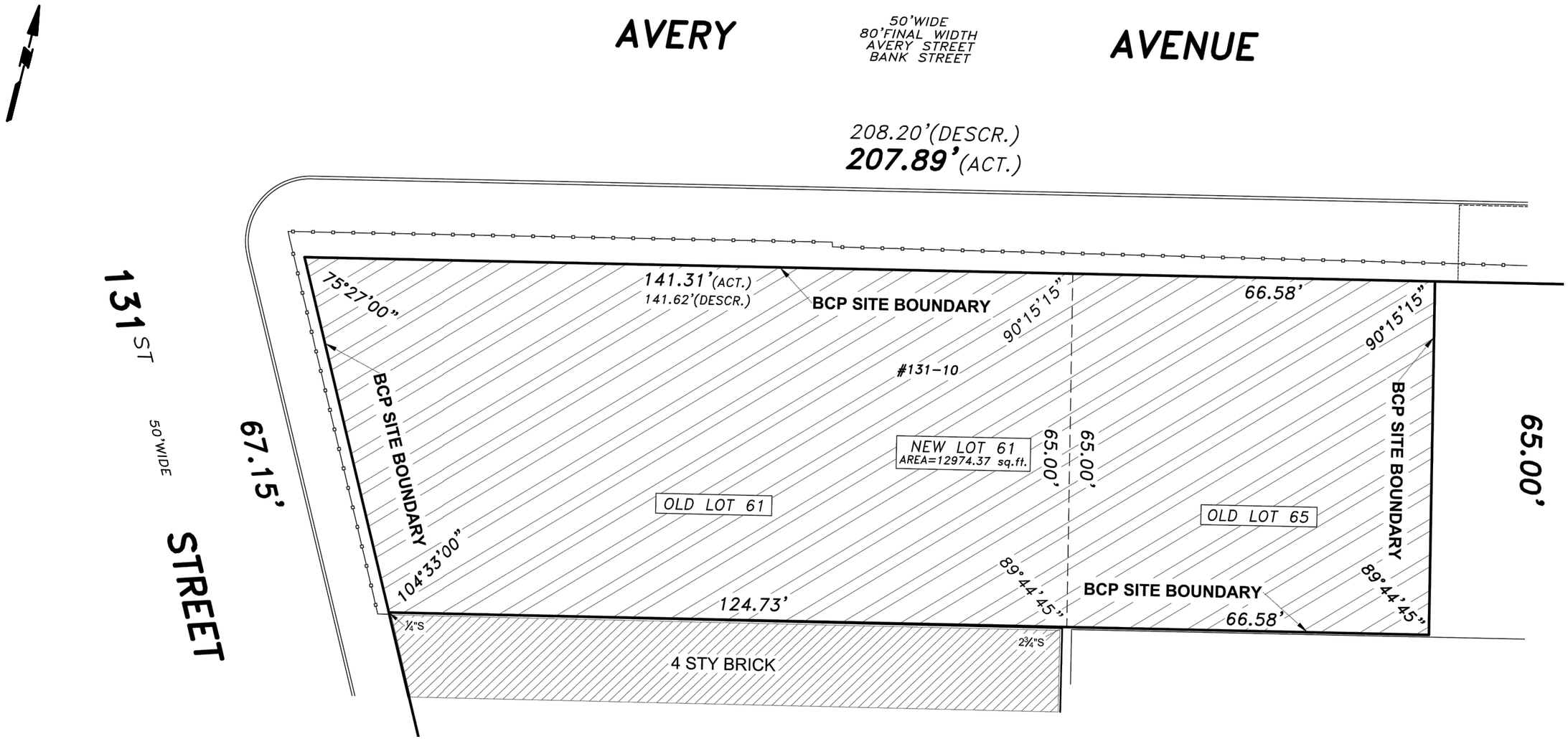
1. THE BASE MAP IS EXTRACTED FROM THE FOUNDATION PLAN FOR 131-10 AVERY AVENUE PREPARED BY TIMES BUILDINGS PC ON AUGUST 2019.

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Elmwood Park, NJ 07407 *Fax: (201) 791-4533*

REMAINING GROUNDWATER SAMPLE EXCEEDANCES

131-10 AVERY AVENUE
SITE ID: C241228
FLUSHING
QUEENS NEW YORK

JOB NO.: 17116	SCALE: AS SHOWN	DATE: 7/7/2020	FIG. 5



LEGEND:

INSTITUTIONAL CONTROL AREA

NOTES:

1. THE BASE MAP IS EXTRACTED FROM THE ENVIRONMENTAL EASEMENT SURVEY PREPARED BY PERFECT POINT LAND SURVEYING RT DATED JULY 20, 2020.

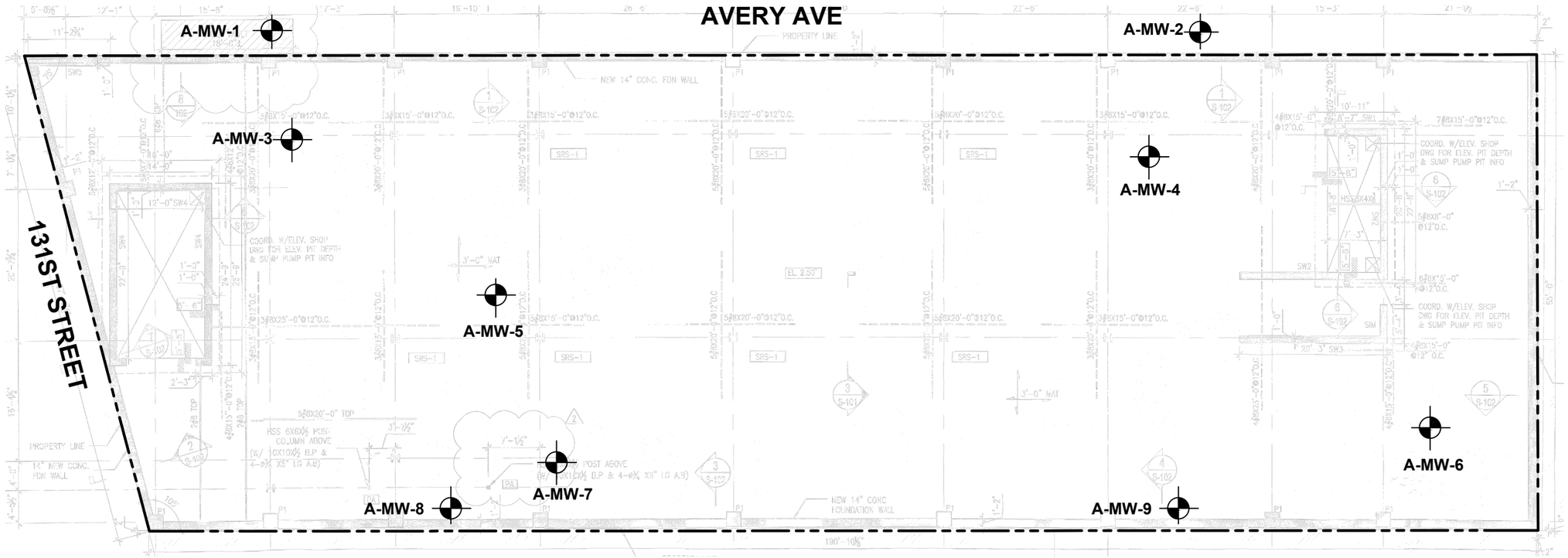
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INSTITUTIONAL CONTROL BOUNDARIES

131-10 AVERY AVENUE
SITE ID: C241228
FLUSHING
QUEENS NEW YORK

JOB NO.: 17116	SCALE: AS SHOWN	DATE: 09/02/20	FIG. 6

P:\17\17116 Avery Avenue Site\Final Engineering Report\131-10 Avery Avenue\Appendix\O - Site Management Plan\Figure\dwg\ Figure 6.7 - IC EC locations.dwg Sep 14, 2020 - 12:23pm hluo



LEGEND:

AS-BUILT MONITORING WELL LOCATIONS/GROUNDWATER INJECTION

W-MW-X LOCATIONS AND DESIGNATION NUMBER

BUILDING BOUNDARY

0 8 16 32 Feet

Graphic Scale

NOTE:

1. THE BASE MAP IS EXTRACTED FROM THE FOUNDATION PLAN FOR 131-10 AVERY AVENUE PREPARED BY TIMES BUILDINGS PC ON AUGUST 2019.

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GROUNDWATER NETWORK MAP

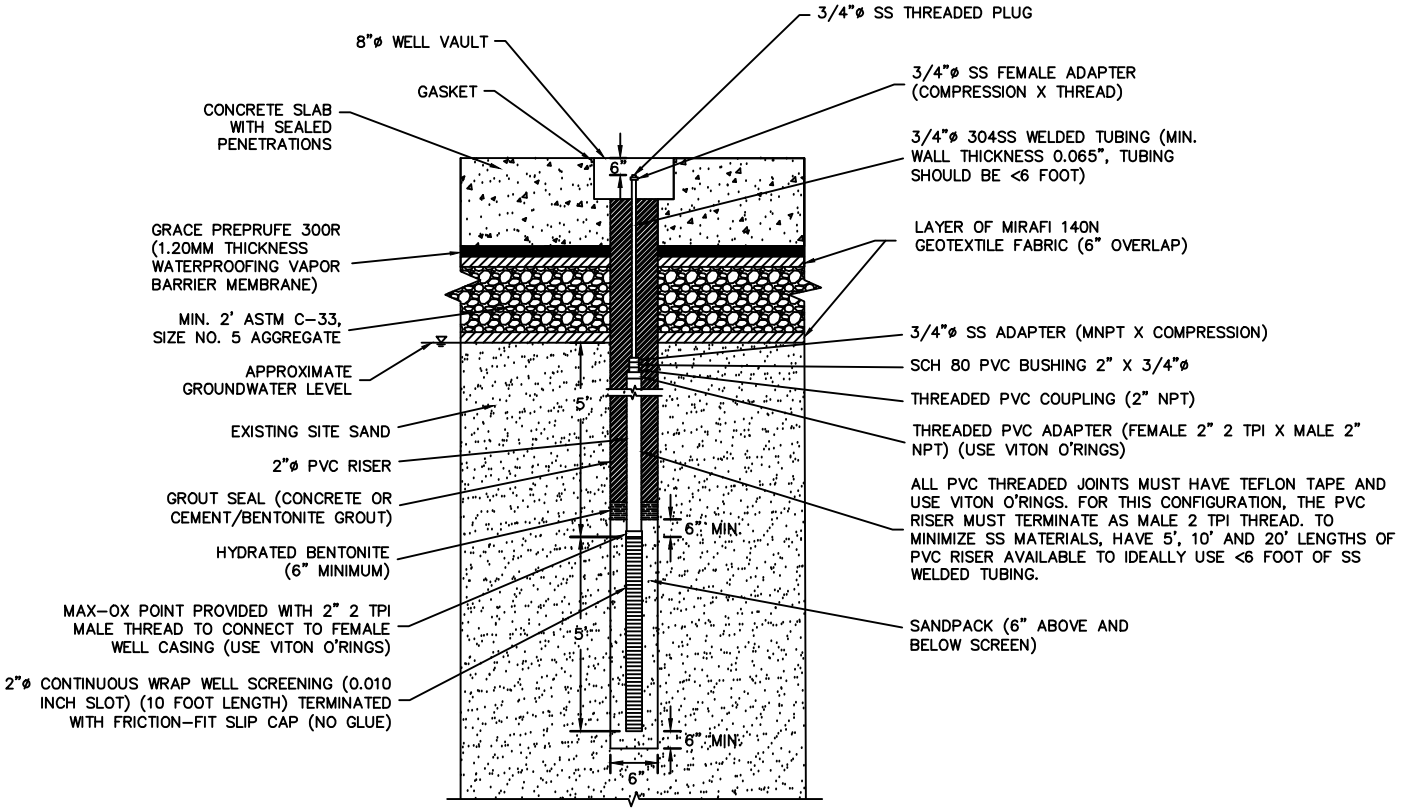
131-10 TO 131-18 AVERY AVENUE

QUEENS

FLUSHING NEW YORK

JOB NO.: 17116	SCALE: AS SHOWN	DATE: 7/7/2020	FIG. 7

P:\17\17116 Avery Avenue Site\Final Engineering Report\131-10 Avery Avenue\Appendix\D - Site Management Plan\Figure\dwg\ 131-10 Avery Groundwater Sample Exceedance Map.dwg Sep 30, 2020 - 4:37pm hluo



GROUNDWATER MONITORING/INJECTION WELL
(N.T.S)

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Geotechnical, Environmental and Civil Engineering

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Elmwood Park, NJ 07407 *Fax: (201) 791-4533*

GROUNDWATER MONITORING/INJECTION WELL
CONSTRUCTION DETAILS
131-10 AVERY AVENUE
QUEENS
FLUSHING NEW YORK

JOB NO.: 17116	SCALE: As Shown	DATE: 05/18/20	FIG. 8

P:\17\17116 Avery Avenue Site\Final Engineering Report\131-10 Avery Avenue\Appendix\O - Site Management Plan\Figure\dwg\ Figure 9 - Groundwater Monitoring Well Construction Details.dwg Sep 14, 2020 - 12:21pm hluo

APPENDIX

APPENDIX A – Environmental Easement

NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER

This page is part of the instrument. The City Register will rely on the information provided by you on this page for purposes of indexing this instrument.The information on this page will control for indexing purposes in the event of any conflict with the rest of the document.

2020111801127001002ECDF5

RECORDING AND ENDORSEMENT COVER PAGE **PAGE 1 OF 10**

Document ID: 2020111801127001 Document Date: 11-03-2020 Preparation Date: 11-18-2020
Document Type: EASEMENT
Document Page Count: 9

PRESENTER:
ROYAL REGISTERED PROPERTY REPORTS
(183297)MB
125 PARK AVENUE, SUITE 1610
NEW YORK, NY 10017
212-376-0900
MBASALATAN@ROYALABSTRACT.COM

RETURN TO:
ROYAL REGISTERED PROPERTY REPORTS
(183297)MB
125 PARK AVENUE, SUITE 1610
NEW YORK, NY 10017
212-376-0900
MBASALATAN@ROYALABSTRACT.COM

PROPERTY DATA

Borough	Block	Lot	Unit	Address
QUEENS	5076	61	Entire Lot	131-10 AVERY AVENUE

Property Type: COMMERCIAL REAL ESTATE

CROSS REFERENCE DATA

CRFN_____ *or* DocumentID_____ *or* _____ Year_____ Reel____ Page_____ *or* File Number_____

PARTIES

GRANTOR/SELLER:
AVERY GROUP LLC
131-10 AVERY AVENUE
FLUSHING, NY 11355

GRANTEE/BUYER:
THE PEOPLE OF THE STATE OF NEW YORK
625 BROADWAY
ALBANY, NY 12233

FEES AND TAXES

Mortgage :

Mortgage Amount:	$	0.00
Taxable Mortgage Amount:	$	0.00
Exemption:		
TAXES: County (Basic):	$	0.00
City (Additional):	$	0.00
Spec (Additional):	$	0.00
TASF:	$	0.00
MTA:	$	0.00
NYCTA:	$	0.00
Additional MRT:	$	0.00
TOTAL:	$	0.00
Recording Fee:	$	82.00
Affidavit Fee:	$	0.00

Filing Fee: $ 0.00

NYC Real Property Transfer Tax: $ 0.00

NYS Real Estate Transfer Tax: $ 0.00

RECORDED OR FILED IN THE OFFICE OF THE CITY REGISTER OF THE CITY OF NEW YORK
Recorded/Filed 11-20-2020 15:18
City Register File No.(CRFN): **2020000327795**

City Register Official Signature

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made as of this 3rd day of November, 2022 between Owner, Avery Group LLC, having an office at 131-10 Avery Avenue, Flushing, New York 11355, County of Queens, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 131-10 Avery Avenue in the City of New York, County of Queens and State of New York, known and designated on the tax map of the New York City Department of Finance as tax map parcel number: Block 5076 Lot 61 (f/k/a Lots 61 and 65), being the same as that property conveyed to Grantor by deed dated October 10, 2013 and recorded in the City Register of the City of New York as CRFN #2013000440888; and

WHEREAS, the property subject to this Environmental Easement (the "Controlled Property") comprises approximately 0.2979 +/- acres, and is hereinafter more fully described in the Land Title Survey dated July 20, 2020 prepared by Richard Tom, L.L.S. of Perfect Point Land Surveying RT, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the

protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: C241228-01-19, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the New York City Department of Health and Mental Hygiene to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation

Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against

the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:
Site Number: C241228
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:
Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed

by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

11. Consistency with the SMP. To the extent there is any conflict or inconsistency between the terms of this Environmental Easement and the SMP, regarding matters specifically addressed by the SMP, the terms of the SMP will control.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Avery Group LLC:

By: _____

Print Name: PAUL TAO

Title: V.P Date: 10/24/20

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF QUEENS)

On the 24TH day of OCTOBER, in the year 2020 before me, the undersigned, personally appeared PAUL TAO, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public - State of New York

YU XIAO YUN
Notary Public, State of New York
No. 01YU6155027
Qualified in Queens County
Commission Expires Oct. 23, 2022

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: _____
Michael J. Ryan, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 3rd day of November, in the year 2020, before me, the undersigned, personally appeared Michael J. Ryan, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

JUSTIN F STENERSON
NOTARY PUBLIC, STATE OF NEW YORK
Registration No. 02ST6383061
Qualified in Ulster County
Commission Expires November 13, 2022

183297

Royal Registered Property Reports, Inc.
125 Park Avenue, Suite 1610
New York, N.Y 10017
(212) 378-0900

SCHEDULE "A" PROPERTY DESCRIPTION

ENVIRONMENTAL EASEMENT LEGAL DESCRIPTION
131-10 AVERY AVENUE

ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND, SITUATE, LYING AND BEING IN THE BOROUGH AND COUNTY OF QUEENS, CITY AND STATE OF NEW YORK, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE CORNER FORMED BY THE INTERSECTION OF THE EASTERLY SIDE OF 131ST STREET, 50 FEET WIDE, WITH THE SOUTHERLY SIDE OF AVERY AVENUE, 80 FEET WIDE;

RUNNING THENCE EASTERLY ALONG THE SOUTHERLY SIDE OF AVERY AVENUE, 208.20 FEET (DEED; 208.19 FEET ON TAX MAP);

THENCE SOUTHERLY AND PART OF THE DISTANCE THROUGH A PARTY WALL, 65 FEET;

THENCE WESTERLY PARALLEL WITH AVERY AVENUE, 191.32 FEET TO THE EASTERLY SIDE OF 131ST STREET;

THENCE NORTHERLY ALONG EASTERLY SIDE OF 131ST STREET, 67.15 FEET TO THE CORNER, THE POINT OR PLACE OF BEGINNING.

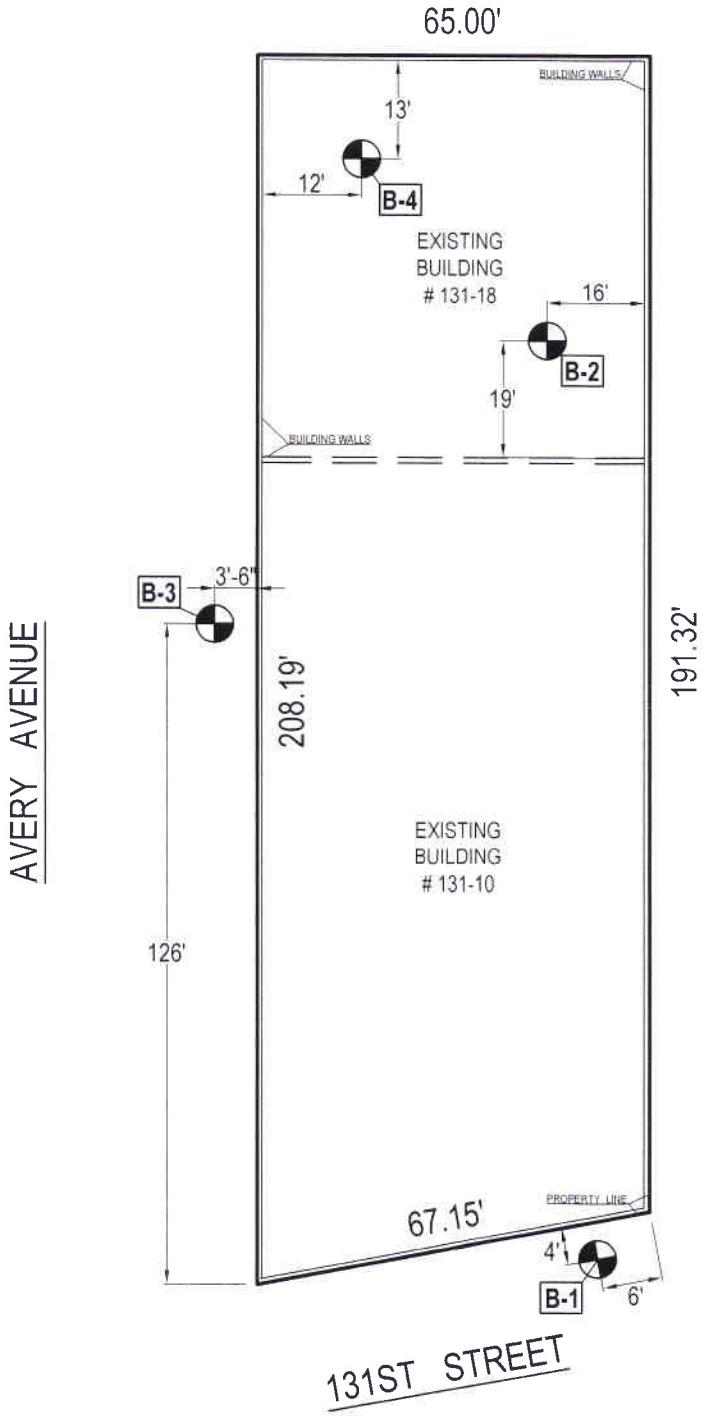
AREA OF THE ENVIRONMENTAL EASEMENT: 12974.37 SQ. FT. = 0.2979 ACRE

APPENDIX B – List of Site Contacts

APPENDIX B – LIST OF SITE CONTACTS

Name	Phone/Email Address
Site Owner & Remedial Party: Avery Group LLC	516-698-6717 ctao08@gmail.com
Qualified Environmental Professional: Sixuan Wang	201-899-3935 swang@yu-associates.com
NYSDEC Project Manager: Javier Perez-Maldonado	518-402-9768 Javier-maldonado@dec.ny.gov
NYSDEC BURB Section B, Section Chief: John Grathwol	(518) 402-9767 John.grathwol@dec.ny.gov
NYSDOH Public Health Specialist: Sarita Wagh	518-402-7860 beei@health.ny.gov
NYSDEC Regional Remediation Engineer Jane O'Connell	(718)482-4599 Jane.oconnell@dec.ny.gov
NYSDEC Site Control Section Chief: Kelly Lewandowski	(518)402-9553 Kelly.lewandowski@dec.ny.gov
Remedial Party Attorney: David Yudelson	(646)378-7219 dyudelson@sprlaw.com

APPENDIX C – Site Specific Boring Logs



SITE PLAN
(NOT TO SCALE)

GENERAL NOTES

1. BORING LOCATIONS ARE AS PER DIRECTIONS OF THE CLIENT. SEE SITE PLAN.
2. BORINGS PERFORMED IN ACCORDANCE WITH PROCEDURES ESTABLISHED IN SECTION 1802.5 OF NYC BUILDING CODE AND COMPLY TO REQUIREMENTS OF SECTION 1704.7.4 OF NYC BUILDING CODE.
3. ⊕ - DENOTES TEST LOCATION AND CARRIES A TAG CORRESPONDING TO THE PERFORMED TEST(S).
4. DEPTHS ARE SHOWN FROM THE GROUND LEVEL IN THE GIVEN POINT WHERE THE BORING WAS TAKEN. DIFFERENCES IN ELEVATION HAVE NOT BEEN CALCULATED.
5. GROUND WATER LEVEL SHOWN LIKE THIS ●.
6. UNLESS A WELL POINT IS INSTALLED, WATER LEVEL REPORTED OCCURS AT THE TIME THE BORING WAS TAKEN AND MAY NOT BE THAT OF THE ACTUAL WATER TABLE. FLUCTUATIONS IN GROUND WATER LEVEL CAUSED BY TIDAL AND SEASONAL CHANGES HAVE NOT BEEN CONSIDERED.
7. IDENTIFICATIONS, DESCRIPTIONS AND CLASSIFICATIONS OF SOIL ARE TRUE TO THE BEST OF OUR KNOWLEDGE AND ARE BASED ON VISUAL EXAMINATION OF THE RECOVERED SOIL SAMPLES AT THE INDICATED LEVELS.
8. BORINGS WERE INSPECTED UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER AND ARE REASONABLY REPRESENTATIVE OF SUBSURFACE CONDITIONS, BUT MAY NOT NECESSARILY SHOW ACTUAL CONDITIONS BETWEEN BORINGS.

DATUM NOTE: ALL ELEVATIONS REFER TO THE BOROUGH OF QUEENS DATUM, WHICH IS 2.725 FEET ABOVE MEAN SEA LEVEL AT SANDY HOOK AS ESTABLISHED BY THE U.S. COAST & GEODETIC SURVEY.

DRAWN	GAS	CHECKED	AAS

APPROVED (SEAL)

PROFESSIONAL SOLUTIONS GROUP, INC.
P. O Box 3015
Astoria, NY 11103
office@PSGNYC.com
www.PSGNYC.com
T: 718.505.8000 F: 718.507.2224

PROJECT
SUBSURFACE INVESTIGATION AT:
131-10/18 AVERY AVENUE
FLUSHING, NY 11355

SITE PLAN, TEST LOCATIONS, GENERAL NOTES

DATE	SCALE	SHEET
04/24/2015	N.T.S.	1 OF 5

DRAWING No.
B - 001.00

THIS REPORT IS SUBMITTED WITH THE SPECIFIC UNDERSTANDING THAT THE SOLE LIABILITY OF PROFESSIONAL SOLUTIONS GROUP INC., IT'S ASSOCIATES, SUBCONTRACTORS, ENGINEERS AND EMPLOYEES, FOR ERRORS AND OMISSIONS IS LIMITED TO THE AMOUNT OF THE FEE PAID FOR THIS REPORT. THE USE OF THIS REPORT WILL CONSTITUTE AN ACCEPTANCE BY THE CLIENT OF THIS DISCLAIMER. THE FEE CHARGED FOR THIS REPORT IS PREDICATED UPON THIS LIMITATION OF LIABILITY, WHICH IS THE ESSENCE OF THIS AGREEMENT. IF THESE TERMS ARE NOT ACCEPTABLE, THE CLIENT MUST NOTIFY PROFESSIONAL SOLUTIONS GROUP INC., IN WRITING BY CERTIFIED MAIL - RETURN RECEIPT REQUESTED, WITHIN FIVE (5) DAYS. PROFESSIONAL SOLUTIONS GROUP INC., IT'S ASSOCIATES, SUBCONTRACTORS, ENGINEERS, EMPLOYEES DO NOT ACCEPT ANY LIABILITY OR RESPONSIBILITY FOR PERSONS OTHER THAN THE CLIENT FOR WHOM THIS WORK WAS DIRECTLY PREPARED AND ANY SUCH PERSON, FIRM OR CORPORATION RELIES ON THIS REPORT AT THEIR OWN RISK.

BORING DONE 02-13-2015

BORING B-1

DEPTH	SOIL & ROCK DESCRIPTION & CLASSIFICATION	SAMPLE	BLOWS PER 6" OF SPOON	
	ELEVATION: AT THE EXISTING CURB LEVEL ±			
	CONCRETE PAVEMENT = 5"			
	-- FILL --	1	2	
	SAND - SILT - GRAVEL -		1	
	- BRICK - GLASS		1	
	7		2	2.0
	Depth 4' - 0"			
5	VERY FINE SAND -	2	4	5.0
	- TRACE OF SILT		3	
	6		3	
	Depth 8' - 0"		4	7.0
10	FINE SAND [MOIST @ 13'] -	3	3	10.0
	- LITTLE SILT -		2	
	- TRACE OF GRAVEL		2	
	6		3	12.0
15	*Depth 15' - 6"*	4	5	15.0
			6	
			7	
			8	17.0
	Depth 16'-0"			
20	FINE TO MEDIUM SAND -	5	10	20.0
	- LITTLE SILT		9	
	3b		10	
			11	22.0
	Depth 24' - 0"			
25	MEDIUM SAND -	6	12	25.0
	- SOME SILT		13	
	3b		14	
			14	27.0
30		7	14	30.0
			15	
	Depth 32'- 0"		14	
			18	32.0

END OF BORING B-1

(1 OF TOTAL 4)

TYPICAL EQUIPMENT	*Unless otherwise noted:*			
	Size of sample spoon	2 x 24 inches	Hollow augers, diameter	3.25 inches *or*
	Weight of spoon hammer	140 lbs.	Size of casing	3.0 inches
	Sample hammer drop	30 inches	Weight of driver hammer	300 lbs.
			Casing hammer drop	18 inches

UNIFIED SOIL CLASSIFICATION

SOIL GROUPS	TYPICAL NAMES
GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
GP	POORLY GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
GM	SILTY GRAVELS, GRAVEL-AND-SILT MIXTURES
GC	CLAYEY GRAVELS, GRAVEL-AND-CLAY MIXTURES
SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
SP	POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES
SM	SILTY SANDS, SAND-SILT MIXTURES
SC	CLAYEY SANDS, SAND-CLAY MIXTURES
ML	INORGANIC SILTS & VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
CL	INORGANIC CLAYS OF LOW TO MEDIUM PLACTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

ALLOWABLE BEARING PRESSURES

NYC BUILDING CODE BC1804 (Tab.1804.1)

CLASS OF MATERIALS	DESCRIPTION	MAX ALLOWABLE FOUNDATION PRESSURE TONS/SQ FT
1a	HARD SOUND ROCK - GNEISS, DIABASE, SCHIST	60
1b	MEDIUM HARD ROCK - MARBLE, SERPENTINE	40
1c	INTERMEDIATE ROCK - SHALE, SANDSTONE	20
1d	SOFT ROCK - WEATHERED ROCK	8
2a	SANDY GRAVEL (SOIL GROUPS GW,GP) - DENSE	10
2b	SANDY GRAVEL (SOIL GROUPS GW,GP) - MEDIUM	6
3a	GRANULAR SOILS (SOIL GROUPS GC,GM,SW,SP,SM AND SC) - DENSE	6
3b	GRANULAR SOILS (SOIL GROUPS GC,GM,SW,SP,SM AND SC) - MEDIUM	3
4a	CLAYS AND CLAY SOILS (SOIL GROUPS SC, CL & CH) - HARD	5
4b	CLAYS AND CLAY SOILS (SOIL GROUPS SC, CL & CH) - STIFF	3
4c	CLAYS AND CLAY SOILS (SOIL GROUPS SC, CL & CH) - MEDIUM	2
5a	SILTS AND SILTY SOILS (SOIL GROUPS ML & MH) - DENSE	3
5b	SILTS AND SILTY SOILS (SOIL GROUPS ML & MH) - MEDIUM	1.5
6	ORGANIC SILTS, ORGANIC CLAYS, PEATS, SOFT CLAYS, LOOSE GRANULAR SOILS AND VARVED SILTS	see 1804.2.1
7	CONTROLLED AND UNCONTROLLED FILLS	see 1804.2.2 or 1804.2.3

DRAWN GAS | CHECKED AAS

APPROVED (SEAL)



PROFESSIONAL SOLUTIONS GROUP, INC.

P. O. Box 3015
Astoria, NY 11103

office@PSGNYC.com
www.PSGNYC.com

T: 718.505.8000 **F: 718.507.2224**

PROJECT

SUBSURFACE INVESTIGATION AT:

131-10/18 AVERY AVENUE
FLUSHING, NY 11355

BORING LOG B-1

DATE	SCALE	SHEET
04/24/2015	N.T.S.	2 OF 5

DRAWING No.

B - 101.00

BORING DONE 02-13-2015

BORING B-2

DEPTH	SOIL & ROCK DESCRIPTION & CLASSIFICATION	SAMPLE	BLOWS PER 6" OF SPOON
	ELEVATION: +2' ABOVE EXISTING CURB LEVEL ±		
	-- FILL -- SAND - SILT - GRAVEL - - BRICK - GLASS **7**	1	7 8 5 6
2.0			
5		2	8 9 10 11
5.0			
7.0	Depth 8' - 0"		
10	FINE SAND - - LITTLE SILT - - COBBLES **3a**	3	18 16 17 17
10.0			
12.0			
15		4	19 21 40 80
15.0			
17.0	FINE SAND & BOULDERS		
	Depth 18' - 0"		Depth 19'-0"
20	FINE TO MEDIUM SAND - - LITTLE SILT **3b**	5	13 11 13 11
20.0			
22.0			
25	Depth 25' - 6"	6	12 15 14 16
25.0			
27.0	MEDIUM SAND - - SOME SILT & CLAY **4b**		
30		7	15 13 14 14
30.0			
32.0	Depth 32'- 0"		

END OF BORING B-2

(2 OF TOTAL 4)

TYPICAL EQUIPMENT	*Unless otherwise noted:*			
	Size of sample spoon	2 x 24 inches	Hollow augers, diameter	3.25 inches *or*
	Weight of spoon hammer	140 lbs.	Size of casing	3.0 inches
	Sample hammer drop	30 inches	Weight of driver hammer	300 lbs.
			Casing hammer drop	18 inches

UNIFIED SOIL CLASSIFICATION
TYPICAL NAMES

SOIL GROUPS	
GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
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SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
SP	POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES
SM	SILTY SANDS, SAND-SILT MIXTURES
SC	CLAYEY SANDS, SAND-CLAY MIXTURES
ML	INORGANIC SILTS & VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
CL	INORGANIC CLAYS OF LOW TO MEDIUM PLACTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

ALLOWABLE BEARING PRESSURES
NYC BUILDING CODE BC1804 (Tab.1804.1)

CLASS OF MATERIALS	DESCRIPTION	MAX ALLOWABLE FOUNDATION PRESSURE TONS/SQ FT
1a	HARD SOUND ROCK - GNEISS, DIABASE, SCHIST	60
1b	MEDIUM HARD ROCK - MARBLE, SERPENTINE	40
1c	INTERMEDIATE ROCK - SHALE, SANDSTONE	20
1d	SOFT ROCK - WEATHERED ROCK	8
2a	SANDY GRAVEL (SOIL GROUPS GW,GP) - DENSE	10
2b	SANDY GRAVEL (SOIL GROUPS GW,GP) - MEDIUM	6
3a	GRANULAR SOILS (SOIL GROUPS GC,GM,SW,SP,SM AND SC) - DENSE	6
3b	GRANULAR SOILS (SOIL GROUPS GC,GM,SW,SP,SM AND SC) - MEDIUM	3
4a	CLAYS AND CLAY SOILS (SOIL GROUPS SC, CL & CH) - HARD	5
4b	CLAYS AND CLAY SOILS (SOIL GROUPS SC, CL & CH) - STIFF	3
4c	CLAYS AND CLAY SOILS (SOIL GROUPS SC, CL & CH) - MEDIUM	2
5a	SILTS AND SILTY SOILS (SOIL GROUPS ML & MH) - DENSE	3
5b	SILTS AND SILTY SOILS (SOIL GROUPS ML & MH) - MEDIUM	1.5
6	ORGANIC SILTS, ORGANIC CLAYS, PEATS, SOFT CLAYS, LOOSE GRANULAR SOILS AND VARVED SILTS	see 1804.2.1
7	CONTROLLED AND UNCONTROLLED FILLS	see 1804.2.2 or 1804.2.3

DRAWN GAS | CHECKED AAS

APPROVED (SEAL)



PROFESSIONAL SOLUTIONS GROUP, INC.
P. O. Box 3015
Astoria, NY 11103
office@PSGNYC.com
www.PSGNYC.com
T: 718.505.8000 **F: 718.507.2224**

PROJECT

SUBSURFACE INVESTIGATION AT:

131-10/18 AVERY AVENUE
FLUSHING, NY 11355

BORING LOG B-2

DATE	SCALE	SHEET
04/24/2015	N.T.S.	3 OF 5

DRAWING No.

B - 102.00

BORING DONE 04-02-2015

BORING B-3

DEPTH	SOIL & ROCK DESCRIPTION & CLASSIFICATION	SAMPLE	BLOWS PER 6" OF SPOON	
	ELEVATION: AT THE EXISTING CURB LEVEL ±			
	--- FILL --- SAND-SILT-GRAVEL-ASPHALT	1	12 - 10 - 6 - 9	2.0
	7			5.0
5	Depth 5'- 0"			
	FINE SAND - LITTLE SILT -	2	22 - 5 - 5 - 5	7.0
	- TRACE OF GRAVEL	3	5 - 5 - 7 - 4	9.0
10	3b	4	8 - 6 - 7 - 10	11.0
	Depth 12'- 0"	5	5 - 8 - 10 - 15	13.0
				15.0
15	FINE TO MEDIUM SAND -	6	10 - 15 - 10 - 11	17.0
	- TRACE OF SILT -			20.0
20	3b	7	6 - 8 - 10 - 3	22.0
	Depth 22'- 0"			
				25.0
25	MEDIUM SAND -	8	7 - 12 - 14 - 15	27.0
	- TRACE OF SILT -		Depth 27'-0"	
30	3b	9	6 - 8 - 10 - 12	32.0
	Depth 33'- 0"			
				35.0
35		10	7 - 12 - 14 - 15	37.0
				40.0
40		11	7 - 6 - 4 - 7	42.0
				45.0
45		12	11 - 15 - 13 - 9	47.0
	CLAYEY FINE SAND			50.0
50	5b	13	8 - 8 - 9 - 11	52.0
				55.0
55		14	7 - 13 - 13 - 9	57.0
				60.0
60		15	5 - 6 - 8 - 9	62.0
				65.0
65		16	5 - 8 - 9 - 10	67.0
70	Depth 70'- 0"			70.0
		17	12 - 14 - 16 - 15	72.0
				75.0
75		18	5 - 8 - 8 - 11	77.0
	CLAYEY SILT			80.0
80	5b	19	8 - 8 - 6 - 10	82.0
				85.0
85		20	5 - 9 - 12 - 10	87.0
	Depth 88'- 0"			
90		21	12 - 21 - 27 - 31	90.0 92.0
	CLAYEY SILT			95.0
95	5a	22	21 - 13 - 28 - 4	97.0
100	Depth 102'- 0"	23	17 - 24 - 25 - 32	100.0 102.0

END OF BORING B-3

(3 OF TOTAL 4)

TYPICAL EQUIPMENT	*Unless otherwise noted:*			
	Size of sample spoon	2 x 24 inches	Hollow augers, diameter	4.5 inches *or*
	Weight of spoon hammer	140 lbs.	Size of casing	3.0 inches
	Sample hammer drop	30 inches	Weight of driver hammer	300 lbs.
			Casing hammer drop	18 inches

UNIFIED SOIL CLASSIFICATION TYPICAL NAMES

SOIL GROUPS	
GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
GP	POORLY GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
GM	SILTY GRAVELS, GRAVEL-AND-SILT MIXTURES
GC	CLAYEY GRAVELS, GRAVEL-AND-CLAY MIXTURES
SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
SP	POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES
SM	SILTY SANDS, SAND-SILT MIXTURES
SC	CLAYEY SANDS, SAND-CLAY MIXTURES
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P1	PEAT AND OTHER HIGHLY ORGANIC SOILS

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NYC BUILDING CODE BC1804 (Tab.1804.1)

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7	CONTROLLED AND UNCONTROLLED FILLS	see 1804.2.2 or 1804.2.3

DRAWN GAS | CHECKED AAS

APPROVED (SEAL)



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PROJECT

SUBSURFACE INVESTIGATION AT:

131-10/18 AVERY AVENUE
FLUSHING, NY 11355

BORING LOG B-3

DATE	SCALE	SHEET
04/24/2015	N.T.S.	4 OF 5

DRAWING No.

B - 103.00

BORING DONE 04-23-2015

BORING B-4

ELEVATION: + 3' ABOVE EXISTING CURB LEVEL ±

DEPTH	SOIL & ROCK DESCRIPTION & CLASSIFICATION	SAMPLE	BLOWS PER 6" OF SPOON	
		1	10 12 12 10	2.0
5	-- FILL -- SAND - SILT - GRAVEL - - BRICK - GLASS 7	2	23 9 6 4	5.0 7.0
	Depth 9' - 0"			
10	FINE SAND - - LITTLE SILT - - LITTLE GRAVEL 3b	3	7 6 6 8	10.0 12.0
15		4	8 10 10 9	15.0 17.0
	Depth 17' - 0"			
20	FINE TO MED SAND [MOIST @ 18'] - - LITTLE SILT 3b	5	10 12 14 13	20.0 22.0
	Depth 22'-0"			
25		6	13 14 13 16	25.0 27.0
	Depth 27' - 0"			
30	MEDIUM SAND - - SOME CLAY & SILT 4b	7	16 14 14 15	30.0 32.0
	Depth 32'- 0"			

END OF BORING B-4

(4 OF TOTAL 4)

TYPICAL EQUIPMENT	*Unless otherwise noted:*		Hollow augers, diameter	3.25 inches *or*
	Size of sample spoon	2 x 24 inches	Size of casing	3.0 inches
	Weight of spoon hammer	140 lbs.	Weight of driver hammer	300 lbs.
	Sample hammer drop	30 inches	Casing hammer drop	18 inches

UNIFIED SOIL CLASSIFICATION

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7	CONTROLLED AND UNCONTROLLED FILLS	see 1804.2.2 or 1804.2.3

DRAWN GAS | CHECKED AAS

APPROVED (SEAL)



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PROJECT

SUBSURFACE INVESTIGATION AT:

131-10/18 AVERY AVENUE
FLUSHING, NY 11355

BORING LOG B-4

DATE	SCALE	SHEET
04/24/2015	N.T.S.	5 OF 5

DRAWING No.

B - 104.00

NYC Buildings

TR1: Technical Report
Statement of Responsibility

This form must be typewritten

Orient and affix BIS job number label here

1 Location Information *Required for all applications.*

House No(s) 131-10/18 Street Name AVERY AVENUE

Work on Floor(s) OSP, 001, UDG

2 Applicant Information *Required for all applications.*

Choose all that apply: ☐ Design Applicant *3A, 4A, 5* ☒ Special Inspections Applicant *3B-D, 6-9* ☐ Progress Inspections Applicant *4B-D, 6-9*

Last Name Ghaida First Name Sam Middle Initial A

Business Name Professional Solutions Group Inc. Business Telephone 718-505-8000

Business Address P.O. Box 3015 Business Fax 718-507-2224

City Astoria State NY Zip 11103 Mobile Telephone

License Type *choose one:* ☒ P.E. ☐ R.A. ☐ Other: License Number 071407

Special Inspection Agency Number 001756

3 Special Inspection Categories *Required for all applications, continued on page 2; ■ indicates report required.*

3A ← Identification of Requirement			3B Identification of Responsibilities	3C Certificate of Complete Inspections / Tests	3D Withdraw Responsibilities
Y N Special Inspections		Code/Section	Initial & Date	Initial & Date	Initial & Date
☐ ☒ Structural Steel – Welding		BC 1704.3.1			
☐ ☒ Structural Steel – Details		BC 1704.3.2			
☐ ☒ Structural Steel – High Strength Bolting		BC 1704.3.3			
☐ ☒ Structural Cold-Formed Steel		BC 1704.3.4			
☐ ☒ Concrete – Cast-In-Place		BC 1704.4			
☐ ☒ Concrete – Precast		BC 1704.4			
☐ ☒ Concrete – Prestressed		BC 1704.4			
☐ ☒ Masonry		BC 1704.5			
☐ ☒ Wood – Installation of High-Load Diaphragms		BC 1704.6.1			
☐ ☒ Wood – Installation of Metal-Plate-Connected Trusses		BC 1704.6.2			
☐ ☒ Wood – Installation of Prefabricated I-Joists		BC 1704.6.3			
☐ ☒ Subgrade Inspection		BC 1704.7.1			
☐ ☒ Subsurface Conditions – Fill Placement & In-Place Density		BC 1704.7.2 BC 1704.7.3			
☒ ☐ Subsurface Investigations (Borings/Test Pits)	■ TR4	BC 1704.7.4	02/13/2015		
☐ ☒ Deep Foundation Elements	■ TR5	BC 1704.8			
☐ ☒ Helical Piles (BB # 2014-020)	■ TR5H	BC 1704.8.5			
☐ ☒ Vertical Masonry Foundation Elements		BC 1704.9			
☐ ☒ Wall Panels, Curtain Walls, and Veneers	■	BC 1704.10			
☐ ☒ Sprayed fire-resistant materials		BC 1704.11			
☐ ☒ Mastic and Intumescent Fire-resistant Coatings		BC 1704.12			
☐ ☒ Exterior Insulation and Finish Systems (EIFS)		BC 1704.13			
☐ ☒ Alternative Materials - OTCR Buildings Bulletin # _____		BC 1704.14			
☐ ☒ Smoke Control Systems		BC 1704.15			
☐ ☒ Mechanical Systems		BC 1704.16			
☐ ☒ Fuel-Oil Storage and Fuel-Oil Piping Systems		BC 1704.17			
☐ ☒ High-Pressure Steam Piping (Welding)		BC 1704.18			
☐ ☒ High Temperature Hot Water Piping (Welding)		BC 1704.18			
☐ ☒ High-Pressure Fuel-Gas Piping (Welding)		BC 1704.19			
☐ ☒ Structural Stability – Existing Buildings		BC 1704.20.1			
☐ ☒ Excavations—Sheeting, Shoring, and Bracing		BC 1704.20.2			
☐ ☒ Underpinning		BC 1704.20.3 BC 1814			
☐ ☒ Mechanical Demolition		BC 1704.20.4			

NYC Buildings

TR1: Technical Report
Statement of Responsibility

This form must be typewritten

3 Special Inspection Categories (continued)

Required for all applications, continued on page 2; ■ indicates report required.

3A ← Identification of Requirement				3B Identification of Responsibilities	3C Certificate of Complete Inspections / Tests	3D Withdraw Responsibilities
Y	N	Special Inspections	Code/Section	Initial & Date	Initial & Date	Initial & Date
☐	☒	Raising and Moving of a Building	BC 1704.20.5			
☐	☒	Soil Percolation Test - Private On-Site Storm Water Drainage Disposal Systems, and Detention Facilities ■	BC 1704.21.1.2			
☐	☒	Private On-Site Storm Water Drainage Disposal Systems, and Detention Facilities Installation	BC 1704.21.2			
☐	☒	Individual On-Site Private Sewage Disposal Systems Installation	BC 1704.22			
☐	☒	Soil Percolation Test - Individual On-Site Private Sewage Disposal Systems ■	BC 1704.22			
☐	☒	Sprinkler Systems	BC 1704.23			
☐	☒	Standpipe Systems	BC 1704.24			
☐	☒	Heating Systems	BC 1704.25			
☐	☒	Chimneys	BC 1704.26			
☐	☒	Fire-resistant Penetrations and Joints	BC 1704.27			
☐	☒	Aluminum Welding	BC 1704.28			
☐	☒	Flood Zone Compliance (attach FEMA elevation/dry floodproofing certificate where applicable)	BC 1704.29 BC G105			
☐	☒	Luminous Egress Path Markings ■ TR7	BC 1704.30 BC 1024.8			
☐	☒	Emergency and Standby Power Systems (Generators)	BC 1704.31			
☐	☒	Post-installed Anchors (BB# 2014-018, 2014-019)	BC 1704.32			
☐	☒	Seismic Isolation Systems	BC 1707.8			
☐	☒	Concrete Design Mix ■ TR3	BC 1905.3 BC 1913.5	Submit TR3 to complete this item		
☐	☒	Concrete Sampling and Testing ■ TR2	BC 1905.6 BC 1913.10	Submit TR2 to complete this item		

4 Progress Inspection Categories

Required for all applications. ■ indicates report required.

4A ← Identification of Requirement				4B Identification of Responsibilities	4C Certificate of Complete Inspections / Tests	4D Withdraw Responsibilities
Y	N	Progress Inspections	Code/Section	Initial & Date	Initial & Date	Initial & Date
☐	☒	**Preliminary**	28-116.2.1, BC 110.2			
☐	☒	Footing and Foundation	BC 110.3.1			
☐	☒	Lowest Floor Elevation	BC 110.3.2			
☐	☒	Structural Wood Frame	BC 110.3.3			
☐	☒	Energy Code Compliance Inspections ■ TR8	BC 110.3.5	Submit TR8 to complete this item		
☐	☒	Fire-Resistance Rated Construction	BC 110.3.4			
☐	☒	Public Assembly Emergency Lighting	28-116.2.2			
☐	☒	Final*	28-116.2.4.2, BC 110.5, Directive 14 of 1975, and 1 RCNY §101-10			

** For column 4C, indicate date when the actual final inspection was performed*

5 Design Applicant's Statements and Signatures

P.E./R.A. responsible for plans, choose both below and sign/seal.

☒ I have identified all of the special inspections, progress inspections and tests required for compliance.

☒ I certify that the Special Inspection and Approved Agencies engaged by the owner to supervise the work specified above are acceptable. (BC 1704.1)

Name (please print)

Signature Date

P.E. / R.A. Seal *(apply seal, then sign and date over seal)*

6 Owner's Statement and Signature for Progress/Special Inspector *Required when inspection applicant identifies responsibilities.*

I have reviewed the information provided herein and, to the best of my knowledge and belief, attest to its accuracy. I approve the identification of the responsible inspector. Falsification of any statement is a misdemeanor and is punishable by a fine or imprisonment, or both. It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by a fine or imprisonment, or both. I understand that if I am found after hearing to have knowingly or negligently made a false statement or to have knowingly or negligently falsified or allowed to be falsified any certificate, form, signed statement, application, report or certification of the correction of a violation required under the provisions of this code or of a rule of any agency, I may be barred from filing further applications or documents with the Department.

Name (print) Title

Signature Date

7 Inspection Applicant's Identification of Responsibilities

Check all that apply below:

☒ For the **special inspections** indicated above in section 3, I certify that I am the principal/director of the special inspection agency accepting responsibility for conducting the inspections. I further certify that I have read the applicable sections of the New York City Construction Codes in connection with special inspections as well as 1 RCNY 101-06 Rule, which specifies the qualifications required for each inspection and that this agency meets those qualifications for each and every special inspection for which I/we take responsibility. I agree that both I and the agency will comply with all provisions of the New York City Construction Codes and the Rule. I am aware of the additional sanctions imposed on false filings by §28-211.1.2 of the Administrative Code.

☐ For the **progress inspections** indicated above in section 4, except energy code inspections on the TR1EN form, and/or **concrete test items** indicated in section 3, I assume the responsibility and I personally, or where permitted by the New York City Construction Codes, qualified personnel under my direct supervision, will perform the required inspections and tests on such forms and in such matter as the Department requires or requests. I am aware of the additional sanctions imposed on false filings by §28-211.1.2 of the Administrative Code.

Final Inspection:

☐ I will make final inspection of the construction work, including those inspections during its progress necessary to my certification upon final inspection that all work substantially conforms to approved construction documents and applicable laws and rules. I will confirm that the performance of progress inspections and other inspections has been documented before I report the work complete. As prescribed by 1 RCNY 101-10, I will perform the final inspection within 1 year from the expiration of the last valid permit of the work.

Upon completion of the work and within 30 days of my final inspection, I will file a certification attesting to the fact that all work was performed and completed in accordance with the approved construction documents, laws and rules, except as reported otherwise.

☐ **I understand that my failure to file a certification of completion or to notify the Department of my withdrawal of responsibilities within one year from expiration of the last valid permit may result in the loss of my privileges to file under Directives 2 and 14 of 1975 or issuance of a violation, or both. I am aware of the additional sanctions imposed on false filings by §28-211.1.2 of the Administrative Code.**

☐ **Change of Applicant:** I am a newly designated individual responsible for the items specified herein and I hereby state that:

- ☐ None of the inspections/tests indicated herein have been performed to date by the previously designated individual.
- ☐ Some of the inspections/tests indicated herein have been performed by the previously designated individual, as indicated in the attached report.

I am aware of the additional sanctions imposed on false filings by §28-211.1.2 of the Administrative Code.

Name (please print)
Sam A. Ghaida

Signature Date
02-13-2015

P.E. / R.A. Seal *(apply seal, then sign and date over seal)*

8 Inspection Applicant's Certification of Partial Completion

☐ I have completed the items specified herein and certify that the all work performed substantially conforms to approved construction documents and has been performed in accordance with applicable provisions of the New York City Construction Codes and other designated rules and regulations, except as indicated in the attached report.

☐ **Withdrawal of Applicant:** I am withdrawing responsibility for the items of special/progress inspections and/or tests indicated herein and herewith submit the results or status of the work performed to date.

I am aware of the additional sanctions imposed on false filings by §28-211.1.2 of the Administrative Code.

Name (please print)

Signature Date

P.E. / R.A. Seal *(apply seal, then sign and date over seal)*

9 Inspection Applicant's Certification of Full Completion

All work performed substantially conforms to approved construction documents and has been performed in accordance with applicable provisions of the New York City Construction Codes and other designated rules and regulations.

I am aware of the additional sanctions imposed on false filings by §28-211.1.2 of the Administrative Code.

Name (please print)

Signature Date

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NYC Buildings

TR1: Technical Report
Statement of Responsibility

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1 Location Information *Required for all applications.*

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Work on Floor(s) OSP, 001, UDG

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Choose all that apply: ☐ Design Applicant *3A, 4A, 5* ☒ Special Inspections Applicant *3B-D, 6-9* ☐ Progress Inspections Applicant *4B-D, 6-9*

Last Name Ghaida First Name Sam Middle Initial A

Business Name Professional Solutions Group Inc. Business Telephone 718-505-8000

Business Address P.O. Box 3015 Business Fax 718-507-2224

City Astoria State NY Zip 11103 Mobile Telephone

License Type *choose one:* ☒ P.E. ☐ R.A. ☐ Other: License Number 071407

Special Inspection Agency Number 001756

3 Special Inspection Categories *Required for all applications, continued on page 2;* ■ *indicates report required.*

3A ← Identification of Requirement			3B Identification of Responsibilities	3C Certificate of Complete Inspections / Tests	3D Withdraw Responsibilities
Y N Special Inspections		Code/Section	Initial & Date	Initial & Date	Initial & Date
☐ ☒ Structural Steel – Welding		BC 1704.3.1			
☐ ☒ Structural Steel – Details		BC 1704.3.2			
☐ ☒ Structural Steel – High Strength Bolting		BC 1704.3.3			
☐ ☒ Structural Cold-Formed Steel		BC 1704.3.4			
☐ ☒ Concrete – Cast-In-Place		BC 1704.4			
☐ ☒ Concrete – Precast		BC 1704.4			
☐ ☒ Concrete – Prestressed		BC 1704.4			
☐ ☒ Masonry		BC 1704.5			
☐ ☒ Wood – Installation of High-Load Diaphragms		BC 1704.6.1			
☐ ☒ Wood – Installation of Metal-Plate-Connected Trusses		BC 1704.6.2			
☐ ☒ Wood – Installation of Prefabricated I-Joists		BC 1704.6.3			
☐ ☒ Subgrade Inspection		BC 1704.7.1			
☐ ☒ Subsurface Conditions – Fill Placement & In-Place Density		BC 1704.7.2 BC 1704.7.3			
☒ ☐ Subsurface Investigations (Borings/Test Pits)	■ TR4	BC 1704.7.4		04/24/2015	
☐ ☒ Deep Foundation Elements	■ TR5	BC 1704.8			
☐ ☒ Helical Piles (BB # 2014-020)	■ TR5H	BC 1704.8.5			
☐ ☒ Vertical Masonry Foundation Elements		BC 1704.9			
☐ ☒ Wall Panels, Curtain Walls, and Veneers	■	BC 1704.10			
☐ ☒ Sprayed fire-resistant materials		BC 1704.11			
☐ ☒ Mastic and Intumescent Fire-resistant Coatings		BC 1704.12			
☐ ☒ Exterior Insulation and Finish Systems (EIFS)		BC 1704.13			
☐ ☒ Alternative Materials - OTCR Buildings Bulletin # _____		BC 1704.14			
☐ ☒ Smoke Control Systems		BC 1704.15			
☐ ☒ Mechanical Systems		BC 1704.16			
☐ ☒ Fuel-Oil Storage and Fuel-Oil Piping Systems		BC 1704.17			
☐ ☒ High-Pressure Steam Piping (Welding)		BC 1704.18			
☐ ☒ High Temperature Hot Water Piping (Welding)		BC 1704.18			
☐ ☒ High-Pressure Fuel-Gas Piping (Welding)		BC 1704.19			
☐ ☒ Structural Stability – Existing Buildings		BC 1704.20.1			
☐ ☒ Excavations—Sheeting, Shoring, and Bracing		BC 1704.20.2			
☐ ☒ Underpinning		BC 1704.20.3 BC 1814			
☐ ☒ Mechanical Demolition		BC 1704.20.4			

6 Owner's Statement and Signature for Progress/Special Inspector *Required when inspection applicant identifies responsibilities.*

I have reviewed the information provided herein and, to the best of my knowledge and belief, attest to its accuracy. I approve the identification of the responsible inspector. Falsification of any statement is a misdemeanor and is punishable by a fine or imprisonment, or both. It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by a fine or imprisonment, or both. I understand that if I am found after hearing to have knowingly or negligently made a false statement or to have knowingly or negligently falsified or allowed to be falsified any certificate, form, signed statement, application, report or certification of the correction of a violation required under the provisions of this code or of a rule of any agency, I may be barred from filing further applications or documents with the Department.

Name (print) Title

Signature Date

7 Inspection Applicant's Identification of Responsibilities

Check all that apply below:

☐ For the **special inspections** indicated above in section 3, I certify that I am the principal/director of the special inspection agency accepting responsibility for conducting the inspections. I further certify that I have read the applicable sections of the New York City Construction Codes in connection with special inspections as well as 1 RCNY 101-06 Rule, which specifies the qualifications required for each inspection and that this agency meets those qualifications for each and every special inspection for which I/we take responsibility. I agree that both I and the agency will comply with all provisions of the New York City Construction Codes and the Rule. I am aware of the additional sanctions imposed on false filings by §28-211.1.2 of the Administrative Code.

☐ For the **progress inspections** indicated above in section 4, except energy code inspections on the TR1EN form, and/or **concrete test items** indicated in section 3, I assume the responsibility and I personally, or where permitted by the New York City Construction Codes, qualified personnel under my direct supervision, will perform the required inspections and tests on such forms and in such matter as the Department requires or requests. I am aware of the additional sanctions imposed on false filings by §28-211.1.2 of the Administrative Code.

Final Inspection:

☐ I will make final inspection of the construction work, including those inspections during its progress necessary to my certification upon final inspection that all work substantially conforms to approved construction documents and applicable laws and rules. I will confirm that the performance of progress inspections and other inspections has been documented before I report the work complete. As prescribed by 1 RCNY 101-10, I will perform the final inspection within 1 year from the expiration of the last valid permit of the work.

Upon completion of the work and within 30 days of my final inspection, I will file a certification attesting to the fact that all work was performed and completed in accordance with the approved construction documents, laws and rules, except as reported otherwise.

☐ **I understand that my failure to file a certification of completion or to notify the Department of my withdrawal of responsibilities within one year from expiration of the last valid permit may result in the loss of my privileges to file under Directives 2 and 14 of 1975 or issuance of a violation, or both. I am aware of the additional sanctions imposed on false filings by §28-211.1.2 of the Administrative Code.**

☐ **Change of Applicant:** I am a newly designated individual responsible for the items specified herein and I hereby state that:

- ☐ None of the inspections/tests indicated herein have been performed to date by the previously designated individual.
- ☐ Some of the inspections/tests indicated herein have been performed by the previously designated individual, as indicated in the attached report.

I am aware of the additional sanctions imposed on false filings by §28-211.1.2 of the Administrative Code.

Name (please print)

Signature Date

P.E. / R.A. Seal *(apply seal, then sign and date over seal)*

8 Inspection Applicant's Certification of Partial Completion

☐ I have completed the items specified herein and certify that the all work performed substantially conforms to approved construction documents and has been performed in accordance with applicable provisions of the New York City Construction Codes and other designated rules and regulations, except as indicated in the attached report.

☐ **Withdrawal of Applicant:** I am withdrawing responsibility for the items of special/progress inspections and/or tests indicated herein and herewith submit the results or status of the work performed to date.

I am aware of the additional sanctions imposed on false filings by §28-211.1.2 of the Administrative Code.

Name (please print)

Signature Date

P.E. / R.A. Seal *(apply seal, then sign and date over seal)*

9 Inspection Applicant's Certification of Full Completion

All work performed substantially conforms to approved construction documents and has been performed in accordance with applicable provisions of the New York City Construction Codes and other designated rules and regulations.

I am aware of the additional sanctions imposed on false filings by §28-211.1.2 of the Administrative Code.

Name (please print) Sam A. Ghaida

Signature Date 05-18-2015

P.E. / R.A. Seal *(apply seal, then sign and date over seal)*

NYC BUILDINGS

TR4: Technical Report
Soil Investigation

Must be typewritten.

Orient and affix BIS job number label here

1 Location Information *Required for all applications.*

House No(s) 131-10/18 Street Name AVERY AVENUE

Borough QUEENS Block 5076 Lot 61 BIN CB No. 407

Work on Floor(s) OSP, 001, UDG Apt/Condo No(s)

2 Applicant Information *Required for all applications.*

Last Name Ghaida First Name Sam Middle Initial A

Business Name Professional Solutions Group Inc. Business Telephone 718-505-8000

Business Address P.O. Box 3015 Business Fax 718-507-2224

City Astoria State NY Zip 11103 Mobile Telephone

E-Mail office@PSGNYC.com License Number 071407

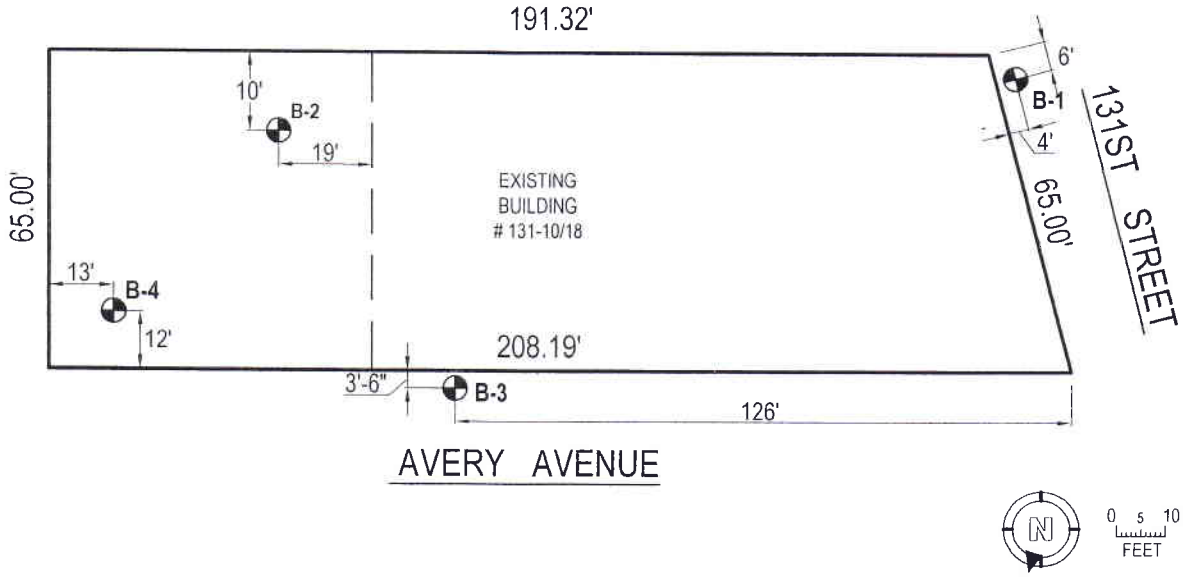
☒ P.E. ☐ R.A.

3 Required Borings / Test Pits *Required for all applications.*

Number of Test Pits as Required as per NYC Construction Codes:

4 Plot Diagram *Required for all applications.*

Draw in ink to indicate scale. Show building outline or extension and location of all borings and/or test pits by dimensions. Borings and/or test pits shall be distributed according to the NYC Construction Codes.



5 Test Report *Required for all applications.*

Date	Boring/ Test Pit #	Feet Below Curb	Soil Description	Class Number	Remarks
02/13/15	B-1	0.0 - 4.0	Sand-Silt-Gravel-Brick-Glass	7	Elevation: at the curb level +/-
		4.0 - 8.0	Very fine sand - Trace silt	6	
		8.0 - 15.5	Fine sand - Little silt - Trace gravel	6	
		15.5 - 24.0	Fine/med sand - Little silt	3b	
		24.0 - 32.0	Med sand - Some silt	3b	End of boring B-1
02/13/15	B-2	+2.0 - 6.0	Sand-Silt-Gravel-Brick-Glass	7	Elevation: 2' above curb level +/-
		6.0 - 14.0	Fine sand - Little silt - Cobbles	3a	
		14.0 - 16.0	Fine sand - Boulders	-	
		16.0 - 23.5	F/m sand - Little silt	3b	
		23.5 - 30.0	Medium sand - Some silt & clay	4b	End of boring B-2
04/02/15	B-3	see p.3	SEE PAGE 3	***	Continued on page 3
04/23/15	B-4	see p.3	SEE PAGE 3	***	Continued on page 3

6 Statements and Signatures *Required for all applications.*

I hereby state that the above information is correct and complete to the best of my knowledge and that the above tests were performed in accordance with all Administrative Code Provisions and Departmental Rules, Regulations and Directives.

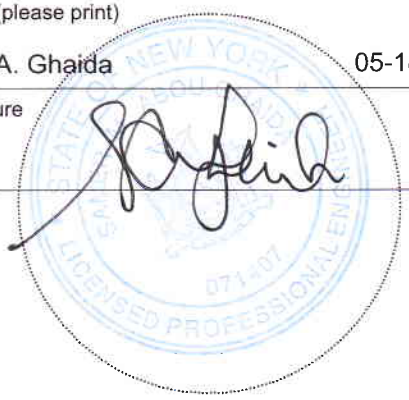
Falsification of any statement is a misdemeanor and is punishable by a fine or imprisonment, or both.

It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by imprisonment or fine or both.

Name (please print)

Sam A. Ghaida 05-18-2015

Signature Date



P.E. / R.A. Seal *(apply seal, then sign and date over seal)*

Approvals - Internal Use Only

Examined and Recommended for Approval		Approved	
Examiner Name		Borough Commissioner Signature	Date
Signature	Date		

5 Test Report *Required for all applications.*

Date	Boring/ Test Pit #	Feet Below Curb	Soil Description	Class Number	Remarks
04/02/15	B-3	0.0 - 5.0	Sand - Silt - Gravel - Asphalt	7	Elevation: at the curb level +/-
		5.0 - 12.0	Fine sand - Little silt - Trace gravel	3b	
		12.0 - 22.0	Fine/med sand - Trace silt	3b	
		22.0 - 33.0	Med sand - Trace silt	3b	
		33.0 - 70.0	Clayey fine sand	5b	
		70.0 - 88.0	Clayey silt	5b	
		88.0 - 102.0	Clayey silt	5a	End of boring B-3
04/23/15	B-4	+3.0 - 6.0	Sand - Silt - Gravel - Brick - Glass	7	Elevation: +3' above curb +/-
		6.0 - 14.0	Fine sand - Little silt - Little gravel	3b	
		14.0 - 24.0	Fine/med sand - Little silt	3b	
		24.0 - 29.0	Med sand - Some clay & silt	4b	End of boring B-4
***	***	***	******	***	END OF REPORT
					See page 2 for borings B-1, B-2

6 Statements and Signatures *Required for all applications.*

I hereby state that the above information is correct and complete to the best of my knowledge and that the above tests were performed in accordance with all Administrative Code Provisions and Departmental Rules, Regulations and Directives.

Falsification of any statement is a misdemeanor and is punishable by a fine or imprisonment, or both.

It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by imprisonment or fine or both.

Name (please print)

Sam A. Ghaida — 05-18-2015

Signature — Date



P.E. / R.A. Seal *(apply seal, then sign and date over seal)*

Approvals - Internal Use Only

Examined and Recommended for Approval		Approved	
Examiner Name		Borough Commissioner Signature	Date
Signature	Date		

APPENDIX D – Groundwater Monitoring Well Installation Logs

& Associates

200 Riverfront Boulevard, Elmwood Park, NJ 07407 ● Tel: 201-791-0075 ● Fax: 201-791-4533

OBSERVATION WELL INSTALLATION LOG

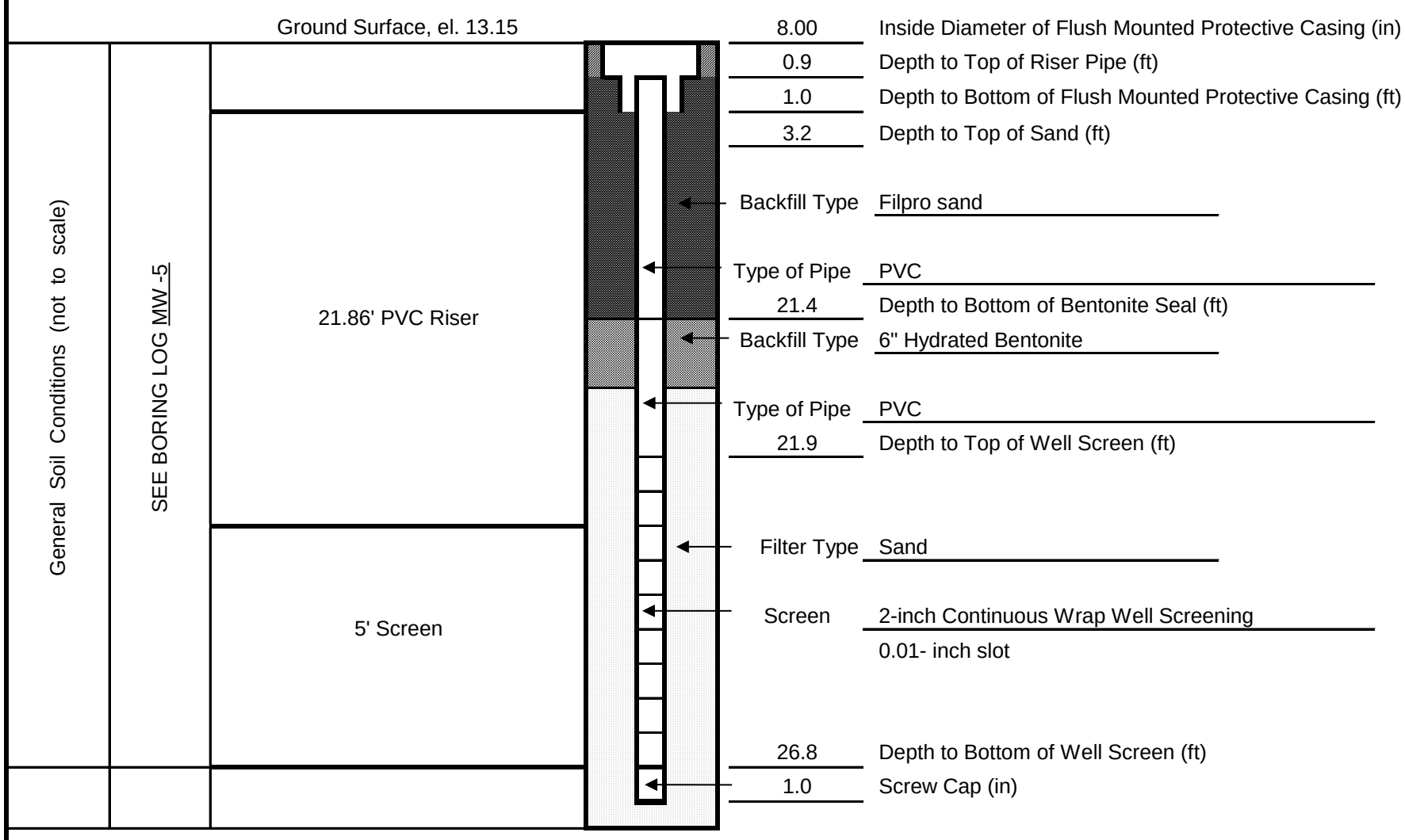
PROJECT: 131-24 Avery Ave
LOCATION: 131-24 Avery Ave, Queens, NY 11235

WELL NO. **A-MW-01**

Well No. A-MW-01
Installation Date: 10/24/2019
Boring Company PAL
Foreman:
Inspector: CH
Project #: 17116

Groundwater Readings in Well *(measured in feet below top of riser pipe)*

Date	Time	Reading(ft)	Remarks
10/24/2019	800	13.15	PID reading = 0.0



Notes: PID = 0.0 PPM

Well Development Information:

Time Start: 13:10 Date: 10/25/2019
Time End: 14:30 Date: 10/25/2019
Inspector: CH

& Associates

200 Riverfront Boulevard, Elmwood Park, NJ 07407 ● Tel: 201-791-0075 ● Fax: 201-791-4533

OBSERVATION WELL INSTALLATION LOG

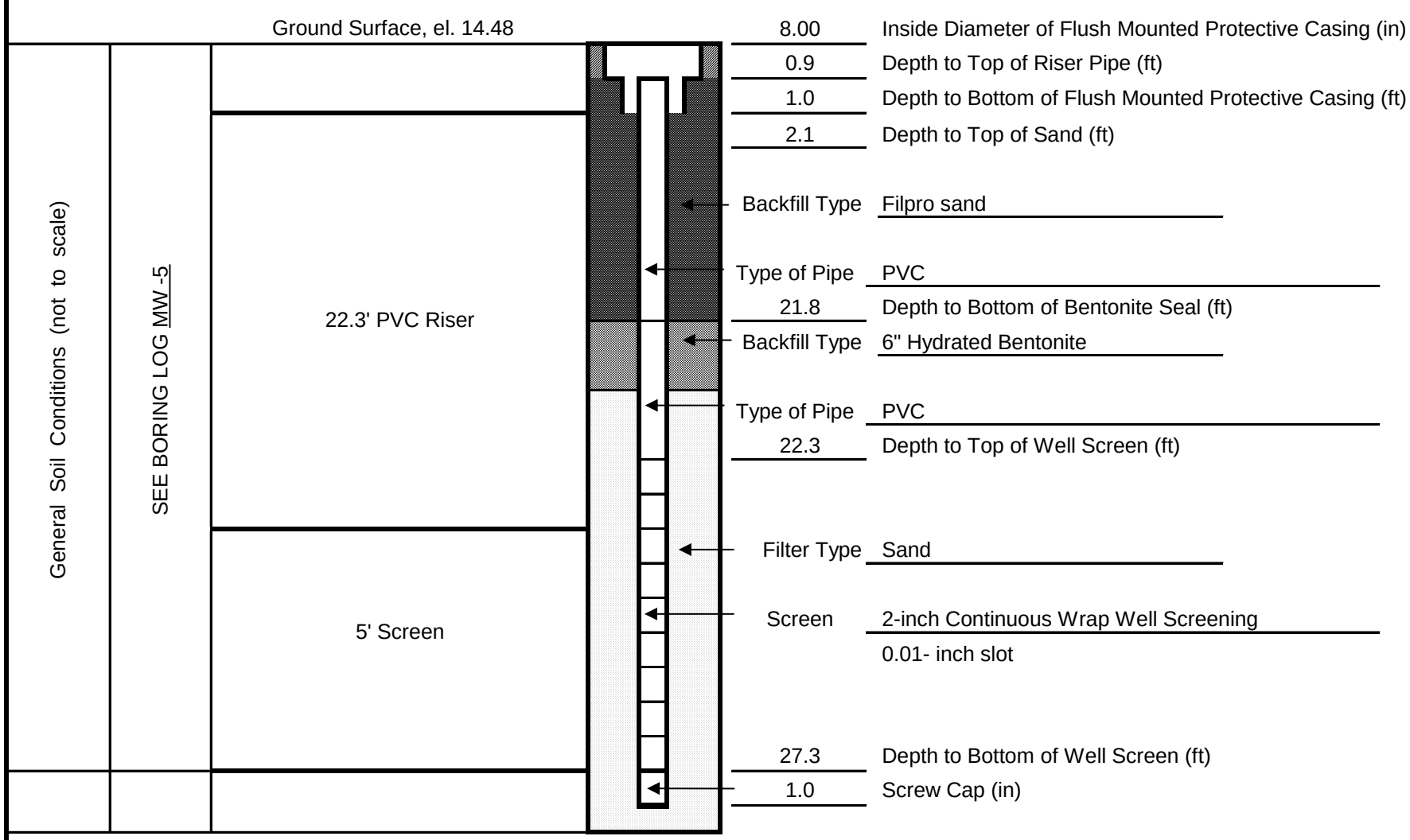
PROJECT: 131-24 Avery Ave
LOCATION: 131-24 Avery Ave, Queens, NY 11235

WELL NO.
A-MW-02

Well No. A-MW-02
Installation Date: 10/24/2019
Boring Company PAL
Foreman:
Inspector: CH
Project #: 17116

Groundwater Readings in Well *(measured in feet below top of riser pipe)*

Date	Time	Reading(ft)	Remarks
10/24/2019	800	16.75	PID reading = 0.0



Notes: PID = 0.0 PPM

Well Development Information:

Time Start: 13:10 Date: 10/24/2019
Time End: 14:30 Date: 10/24/2019
Inspector: CH

& Associates

200 Riverfront Boulevard, Elmwood Park, NJ 07407 ● Tel: 201-791-0075 ● Fax: 201-791-4533

OBSERVATION WELL INSTALLATION LOG

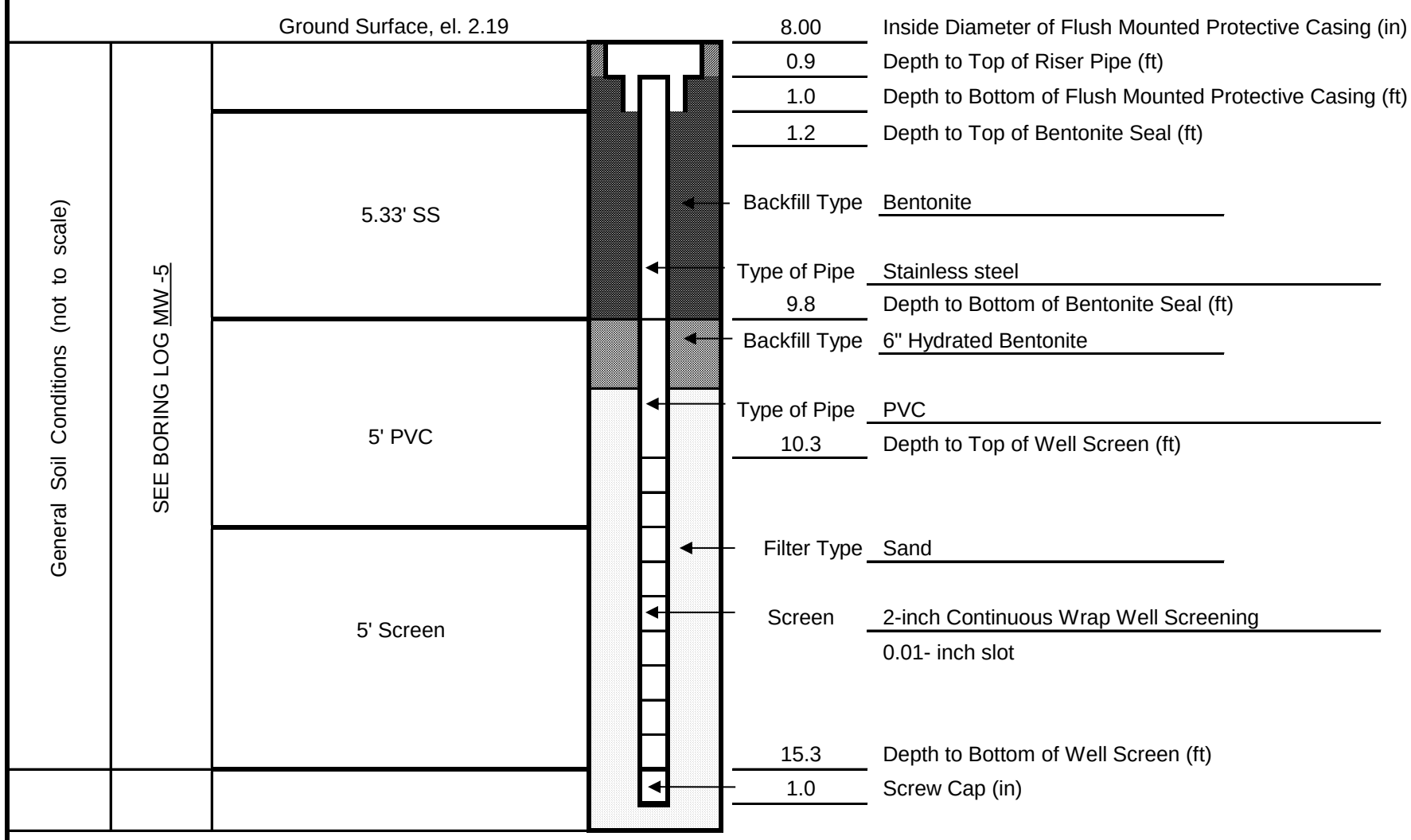
PROJECT: 131-24 Avery Ave
LOCATION: 131-24 Avery Ave, Queens, NY 11235

WELL NO.
A-MW-03

Well No. A-MW-3
Installation Date: 10/25/2019
Boring Company PAL
Foreman:
Inspector: CH
Project #: 17116

Groundwater Readings in Well *(measured in feet below top of riser pipe)*

Date	Time	Reading(ft)	Remarks
10/25/2019	800	3.78	PID reading = 0.0



Notes: PID = 0.0 PPM

Well Development Information:

Time Start: 13:10 Date: 10/25/2019
Time End: 14:30 Date: 10/25/2019
Inspector: CH

& Associates

200 Riverfront Boulevard, Elmwood Park, NJ 07407 ● Tel: 201-791-0075 ● Fax: 201-791-4533

OBSERVATION WELL INSTALLATION LOG

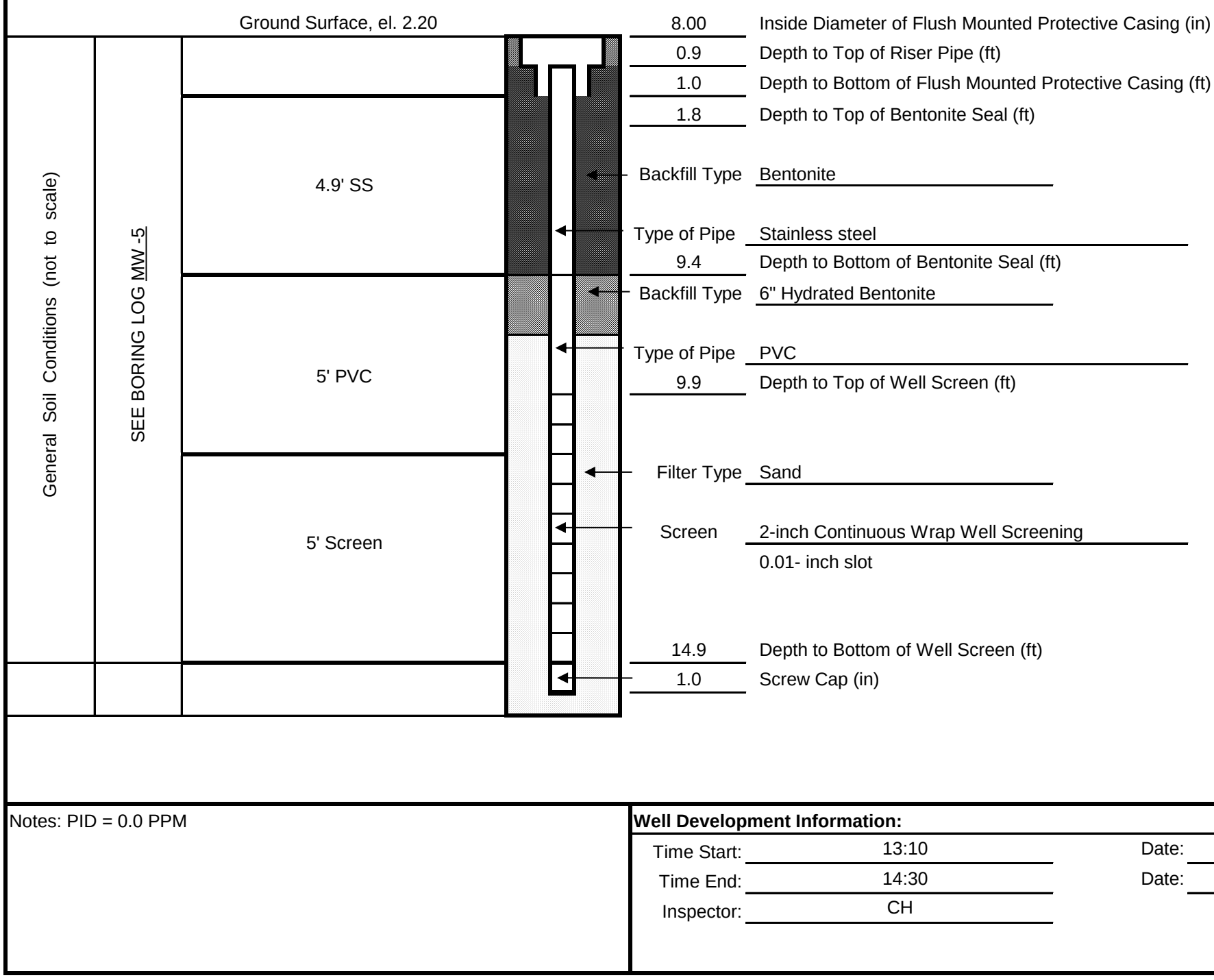
PROJECT: 131-24 Avery Ave
LOCATION: 131-24 Avery Ave, Queens, NY 11235

WELL NO.
A-MW-04

Well No. A-MW-4
Installation Date: 10/25/2019
Boring Company PAL
Foreman:
Inspector: CH
Project #: 17116

Groundwater Readings in Well *(measured in feet below top of riser pipe)*

Date	Time	Reading(ft)	Remarks
10/25/2019	800	3.55	PID reading = 0.0



Notes: PID = 0.0 PPM

Well Development Information:

Time Start: 13:10 Date: 10/25/2019
Time End: 14:30 Date: 10/25/2019
Inspector: CH

& Associates

200 Riverfront Boulevard, Elmwood Park, NJ 07407 ● Tel: 201-791-0075 ● Fax: 201-791-4533

OBSERVATION WELL INSTALLATION LOG

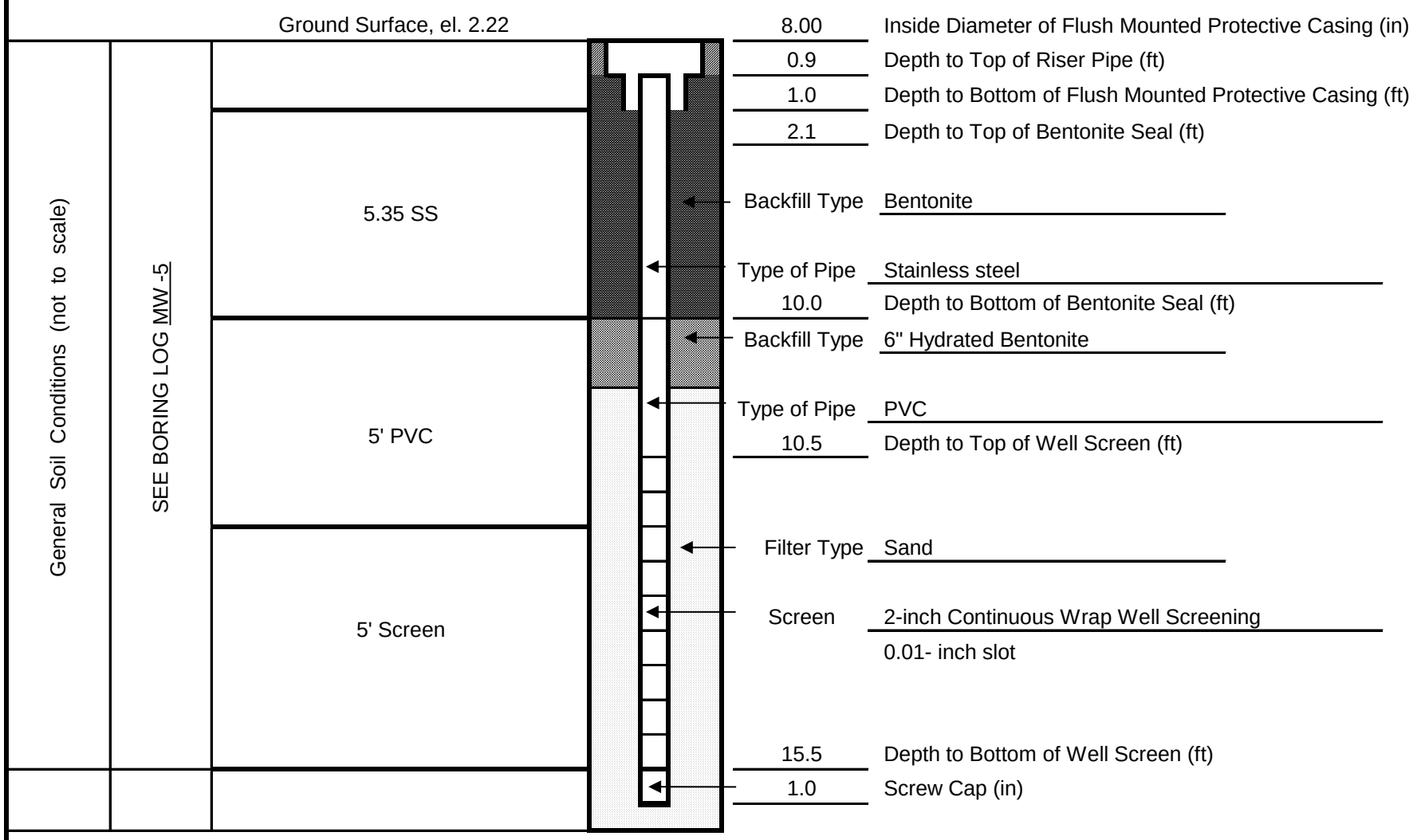
PROJECT: 131-24 Avery Ave
LOCATION: 131-24 Avery Ave, Queens, NY 11235

WELL NO.
A-MW-05

Well No. A-MW-5
Installation Date: 10/25/2019
Boring Company PAL
Foreman:
Inspector: CH
Project #: 17116

Groundwater Readings in Well *(measured in feet below top of riser pipe)*

Date	Time	Reading(ft)	Remarks
10/25/2019	800	5.35	PID reading = 0.0



Notes: PID = 0.0 PPM

Well Development Information:

Time Start: 13:10 Date: 10/25/2019
Time End: 14:30 Date: 10/25/2019
Inspector: CH

& Associates

200 Riverfront Boulevard, Elmwood Park, NJ 07407 ● Tel: 201-791-0075 ● Fax: 201-791-4533

OBSERVATION WELL INSTALLATION LOG

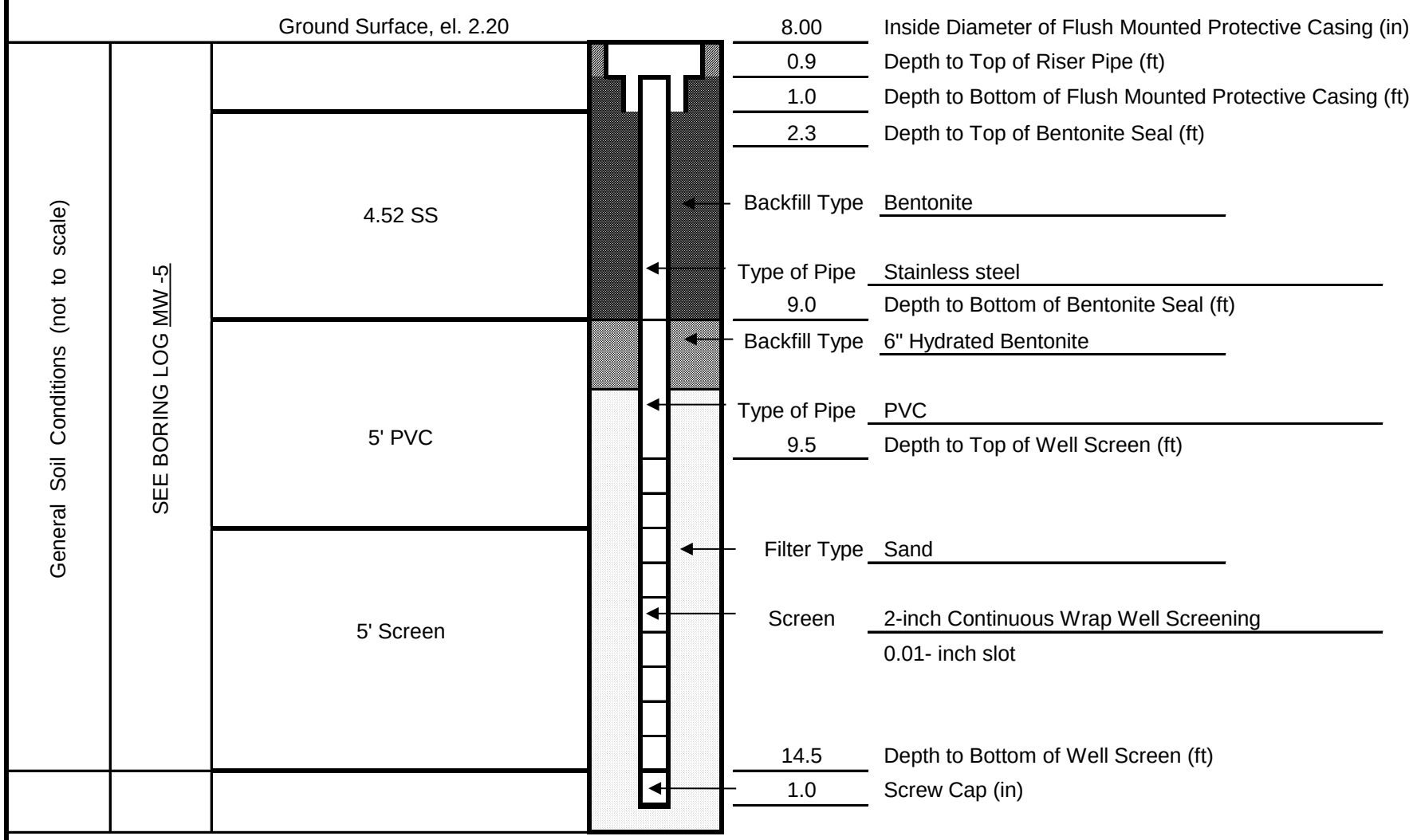
PROJECT: 131-24 Avery Ave
LOCATION: 131-24 Avery Ave, Queens, NY 11235

WELL NO.
A-MW-06

Well No. A-MW-6
Installation Date: 10/25/2019
Boring Company PAL
Foreman:
Inspector: CH
Project #: 17116

Groundwater Readings in Well *(measured in feet below top of riser pipe)*

Date	Time	Reading(ft)	Remarks
10/25/2019	800	4.08	PID reading = 0.0



Notes: PID = 0.0 PPM

Well Development Information:

Time Start: 13:10 Date: 10/25/2019
Time End: 14:30 Date: 10/25/2019
Inspector: CH

& Associates

200 Riverfront Boulevard, Elmwood Park, NJ 07407 ● Tel: 201-791-0075 ● Fax: 201-791-4533

OBSERVATION WELL INSTALLATION LOG

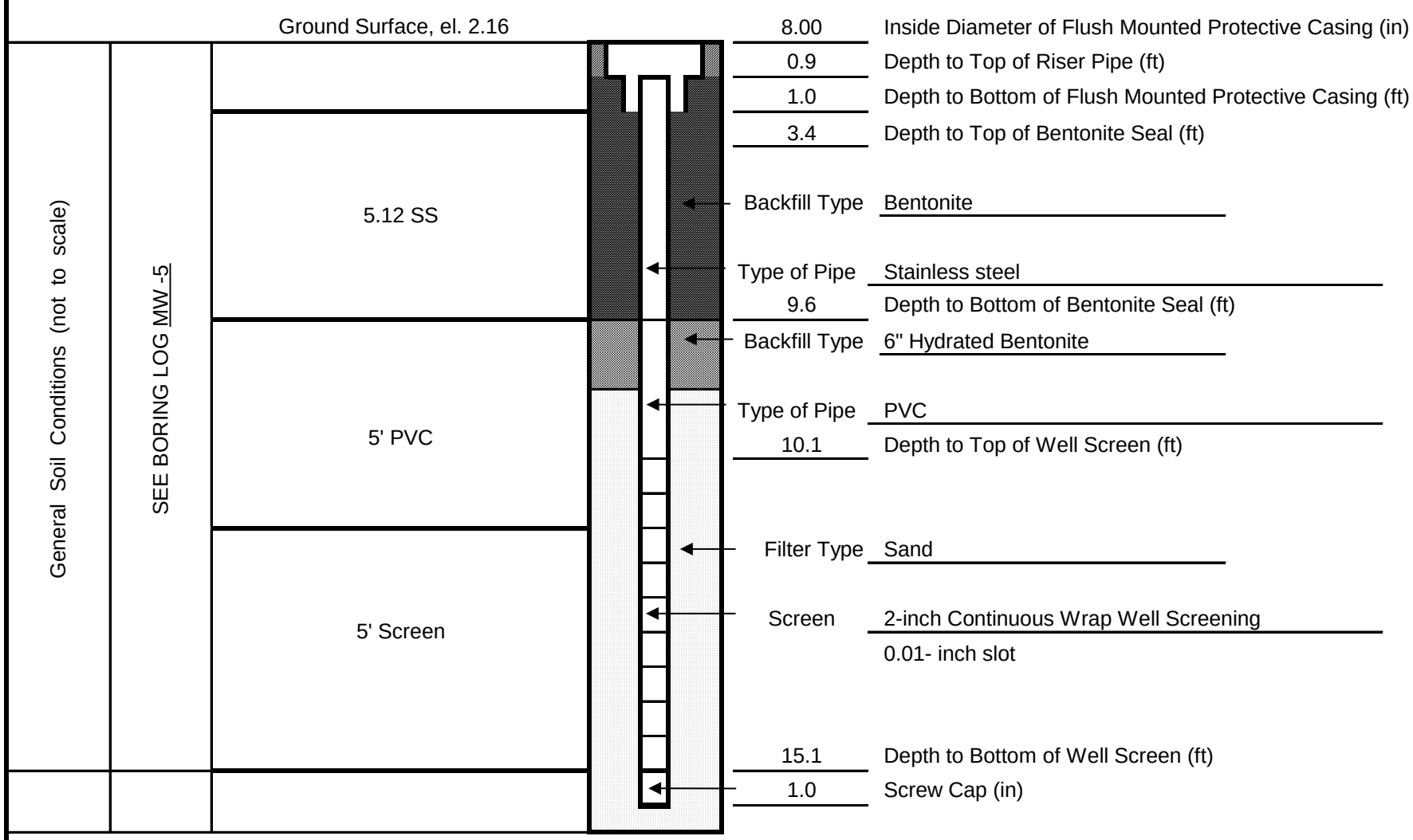
PROJECT: 131-24 Avery Ave
LOCATION: 131-24 Avery Ave, Queens, NY 11235

WELL NO.
A-MW-07

Well No. A-MW-7
Installation Date: 10/25/2019
Boring Company PAL
Foreman:
Inspector: CH
Project #: 17116

Groundwater Readings in Well *(measured in feet below top of riser pipe)*

Date	Time	Reading(ft)	Remarks
10/25/2019	800	4.63	PID reading = 0.0



Notes: PID = 0.0 PPM

Well Development Information:

Time Start: 13:10 Date: 10/25/2019
Time End: 14:30 Date: 10/25/2019
Inspector: CH

& Associates

200 Riverfront Boulevard, Elmwood Park, NJ 07407 ● Tel: 201-791-0075 ● Fax: 201-791-4533

OBSERVATION WELL INSTALLATION LOG

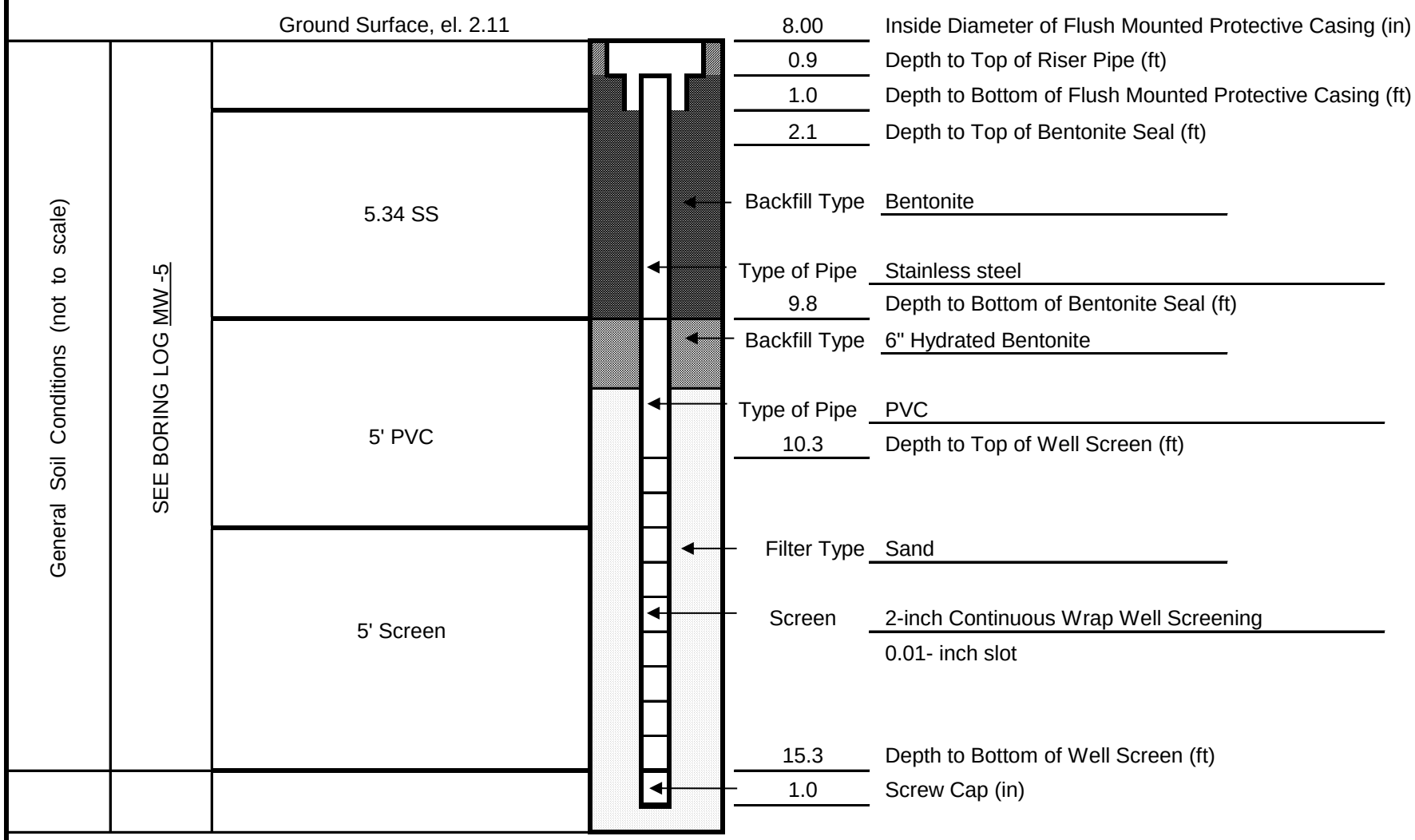
PROJECT: 131-24 Avery Ave
LOCATION: 131-24 Avery Ave, Queens, NY 11235

WELL NO.
A-MW-08

Well No. A-MW-8
Installation Date: 10/25/2019
Boring Company PAL
Foreman:
Inspector: CH
Project #: 17116

Groundwater Readings in Well *(measured in feet below top of riser pipe)*

Date	Time	Reading(ft)	Remarks
10/25/2019	800	4.74	PID reading = 0.0



Notes: PID = 0.0 PPM

Well Development Information:

Time Start: 13:10 Date: 10/25/2019
Time End: 14:30 Date: 10/25/2019
Inspector: CH

& Associates

200 Riverfront Boulevard, Elmwood Park, NJ 07407 ● Tel: 201-791-0075 ● Fax: 201-791-4533

OBSERVATION WELL INSTALLATION LOG

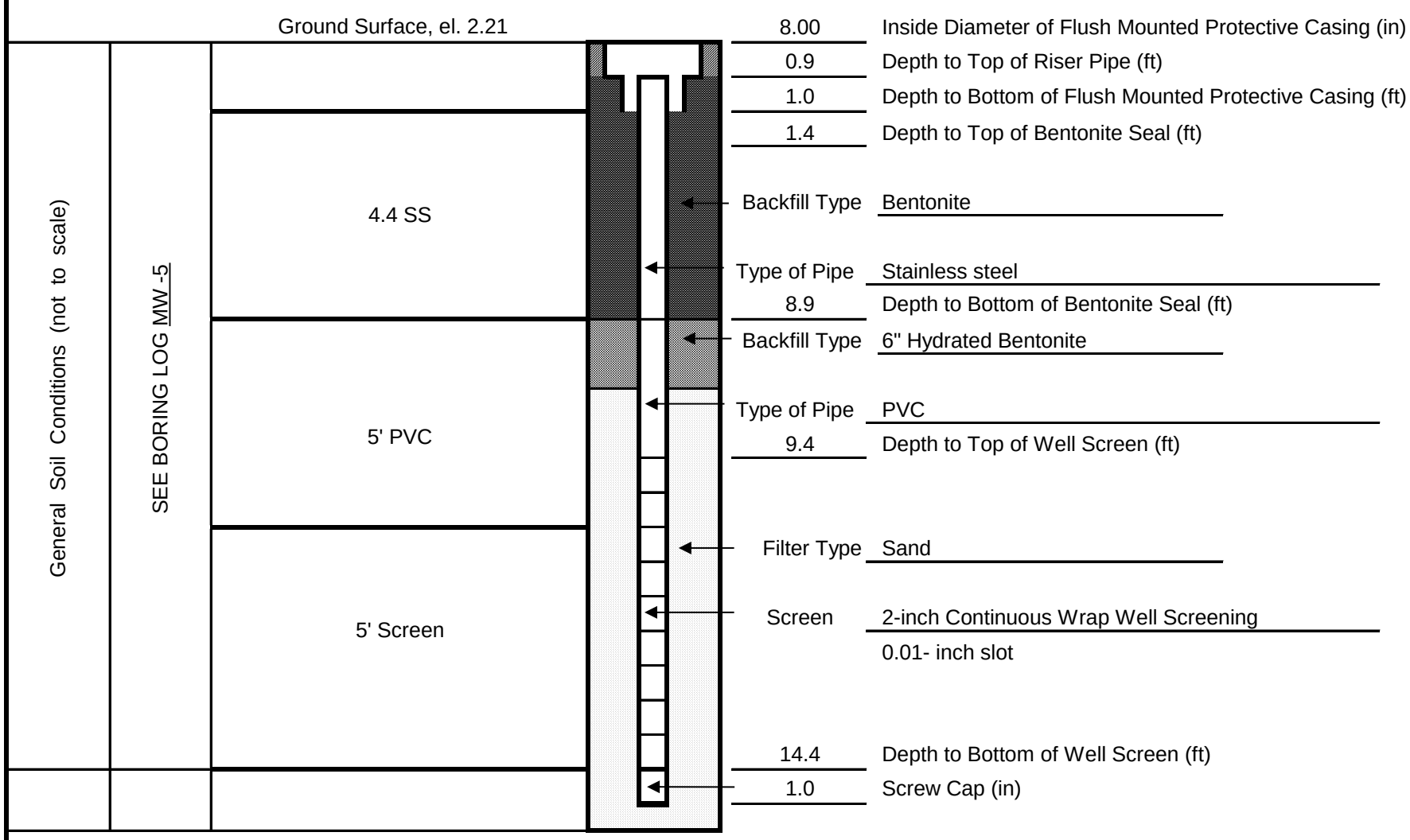
PROJECT: 131-10 Avery Ave
LOCATION: 131-10 Avery Ave, Queens, NY 11235

WELL NO.
A-MW-09

Well No. A-MW-9
Installation Date: 10/25/2019
Boring Company PAL
Foreman:
Inspector: CH
Project #: 17116

Groundwater Readings in Well *(measured in feet below top of riser pipe)*

Date	Time	Reading(ft)	Remarks
10/25/2019	800	5.4	PID reading = 0.0



Notes: PID = 0.0 PPM

Well Development Information:

Time Start: 13:10 Date: 10/25/2019
Time End: 14:30 Date: 10/25/2019
Inspector: CH

APPENDIX E – Remedial Investigation Sample Results Figure and Table

Table 2
Volatile Organic Compounds in Soil Samples
131-18 and 131-24 Avery Avenue, Queens

| Sample ID | NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives | NYSDEC Part 375 Restricted Use Soil Cleanup Objectives - Restricted Residential | SB-1 (4'-6') | | SB-2 (13'-15') | | SB-2-Fill (4'-6') | | SB-1 0'-2' | | SB-1 15'-17' | | SB-2 0'-2' | | SB-2 15'-17' | | SB-3 0'-2' | | SB-3 4'-6' | | SB-3 15'-17' | | SB-4 0'-2' | | SB-4 15'-17' | | SB-5 0'-2' | | SB-5 13'-15' | | SB-6 0'-2' | | SB-6 4'-6' | | SB-6 15'-17' | | SB-7 0'-2' | | SB-7 15'-17' | | SB-8 0'-2' | | SB-8 15'-17' | | SB-9 0'-2' | | SB-9 4'-6' | | SB-10 0'-2' | | SB-10 4'-6' | | SB-11 0'-2' | | SB-11 4'-6' | | SB-12 0'-2' | | SB-12 4'-6' | | SB-13 0'-2' | | SB-13 15'-17' | | SB-14 0'-2' | | SB-14 15'-17' | | SB-15 0'-2' | | SB-15 15'-17' | |
|---|---|---

Table 3
Semi-Volatile Organic Compounds in Soil Samples
131-18 and 131-24 Avery Avenue, Queens

Sample ID	NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives	NYSDEC Part 375 Restricted Use Soil Cleanup Objectives - Restricted Residential	SB-1 (4'-6')	SB-2 (13'-15')	SB-2-Fill (4'-6')	SB-1 0'-2'	SB-1 15'-17'	SB-2 0'-2'	SB-2 15'-17'	SB-3 0'-2'	SB-3 4'-6'	SB-3 15'-17'	SB-4 0'-2'	SB-4 15'-17'	SB-5 0'-2'	SB-5 13'-15'	SB-6 0'-2'	SB-6 4'-6'	SB-6 15'-17'	SB-7 0'-2'	SB-7 15'-17'	SB-8 0'-2'	SB-8 15'-17'	SB-13 0'-2'	SB-13 15'-17'	SB-14 0'-2'	SB-14 15'-17'	SB-15 0'-2'	SB-15 15'-17'
Sample Depth (feet)			14E0963-01	14E0963-02	14E0963-03	14J1078-01	14J1078-02	14J1078-03	14J1078-04	14J1199-01	14J1199-02	14J1199-03	14J1199-06	14J1199-07	14J1199-04	14J1199-05	14J1193-01	14J1193-02	14J1193-03	14J1193-06	14J1193-07	14J1193-04	14J1193-05	14J1187-05	14J1187-06	14J1187-01	14J1187-02	14J1187-03	14J1187-04
Lab Sample ID			1	1	1	2	1	1	1	2	1	1	1	5	5	1	1	1	1	5	1	5	1	5	1	2	1	1	1
Dilution Factor			5/21/2014	5/21/2014	5/21/2014	10/27/2014	10/27/2014	10/27/2014	10/27/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/29/2014	10/29/2014	10/29/2014	10/29/2014	10/29/2014	10/29/2014
Sampling Date			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Matrix			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Unit Measure																													
1,1'-Biphenyl	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	SB-3 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
1,2,4,5-Tetrachlorobenzene	NC	NC	NT	NT	NT	0.17 ND	0.085 ND	0.087 ND	0.084 ND	0.17 ND	0.094 ND	0.084 ND	0.085 ND	0.44 ND	0.44 ND	0.085 ND	0.44 ND	0.092 ND	0.090 ND	0.42 ND	0.091 ND	0.44 ND	0.091 ND	0.22 ND	0.087 ND	0.088 ND	0.085 ND	0.087 ND	0.090 ND
1,2,4-Trichlorobenzene	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
1,2-Dichlorobenzene	1.1	100	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
1,2-Diphenylhydrazine (as Azobenzene)	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
1,3-Dichlorobenzene	2.4	49	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
1,4-Dichlorobenzene	1.8	13	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
2,3,4,6-Tetrachlorophenol	NC	NC	NT	NT	NT	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.22 ND	0.044 ND	0.088 ND	0.042 ND	0.043 ND	0.045 ND
2,4,5-Trichlorophenol	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.23 JD	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
2,4,6-Trichlorophenol	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
2,4-Dichlorophenol	NC	NC	0.13 ND	0.13 ND	0.26 ND	0.17 ND	0.085 ND	0.087 ND	0.084 ND	0.17 ND	0.094 ND	0.084 ND	0.085 ND	0.44 ND	0.44 ND	0.085 ND	0.44 ND	0.092 ND	0.090 ND	0.42 ND	0.091 ND	0.44 ND	0.091 ND	0.11 ND	0.087 ND	0.044 ND	0.085 ND	0.087 ND	0.090 ND
2,4-Dimethylphenol	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
2,4-Dinitrophenol	NC	NC	0.26 ND	0.25 ND	0.52 ND	0.35 ND	0.17 ND	0.17 ND	0.17 ND	0.34 ND	0.19 ND	0.17 ND	0.17 ND	0.87 ND	0.88 ND	0.17 ND	0.87 ND	0.18 ND	0.18 ND	0.84 ND	0.18 ND	0.87 ND	0.18 ND	0.22 ND	0.17 ND	0.088 ND	0.17 ND	0.17 ND	0.18 ND
2,4-Dinitrotoluene	NC	NC	0.13 ND	0.13 ND	0.26 ND	0.17 ND	0.085 ND	0.087 ND	0.084 ND	0.17 ND	0.094 ND	0.084 ND	0.085 ND	0.44 ND	0.44 ND	0.085 ND	0.44 ND	0.092 ND	0.090 ND	0.42 ND	0.091 ND	0.44 ND	0.091 ND	0.11 ND	0.087 ND	0.044 ND	0.085 ND	0.087 ND	0.090 ND
2,6-Dinitrotoluene	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
2-Chloronaphthalene	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
2-Chlorophenol	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
2-Methylnaphthalene	NC	NC	0.066 ND	0.41	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.24 JD	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
2-Methylphenol	0.33	100	0.13 ND	0.13 ND	0.26 ND	0.17 ND	0.085 ND	0.087 ND	0.084 ND	0.17 ND	0.094 ND	0.084 ND	0.085 ND	0.44 ND	0.44 ND	0.085 ND	0.44 ND	0.092 ND	0.090 ND	0.42 ND	0.091 ND	0.44 ND	0.091 ND	0.11 ND	0.087 ND	0.044 ND	0.085 ND	0.087 ND	0.090 ND
2-Nitroaniline	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.22 ND	0.044 ND	0.088 ND	0.042 ND	0.043 ND	0.045 ND
2-Nitrophenol	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
3- & 4-Methylphenols	NC	NC	0.13 ND	0.13 ND	0.26 ND	0.17 ND	0.085 ND	0.087 ND	0.084 ND	0.17 ND	0.094 ND	0.084 ND	0.085 ND	0.44 ND	0.44 ND	0.085 ND	0.44 ND	0.092 ND	0.090 ND	0.42 ND	0.091 ND	0.44 ND	0.091 ND	0.11 ND	0.087 ND	0.044 ND	0.085 ND	0.087 ND	0.090 ND
3,3'-Dichlorobenzidine	NC	NC	0.26 ND	0.25 ND	0.52 ND	0.35 ND	0.17 ND	0.17 ND	0.17 ND	0.34 ND	0.19 ND	0.17 ND	0.17 ND	0.87 ND	0.88 ND	0.17 ND	0.87 ND	0.18 ND	0.18 ND	0.84 ND	0.18 ND	0.87 ND	0.18 ND	0.11 ND	0.17 ND	0.044 ND	0.17 ND	0.17 ND	0.18 ND
3-Nitroaniline	NC	NC	0.13 ND	0.13 ND	0.26 ND	0.17 ND	0.085 ND	0.087 ND	0.084 ND	0.17 ND	0.094 ND	0.084 ND	0.085 ND	0.44 ND	0.44 ND	0.085 ND	0.44 ND	0.092 ND	0.090 ND	0.42 ND	0.091 ND	0.44 ND	0.091 ND	0.22 ND	0.087 ND	0.088 ND	0.085 ND	0.087 ND	0.090 ND
4,6-Dinitro-2-methylphenol	NC	NC	0.13 ND	0.13 ND	0.26 ND	0.17 ND	0.085 ND	0.087 ND	0.084 ND	0.17 ND	0.094 ND	0.084 ND	0.085 ND	0.44 ND	0.44 ND	0.085 ND	0.44 ND	0.092 ND	0.090 ND	0.42 ND	0.091 ND	0.44 ND	0.091 ND	0.22 ND	0.087 ND	0.088 ND	0.085 ND	0.087 ND	0.090 ND
4-Bromophenyl phenyl ether	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
4-Chloro-3-methylphenol	NC	NC	NT	NT	NT	0.17 ND	0.085 ND	0.087 ND	0.084 ND	0.17 ND	0.094 ND	0.084 ND	0.085 ND	0.44 ND	0.44 ND	0.085 ND	0.44 ND	0.092 ND	0.090 ND	0.42 ND	0.091 ND	0.44 ND	0.091 ND	0.11 ND	0.087 ND	0.044 ND	0.085 ND	0.087 ND	0.090 ND
4-Chloroaniline	NC	NC	NT	NT	NT	0.17 ND	0.085 ND	0.087 ND	0.084 ND	0.17 ND	0.094 ND	0.084 ND	0.085 ND	0.44 ND	0.44 ND	0.085 ND	0.44 ND	0.092 ND	0.090 ND	0.42 ND	0.091 ND	0.44 ND	0.091 ND	0.11 ND	0.087 ND	0.044 ND	0.085 ND	0.087 ND	0.090 ND
4-Chlorophenyl phenyl ether	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
4-Nitroaniline	NC	NC	0.13 ND	0.13 ND	0.26 ND	0.17 ND	0.085 ND	0.087 ND	0.084 ND	0.17 ND	0.094 ND	0.084 ND	0.085 ND	0.44 ND	0.44 ND	0.085 ND	0.44 ND	0.092 ND	0.090 ND	0.42 ND	0.091 ND	0.44 ND	0.091 ND	0.22 ND	0.087 ND	0.088 ND	0.085 ND	0.087 ND	0.090 ND
4-Nitrophenol	NC	NC	0.13 ND	0.13 ND	0.26 ND	0.17 ND	0.085 ND	0.087 ND	0.084 ND	0.17 ND	0.094 ND	0.084 ND	0.085 ND	0.44 ND	0.44 ND	0.085 ND	0.44 ND	0.092 ND	0.090 ND	0.42 ND	0.091 ND	0.44 ND	0.091 ND	0.22 ND	0.087 ND	0.088 ND	0.085 ND	0.087 ND	0.090 ND
Acenaphthene	20	100	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Acenaphthylene	100	100	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Acetophenone	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Aniline	NC	NC	NT	NT	NT	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.45 ND	0.044 ND	0.18 ND	0.042 ND	0.043 ND	0.045 ND
Anthracene	100	100	0.066 ND	0.063 ND	0.13 ND	0.096 JD	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 JD	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Atrazine	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Benzaldehyde	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Benzidine	NC	NC	0.26 ND	0.25 ND	0.52 ND	0.35 ND	0.17 ND	0.17 ND	0.17 ND	0.34 ND	0.19 ND	0.17 ND	0.17 ND	0.87 ND	0.88 ND	0.17 ND	0.87 ND	0.18 ND	0.18 ND	0.84 ND	0.18 ND	0.87 ND	0.18 ND	0.45 ND	0.17 ND	0.18 ND	0.17 ND	0.17 ND	0.18 ND
Benzo(a)anthracene	1	1	0.10 J	0.063 ND	0.38 JD	0.27 JD	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	**1.20** D	0.24 JD	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.62 JD	0.046 ND	0.40 JD	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Benzo(a)pyrene	1	1	0.11 J	0.063 ND	0.35 JD	0.12 JD	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.83 JD	0.23 JD	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.40 JD	0.046 ND	0.24 JD	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Benzo(b)fluoranthene	1	1	0.11 J	0.063 ND	0.41 JD	0.17 JD	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.47 JD	0.28 JD	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.73 JD	0.046 ND	0.22 JD	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Benzo(g,h,i)perylene	100	100	0.13 ND	0.13 ND	0.26 ND	0.17 ND	0.085 ND	0.087 ND	0.084 ND	0.17 ND	0.094 ND	0.084 ND	0.085 ND	0.44 ND	0.44 ND	0.085 ND	0.44 ND	0.092 ND	0.090 ND	0.90 D	0.091 ND	0.44 ND	0.091 ND	0.11 ND	0.087 ND	0.044 ND	0.085 ND	0.087 ND	0.090 ND
Benzo(k)fluoranthene	0.8	3.9	0.12 J	0.063 ND	0.42 JD	0.19 JD	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.62 JD	0.24 JD	0.043 ND	0.22 ND	0.046 ND	0.045 ND	**0.89** D	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Benzoic acid	NC	NC	0.18 ND	0.17 ND	0.36 ND	0.24 ND	0.12 ND	0.12 ND	0.11 ND	0.23 ND	0.13 ND	0.11 ND	0.12 ND	0.59 ND	0.60 ND	0.12 ND	0.59 ND	0.13 ND	0.12 ND	0.58 ND	0.12 ND	0.60 ND	0.12 ND	0.11 ND	0.12 ND	0.044 ND	0.12 ND	0.12 ND	0.12 ND
Benzyl alcohol	NC	NC	NT	NT	NT	0.17 ND	0.085 ND	0.087 ND	0.084 ND	0.17 ND	0.094 ND	0.084 ND	0.085 ND	0.44 ND	0.44 ND	0.085 ND	0.44 ND	0.092 ND	0.090 ND	0.42 ND	0.091 ND	0.44 ND	0.091 ND	0.11 ND	0.087 ND	0.044 ND	0.085 ND	0.087 ND	0.090 ND
Benzyl butyl phthalate	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.22 JD	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.23 JD	0.26 JD	0.11 J	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Bis(2-chloroethoxy)methane	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Bis(2-chloroethyl)ether	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Bis(2-chloroisopropyl)ether	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Bis(2-ethylhexyl)phthalate	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Caprolactam	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.22 ND	0.044 ND	0.088 ND	0.042 ND	0.043 ND	0.045 ND
Carbazole	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Chrysene	1	3.9	0.11 J	0.063 ND	0.38 JD	0.39 D	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	**1.97** D	0.46 JD	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.72 JD	0.046 ND	0.43 JD	0.046 ND	0.11 ND	0.044 ND	0.063 JD	0.042 ND	0.046 J	0.045 ND
Dibenzo(a,h)anthracene	0.33	0.33	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	**0.39** JD	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Dibenzofuran	7	59	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Diethyl phthalate	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Dimethyl phthalate	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Di-n-butyl phthalate	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.13 JD	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Di-n-octyl phthalate	NC	NC	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0.21 ND	0.046 ND	0.22 ND	0.046 ND	0.11 ND	0.044 ND	0.044 ND	0.042 ND	0.043 ND	0.045 ND
Fluoranthene	100	100	0.17 J	0.063 ND	0.70 D	0.57 D	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	1.81 D	0.89 D	0.043 ND	0.25 JD	0.046 ND	0.045 ND	1.16 D	0.046 ND	0.90 D	0.046 ND	0.16 ND	0.044 ND	0.11 D	0.042 ND	0.089 J	0.045 ND
Fluorene	30	100	0.066 ND	0.063 ND	0.13 ND	0.087 ND	0.042 ND	0.043 ND	0.042 ND	0.086 ND	0.047 ND	0.042 ND	0.043 ND	0.22 ND	0.22 ND	0.043 ND	0.22 ND	0.046 ND	0.045 ND	0

Table 4
Pesticides and PCBs in Soil Samples
131-18 and 131-24 Avery Avenue, Queens

Sample ID	NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives	NYSDEC Part 375 Restricted Use Soil Cleanup Objectives - Restricted Residential	SB-1		SB-2		SB-2-Fill		SB-1		SB-1		SB-2		SB-2		SB-3		SB-3		SB-3		SB-4		SB-4		SB-5		SB-5		SB-6		SB-6		SB-6		SB-7		SB-7		SB-8		SB-8		SB-13		SB-13		SB-14		SB-14		SB-15		SB-15	
Sample Depth (feet)			(4'-6')		(13'-15')		(4'-6')		0'-2'		15'-17'		0'-2'		15'-17'		0'-2'		4'-6'		15'-17'		0'-2'		15'-17'		0'-2'		13'-15'		0'-2'		4'-6'		15'-17'		0'-2'		15'-17'		0'-2'		15'-17'		0'-2'		15'-17'		0'-2'		15'-17'		0'-2'		15'-17'	
Lab Sample ID			14E0963-01		14E0963-02		14E0963-03		14J1078-01		14J1078-02		14J1078-03		14J1078-04		14J1199-01		14J1199-02		14J1199-03		14J1199-06		14J1199-07		14J1199-04		14J1199-05		14J1193-01		14J1193-02		14J1193-03		14J1193-06		14J1193-07		14J1193-04		14J1193-05		14J1187-05		14J1187-06		14J1187-01		14J1187-02		14J1187-03		14J1187-04	
Dilution Factor			5		5		5		5		5		5		5		5		5		5		5		5		5		5		5		5		5		5		5		5		5		5		5		5		5		5	
Sampling Date			5/21/2014		5/21/2014		5/21/2014		10/27/2014		10/27/2014		10/27/2014		10/27/2014		10/28/2014		10/28/2014		10/28/2014		10/28/2014		10/28/2014		10/28/2014		10/28/2014		10/28/2014		10/28/2014		10/28/2014		10/28/2014		10/28/2014		10/28/2014		10/28/2014		10/29/2014		10/29/2014		10/29/2014		10/29/2014		10/29/2014	
Sample Matrix			Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
Unit Measure			mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
4,4'-DDD	0.0033	13	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
4,4'-DDE	0.0033	8.9	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	**0.0050**	D	0.0017	ND	0.0017	ND	0.0017	ND	**0.079**	D	**0.0089**	D	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	**0.0075**	D	0.0017	ND	0.0020	D	0.0018	ND	**0.0037**	D	0.0018	ND	0.0017	ND	0.0018	ND
4,4'-DDT	0.0033	7.9	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	**0.21**	D	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	**0.031**	D	0.0018	ND	**0.15**	D	0.0018	ND
Aldrin	0.005	0.097	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
alpha-BHC	0.02	0.48	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
alpha-Chlordane	0.094	4.2	NT		NT		NT		0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
beta-BHC	0.036	0.36	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
Chlordane, total	NC	NC	0.0070	ND	0.0066	ND	0.0069	ND	0.069	ND	0.066	ND	0.068	ND	0.066	ND	0.068	ND	0.074	ND	0.066	ND	0.067	ND	0.069	ND	0.069	ND	0.067	ND	0.069	ND	0.073	ND	0.070	ND	0.067	ND	0.072	ND	0.069	ND	0.071	ND	0.070	ND	0.069	ND	0.070	ND	0.067	ND	0.068	ND	0.070	ND
delta-BHC	0.04	100	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
Dieldrin	0.005	0.2	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
Endosulfan I	2.4	24	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
Endosulfan II	2.4	24	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
Endosulfan sulfate	2.4	24	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
Endrin	0.014	11	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
Endrin aldehyde	NC	NC	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
Endrin ketone	NC	NC	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
gamma-BHC (Lindane)	0.1	1.3	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
gamma-Chlordane	NC	NC	NT		NT		NT		0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
Heptachlor	0.042	2.1	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
Heptachlor epoxide	NC	NC	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0019	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0018	ND	0.0017	ND	0.0018	ND	0.0017	ND	0.0018	ND
Methoxychlor	NC	NC	0.0087	ND	0.0083	ND	0.0086	ND	0.0086	ND	0.0083	ND	0.0085	ND	0.0083	ND	0.0085	ND	0.0092	ND	0.0083	ND	0.0084	ND	0.0086	ND	0.0087	ND	0.0084	ND	0.0086	ND	0.0091	ND	0.0088	ND	0.0083	ND	0.0089	ND	0.0086	ND	0.0089	ND	0.0088	ND	0.0086	ND	0.0087	ND	0.0083	ND	0.0085	ND	0.0088	ND
Toxaphene	NC	NC	0.088	ND	0.084	ND	0.087	ND	0.087	ND	0.084	ND	0.086	ND	0.084	ND	0.086	ND	0.093	ND	0.084	ND	0.085	ND	0.087	ND	0.088	ND	0.085	ND	0.087	ND	0.092	ND	0.089	ND	0.084	ND	0.090	ND	0.087	ND	0.090	ND	0.089	ND	0.087	ND	0.088	ND	0.084	ND	0.086	ND	0.089	ND
PCBs / Dilution Factor			5		5		5		50		1		1		1		20		1		1		1		1		1		1		100		1		1		100		1		1		1		10		1		50		1		1		1	
Aroclor 1016	NC	NC	0.018	ND	0.017	ND	0.018	ND	0.87	ND	0.017	ND	0.017	ND	0.017	ND	0.34	ND	0.019	ND	0.017	ND	0.017	ND	0.017	ND	0.018	ND	0.017	ND	1.73	ND	0.018	ND	0.018	ND	1.68	ND	0.018	ND	1.74	ND	0.018	ND	0.18	ND	0.017	ND	0.88	ND	0.017	ND	0.017	ND	0.018	ND
Aroclor 1221	NC	NC	0.018	ND	0.017	ND	0.018	ND	0.87	ND	0.017	ND	0.017	ND	0.017	ND	0.34	ND	0.019	ND	0.017	ND	0.017	ND	0.017	ND	0.018	ND	0.017	ND	1.73	ND	0.018	ND	0.018	ND	1.68	ND	0.018	ND	1.74	ND	0.018	ND	0.18	ND	0.017	ND	0.88	ND	0.017	ND	0.017	ND	0.018	ND
Aroclor 1232	NC	NC	0.018	ND	0.017	ND	0.018	ND	0.87	ND	0.017	ND	0.017	ND	0.017	ND	0.34	ND	0.019	ND	0.017	ND	0.017	ND	0.017	ND	0.018	ND	0.017	ND	1.73	ND	0.018	ND	0.018	ND	1.68	ND	0.018	ND	1.74	ND	0.018	ND	0.18	ND	0.017	ND	0.88	ND	0.017	ND	0.017	ND	0.018	ND
Aroclor 1242	NC	NC	0.018	ND	0.017	ND	0.018	ND	0.87	ND	0.017	ND	0.017	ND	0.017	ND	0.34	ND	0.019	ND	0.017	ND	0.017	ND	0.017	ND	0.018	ND	0.017	ND	1.73	ND	0.018	ND	0.018	ND	1.68	ND	0.018	ND	1.74	ND	0.018	ND	0.18	ND	0.017	ND	0.88	ND	0.017	ND	0.017	ND	0.018	ND
Aroclor 1248	NC	NC	0.018	ND	0.017	ND	0.018	ND	0.87	ND	0.017	ND	0.017	ND	0.017	ND	0.34	ND	0.019	ND	0.017	ND	0.017	ND	0.017	ND	0.018	ND	0.017	ND	1.73	ND	0.018	ND	0.018	ND	1.68	ND	0.018	ND	1.74	ND	0.018	ND	0.18	ND	0.017	ND	0.88	ND	0.017	ND	0.017	ND	0.018	ND
Aroclor 1254	NC	NC	0.018	ND	0.017	ND	0.029		34.40	D	0.017	ND	0.062		0.017	ND	9.76	D	0.067		0.070		0.017	ND	0.077		0.94		0.017	ND	48.20	D	0.42		0.018	ND	40.20	D	0.097		54.70	D	0.034		5.79	D	0.37		35.60	D	0.025		0.86		0.047	
Aroclor 1260	NC	NC	0.018	ND	0.017	ND	0.018	ND	0.87	ND	0.017	ND	0.017	ND	0.017	ND	0.34	ND	0.019	ND	0.017	ND	0.017	ND	0.017	ND	0.018	ND	0.017	ND	1.73	ND	0.018	ND	0.018	ND	1.68	ND	0.018	ND	1.74	ND	0.018	ND	0.18	ND	0.017	ND	0.88	ND	0.017	ND	0.017	ND	0.018	ND
Total PCBs	0.1	1	0.0072	ND	0.0068	ND	0.029		**34.40**	D	0.017	ND	0.062		0.017	ND	**9.76**	D	0.067		0.070		0.017	ND	0.077		**0.94**		0.017	ND	**48.20**	D	**0.42**		0.018	ND	**40.20**	D	0.097		**54.70**	D	0.034		**5.79**	D	**0.37**		**35.60**	D	0.025		**0.86**		0.047	

Legend

mg/kg - milligrams per kilograms
NC - No criterion for evaluation of analytical parameter
ND - Analyte not detected at or above the indicated (reporting limit, method detection limit)
NT - Analyte not tested for
D - Result is from an analysis that required a dilution

Gray bold and shaded values exceed the Part 375 Unrestricted Use Soil Cleanup Objectives
Orange bold and shaded values exceed the Part 375 Restricted Residential Use Soil Cleanup Objectives

Notes

1. Evaluation criteria for soil sample results is the NYSDEC Part 375 Value for Unrestricted Use Soil Cleanup Objective and Restricted Residential SCOs

Table 5
TAL Metals in Soil Samples
131-18 and 131-24 Avery Avenue, Queens

Sample ID	NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives	NYSDEC Part 375 Restricted Use Soil Cleanup Objectives - Restricted Residential	SB-1	SB-2	SB-2-Fill	SB-1	SB-1	SB-2	SB-2	SB-3	SB-3	SB-3	SB-4	SB-4	SB-5	SB-5	SB-6	SB-6	SB-6	SB-7	SB-7	SB-8	SB-8	SB-13	SB-13	SB-14	SB-14	SB-15	SB-15
Sample Depth (feet)			(4'-6')	(13'-15')	(4'-6')	0'-2'	15'-17'	0'-2'	15'-17'	0'-2'	4'-6'	15'-17'	0'-2'	15'-17'	0'-2'	15'-17'	0'-2'	4'-6'	15'-17'	0'-2'	15'-17'	0'-2'	15'-17'	0'-2'	0'-2'	15'-17'	0'-2'	15'-17'	0'-2'	15'-17'
Lab Sample ID			14E0963-01	14E0963-02	14E0963-03	14J1078-01	14J1078-02	14J1078-03	14J1078-04	14J1199-01	14J1199-02	14J1199-03	14J1199-06	14J1199-07	14J1199-04	14J1199-05	14J1193-01	14J1193-02	14J1193-03	14J1193-06	14J1193-07	14J1193-04	14J1193-05	14J1187-05	14J1187-06	14J1187-01	14J1187-02	14J1187-03	14J1187-04
Dilution Factor			5	5	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sampling Date			5/21/2014	5/21/2014	5/21/2014	10/27/2014	10/27/2014	10/27/2014	10/27/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/28/2014	10/29/2014	10/29/2014	10/29/2014	10/29/2014	10/29/2014	10/29/2014
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Unit Measure			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	NC	NC	7,490	3,390	4,780	4,780 B	1,580 B	4,430 B	1,670 B	5,550	16,600	2,550	2,960	3,220	5,460	4,570	3,680	9,820	7,680	5,570	13,400	6,160	13,200	4,590 B	7,180 B	2,600 B	3,630 B	2,580 B	9,520 B
Antimony	NC	NC	0.53 ND	0.50 ND	0.80	0.55	0.50 ND	0.52 ND	0.50 ND	0.51 ND	0.56 ND	0.50 ND	0.51 ND	0.73	0.53 ND	0.51 ND	0.52 ND	0.55 ND	0.53 ND	0.51 ND	0.54 ND	0.52 ND	0.54 ND	0.53 ND	0.52 ND	0.53 ND	0.50 ND	0.52 ND	0.53 ND
Arsenic	13	16	3.98	1 ND	4.87	8.14	1.01 ND	1.23	1 ND	4.28	5	1 ND	1.01 ND	**13.80**	7.67	1.07	2.34	4.50	1.58	3.69	1.31	2.67	1.56	5.04	1.05	1.51	1.01 ND	1.32	3.06
Barium	350	400	58.50	17.50	218	335	15.60	24.50	17.70	53.90	49.80	18.90	23.90	70.20	64	26.60	35.70	62.60	38.50	47.90	75.30	44.30	112	76.40	50	27.60	20.20	37.10	26
Beryllium	7.2	72	0.11 ND	0.10 ND	0.10 ND	0.10 ND	0.10 ND	0.10 ND	0.10 ND	0.10 ND	0.11 ND	0.10 ND	0.10 ND	0.10 ND	0.11 ND	0.10 ND	0.10 ND	0.11 ND	0.11 ND	0.10 ND	0.11 ND	0.10 ND	0.11 ND	0.11 ND	0.10 ND	0.11 ND	0.10 ND	0.10 ND	0.11 ND
Cadmium	2.5	4.3	0.32 ND	0.30 ND	0.31 ND	0.31 ND	0.30 ND	0.31 ND	0.30 ND	0.31 ND	0.34 ND	0.30 ND	0.30 ND	0.31 ND	0.32 ND	0.30 ND	0.31 ND	0.33 ND	0.32 ND	0.30 ND	0.33 ND	0.54	0.33 ND	0.32 ND	0.31 ND	0.32 ND	0.30 ND	0.31 ND	0.32 ND
Calcium	NC	NC	1,450	206	13,100	102,000	795	732	473	60,200	1,180	993	624	4,810	60,600	706	11,700	1,380	761	28,900	1,160	10,400	1,710	110,000 BE	786 B	12,100 B	266 B	3,740 B	840 B
Chromium	NC	NC	13.10	9.20	17.60	13.60	4.68	11.20	5.35	13.10	25.90	7.57	6	12.40	12.80	14.20	8.93	18.70	20.50	14.30	31.90	16.20	28.50	9.88	18.40	7.84	10.90	20.40	18.70
Cobalt	NC	NC	5.82	4.54	5.35	12.90	4.06	4.45	2.53	5.04	10	3.28	3.23	10.30	6.51	4.63	4.15	6.65	7.58	5.33	13.80	5.98	12.40	4.41	11.20	3.37	4.27	3.90	8.47
Copper	50	270	17	5.97	**106**	**341**	8.89	11	7.15	27.50	11.80	8.30	6.11	44.40	21.80	9.02	11.20	19	16.10	**65.50**	25.70	**669**	34.20	18	12.40	9.24	6.06	11.10	8.88
Iron	NC	NC	14,900	7,840	16,400	11,500	6,580	9,890	5,340	13,400	26,100	7,890	6,450	12,200	13,000	11,100	10,600	17,300	19,000	12,500	23,700	14,400	26,600	17,100 B	16,600 B	10,100 B	8,310 B	10,800 B	19,000 B
Lead	63	400	39.50	1.98	**282**	**154**	1.35	4.37	1.12	**70.50**	10.50	2.41	2.43	**99.20**	**66.50**	3.49	31.70	54.80	5.50	**146**	5.53	**412**	5.61	**70.80**	3.67	17.90	2.35	31.30	5.88
Magnesium	NC	NC	1,600	1,030	1,720	10,000	931	1,340	816	5,420	2,920	981	1,220	878	5,880	1,330	2,130	1,740	1,660	8,840	3,120	2,910	3,310	12,200	2,920	2,300	1,170	1,190	2,280
Manganese	1600	2000	432	107	369	1,090	233	236	254	313	365	214	232	73.80	295	236	167	457	319	266	488	266	950	375	255	151	98.50	193	312
Mercury	0.18	0.81	0.035 ND	0.033 ND	0.053	**1.76**	0.030 ND	0.031 ND	0.030 ND	0.092	0.062	0.030 ND	0.030 ND	0.083	0.083	0.030 ND	0.10	0.16	0.032 ND	0.059	0.033 ND	0.12	0.033 ND	0.073	0.031 ND	0.063	0.030 ND	0.033	0.032 ND
Nickel	30	310	18.70	11.70	19.40	**32.30**	9.59	12.50	7.72	17.50	21.50	9.25	8.02	**45.30**	22.30	11	10.70	15.90	14.50	15.50	23.40	17.40	25.50	16	18.40	10.60	12	17.20	17.20
Potassium	NC	NC	420	661	899	900	352	500	374	887	855	435	483	513	896	523	711	405	1,090	687	2,550	697	1,990	933 B	2,250 B	722 B	918 B	695 B	674 B
Selenium	3.9	180	1.34	1 ND	1.26	2.74	1.01 ND	1.03 ND	1 ND	**4.40**	**5.29**	1.86	1.83	3.16	**4.39**	2.85	3.25	**4.80**	**4.61**	**5.51**	**5.28**	**3.95**	**6.68**	**5.20**	**4.37**	3.33	2.26	2.85	**4.18**
Silver	2	180	0.53 ND	0.50 ND	0.52 ND	0.52 ND	0.50 ND	0.52 ND	0.50 ND	0.51 ND	0.56 ND	0.50 ND	0.51 ND	0.52 ND	0.53 ND	0.51 ND	0.52 ND	0.55 ND	0.53 ND	0.51 ND	0.54 ND	0.52 ND	0.54 ND	0.53 ND	0.52 ND	0.53 ND	0.50 ND	0.52 ND	0.53 ND
Sodium	NC	NC	10.50 ND	10 ND	116	283	143	132	119	129	60	76.80	45	252	123	31.80	68.20	63.10	89.10	71.60	67.60	60.90	139	99.60	85.20	34.70	10.10 ND	25.20	28.60
Thallium	NC	NC	1.05 ND	1 ND	1.04 ND	1.04 ND	1.01 ND	1.03 ND	1 ND	1.02 ND	1.12 ND	1 ND	1.01 ND	1.04 ND	1.05 ND	1.01 ND	1.04 ND	1.10 ND	1.07 ND	1.01 ND	1.08 ND	1.04 ND	1.08 ND	1.07 ND	1.04 ND	1.06 ND	1.01 ND	1.03 ND	1.07 ND
Vanadium	NC	NC	18.50	11.90	18.50	18.30	7.74	14.80	6.63	22.30	37.30	9.42	12.40	30.30	26.80	16.60	13.80	22.50	29.10	24.60	45.10	21.70	47.70	15.40	25.20	10.50	11.10	11.10	26.30
Zinc	109	10000	38.50	13.30	**270**	**175**	15.30	51.80	8.56	64.50	35.50	11.60	12	20.70	44.50	13.90	29.60	56.70	24.50	**140**	35.10	88.20	34.70	54.20 B	29.90 B	23.80 B	13.10 B	32.60 B	23 B
Chromium, Hexavalent	1	110	0.53 ND	0.50 ND	0.52 ND	0.52 ND	0.50 ND	0.52 ND	0.50 ND	0.51 ND	0.56 ND	0.50 ND	0.51 ND	**1.43**	0.53 ND	0.51 ND	0.52 ND	0.55 ND	**1.88**	0.51 ND	0.54 ND	0.52 ND	0.54 ND	0.53 ND	0.52 ND	0.53 ND	0.50 ND	0.52 ND	0.53 ND
Chromium, Trivalent	30	180	12.40	9.16	16.90	13.60	4.68	11.20	5.35	13.10	25.90	7.57	6	11	12.80	14.20	8.93	18.70	18.60	14.30	**31.90**	16.20	28.50	9.27	17.70	7.40	10.80	19.70	17.50

Legend

mg/kg - milligrams per kilograms

NC - No criterion for evaluation of analytical parameter

ND - Analyte not detected at or above the indicated (reporting limit, method detection limit)

B - Analyte found in the analysis batch blank

Gray bold and shaded values exceed the Part 375 Unrestricted Use Soil Cleanup Objectives

Orange bold and shaded values exceed the Part 375 Restricted Residential Use Soil Cleanup Objectives

Table 6
Summary of Groundwater Sampling Results
Target Compound List VOCs
131-18 to 131-32 Avery Avenue,
Queens, NY

Sample ID		GW-1		MW-1		MW-2		MW-3		MW-4		Field Blank		Trip Blank		Field Blank		Trip Blank	
Lab Sample ID	NYSDEC Class GA Groundwater	14E0922-01		14J1194-01		14J1194-02		14J1280-01		14J1280-02		14J1194-03		14J1194-04		14J1280-03		14J1280-04	
Date Sampled	Standard/Guidance Value	5/21/2014		10/29/2014		10/29/2014		10/31/2014		10/31/2014		10/29/2014		10/29/2014		10/31/2014		10/31/2014	
Dilution Factor		1		20		20		2		10		1		1		1		1	
Unit of Measure	(ug/L)	(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)	
1,1,1,2-Tetrachloroethane	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,1,1-Trichloroethane	5	0.93		0.20	ND	0.54		0.40	ND	0.93		0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,1,2,2-Tetrachloroethane	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5	1.50		0.20	ND	0.20	ND	0.54	JD	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,1,2-Trichloroethane	1	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,1-Dichloroethane	5	**6**		1.10		4.40		4.60	D	**8**		0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,1-Dichloroethylene	5	2		0.39	J	1.20		1.30	D	2.30		0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,2,4-Trichlorobenzene	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,2,4-Trimethylbenzene	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,2-Dibromo-3-chloropropane	0.04	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,2-Dibromoethane	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,2-Dichlorobenzene	3	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,2-Dichloroethane	0.6	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,2-Dichloropropane	1	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,3,5-Trimethylbenzene	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,3-Dichlorobenzene	3	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,4-Dichlorobenzene	3	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
1,4-Dioxane	~	40	ND	40	ND	40	ND	80	ND	40	ND	40	ND	40	ND	40	ND	40	ND
2-Butanone	50	0.50	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
2-Hexanone	50	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
4-Methyl-2-pentanone	~	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Acetone	50	1.50	JB	1	ND	1	ND	2	ND	1	ND	1	ND	1	ND	1	ND	1.70	JB
Acrolein	~	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Acrylonitrile	~	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Benzene	1	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Bromodichloromethane	50	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Bromoform	50	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Bromomethane	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Carbon disulfide	~	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Carbon tetrachloride	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Chlorobenzene	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Chloroethane	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Chloroform	7	0.32	J	0.29	J	0.66		0.40	ND	0.32	J	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Chloromethane	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
cis-1,2-Dichloroethylene	5	3.70		4.10		**8.40**		2.20	D	3.20		0.20	ND	0.20	ND	0.20	ND	0.20	ND
cis-1,3-Dichloropropylene	0.4	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Dibromochloromethane	50	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Dibromomethane	~	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Dichlorodifluoromethane	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Ethyl Benzene	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Hexachlorobutadiene	0.5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Isopropylbenzene	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Methyl acetate	~	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Methyl tert-butyl ether (MTBE)	10	1.20		0.51		1.10		1.30	D	1.70		0.20	ND	0.20	ND	0.20	ND	0.20	ND
Methylene chloride	5	1	ND	1	ND	1	ND	2	ND	1	ND	1	ND	4.50		1	ND	3.80	
n-Butylbenzene	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
n-Propylbenzene	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
o-Xylene	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
p- & m- Xylenes	5	0.50	ND	0.50	ND	0.50	ND	1	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND
p-Isopropyltoluene	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
sec-Butylbenzene	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Styrene	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
tert-Butyl alcohol (TBA)	~	0.50	ND	0.50	ND	0.50	ND	1	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND
tert-Butylbenzene	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Tetrachloroethylene	5	**7.80**		**190**	**D**	**150**	**D**	**48**	**D**	**36**	**D**	0.20	ND	0.20	ND	0.41	J	0.20	ND
Toluene	5	0.75		0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
trans-1,2-Dichloroethylene	5	0.20	ND	0.20	ND	0.32	J	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
trans-1,3-Dichloropropylene	0.4	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Trichloroethylene	5	**7**		**27**		**15**		2	D	3.60		0.20	ND	0.20	ND	0.20	ND	0.20	ND
Trichlorofluoromethane	5	0.20	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Vinyl Chloride	2	0.50	ND	0.20	ND	0.20	ND	0.40	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND
Xylenes, Total	5	0.60	ND	0.60	ND	0.60	ND	1.20	ND	0.60	ND	0.60	ND	0.60	ND	0.60	ND	0.60	ND

Legend
µg/L - micrograms per liter
ND - Concentration less than the minimum detection limit.
NC - No evaluation criterion for analytical parameter
B - analyte found in the analysis batch blank
J - estimated value
Bold and shaded value exceeds the New York State Class GA Groundwater Standard/Guidance Value for the indicated parameter

Notes
1. The groundwater evaluation criteria is the applicable NYSDEC Class GA Groundwater Standard and/or Guidance Value

Table 7
Summary of Groundwater Sampling Results
Target Compound List SVOCs
131-18 to 131-32 Avery Avenue, Queens, NY

Sample ID	NYSDEC Class GA Groundwater Standard/Guidance Value	GW-1		MW-1		MW-2		MW-3		MW-4		Field Blank		Field Blank	
Lab Sample ID		14E0922-01		14J1194-01		14J1194-02		14J1280-01		14J1280-02		14J1194-03		14J1280-03	
Date Sampled		5/21/2014		10/29/2014		10/29/2014		10/31/2014		10/31/2014		10/29/2014		10/31/2014	
Dilution Factor		1		1		1		1		1		1		1	
Unit of Measure	(ug/L)	(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)	
1,1'-Biphenyl	NC	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
1,2,4,5-Tetrachlorobenzene	NC	NT		2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
1,2,4-Trichlorobenzene	5	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
1,2-Dichlorobenzene	3	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
1,2-Diphenylhydrazine (as Azobenzene)	NC	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
1,3-Dichlorobenzene	3	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
1,4-Dichlorobenzene	3	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
2,3,4,6-Tetrachlorophenol	NC	NT		2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
2,4,5-Trichlorophenol	1	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
2,4,6-Trichlorophenol	1	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
2,4-Dichlorophenol	5	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
2,4-Dimethylphenol	50	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
2,4-Dinitrophenol	10	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
2,4-Dinitrotoluene	5	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
2,6-Dinitrotoluene	5	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
2-Chloronaphthalene	10	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
2-Chlorophenol	1	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
2-Methylnaphthalene	NC	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
2-Methylphenol	1	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
2-Nitroaniline	5	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
2-Nitrophenol	1	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
3- & 4-Methylphenols	NC	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
3,3'-Dichlorobenzidine	5	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
3-Nitroaniline	5	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
4,6-Dinitro-2-methylphenol	NC	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
4-Bromophenyl phenyl ether	NC	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
4-Chloro-3-methylphenol	1	NT		2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
4-Chloroaniline	5	NT		2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
4-Chlorophenyl phenyl ether	NC	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
4-Nitroaniline	5	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
4-Nitrophenol	1	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Acenaphthene	20	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND
Acenaphthylene	NC	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND
Acetophenone	NC	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Aniline	5	NT		2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Anthracene	50	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND
Atrazine	NC	0.51	ND	0.53	ND	0.51	ND	0.53	ND	0.51	ND	0.53	ND	0.51	ND
Benzaldehyde	NC	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Benzidine	NC	10.30	ND	10.50	ND	10.30	ND	10.50	ND	10.30	ND	10.50	ND	10.30	ND
Benzo(a)anthracene	0.002	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND
Benzo(a)pyrene	0.002	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND
Benzo(b)fluoranthene	0.002	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND
Benzo(g,h,i)perylene	NC	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND
Benzo(k)fluoranthene	0.002	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND
Benzoic acid	NC	25.60	ND	26.30	ND	25.60	ND	26.30	ND	25.60	ND	26.30	ND	25.60	ND
Benzyl alcohol	NC	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Benzyl butyl phthalate	50	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Bis(2-chloroethoxy)methane	5	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Bis(2-chloroethyl)ether	1	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Bis(2-chloroisopropyl)ether	5	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Bis(2-ethylhexyl)phthalate	5	0.51	ND	0.53	ND	1.20	B	2.12	B	3.75	B	0.53	ND	0.70	B
Caprolactam	NC	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Carbazole	NC	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Chrysene	0.002	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND
Dibenzo(a,h)anthracene	NC	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND
Dibenzofuran	NC	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Diethyl phthalate	50	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Dimethyl phthalate	50	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Di-n-butyl phthalate	50	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Di-n-octyl phthalate	50	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Fluoranthene	50	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND
Fluorene	50	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.35		0.051	ND
Hexachlorobenzene	0.04	0.021	ND	0.021	ND	0.021	ND	0.021	ND	0.021	ND	0.021	ND	0.021	ND
Hexachlorobutadiene	0.5	0.51	ND	0.53	ND	0.51	ND	0.53	ND	0.51	ND	0.53	ND	0.51	ND
Hexachlorocyclopentadiene	5	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Hexachloroethane	5	0.51	ND	0.53	ND	0.51	ND	0.53	ND	0.51	ND	0.53	ND	0.51	ND
Indeno(1,2,3-cd)pyrene	0.002	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND
Isophorone	50	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Naphthalene	10	0.051	ND	0.063		0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND
Nitrobenzene	0.4	0.26	ND	0.26	ND	0.26	ND	0.26	ND	0.26	ND	0.26	ND	0.26	ND
N-Nitrosodimethylamine	NC	0.51	ND	0.53	ND	0.51	ND	0.53	ND	0.51	ND	0.53	ND	0.51	ND
N-nitroso-di-n-propylamine	NC	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
N-Nitrosodiphenylamine	50	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Pentachlorophenol	1	0.26	ND	0.26	ND	0.26	ND	0.26	ND	0.26	ND	0.26	ND	0.26	ND
Phenanthrene	50	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND
Phenol	1	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND	2.63	ND	2.56	ND
Pyrene	50	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND	0.053	ND	0.051	ND

Legend
µg/L - micrograms per liter
ND - Concentration less than the minimum detection limit.
NC - No evaluation criterion for analytical parameter
NT - Analyte not tested for
D - Sample required dilution

Notes
1. The groundwater evaluation criteria is the applicable NYSDEC Class GA Groundwater Standard and/or Guidance Value

Table 8
Summary of Groundwater Sampling Results
Target Compound List Pesticides and PCBs
131-18 to 131-32 Avery Avenue,
Queens, NY

Sample ID		GW-1		MW-1		MW-2		MW-3		MW-4		Field Blank		Field Blank	
Lab Sample ID	NYSDEC Class GA Groundwater Standard/Guidance Value	14E0922-01		14J1194-01		14J1194-02		14J1280-01		14J1280-02		14J1194-03		14J1280-03	
Date Sampled		5/21/2014		10/29/2014		10/29/2014		10/31/2014		10/31/2014		10/29/2014		10/31/2014	
Dilution Factor		1		1		1		1		1		1		1	
Unit of Measure	(ug/L)	(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)	
PESTICIDES															
4,4'-DDD	0.3	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
4,4'-DDE	0.2	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
4,4'-DDT	0.2	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
Aldrin	NC	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
alpha-BHC	0.01	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
alpha-Chlordane	NC	NT		0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
beta-BHC	0.04	0.0513	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
Chlordane, total	0.05	0.0513	ND	0.041	ND	0.041	ND	0.041	ND	0.041	ND	0.042	ND	0.041	ND
delta-BHC	0.04	0.051	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
Dieldrin	0.004	0.0513	ND	0.0021	ND	0.0021	ND	0.0021	ND	0.0021	ND	0.0021	ND	0.0021	ND
Endosulfan I	NC	0.0513	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
Endosulfan II	NC	0.0513	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
Endosulfan sulfate	NC	0.0513	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
Endrin	NC	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
Endrin aldehyde	5	0.0410	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.011	ND	0.010	ND
Endrin ketone	5	0.004	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.011	ND	0.010	ND
gamma-BHC (Lindane)	0.05	0.002	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
gamma-Chlordane	NC	NT		0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.011	ND	0.010	ND
Heptachlor	0.04	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
Heptachlor epoxide	0.03	0.004	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
Methoxychlor	35	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0041	ND	0.0042	ND	0.0041	ND
Toxaphene	0.06	0.0103	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.11	ND	0.10	ND
POLYCLORINATED BIPHENYLS (PCBs)															
Aroclor 1016	NC	0.01	ND	0.051	ND	0.051	ND	0.051	ND	0.051	ND	0.053	ND	0.051	ND
Aroclor 1221	NC	0.0041	ND	0.051	ND	0.051	ND	0.051	ND	0.051	ND	0.053	ND	0.051	ND
Aroclor 1232	NC	0.004	ND	0.051	ND	0.051	ND	0.051	ND	0.051	ND	0.053	ND	0.051	ND
Aroclor 1242	NC	0.004	ND	0.051	ND	0.051	ND	0.051	ND	0.051	ND	0.053	ND	0.051	ND
Aroclor 1248	NC	0.004	ND	0.051	ND	0.051	ND	0.051	ND	0.051	ND	0.053	ND	0.051	ND
Aroclor 1254	NC	0.051	ND	0.24		0.051	ND	0.051	ND	0.051	ND	0.053	ND	0.051	ND
Aroclor 1260	NC	0.103	ND	0.051	ND	0.051	ND	0.051	ND	0.051	ND	0.053	ND	0.051	ND
Total PCBs	0.09	0.0041	ND	**0.24**		0.051	ND	0.051	ND	0.051	ND	0.053	ND	0.051	ND

Legend

µg/L - micrograms per liter
ND - Concentration less than the minimum detection limit.
NC - No evaluation criterion for analytical parameter
NT - Analyte not tested for
D - Sample required dilution
Bold and shaded value exceeds the New York State Class GA Groundwater Standard/Guidance Value for the indicated parameter

Notes

1. The groundwater evaluation criteria is the applicable NYSDEC CLass GA Groundwater Standard and/or Guidance Value

Table 9
Summary of Groundwater Sampling Results
Total Levels of Target Analyte List Metals
131-18 to 131-32 Avery Avenue, Queens, NY

Sample ID Lab Sample ID Date Sampled Dilution Factor Unit of Measure	NYSDEC Class GA Groundwater Standard/Guidance Value (ug/L)	GW-1 14E0922-01 5/21/2014 1 (ug/L)		MW-1 14J1194-01 10/29/2014 1 (ug/L)		MW-2 14J1194-02 10/29/2014 1 (ug/L)		MW-3 14J1280-01 10/31/2014 1 (ug/L)		MW-4 14J1280-02 10/31/2014 1 (ug/L)		Field Blank 14J1194-03 10/29/2014 1 (ug/L)		Field Blank 14J1280-03 10/31/2014 1 (ug/L)	
Aluminum	NC	22		3,110		1,170		776		183		10	ND	10	ND
Antimony	3	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND
Arsenic	25	4	ND	4	ND	4	ND	4	ND	4	ND	4	ND	4	ND
Barium	1000	56		119		72		81		75		10	ND	10	ND
Beryllium	3	1	ND	1	ND	1	ND	1	ND	1	ND	1	ND	1	ND
Cadmium	5	3	ND	3	ND	3	ND	3	ND	3	ND	3	ND	3	ND
Calcium	NC	70,800		82,100		64,900.00		79,300		79,300		50	ND	70	
Chromium	50	5	ND	13		5		5	ND	5	ND	5	ND	5	ND
Cobalt	NC	5	ND	11		5	ND	7		7		5	ND	5	ND
Copper	200	3	ND	6		3	ND	3	ND	3		3	ND	3	ND
Iron	NC	20	ND	5,210		2,230		2,790		2,270		20	ND	20	ND
Lead	25	3	ND	8		6		4		4		4		3	ND
Magnesium	35000	33,400		26,900		22,100		30,500		34,300		50	ND	50	ND
Manganese	300	223		**1,430**		**1,180**		**1,820**		**2,530**		5	ND	5	ND
Nickel	100	5	ND	12		8		10		9		5	ND	5	ND
Potassium	NC	3,580		4,160		4,110		5,780		4,470		50	ND	50	ND
Selenium	10	10	ND	**24**		**21**		**25**		**30**		10	ND	10	ND
Silver	50	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND
Sodium	20000	**132,000**		**108,000**		**147,000**		**147,000**		**132,000**		375		494	
Thallium	NC	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND
Vanadium	NC	10	ND	10	ND	10	ND	10	ND	10	ND	10	ND	10	ND
Zinc	2000	10	ND	19		15		14		15		10		10	ND
Mercury	0.7	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND

Legend
µg/L - micrograms per liter
ND - Concentration less than the minimum detection limit.
NC - No evaluation criterion for analytical parameter
Bold and shaded value exceeds the New York State Class GA Groundwater Standard/Guidance Value for the indicated parameter

Notes
1. The groundwater evaluation criteria is the applicable NYSDEC CLass GA Groundwater Standard and/or Guidance Value

Table 10
Summary of Groundwater Sampling Results
Dissolved Target Analyte List Metals
131-18 to 131-32 Avery Avenue,
Queens, NY

Sample ID	NYSDEC Class GA Groundwater Standard/Guidance Value	GW-1		MW-1		MW-2		MW-3		MW-4		Field Blank		Field Blank	
Lab Sample ID		14E0922-01		14J1194-01		14J1194-02		14J1280-01		14J1280-02		14J1194-03		14J1280-03	
Date Sampled		5/21/2014		10/29/2014		10/29/2014		10/31/2014		10/31/2014		10/29/2014		10/31/2014	
Dilution Factor		1		1		1		1		1		1		1	
Unit of Measure	(ug/L)	(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)	
Aluminum	NC	22		10	ND	10	ND	10	ND	10	ND	10	ND	10	ND
Antimony	3	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND
Arsenic	25	4	ND	4	ND	4	ND	4	ND	4	ND	4	ND	4	ND
Barium	1000	56		96		65		72		72		10	ND	10	ND
Beryllium	3	1	ND	1	ND	1	ND	1	ND	1	ND	1	ND	1	ND
Cadmium	5	3	ND	3	ND	3	ND	3	ND	3	ND	3	ND	3	ND
Calcium	NC	70,800		84,200		64,900.00		77,200		80,100		50	ND	50	
Chromium	50	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND
Cobalt	NC	5	ND	8		5	ND	6		7		5	ND	5	ND
Copper	200	3	ND	3	ND	3	ND	3	ND	3	ND	3	ND	3	ND
Iron	NC	20	ND	575		20	ND	23		28		20	ND	20	ND
Lead	25	3	ND	3	ND	3	ND	3	ND	3	ND	3	ND	3	ND
Magnesium	35000	33,400		26,900		23,100		29,900		33,400		50	ND	50	ND
Manganese	300	223		**1,410**		**1,050**		**1,800**		**2,460**		5	ND	5	ND
Nickel	100	5	ND	6		5	ND	7		8		5	ND	5	ND
Potassium	NC	3,580		3,730		3,950		5,270		4,210		50	ND	50	ND
Selenium	10	10	ND	**15**		**15**		**26**		**31**		10	ND	10	ND
Silver	50	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND
Sodium	20000	**132,000**		**107,000**		**147,000**		**145,000**		**133,000**		100	ND	103	
Thallium	NC	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND
Vanadium	NC	10	ND	10	ND	10	ND	10	ND	10	ND	10	ND	10	ND
Zinc	2000	10	ND	10	ND	10	ND	12		11		10	ND	10	ND
Mercury	0.7	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND	0.20	ND

Legend

µg/L - micrograms per liter

ND - Concentration less than the minimum detection limit.

NC - No evaluation criterion for analytical parameter

Bold and shaded value exceeds the New York State Class GA Groundwater Standard/Guidance Value for the indicated parameter

Notes

1. The groundwater evaluation criteria is the applicable NYSDEC CLass GA Groundwater Standard and/or Guidance Value

Table 11
Volatile Organic Compounds in Soil Vapor
131-18 and 131-24 Avery Avenue, Queens, NY

Sample ID	Soil Vapor Evaluation Criteria	SV-1 (S02)		SV-2 (16955)		SV-3 (16973)		SV-4 (15523)		SV-5 (S10)		SV-6 (P17)	
Lab Sample ID		14J1186-01		14J1186-02		14J1186-03		14J1186-04		14J1278-01		14J1278-02	
Sampling Date		10/29/2014		10/29/2014		10/29/2014		10/29/2014		10/31/2014		10/31/2014	
Dilution Factor		103.4		100.8		126		115.2		84		100.8	
Sample Matrix		Soil Vapor		Soil Vapor		Soil Vapor		Soil Vapor		Soil Vapor		Soil Vapor	
Unit of Measure		ug/m3		ug/m3		ug/m3		ug/m3		ug/m3		ug/m3	
1,1,1-Trichloroethane	1000	14.18	ND	13.64	ND	13.64	ND	15.82	ND	15	D	33	D
1,1,2,2-Tetrachloroethane	NC	17.84	ND	17.16	ND	17.16	ND	19.90	ND	14	ND	14	ND
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NC	19.92	ND	19.15	ND	19.15	ND	22.22	ND	32	D	37	D
1,1,2-Trichloroethane	NC	14.18	ND	13.64	ND	13.64	ND	15.82	ND	11	ND	11	ND
1,1-Dichloroethane	NC	10.52	ND	10.11	ND	10.11	ND	11.73	ND	43	D	68	D
1,1-Dichloroethylene	NC	10.30	ND	9.91	ND	47.56	D	11.49	ND	16	D	22	D
1,2,4-Trichlorobenzene	NC	19.29	ND	18.55	ND	18.55	ND	21.51	ND	16	ND	15	ND
1,2,4-Trimethylbenzene	NC	12.78	ND	12.29	ND	12.29	ND	14.25	ND	10	ND	9.90	ND
1,2-Dibromoethane	NC	19.97	ND	19.20	ND	19.20	ND	22.27	ND	16	ND	15	ND
1,2-Dichlorobenzene	NC	15.63	ND	15.02	ND	15.02	ND	17.43	ND	13	ND	12	ND
1,2-Dichloroethane	NC	10.52	ND	10.11	ND	10.11	ND	11.73	ND	8.50	ND	8.20	ND
1,2-Dichloropropane	NC	12.01	ND	11.55	ND	11.55	ND	13.40	ND	9.70	ND	9.30	ND
1,2-Dichlorotetrafluoroethane	NC	18.17	ND	17.47	ND	17.47	ND	20.26	ND	15	ND	14	ND
1,3,5-Trimethylbenzene	NC	12.78	ND	12.29	ND	12.29	ND	14.25	ND	10	ND	9.90	ND
1,3-Butadiene	NC	11.27	ND	10.83	ND	78.00	D	91.01	D	9.10	ND	8.70	ND
1,3-Dichlorobenzene	NC	15.63	ND	15.02	ND	15.02	ND	17.43	ND	13	ND	12	ND
1,4-Dichlorobenzene	NC	15.63	ND	15.02	ND	15.02	ND	17.43	ND	13	ND	12	ND
1,4-Dioxane	NC	9.36	ND	9.00	ND	9.00	ND	10.45	ND	7.60	ND	7.30	ND
2-Butanone	NC	22.11	D	64.86	D	32.43	D	25.35	D	26	D	20	D
2-Hexanone	NC	21.29	ND	20.47	ND	20.47	ND	23.75	ND	17	ND	17	ND
4-Methyl-2-pentanone	NC	10.65	ND	10.24	ND	10.24	ND	11.88	ND	8.60	ND	8.30	ND
Acetone	NC	593.83	D	807.60	D	570.07	D	498.81	D	480	D	290	D
Benzene	NC	8.30	ND	7.98	ND	15.97	D	26.82	D	6.70	ND	6.40	ND
Benzyl chloride	NC	13.45	ND	12.94	ND	12.94	ND	15.01	ND	11	ND	10	ND
Bromodichloromethane	NC	16.14	ND	15.52	ND	15.52	ND	18.00	ND	13	ND	13	ND
Bromoform	NC	26.87	ND	25.84	ND	25.84	ND	29.97	ND	22	ND	21	ND
Bromomethane	NC	10.09	ND	9.70	ND	9.70	ND	11.26	ND	8.20	ND	7.80	ND
Carbon disulfide	NC	8.09	ND	7.78	ND	22.10	D	19.61	D	12	D	6.30	ND
Carbon tetrachloride	250	4.09	ND	3.96	ND	3.96	ND	4.53	ND	3.30	ND	3.20	ND
Chlorobenzene	NC	11.96	ND	11.50	ND	11.50	ND	13.35	ND	9.70	ND	9.30	ND
Chloroethane	NC	6.86	ND	6.59	ND	6.59	ND	7.65	ND	5.50	ND	5.30	ND
Chloroform	NC	35.14	D	35.63	D	87.85	D	82.97	D	110	D	97	D
Chloromethane	NC	5.37	ND	5.16	ND	5.16	ND	5.99	ND	4.30	ND	4.20	ND
cis-1,2-Dichloroethylene	NC	47.56	D	43.60	D	17,438.10	D	4,755.85	D	3,300	D	2,500	D
cis-1,3-Dichloropropylene	NC	11.80	ND	11.34	ND	11.34	ND	13.16	ND	9.50	ND	9.10	ND
Cyclohexane	NC	8.95	ND	8.60	ND	8.60	ND	9.98	ND	7.20	ND	6.90	ND
Dibromochloromethane	NC	20.86	ND	20.06	ND	20.06	ND	23.27	ND	17	ND	16	ND
Dichlorodifluoromethane	NC	12.85	ND	12.36	ND	12.36	ND	14.34	ND	10	ND	10	ND
Ethyl acetate	NC	18.73	ND	18.01	ND	18.01	ND	20.89	ND	15	ND	15	ND
Ethyl Benzene	NC	11.29	ND	10.85	ND	10.85	ND	12.59	ND	9.10	ND	8.80	ND
Hexachlorobutadiene	NC	27.72	ND	26.65	ND	26.65	ND	30.92	ND	22	ND	22	ND
Isopropanol	NC	12.78	ND	36.86	D	19.17	D	14.25	ND	10	ND	9.90	ND
Methyl Methacrylate	NC	10.64	ND	10.23	ND	10.23	ND	11.87	ND	8.60	ND	8.30	ND
Methyl tert-butyl ether (MTBE)	NC	9.35	ND	8.99	ND	8.99	ND	10.43	ND	7.60	ND	7.30	ND
Methylene chloride	NC	18.06	ND	17.36	ND	34.72	D	20.14	ND	15	ND	14	ND
n-Heptane	NC	10.65	ND	10.24	ND	10.24	ND	11.88	D	8.60	ND	8.30	ND
n-Hexane	NC	9.16	ND	8.81	ND	22.20	D	23.25	D	10	D	7.10	ND
o-Xylene	NC	11.29	ND	10.85	ND	10.85	ND	12.59	ND	9.10	ND	8.80	ND
p- & m- Xylenes	NC	22.57	ND	21.70	ND	21.70	ND	25.18	ND	18	ND	18	ND
p-Ethyltoluene	NC	12.78	ND	12.29	ND	12.29	ND	14.25	ND	10	ND	9.90	ND
Propylene	NC	13.42	D	6.54	D	223.65	D	344.07	D	3.60	ND	3.50	ND
Styrene	NC	11.07	ND	10.64	ND	10.64	ND	12.35	ND	8.90	ND	8.60	ND
Tetrachloroethylene	1000	**14,237.24**	D	**18,305.03**	D	**4,813.54**	D	**2,305.08**	D	500	D	910	D
Tetrahydrofuran	NC	7.66	ND	7.37	ND	7.37	ND	8.55	ND	6.20	ND	5.90	ND
Toluene	NC	22.23	D	23.73	D	26.75	D	41.44	D	9.50	D	7.60	ND
trans-1,2-Dichloroethylene	NC	21.40	D	22.99	D	2,060.87	D	594.48	D	560	D	550	D
trans-1,3-Dichloropropylene	NC	11.80	ND	11.34	ND	11.34	ND	13.16	ND	9.50	ND	9.10	ND
Trichloroethylene	250	**8,057.44**	D	**13,966.23**	D	**26,320.97**	D	**22,023.67**	D	**8,700**	D	**12,000**	D
Trichlorofluoromethane (Freon 11)	NC	14.60	ND	14.04	ND	14.04	ND	16.29	ND	12	ND	11	ND
Vinyl acetate	NC	9.15	ND	8.80	ND	8.80	ND	10.21	ND	7.40	ND	7.10	ND
Vinyl Chloride	NC	1.66	ND	1.61	ND	53.66	D	1.84	ND	71	D	19	D

Legend
NC - No criterion for evaluation of analytical parameter
ND - Analyte not detected at or above the level indicated
D - Result is from an analysis that required a dilution
Shaded bold values are detected compounds that exceed the evaluation criteria

Note
Evaluation criteria for soil vapor is the sub-slub vapor concentration for the Matrix 1 and Matrix 2 compounds presented in the NYSDOH Soil Vapor Intrusion Guidance document dated October 2006

Table 12 Soil Samples Analytical Data Summary

131-10 Avery Avenue, Flushing, Queens, NY 11355

*Sample S-19DUP was collected from soil boring SB-17.

CLIENT SAMPLE ID		S-16S		S-16D		S-17S		S-17D		S-18S		S-18D		S-19 DUP*		NYSDEC	NYSDEC
SAMPLING DATE		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		Part 375	Part 375
LAB SAMPLE ID		L1533826-01		L1533826-02		L1533826-03		L1533826-04		L1533826-05		L1533826-06		L1533826-07		Track 1	Track 2
SAMPLING DEPTH		0-2'		6'-8'		0-2'		6'-8'		0-2'		6'-8'		6'-8'		Unrestricted	Restricted
	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Use SCOs	Residential SCOs
Total Metals																	
Aluminum, Total	mg/kg	5200		4800		4200		6300		4400		3200		9400			
Antimony, Total	mg/kg	0.73	U	0.7	U	0.7	U	0.75	U	0.69	U	0.75	U	0.76	U		
Arsenic, Total	mg/kg	2.4		0.64	J	1.6		0.66	J	1		0.55	J	1.1		13	16
Barium, Total	mg/kg	50		16		36		43		35		21		59		350	400
Beryllium, Total	mg/kg	0.22	J	0.18	J	0.18	J	0.24	J	0.17	J	0.16	J	0.37	J	7.2	72
Cadmium, Total	mg/kg	0.06	U	0.06	U	0.06	U	0.07	U	0.06	U	0.07	U	0.07	U	2.5	4.3
Calcium, Total	mg/kg	2300		410		7300		720		3600		330		1100			
Chromium, Total	mg/kg	14		15		12		17		12		10		25			
Cobalt, Total	mg/kg	3.5		3		3.4		6.8		3.4		4.3		8			
Copper, Total	mg/kg	20		7.4		16		9.7		13		6.2		14		50	270
Iron, Total	mg/kg	11000		11000		8400		12000		9100		8500		17000			
Lead, Total	mg/kg	50		0.27	J	27		0.19	U	16		0.19	U	0.19	U	63	400
Magnesium, Total	mg/kg	1400		1600		2100		2200		1500		1100		3100			
Manganese, Total	mg/kg	190		72		140		240		240		240		310		1600	2000
Mercury, Total	mg/kg	0.05	J	0.02	U	0.05	J	0.02	U	0.04	J	0.02	U	0.02	U	0.18	0.81
Nickel, Total	mg/kg	8.4		7.2		7.4		14		7.7		5.6		14		30	310
Potassium, Total	mg/kg	910		1400		670		1900		980		800		2800			
Selenium, Total	mg/kg	0.27	U	0.26	U	0.26	U	0.28	U	0.26	U	0.28	U	0.28	U	3.9	180
Silver, Total	mg/kg	0.18	U	0.17	U	0.18	U	0.19	U	0.17	U	0.19	U	0.19	U	2	180
Sodium, Total	mg/kg	110	J	87	J	69	J	81	J	120	J	61	J	120	J		
Thallium, Total	mg/kg	0.36	U	0.35	U	0.35	U	0.37	U	0.34	U	0.38	U	0.38	U		
Vanadium, Total	mg/kg	15		18		12		20		14		12		31			
Zinc, Total	mg/kg	62		20		45		24		36		13		30		109	10000
Volatile Organics by 8260/5035																	
1,1,1-Trichloroethane	mg/kg	0.00014	U	0.00012	U	0.00014	U	0.00012	U	0.00014	U	0.00013	U	0.00012	U	0.68	100
1,1,2,2-Tetrachloroethane	mg/kg	0.00013	U	0.00011	U	0.00013	U	0.00011	U	0.00012	U	0.00012	U	0.00011	U		
1,1,2-Trichloroethane	mg/kg	0.00038	U	0.00034	U	0.0004	U	0.00034	U	0.00038	U	0.00036	U	0.00034	U		
1,1-Dichloroethane	mg/kg	0.00011	U	0.0001	U	0.00011	U	0.0001	U	0.00011	U	0.0001	U	0.0001	U	0.27	26
1,1-Dichloroethene	mg/kg	0.00033	U	0.00029	U	0.00034	U	0.00029	U	0.00032	U	0.00031	U	0.0003	U	0.33	100
1,2,3-Trichlorobenzene	mg/kg	0.00019	U	0.00016	U	0.00019	U	0.00016	U	0.00018	U	0.00017	U	0.00017	U		
1,2,4-Trichlorobenzene	mg/kg	0.00023	U	0.0002	U	0.00024	U	0.0002	U	0.00022	U	0.00022	U	0.00021	U		
1,2-Dibromo-3-chloropropane	mg/kg	0.0005	U	0.00044	U	0.00052	U	0.00044	U	0.00049	U	0.00047	U	0.00045	U		
1,2-Dibromoethane	mg/kg	0.00022	U	0.00019	U	0.00023	U	0.00019	U	0.00022	U	0.00021	U	0.0002	U		
1,2-Dichlorobenzene	mg/kg	0.00019	U	0.00017	U	0.0002	U	0.00017	U	0.00019	U	0.00018	U	0.00017	U	1.1	100
1,2-Dichloroethane	mg/kg	0.00014	U	0.00013	U	0.00015	U	0.00012	U	0.00014	U	0.00013	U	0.00013	U	0.02	3.1
1,2-Dichloropropane	mg/kg	0.00029	U	0.00025	U	0.0003	U	0.00025	U	0.00028	U	0.00027	U	0.00026	U		
1,3-Dichlorobenzene	mg/kg	0.00017	U	0.00015	U	0.00018	U	0.00015	U	0.00017	U	0.00016	U	0.00015	U	2.4	49
1,4-Dichlorobenzene	mg/kg	0.00018	U	0.00015	U	0.00018	U	0.00015	U	0.00033	J	0.00043	J	0.00016	U	1.8	13
1,4-Dioxane	mg/kg	0.018	U	0.016	U	0.019	U	0.016	U	0.018	U	0.017	U	0.016	U	0.1	13
2-Butanone	mg/kg	0.011	J	0.0041	J	0.00036	U	0.0003	U	0.00034	U	0.00032	U	0.00031	U	0.12	100
2-Hexanone	mg/kg	0.00084	U	0.00074	U	0.00087	U	0.00074	U	0.00082	U	0.00079	U	0.00076	U		
4-Methyl-2-pentanone	mg/kg	0.00031	U	0.00027	U	0.00032	U	0.00027	U	0.0003	U	0.00029	U	0.00028	U		
Acetone	mg/kg	0.071		0.027		0.012	J	0.0065	J	0.016		0.0054	J	0.0055	J	0.05	100
Benzene	mg/kg	0.00015	U	0.00013	U	0.00015	U	0.00013	U	0.00015	U	0.00014	U	0.00013	U	0.06	4.8
Bromochloromethane	mg/kg	0.00035	U	0.00031	U	0.00036	U	0.00031	U	0.00034	U	0.00033	U	0.00031	U		

CLIENT SAMPLE ID		S-16S		S-16D		S-17S		S-17D		S-18S		S-18D		S-19 DUP*		NYSDEC	NYSDEC
SAMPLING DATE		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		Part 375	Part 375
LAB SAMPLE ID		L1533826-01		L1533826-02		L1533826-03		L1533826-04		L1533826-05		L1533826-06		L1533826-07		Track 1	Track 2
SAMPLING DEPTH		0-2'		6'-8'		0-2'		6'-8'		0-2'		6'-8'		6'-8'		Unrestricted	Restricted
	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Use SCOs	Residential SCOs
Volatile Organics by 8260/5035																	
Bromodichloromethane	mg/kg	0.00022	U	0.00019	U	0.00023	U	0.00019	U	0.00021	U	0.0002	U	0.0002	U		
Bromoform	mg/kg	0.0003	U	0.00026	U	0.00031	U	0.00026	U	0.00029	U	0.00028	U	0.00027	U		
Bromomethane	mg/kg	0.00043	U	0.00038	U	0.00044	U	0.00038	U	0.00042	U	0.0004	U	0.00038	U		
Carbon disulfide	mg/kg	0.0034	J	0.0012	U	0.0014	U	0.0012	U	0.0014	U	0.0013	U	0.0012	U		
Carbon tetrachloride	mg/kg	0.00027	U	0.00023	U	0.00028	U	0.00023	U	0.00026	U	0.00025	U	0.00024	U	0.76	2.4
Chlorobenzene	mg/kg	0.00044	U	0.00039	U	0.00046	U	0.00039	U	0.00043	U	0.00041	U	0.00039	U	1.1	100
Chloroethane	mg/kg	0.0004	U	0.00035	U	0.00041	U	0.00035	U	0.00039	U	0.00037	U	0.00036	U		
Chloroform	mg/kg	0.00047	U	0.00041	U	0.00048	U	0.00041	U	0.00046	U	0.00044	U	0.00042	U	0.37	49
Chloromethane	mg/kg	0.00037	U	0.00033	U	0.00038	U	0.00033	U	0.00036	U	0.00035	U	0.00033	U		
cis-1,2-Dichloroethene	mg/kg	0.0021		0.0018		0.0026		0.00016	U	0.0015		0.00017	U	0.00016	U	0.25	100
cis-1,3-Dichloropropene	mg/kg	0.00015	U	0.00013	U	0.00015	U	0.00013	U	0.00014	U	0.00014	U	0.00013	U		
Cyclohexane	mg/kg	0.00018	U	0.00016	U	0.00019	U	0.00016	U	0.00018	U	0.00017	U	0.00016	U		
Dibromochloromethane	mg/kg	0.00019	U	0.00017	U	0.0002	U	0.00017	U	0.00019	U	0.00018	U	0.00017	U		
Dichlorodifluoromethane	mg/kg	0.00024	U	0.00021	U	0.00025	U	0.00021	U	0.00024	U	0.00022	U	0.00022	U		
Ethylbenzene	mg/kg	0.00016	U	0.00014	U	0.00017	U	0.00014	U	0.00016	U	0.00015	U	0.00014	U	1	41
Freon-113	mg/kg	0.00035	U	0.0003	U	0.00036	U	0.0003	U	0.00034	U	0.00032	U	0.00031	U		
Isopropylbenzene	mg/kg	0.00013	U	0.00012	U	0.00014	U	0.00012	U	0.00013	U	0.00012	U	0.00012	U		
Methyl Acetate	mg/kg	0.00034	U	0.0003	U	0.00035	U	0.0003	U	0.00033	U	0.00032	U	0.00031	U		
Methyl cyclohexane	mg/kg	0.0002	U	0.00017	U	0.0002	U	0.00017	U	0.00019	U	0.00018	U	0.00018	U		
Methyl tert butyl ether	mg/kg	0.00011	U	0.00009	U	0.00011	U	0.00009	U	0.0001	U	0.0001	U	0.0001	U	0.93	100
Methylene chloride	mg/kg	0.0014	U	0.0012	U	0.0014	U	0.0012	U	0.0014	U	0.0013	U	0.0012	U	0.05	100
o-Xylene	mg/kg	0.00022	U	0.00019	U	0.00022	U	0.00019	U	0.00021	U	0.0002	U	0.00019	U		
p/m-Xylene	mg/kg	0.00025	U	0.00022	U	0.00026	U	0.00022	U	0.00024	U	0.00023	U	0.00022	U		
Styrene	mg/kg	0.00051	U	0.00045	U	0.00053	U	0.00045	U	0.0005	U	0.00048	U	0.00046	U		
Tetrachloroethene	mg/kg	0.00018	U	0.00016	U	0.002		0.00016	U	0.00096	J	0.00016	U	0.00016	U	1.3	19
Toluene	mg/kg	0.00025	U	0.00022	U	0.00026	U	0.00022	U	0.00024	U	0.00023	U	0.00022	U	0.7	100
trans-1,2-Dichloroethene	mg/kg	0.00027	U	0.00024	U	0.00028	U	0.00024	U	0.00026	U	0.00025	U	0.00024	U	0.19	100
trans-1,3-Dichloropropene	mg/kg	0.00015	U	0.00013	U	0.00016	U	0.00013	U	0.00015	U	0.00014	U	0.00014	U		
Trichloroethene	mg/kg	0.0019		0.00076	J	0.0065		0.00014	U	0.0043		0.00015	U	0.00014	U	0.47	21
Trichlorofluoromethane	mg/kg	0.00049	U	0.00043	U	0.00051	U	0.00043	U	0.00048	U	0.00046	U	0.00044	U		
Vinyl chloride	mg/kg	0.00096	J	0.00013	U	0.00015	U	0.00013	U	0.00014	U	0.00014	U	0.00013	U	0.02	0.9
Semivolatile Organics by GC/MS																	
1,2,4,5-Tetrachlorobenzene	mg/kg	0.02	U	0.019	U	0.018	U	0.021	U	0.019	U	0.02	U	0.02	U		
1,2,4-Trichlorobenzene	mg/kg	0.021	U	0.021	U	0.02	U	0.022	U	0.02	U	0.022	U	0.022	U		
1,2-Dichlorobenzene	mg/kg	0.034	U	0.033	U	0.032	U	0.035	U	0.032	U	0.034	U	0.035	U	1.1	100
1,3-Dichlorobenzene	mg/kg	0.032	U	0.031	U	0.03	U	0.034	U	0.031	U	0.033	U	0.034	U	2.4	49
1,4-Dichlorobenzene	mg/kg	0.033	U	0.032	U	0.031	U	0.034	U	0.031	U	0.034	U	0.034	U	1.8	13
2,4,5-Trichlorophenol	mg/kg	0.036	U	0.035	U	0.034	U	0.038	U	0.034	U	0.037	U	0.037	U		
2,4,6-Trichlorophenol	mg/kg	0.036	U	0.034	U	0.034	U	0.037	U	0.034	U	0.036	U	0.037	U		
2,4-Dichlorophenol	mg/kg	0.03	U	0.029	U	0.028	U	0.032	U	0.029	U	0.031	U	0.031	U		
2,4-Dimethylphenol	mg/kg	0.062	U	0.06	U	0.059	U	0.065	U	0.059	U	0.064	U	0.064	U		
2,4-Dinitrophenol	mg/kg	0.087	U	0.085	U	0.083	U	0.092	U	0.084	U	0.09	U	0.091	U		
2,4-Dinitrotoluene	mg/kg	0.038	U	0.036	U	0.036	U	0.039	U	0.036	U	0.038	U	0.039	U		
2,6-Dinitrotoluene	mg/kg	0.032	U	0.031	U	0.03	U	0.034	U	0.031	U	0.033	U	0.033	U		
2-Chloronaphthalene	mg/kg	0.019	U	0.018	U	0.018	U	0.02	U	0.018	U	0.019	U	0.019	U		
2-Chlorophenol	mg/kg	0.022	U	0.021	U	0.021	U	0.023	U	0.021	U	0.023	U	0.023	U		
2-Methylnaphthalene	mg/kg	0.023	U	0.022	U	0.021	U	0.024	U	0.022	U	0.023	U	0.024	U		
2-Methylphenol	mg/kg	0.029	U	0.028	U	0.028	U	0.03	U	0.028	U	0.03	U	0.03	U	0.33	100
2-Nitroaniline	mg/kg	0.036	U	0.035	U	0.034	U	0.038	U	0.035	U	0.037	U	0.038	U		
2-Nitrophenol	mg/kg	0.07	U	0.068	U	0.067	U	0.074	U	0.068	U	0.072	U	0.073	U		
3,3'-Dichlorobenzidine	mg/kg	0.05	U	0.048	U	0.047	U	0.052	U	0.048	U	0.051	U	0.052	U		

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SAMPLING DATE		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		Part 375	Part 375
LAB SAMPLE ID		L1533826-01		L1533826-02		L1533826-03		L1533826-04		L1533826-05		L1533826-06		L1533826-07		Track 1	Track 2
SAMPLING DEPTH		0-2'		6'-8'		0-2'		6'-8'		0-2'		6'-8'		6'-8'		Unrestricted	Restricted
	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Use SCOs	Residential SCOs
Semivolatile Organics by GC/MS																	
3-Methylphenol/4-Methylphenol	mg/kg	0.029	U	0.028	U	0.028	U	0.031	U	0.028	U	0.03	U	0.03	U	0.33	100
3-Nitroaniline	mg/kg	0.035	U	0.034	U	0.034	U	0.037	U	0.034	U	0.036	U	0.037	U		
4,6-Dinitro-o-cresol	mg/kg	0.09	U	0.087	U	0.085	U	0.095	U	0.086	U	0.092	U	0.094	U		
4-Bromophenyl phenyl ether	mg/kg	0.029	U	0.028	U	0.027	U	0.03	U	0.027	U	0.029	U	0.03	U		
4-Chloroaniline	mg/kg	0.034	U	0.033	U	0.032	U	0.036	U	0.033	U	0.035	U	0.035	U		
4-Chlorophenyl phenyl ether	mg/kg	0.02	U	0.019	U	0.019	U	0.021	U	0.019	U	0.021	U	0.021	U		
4-Nitroaniline	mg/kg	0.078	U	0.075	U	0.074	U	0.082	U	0.074	U	0.08	U	0.081	U		
4-Nitrophenol	mg/kg	0.077	U	0.074	U	0.072	U	0.08	U	0.073	U	0.078	U	0.079	U		
Acenaphthene	mg/kg	0.019	U	0.019	U	0.018	U	0.02	U	0.019	U	0.02	U	0.02	U	20	100
Acenaphthylene	mg/kg	0.029	U	0.028	U	0.027	U	0.03	U	0.028	U	0.03	U	0.03	U	100	100
Acetophenone	mg/kg	0.023	U	0.022	U	0.022	U	0.024	U	0.022	U	0.024	U	0.024	U		
Anthracene	mg/kg	0.037	U	0.035	U	0.058	J	0.038	U	0.035	U	0.038	U	0.038	U	100	100
Benzo(a)anthracene	mg/kg	0.021	U	0.02	U	0.14		0.022	U	0.21		0.022	U	0.022	U	1	1
Benzo(a)pyrene	mg/kg	0.046	U	0.044	U	0.12	J	0.048	U	0.19		0.047	U	0.048	U	1	1
Benzo(b)fluoranthene	mg/kg	0.032	U	0.031	U	0.14		0.033	U	0.24		0.032	U	0.033	U	1	1
Benzo(ghi)perylene	mg/kg	0.022	U	0.021	U	0.075	J	0.023	U	0.12	J	0.023	U	0.023	U	100	100
Benzo(k)fluoranthene	mg/kg	0.03	U	0.029	U	0.064	J	0.032	U	0.11		0.031	U	0.031	U	0.8	3.9
Benzoic Acid	mg/kg	0.19	U	0.18	U	0.18	U	0.2	U	0.18	U	0.19	U	0.2	U		
Benzyl Alcohol	mg/kg	0.057	U	0.056	U	0.054	U	0.06	U	0.055	U	0.059	U	0.06	U		
Biphenyl	mg/kg	0.044	U	0.042	U	0.041	U	0.046	U	0.042	U	0.045	U	0.045	U		
Bis(2-chloroethoxy)methane	mg/kg	0.019	U	0.018	U	0.018	U	0.02	U	0.018	U	0.019	U	0.02	U		
Bis(2-chloroethyl)ether	mg/kg	0.025	U	0.025	U	0.024	U	0.027	U	0.024	U	0.026	U	0.026	U		
Bis(2-chloroisopropyl)ether	mg/kg	0.032	U	0.031	U	0.03	U	0.034	U	0.031	U	0.033	U	0.033	U		
Bis(2-Ethylhexyl)phthalate	mg/kg	0.065	U	0.063	U	0.061	U	0.068	U	0.062	U	0.067	U	0.067	U		
Butyl benzyl phthalate	mg/kg	0.047	U	0.046	U	0.045	U	0.05	U	0.045	U	0.048	U	0.049	U		
Carbazole	mg/kg	0.018	U	0.018	U	0.017	U	0.019	U	0.017	U	0.019	U	0.019	U		
Chrysene	mg/kg	0.02	U	0.019	U	0.11		0.02	U	0.18		0.02	U	0.02	U	1	3.9
Di-n-butylphthalate	mg/kg	0.036	U	0.034	U	0.034	U	0.037	U	0.034	U	0.036	U	0.037	U		
Di-n-octylphthalate	mg/kg	0.064	U	0.062	U	0.06	U	0.067	U	0.061	U	0.065	U	0.066	U		
Dibenzo(a,h)anthracene	mg/kg	0.022	U	0.021	U	0.022	J	0.023	U	0.035	J	0.022	U	0.022	U	0.33	0.33
Dibenzofuran	mg/kg	0.018	U	0.017	U	0.017	U	0.019	U	0.017	U	0.018	U	0.018	U	7	59
Diethyl phthalate	mg/kg	0.017	U	0.017	U	0.016	U	0.018	U	0.017	U	0.018	U	0.018	U		
Dimethyl phthalate	mg/kg	0.039	U	0.038	U	0.037	U	0.041	U	0.038	U	0.04	U	0.041	U		
Fluoranthene	mg/kg	0.022	U	0.021	U	0.24		0.023	U	0.33		0.022	U	0.022	U	100	100
Fluorene	mg/kg	0.018	U	0.018	U	0.018	J	0.019	U	0.017	U	0.019	U	0.019	U	30	100
Hexachlorobenzene	mg/kg	0.021	U	0.02	U	0.02	U	0.022	U	0.02	U	0.022	U	0.022	U	0.33	1.2
Hexachlorobutadiene	mg/kg	0.027	U	0.027	U	0.026	U	0.029	U	0.026	U	0.028	U	0.028	U		
Hexachlorocyclopentadiene	mg/kg	0.17	U	0.16	U	0.16	U	0.18	U	0.16	U	0.17	U	0.18	U		
Hexachloroethane	mg/kg	0.03	U	0.029	U	0.029	U	0.032	U	0.029	U	0.031	U	0.032	U		
Indeno(1,2,3-cd)Pyrene	mg/kg	0.026	U	0.025	U	0.067	J	0.028	U	0.11	J	0.027	U	0.027	U	0.5	0.5
Isophorone	mg/kg	0.024	U	0.024	U	0.023	U	0.026	U	0.023	U	0.025	U	0.025	U		
n-Nitrosodi-n-propylamine	mg/kg	0.029	U	0.028	U	0.027	U	0.03	U	0.028	U	0.03	U	0.03	U		
Naphthalene	mg/kg	0.023	U	0.022	U	0.022	U	0.024	U	0.022	U	0.023	U	0.024	U	12	100
Nitrobenzene	mg/kg	0.028	U	0.027	U	0.026	U	0.029	U	0.026	U	0.028	U	0.029	U		15
NitrosoDiPhenylAmine(NDPA)/DPA	mg/kg	0.021	U	0.021	U	0.02	U	0.022	U	0.02	U	0.022	U	0.022	U		
P-Chloro-M-Cresol	mg/kg	0.028	U	0.027	U	0.026	U	0.029	U	0.027	U	0.029	U	0.029	U		
Pentachlorophenol	mg/kg	0.041	U	0.04	U	0.039	U	0.043	U	0.04	U	0.042	U	0.043	U	0.8	6.7
Phenanthrene	mg/kg	0.023	U	0.022	U	0.15		0.024	U	0.074	J	0.023	U	0.024	U	100	100
Phenol	mg/kg	0.028	U	0.027	U	0.027	U	0.03	U	0.027	U	0.029	U	0.029	U	0.33	100
Pyrene	mg/kg	0.019	U	0.018	U	0.21		0.02	U	0.28		0.019	U	0.019	U	100	100

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	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Use SCOs	Residential SCOs
Polychlorinated Biphenyls by GC																	
Aroclor 1016	mg/kg	0.0291	U	0.00284	U	0.057	U	0.00313	U	0.0573	U	0.00311	U	0.00306	U	0.1	1
Aroclor 1221	mg/kg	0.034	U	0.00332	U	0.0666	U	0.00365	U	0.0668	U	0.00363	U	0.00358	U	0.1	1
Aroclor 1232	mg/kg	0.0432	U	0.00422	U	0.0846	U	0.00464	U	0.085	U	0.00462	U	0.00455	U	0.1	1
Aroclor 1242	mg/kg	0.0452	U	0.0044	U	0.0884	U	0.00485	U	0.0887	U	0.00482	U	0.00475	U	0.1	1
Aroclor 1248	mg/kg	0.0311	U	0.00304	U	0.0609	U	0.00334	U	0.0612	U	0.00333	U	0.00327	U	0.1	1
Aroclor 1254	mg/kg	2.97		0.635		6.84		0.00326	U	4.48		0.00324	U	0.00319	U	0.1	1
Aroclor 1260	mg/kg	0.0281	U	0.00274	U	0.055	U	0.00302	U	0.0552	U	0.003	U	0.00296	U	0.1	1
Aroclor 1262	mg/kg	0.0183	U	0.00178	U	0.0358	U	0.00196	U	0.036	U	0.00196	U	0.00192	U	0.1	1
Aroclor 1268	mg/kg	0.0535	U	0.00522	U	0.105	U	0.00574	U	0.105	U	0.00572	U	0.00562	U	0.1	1
PCBs, Total	mg/kg	2.97		0.635		6.84		0.00196	U	4.48		0.00196	U	0.00192	U		
Organochlorine Pesticides by GC																	
4,4'-DDD	mg/kg	0.000646	U	0.000614	U	0.00061	U	0.000668	U	0.00062	U	0.000662	U	0.000672	U	0.0033	13
4,4'-DDE	mg/kg	0.000419	U	0.000398	U	0.000395	U	0.000433	U	0.000402	U	0.000429	U	0.000436	U	0.0033	8.9
4,4'-DDT	mg/kg	0.00146	U	0.00138	U	0.00137	U	0.0015	U	0.0014	U	0.00149	U	0.00152	U	0.0033	7.9
Aldrin	mg/kg	0.000638	U	0.000606	U	0.000602	U	0.000659	U	0.000612	U	0.000654	U	0.000664	U	0.005	0.097
Alpha-BHC	mg/kg	0.000214	U	0.000204	U	0.000202	U	0.000222	U	0.000206	U	0.00022	U	0.000223	U	0.02	0.48
Beta-BHC	mg/kg	0.000686	U	0.000653	U	0.000648	U	0.00071	U	0.000659	U	0.000704	U	0.000715	U	0.036	0.36
Chlordane	mg/kg	0.006	U	0.00571	U	0.00566	U	0.0062	U	0.00576	U	0.00615	U	0.00624	U		
cis-Chlordane	mg/kg	0.000631	U	0.0006	U	0.000595	U	0.000652	U	0.000605	U	0.000647	U	0.000657	U	0.094	4.2
Delta-BHC	mg/kg	0.000355	U	0.000337	U	0.000335	U	0.000367	U	0.00034	U	0.000364	U	0.000369	U	0.04	100
Dieldrin	mg/kg	0.000566	U	0.000538	U	0.000534	U	0.000585	U	0.000543	U	0.00058	U	0.000589	U	0.005	0.2
Endosulfan I	mg/kg	0.000428	U	0.000407	U	0.000404	U	0.000442	U	0.00041	U	0.000438	U	0.000445	U	2.4	24
Endosulfan II	mg/kg	0.000605	U	0.000576	U	0.000571	U	0.000626	U	0.000581	U	0.00062	U	0.00063	U	2.4	24
Endosulfan sulfate	mg/kg	0.000359	U	0.000342	U	0.000339	U	0.000371	U	0.000345	U	0.000368	U	0.000374	U	2.4	24
Endrin	mg/kg	0.000309	U	0.000294	U	0.000292	U	0.00032	U	0.000297	U	0.000317	U	0.000322	U	0.014	11
Endrin ketone	mg/kg	0.000466	U	0.000444	U	0.00044	U	0.000482	U	0.000448	U	0.000478	U	0.000485	U		
Heptachlor	mg/kg	0.000406	U	0.000386	U	0.000383	U	0.00042	U	0.00039	U	0.000416	U	0.000423	U	0.042	2.1
Heptachlor epoxide	mg/kg	0.0826		0.00971		0.000961	U	0.00105	U	0.000978	U	0.00104	U	0.00106	U		
Lindane	mg/kg	0.0196		0.000321	U	0.000318	U	0.000349	U	0.000324	U	0.000346	U	0.000351	U	0.1	1.3
Methoxychlor	mg/kg	0.00106	U	0.001	U	0.000997	U	0.00109	U	0.00101	U	0.00108	U	0.0011	U		
Toxaphene	mg/kg	0.00951	U	0.00904	U	0.00897	U	0.00983	U	0.00912	U	0.00974	U	0.0099	U		
trans-Chlordane	mg/kg	0.000598	U	0.000568	U	0.000564	U	0.000618	U	0.000573	U	0.000613	U	0.000622	U		

Result Detected

RL Exceeds Criteria

Result Exceeds Criteria

Notes:

U = Undetected

J = Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Soil Samples Analytical Data Summary

131-24 Avery Avenue, Flushing, Queens, NY 11355

CLIENT SAMPLE ID		S-19		S-20		S-21		S-22		S-23		NYSDEC	NYSDEC
SAMPLING DATE		28-DEC-15		28-DEC-15		28-DEC-15		28-DEC-15		28-DEC-15		Part 375	Part 375
LAB SAMPLE ID		L1534218-01		L1534218-02		L1534218-03		L1534218-04		L1534218-05		Track 1	Track 2
SAMPLING DEPTH		0-4'		0-4'		0-4'		0-4'		0-4'		Unrestricted	Restricted
	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Use SCOs	Residential SCOs
Polychlorinated Biphenyls by GC													
Aroclor 1016	mg/kg	0.579	U	1.42	U	0.552	U	0.535	U	0.282	U	0.1	1
Aroclor 1221	mg/kg	0.676	U	1.66	U	0.644	U	0.625	U	0.329	U	0.1	1
Aroclor 1232	mg/kg	0.859	U	2.1	U	0.818	U	0.794	U	0.418	U	0.1	1
Aroclor 1242	mg/kg	0.897	U	2.2	U	0.855	U	0.829	U	0.437	U	0.1	1
Aroclor 1248	mg/kg	0.618	U	1.52	U	0.589	U	0.572	U	0.301	U	0.1	1
Aroclor 1254	mg/kg	35.6		137		46.9		46.6		15.1		0.1	1
Aroclor 1260	mg/kg	0.558	U	1.37	U	0.532	U	0.516	U	0.272	U	0.1	1
Aroclor 1262	mg/kg	0.364	U	0.891	U	0.346	U	0.336	U	0.177	U	0.1	1
Aroclor 1268	mg/kg	1.06	U	2.6	U	1.01	U	0.982	U	0.517	U	0.1	1
PCBs, Total	mg/kg	35.6		137		46.9		46.6		15.1			

Result Exceeds Criteria

Notes:

U = Undetected

Table 13 Groundwater Samples Analytical Data Summary

131-10 Avery Avenue, Flushing, Queens, NY 11355

GROUNDWATER LEVEL/MONITORING WELL DEPTH:

MW-5: 4.5 feet/8 feet below basement ground surface

MW-6: 4.5 feet/8 feet below basement ground surface

*Sample No. MW-7DUP was collected from monitoring well MW-6

CLIENT SAMPLE ID		MW-5		MW-5D		MW-6		MW-6D		MW-7 DUP*		TRIP BLANK		NYSDEC GQS
SAMPLING DATE		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		GQS
LAB SAMPLE ID		L1533795-01		L1533795-02		L1533795-03		L1533795-04		L1533795-05		L1533795-06		GUIDELINES
	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	WQ/GA
Total Metals														
Aluminum, Total	µg/l	219				59300				75800				2000 Effl
Antimony, Total	µg/l	0.1	J			0.2	J			0.2	J			~~6~~ 3
Arsenic, Total	µg/l	1.6				7.5				7.9				~~50~~ 25
Barium, Total	µg/l	49.9				1452				1730				1000~~2000~~
Beryllium, Total	µg/l	0.2	U			4.5				4.8				3
Cadmium, Total	µg/l	0.1	J			0.9				1				~~10~~ 5
Calcium, Total	µg/l	158000				148000				168000				
Chromium, Total	µg/l	1.2				140.7				172.5				~~100~~ 50
Cobalt, Total	µg/l	8.2				99.5				119.1				
Copper, Total	µg/l	0.8	J			114.9				136.4				~~1000~~ 200
Iron, Total	µg/l	7150				151000				203000				~~600~~ 300
Lead, Total	µg/l	0.4	J			76.7				102.6				~~50~~ 25
Magnesium, Total	µg/l	77500				43600				87400				35000
Manganese, Total	µg/l	8880				8837				11300				~~600~~ 300
Mercury, Total	µg/l	0.06	U			0.08	J			0.07	J			~~1.4~~ 0.7
Nickel, Total	µg/l	4.4				107.6				128.5				~~200~~ 100
Potassium, Total	µg/l	20000				15200				18500				
Selenium, Total	µg/l	1	U			16				18				~~20~~ 10
Silver, Total	µg/l	0.1	U			0.7				0.9				~~100~~ 50
Sodium, Total	µg/l	268000				207000				224000				20000
Thallium, Total	µg/l	0.1	U			0.7				0.9				0.5
Vanadium, Total	µg/l	1	J			121.9				136.6				
Zinc, Total	µg/l	24.1				281.4				319.4				2000~~5000~~
Dissolved Metals														
Aluminum, Dissolved	µg/l			4	J			8	J					2000
Antimony, Dissolved	µg/l			0.1	U			0.1	J					6
Arsenic, Dissolved	µg/l			1.2				0.3	J					50
Barium, Dissolved	µg/l			46.8				78.6						2000
Beryllium, Dissolved	µg/l			0.2	U			0.2	U					3
Cadmium, Dissolved	µg/l			0.1	J			0.1	J					10
Calcium, Dissolved	µg/l			147000				95300						
Chromium, Dissolved	µg/l			1.8	J			2.2	J					100
Cobalt, Dissolved	µg/l			7.8				2.4						
Copper, Dissolved	µg/l			1.1				0.6	J					1000
Iron, Dissolved	µg/l			6440				35	J					600
Lead, Dissolved	µg/l			0.1	U			0.1	U					50
Magnesium, Dissolved	µg/l			71400				30400						35000
Manganese, Dissolved	µg/l			8206				284.7						600
Mercury, Dissolved	µg/l			0.06	U			0.06	U					1.4
Nickel, Dissolved	µg/l			4.4				4.6						200
Potassium, Dissolved	µg/l			20100				5340						
Selenium, Dissolved	µg/l			1	U			1	U					20
Silver, Dissolved	µg/l			0.1	U			0.1	U					100
Sodium, Dissolved	µg/l			244000				168000						
Thallium, Dissolved	µg/l			0.1	U			0.1	U					0.5
Vanadium, Dissolved	µg/l			0.6	U			0.6	U					
Zinc, Dissolved	µg/l			25.2				8	J					5000

Effluent limit used if ambient value is not specified

Iron + manganese = 500 ug/l

Use same GQS as above for total metals

CLIENT SAMPLE ID		MW-5		MW-5D		MW-6		MW-6D		MW-7 DUP*		TRIP BLANK		NYSDEC GQS
SAMPLING DATE		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		GQS
LAB SAMPLE ID		L1533795-01		L1533795-02		L1533795-03		L1533795-04		L1533795-05		L1533795-06		GUIDELINES
	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	WQ/GA
Volatile Organics by GC/MS														
1,1,1-Trichloroethane	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
1,1,2,2-Tetrachloroethane	µg/l	0.14	U			0.14	U			0.14	U	0.14	U	5
1,1,2-Trichloroethane	µg/l	0.5	U			0.5	U			0.5	U	0.5	U	1
1,1-Dichloroethane	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
1,1-Dichloroethene	µg/l	0.18	J			0.14	U			0.14	U	0.14	U	5
1,2,3-Trichlorobenzene	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
1,2,4-Trichlorobenzene	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
1,2-Dibromo-3-chloropropane	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	0.04
1,2-Dibromoethane	µg/l	0.65	U			0.65	U			0.65	U	0.65	U	0.0006
1,2-Dichlorobenzene	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	3
1,2-Dichloroethane	µg/l	0.13	U			0.13	U			0.13	U	0.13	U	0.6
1,2-Dichloropropane	µg/l	0.13	U			0.13	U			0.13	U	0.13	U	1
1,3-Dichlorobenzene	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	3
1,4-Dichlorobenzene	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	3
1,4-Dioxane	µg/l	41	U			41	U			41	U	41	U	
2-Butanone	µg/l	1.9	U			1.9	U			1.9	U	1.9	U	50
2-Hexanone	µg/l	1	U			1	U			1	U	1	U	50
4-Methyl-2-pentanone	µg/l	1	U			1	U			1	U	1	U	
Acetone	µg/l	1.5	U			1.5	U			1.5	U	1.5	U	50
Benzene	µg/l	0.16	U			0.16	U			0.16	U	0.16	U	1
Bromochloromethane	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
Bromodichloromethane	µg/l	0.19	U			0.19	U			0.19	U	0.19	U	50
Bromoform	µg/l	0.65	U			0.65	U			0.65	U	0.65	U	50
Bromomethane	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
Carbon disulfide	µg/l	1	U			1	U			1	U	1	U	60
Carbon tetrachloride	µg/l	0.13	U			0.13	U			0.13	U	0.13	U	5
Chlorobenzene	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
Chloroethane	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
Chloroform	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	7
Chloromethane	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	
cis-1,2-Dichloroethene	µg/l	12				10				10		0.7	U	5
cis-1,3-Dichloropropene	µg/l	0.14	U			0.14	U			0.14	U	0.14	U	0.4
Cyclohexane	µg/l	0.27	U			0.27	U			0.27	U	0.27	U	
Dibromochloromethane	µg/l	0.15	U			0.15	U			0.15	U	0.15	U	50
Dichlorodifluoromethane	µg/l	1	U			1	U			1	U	1	U	5
Ethylbenzene	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
Freon-113	µg/l	0.7	U			8.8				8.5		0.7	U	5
Isopropylbenzene	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
Methyl Acetate	µg/l	0.23	U			0.23	U			0.23	U	0.23	U	
Methyl cyclohexane	µg/l	0.4	U			0.4	U			0.4	U	0.4	U	
Methyl tert butyl ether	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	10
Methylene chloride	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
o-Xylene	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
p/m-Xylene	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
Styrene	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	930
Tetrachloroethene	µg/l	1.4				11				10		0.18	U	5
Toluene	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
trans-1,2-Dichloroethene	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
trans-1,3-Dichloropropene	µg/l	0.16	U			0.16	U			0.16	U	0.16	U	0.4
Trichloroethene	µg/l	4.4				80				80		0.18	U	5
Trichlorofluoromethane	µg/l	0.7	U			0.7	U			0.7	U	0.7	U	5
Vinyl chloride	µg/l	1.4				0.07	U			0.07	U	0.07	U	2

CLIENT SAMPLE ID		MW-5		MW-5D		MW-6		MW-6D		MW-7 DUP*		TRIP BLANK		NYSDEC GQS
SAMPLING DATE		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		GQS
LAB SAMPLE ID		L1533795-01		L1533795-02		L1533795-03		L1533795-04		L1533795-05		L1533795-06		GUIDELINES
	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	WQ/GA
Semivolatile Organics by GC/MS														
1,2,4,5-Tetrachlorobenzene	ug/l	0.67	U			0.67	U			0.67	U			5
1,2,4-Trichlorobenzene	ug/l	0.66	U			0.66	U			0.66	U			5
1,2-Dichlorobenzene	ug/l	0.73	U			0.73	U			0.73	U			3
1,3-Dichlorobenzene	ug/l	0.73	U			0.73	U			0.73	U			3
1,4-Dichlorobenzene	ug/l	0.71	U			0.71	U			0.71	U			3
2,4,5-Trichlorophenol	ug/l	0.72	U			0.72	U			0.72	U			
2,4,6-Trichlorophenol	µg/l	0.68	U			0.68	U			0.68	U			
2,4-Dichlorophenol	µg/l	0.77	U			0.77	U			0.77	U			2
2,4-Dimethylphenol	µg/l	1.6	U			1.6	U			1.6	U			2
2,4-Dinitrophenol	µg/l	5.5	U			5.5	U			5.5	U			2
2,4-Dinitrotoluene	µg/l	0.84	U			0.84	U			0.84	U			5
2,6-Dinitrotoluene	µg/l	1.1	U			1.1	U			1.1	U			5
2-Chlorophenol	µg/l	0.63	U			0.63	U			0.63	U			
2-Methylphenol	µg/l	1	U			1	U			1	U			
2-Nitroaniline	µg/l	1.1	U			1.1	U			1.1	U			5
2-Nitrophenol	µg/l	1.5	U			1.5	U			1.5	U			
3,3'-Dichlorobenzidine	µg/l	1.4	U			1.4	U			1.4	U			5
3-Methylphenol/4-Methylphenol	µg/l	1.1	U			1.1	U			1.1	U			
3-Nitroaniline	µg/l	1.1	U			1.1	U			1.1	U			5
4,6-Dinitro-o-cresol	µg/l	2.1	U			2.1	U			2.1	U			
4-Bromophenyl phenyl ether	µg/l	0.73	U			0.73	U			0.73	U			
4-Chloroaniline	µg/l	0.63	U			0.63	U			0.63	U			5
4-Chlorophenyl phenyl ether	µg/l	0.62	U			0.62	U			0.62	U			
4-Nitroaniline	µg/l	1.3	U			1.3	U			1.3	U			5
4-Nitrophenol	µg/l	1.8	U			1.8	U			1.8	U			
Acetophenone	µg/l	0.85	U			0.85	U			0.85	U			
Benzoic Acid	µg/l	13	U			13	U			13	U			
Benzyl Alcohol	µg/l	0.72	U			0.72	U			0.72	U			
Biphenyl	µg/l	0.76	U			0.76	U			0.76	U			
Bis(2-chloroethoxy)methane	µg/l	0.63	U			0.63	U			0.63	U			5
Bis(2-chloroethyl)ether	µg/l	0.67	U			0.67	U			0.67	U			1
Bis(2-chloroisopropyl)ether	µg/l	0.7	U			0.7	U			0.7	U			5
Bis(2-Ethylhexyl)phthalate	µg/l	0.91	U			0.91	U			0.97	J			5
Butyl benzyl phthalate	µg/l	1.3	U			1.3	U			1.3	U			50
Carbazole	µg/l	0.63	U			0.63	U			0.63	U			
Di-n-butylphthalate	µg/l	0.69	U			0.69	U			0.69	U			50
Di-n-octylphthalate	µg/l	1.1	U			1.1	U			1.1	U			50
Dibenzofuran	µg/l	0.66	U			0.66	U			0.66	U			
Diethyl phthalate	µg/l	0.63	U			0.63	U			0.63	U			50
Dimethyl phthalate	µg/l	0.65	U			0.65	U			0.65	U			50
Hexachlorocyclopentadiene	µg/l	7.8	U			7.8	U			7.8	U			5
Isophorone	µg/l	0.6	U			0.6	U			0.6	U			50
n-Nitrosodi-n-propylamine	µg/l	0.7	U			0.7	U			0.7	U			
Nitrobenzene	µg/l	0.75	U			0.75	U			0.75	U			0.4
NitrosoDiPhenylAmine(NDPA)/DPA	µg/l	0.64	U			0.64	U			0.64	U			50
P-Chloro-M-Cresol	µg/l	0.62	U			0.62	U			0.62	U			
Phenol	µg/l	1.9	U			1.9	U			1.9	U			2

CLIENT SAMPLE ID		MW-5		MW-5D		MW-6		MW-6D		MW-7 DUP*		TRIP BLANK		NYSDEC GQS
SAMPLING DATE		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		21-DEC-15		GQS
LAB SAMPLE ID		L1533795-01		L1533795-02		L1533795-03		L1533795-04		L1533795-05		L1533795-06		GUIDELINES
	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	WQ/GA
Semivolatile Organics by GC/MS-SIM														
2-Chloronaphthalene	µg/l	0.04	U			0.04	U			0.04	U			10
2-Methylnaphthalene	µg/l	0.05	U			0.05	U			0.05	U			
Acenaphthene	µg/l	0.04	U			0.04	U			0.04	U			20
Acenaphthylene	µg/l	0.04	U			0.04	U			0.04	U			
Anthracene	µg/l	0.04	U			0.04	U			0.04	U			50
Benzo(a)anthracene	µg/l	0.02	U			0.02	U			0.02	U			
Benzo(a)pyrene	µg/l	0.04	U			0.04	U			0.04	U			
Benzo(b)fluoranthene	µg/l	0.02	U			0.02	U			0.02	U			0.002
Benzo(ghi)perylene	µg/l	0.04	U			0.04	U			0.04	U			
Benzo(k)fluoranthene	µg/l	0.04	U			0.04	U			0.04	U			0.002
Chrysene	µg/l	0.04	U			0.04	U			0.04	U			0.002
Dibenzo(a,h)anthracene	µg/l	0.04	U			0.04	U			0.04	U			
Fluoranthene	µg/l	0.04	U			0.04	U			0.04	U			50
Fluorene	µg/l	0.04	U			0.04	U			0.04	U			50
Hexachlorobenzene	µg/l	0.03	U			0.03	U			0.03	U			0.04
Hexachlorobutadiene	µg/l	0.04	U			0.04	U			0.04	U			0.5
Hexachloroethane	µg/l	0.03	U			0.03	U			0.03	U			5
Indeno(1,2,3-cd)Pyrene	µg/l	0.04	U			0.04	U			0.04	U			0.002
Naphthalene	µg/l	0.04	U			0.04	U			0.04	U			10
Pentachlorophenol	µg/l	0.22	U			0.22	U			0.22	U			2
Phenanthrene	µg/l	0.02	U			0.02	U			0.02	U			50
Pyrene	µg/l	0.04	U			0.04	U			0.04	U			50
Polychlorinated Biphenyls by GC														
Aroclor 1016	µg/l	0.055	U			0.055	U			0.055	U			0.09
Aroclor 1221	µg/l	0.053	U			0.053	U			0.053	U			0.09
Aroclor 1232	µg/l	0.031	U			0.031	U			0.031	U			0.09
Aroclor 1242	µg/l	0.06	U			0.06	U			0.06	U			0.09
Aroclor 1248	µg/l	0.051	U			0.051	U			0.051	U			0.09
Aroclor 1254	µg/l	0.647				0.09				0.097				0.09
Aroclor 1260	µg/l	0.032	U			0.032	U			0.032	U			0.09
Aroclor 1262	µg/l	0.029	U			0.029	U			0.029	U			0.09
Aroclor 1268	µg/l	0.038	U			0.038	U			0.038	U			0.09
PCBs, Total	µg/l	0.647				0.09				0.097				
Organochlorine Pesticides by GC														
4,4'-DDD	µg/l	0.005	U			0.005	U			0.005	U			0.3
4,4'-DDE	µg/l	0.004	U			0.004	U			0.004	U			0.2
4,4'-DDT	µg/l	0.004	U			0.004	U			0.004	U			0.2
Aldrin	µg/l	0.002	U			0.002	U			0.002	U			
Alpha-BHC	µg/l	0.004	U			0.004	U			0.004	U			0.01
Beta-BHC	µg/l	0.006	U			0.006	U			0.006	U			0.04
Chlordane	µg/l	0.046	U			0.046	U			0.046	U			0.05
cis-Chlordane	µg/l	0.007	U			0.007	U			0.007	U			
Delta-BHC	µg/l	0.005	U			0.005	U			0.005	U			0.04
Dieldrin	µg/l	0.004	U			0.004	U			0.004	U			0.004
Endosulfan I	µg/l	0.003	U			0.003	U			0.003	U			
Endosulfan II	µg/l	0.005	U			0.005	U			0.005	U			
Endosulfan sulfate	µg/l	0.005	U			0.005	U			0.005	U			
Endrin	µg/l	0.004	U			0.004	U			0.004	U			
Endrin ketone	µg/l	0.005	U			0.005	U			0.005	U			5
Heptachlor	µg/l	0.003	U			0.003	U			0.003	U			0.04
Heptachlor epoxide	µg/l	0.004	U			0.004	U			0.004	U			0.03
Lindane	µg/l	0.004	U			0.004	U			0.004	U			0.05
Methoxychlor	µg/l	0.007	U			0.007	U			0.007	U			35
Toxaphene	µg/l	0.063	U			0.063	U			0.063	U			0.06
trans-Chlordane	µg/l	0.006	U			0.006	U			0.006	U			

Result Detected														
RL Exceeds Criteria														
Result Exceeds Criteria														
Notes:														
U = Undetected														
J = Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).														

Table 14
Sub-Slab and Air Samples Analytical Data Summary
131-10 Avery Avenue, Flushing, Queens, NY 11355

Lab Sample ID		BK43355		BK43356		BK43357		BK43358		BK43359		BK43360		Table C1 Indoor Values	Table C1 Outdoor Values	Table 3.1 Sub-slab Values
Collection Date		21-Dec-15		21-Dec-15		21-Dec-15		22-Dec-15		22-Dec-15		22-Dec-15				
Sample ID		SS-1		SS-2		SS-3		IA-1		IA-2		OA-1				
Matrix		Air		Air		Air		Air		Air		Air				
Depth		Sub-slab		Sub-slab		Sub-slab		Indoor Air		Indoor Air		Ambient Air				
	Units	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	UF	UF	
Volatiles (TO15) By TO15																
1,1,1,2-Tetrachloroethane	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
1,1,1-Trichloroethane (TCA)	µg/m3	***6.87***	1.00	***13.7***	1.00	***8.45***	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	2.5	0.6	100
1,1,2,2-Tetrachloroethane	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.4	0.4	NP
1,1,2-Trichloroethane	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.4	0.3	NP
1,1-Dichloroethane (11-DCA)	µg/m3	***9.55***	1.00	***21.3***	1.00	***17.8***	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.4	NP	NP
1,1-Dichloroethene	µg/m3	***1.03***	1.00	***3.21***	1.00	***2.84***	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.4	0.4	NP
1,2,4-Trichlorobenzene	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.5	0.4	NP
1,2,4-Trimethylbenzene	µg/m3	***14.3***	1.00	***13***	1.00	***18.8***	1.00	1.01	1.00	< 1.00	1.00	< 1.00	1.00	9.8	1.9	NP
1,2-Dibromoethane(EDB)	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.4	0.4	NP
1,2-Dichlorobenzene	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.5	0.4	NP
1,2-Dichloroethane	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.4	0.4	NP
1,2-dichloropropane	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.4	0.4	NP
1,2-Dichlorotetrafluoroethane	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.4	NP	NP
1,3,5-Trimethylbenzene	µg/m3	**3.71**	1.00	**3.31**	1.00	**3.77**	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	3.9	0.7	NP
1,3-Butadiene	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
1,3-Dichlorobenzene	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.5	0.4	NP
1,4-Dichlorobenzene	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	1.2	0.5	NP
1,4-Dioxane	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
2-Hexanone(MBK)	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
4-Ethyltoluene	µg/m3	3.4	1.00	3.2	1.00	3.62	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
4-Isopropyltoluene	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
4-Methyl-2-pentanone(MIBK)	µg/m3	< 1.00	1.00	< 1.00	1.00	**1.18**	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	1.9	0.5	NP
Acetone	µg/m3	26.1	1.00	28	1.00	**72.9**	1.00	11	1.00	8.71	1.00	4.99	1.00	115	30	NP
Acrylonitrile	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
Benzene	µg/m3	2.39	1.00	2.61	1.00	4.18	1.00	1.08	1.00	1.14	1.00	< 1.00	1.00	13	4.8	NP

Lab Sample ID		BK43355		BK43356		BK43357		BK43358		BK43359		BK43360		Table C1 Indoor Values	Table C1 Outdoor Values	Table 3.1 Sub-slab Values
Collection Date		21-Dec-15		21-Dec-15		21-Dec-15		22-Dec-15		22-Dec-15		22-Dec-15				
Sample ID		SS-1		SS-2		SS-3		IA-1		IA-2		OA-1				
Matrix		Air		Air		Air		Air		Air		Air				
Depth		Sub-slab		Sub-slab		Sub-slab		Indoor Air		Indoor Air		Ambient Air				
	Units	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	UF	UF	
Volatiles (TO15) By TO15																
Benzyl chloride	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
Bromodichloromethane	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
Bromoform	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
Bromomethane	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.5	0.5	NP
Carbon Disulfide	µg/m3	< 1.00	1.00	< 1.00	1.00	1.2	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	13	4.8	NP
Carbon Tetrachloride	µg/m3	0.27	0.25	< 0.25	0.25	< 0.25	0.25	0.47	0.25	0.46	0.25	0.45	0.25	1.3	1.2	5
Chlorobenzene	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.4	NP	NP
Chloroethane	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.4	0.4	NP
Chloroform	µg/m3	***25***	1.00	***21.3***	1.00	***3.1***	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	1.2	0.5	NP
Chloromethane	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	1.14	1.00	1.03	1.00	< 1.00	1.00	4.2	4.3	NP
Cis-1,2-Dichloroethene	µg/m3	***527***	9.99	***2,310***	74.9	***1,350***	9.99	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.4	0.4	NP
cis-1,3-Dichloropropene	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.4	0.4	NP
Cyclohexane	µg/m3	< 1.00	1.00	< 1.00	1.00	**1.14**	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	6.3	0.9	NP
Dibromochloromethane	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
Dichlorodifluoromethane (CFC 12)	µg/m3	***59.3***	1.00	***42.8***	1.00	4.32	1.00	2.37	1.00	2.13	1.00	1.99	1.00	10	10	NP
Ethanol	µg/m3	7.06	1.00	7.14	1.00	6.42	1.00	7.7	1.00	8.93	1.00	9.77	1.00	1300	34	NP
Ethyl acetate	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
Ethylbenzene	µg/m3	***11.4***	1.00	***13.6***	1.00	***11.2***	1.00	**2.44**	1.00	**1.35**	1.00	< 1.00	1.00	6.4	1	NP
Heptane	µg/m3	**3.86**	1.00	**3.1**	1.00	***63.1***	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	18	2.2	NP
Hexachlorobutadiene	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	0.5	0.5	NP
Hexane	µg/m3	**2.66**	1.00	**2.84**	1.00	**3.02**	1.00	1.34	1.00	< 1.00	1.00	1.03	1.00	14	2	NP
Isopropylalcohol	µg/m3	2.78	1.00	4.54	1.00	3.39	1.00	1.65	1.00	2.48	1.00	1.75	1.00	NP	NP	NP
Isopropylbenzene	µg/m3	< 1.00	1.00	1	1.00	**1.52**	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	6.4	1	NP
m,p-Xylene	µg/m3	***35.5***	1.00	***33***	1.00	***32.7***	1.00	**7.33**	1.00	**4.56**	1.00	**1.71**	1.00	11	1	NP
Methyl Ethyl Ketone	µg/m3	2.32	1.00	2.89	1.00	**5.42**	1.00	1.35	1.00	2.03	1.00	< 1.00	1.00	16	5.3	NP
Methyl tert-butyl ether(MTBE)	µg/m3	< 1.00	1.00	1.09	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	14	1.9	NP
Methylene Chloride	µg/m3	1.1	1.00	1.03	1.00	< 1.00	1.00	1.02	1.00	< 1.00	1.00	1.02	1.00	16	1.6	NP
n-Butylbenzene	µg/m3	*1.59*	1.00	*1.45*	1.00	*1.68*	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	1.1	1.9	NP
o-Xylene	µg/m3	***12.8***	1.00	***12.7***	1.00	***12.4***	1.00	***1.63***	1.00	< 1.00	1.00	< 1.00	1.00	7.1	1.2	NP
Propylene	µg/m3	3.22	1.00	6.67	1.00	14.5	1.00	1.72	1.00	1.82	1.00	1.35	1.00	NP	NP	NP

Lab Sample ID		BK43355		BK43356		BK43357		BK43358		BK43359		BK43360		Table C1 Indoor Values	Table C1 Outdoor Values	Table 3.1 Sub-slab Values
Collection Date		21-Dec-15		21-Dec-15		21-Dec-15		22-Dec-15		22-Dec-15		22-Dec-15				
Sample ID		SS-1		SS-2		SS-3		IA-1		IA-2		OA-1				
Matrix		Air		Air		Air		Air		Air		Air				
Depth		Sub-slab		Sub-slab		Sub-slab		Indoor Air		Indoor Air		Ambient Air				
	Units	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	UF	UF	
Volatiles (TO15) By TO15																
sec-Butylbenzene	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
Styrene	µg/m3	**1.1**	1.00	***1.56***	1.00	***2.2***	1.00	***10.2***	1.00	**1.09**	1.00	< 1.00	1.00	1.4	0.5	NP
Tetrachloroethene (PCE)	µg/m3	***535***	2.50	***1,100***	2.50	***115***	0.25	**0.82**	0.25	0.46	0.25	**0.83**	0.25	2.5	0.7	100
Tetrahydrofuran (THF)	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	***2.02***	1.00	***4.27***	1.00	< 1.00	1.00	0.8	0.4	NP
Toluene	µg/m3	**42.9**	1.00	**33.3**	1.00	***94.2***	1.00	2.59	1.00	3.04	1.00	2.01	1.00	57	5.1	NP
Trans-1,2-Dichloroethene	µg/m3	89.5	1.00	305	9.99	177	9.99	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
trans-1,3-Dichloropropene	µg/m3	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
Trichloroethene (TCE)	µg/m3	***2,510***	7.52	***8,490***	18.7	***2,300***	7.52	***0.61***	0.25	0.31	0.25	< 0.25	0.25	0.5	0.4	5
Trichlorofluoromethane (CFC 11)	µg/m3	***30.3***	1.00	***14.8***	1.00	**11.4**	1.00	**10.7**	1.00	***19***	1.00	1.44	1.00	12	5.1	NP
Trichlorotrifluoroethane	µg/m3	237	1.00	1,260	10.0	11.1	1.00	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00	NP	NP	NP
Vinyl Chloride	µg/m3	**2.24**	0.25	**29.4**	0.25	**16.5**	0.25	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25	NP	<1.0	NP

Result Detected

Notes:

Values in bold represent detected contaminant concentrations above the outdoor upper fence val

Values in italics represent detected contaminant concentrations above the indoor upper fence val

Values in bold and italics represent detected contaminant concentrations above both indoor and outdoor upper fence values

Values in bold, italics and red represent detected contaminant concentrations above both indoor and outdoor upper fence values and sub-slab value.

< = analytes not detected below listed minimum reporting limits

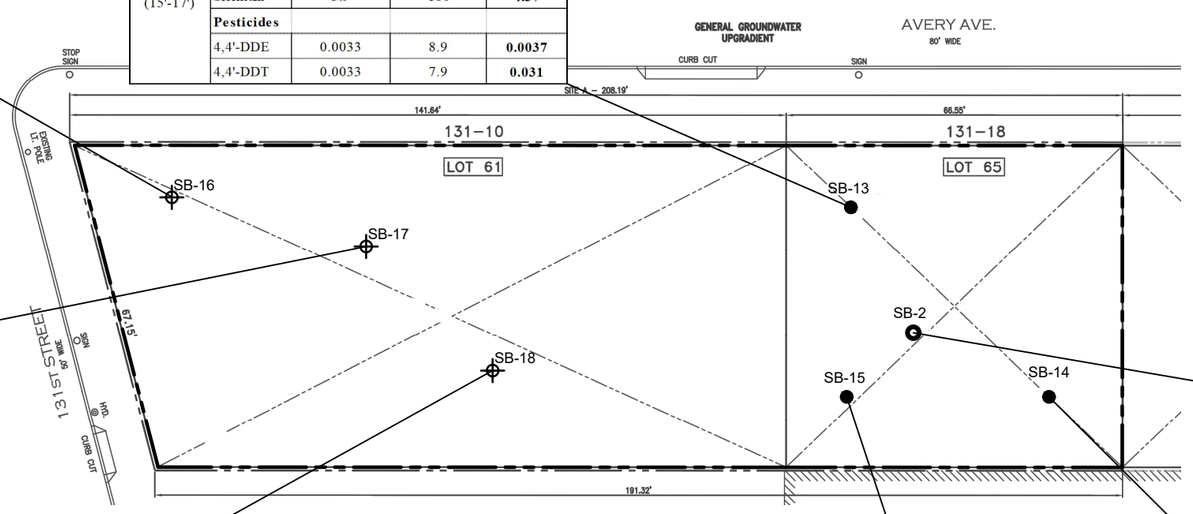
UF = Upper Fence

NP = no information provided.

Table 3.1, October 2006

Sample ID	Analyte	Part 375 SCOs-Unrestricted (mg/kg)	Part 375 SCOs-Restricted Residential (mg/kg)	Results (mg/kg)
SB-16 (0'-2')	**PCBs**			
	Total PCBs	0.1	1	**2.97**
SB-16 (6'-8')	**PCBs**			
	Total PCBs	0.1	1	**0.635**

Sample ID	Analyte	Part 375 SCOs-Unrestricted (mg/kg)	Part 375 SCOs-Restricted Residential (mg/kg)	Results (mg/kg)
SB-13 (0'-2')	**PCBs**			
	Total PCBs	0.1	1	**5.8**
	TAL Metals			
	Lead	63	400	**70.8**
	Selenium	3.9	180	**5.2**
SB-13 (15'-17')	**PCBs**			
	Total PCBs	0.1	1	**0.37**
	TAL Metals			
	Selenium	3.9	180	**4.37**
	Pesticides			
	4,4'-DDE	0.0033	8.9	**0.0037**
	4,4'-DDT	0.0033	7.9	**0.031**



Sample ID	Analyte	Part 375 SCOs-Unrestricted (mg/kg)	Part 375 SCOs-Restricted Residential (mg/kg)	Results (mg/kg)
SB-17 (0'-2')	**PCBs**			
	Total PCBs	0.1	1	**6.84**

Sample ID	Analyte	Part 375 SCOs-Unrestricted (mg/kg)	Part 375 SCOs-Restricted Residential (mg/kg)	Results (mg/kg)
SB-18 (0'-2')	**PCBs**			
	Total PCBs	0.1	1	**4.48**

Sample ID	Analyte	Part 375 SCOs-Unrestricted (mg/kg)	Part 375 SCOs-Restricted Residential (mg/kg)	Results (mg/kg)
SB-15 (0'-2')	**PCBs**			
	Total PCBs	0.1	1	**0.86**
	TAL Metals			
	Selenium	3.9	180	**4.37**
	Pesticides			
	4,4'-DDT	0.0033	7.9	**0.15**

Sample ID	Analyte	Part 375 SCOs-Unrestricted (mg/kg)	Part 375 SCOs-Restricted Residential (mg/kg)	Results (mg/kg)
SB-2 Fill (4'-6')	**TAL Metals**			
	Copper	50	270	**106**
	Lead	63	400	**282**
	Zinc	109	10,000	**270**

Sample ID	Analyte	Part 375 SCOs-Unrestricted (mg/kg)	Part 375 SCOs-Restricted Residential (mg/kg)	Results (mg/kg)
SB-14 (0'-2')	**PCBs**			
	Total PCBs	0.1	1	**35.60**

LEGENDS:

- SITE BOUNDARY
- SB- X — SOIL BORINGS PERFORMED BY ATHENICA ENVIRONMENTAL SERVICES ON 05/21/2014 FOR THE FOCUSED PHASE II SUBSURFACE INVESTIGATION REPORT DATED JUNE 2014
- SB- X — SOIL BORINGS PERFORMED BY ATHENICA ENVIRONMENTAL SERVICES ON 10/29/2014 FOR THE REMEDIAL INVESTIGATION REPORT DATED FEBRUARY 2015
- SB- X — SOIL BORINGS PERFORMED BY AIRTEK ENVIRONMENTAL CORP ON 12/21/2015 DURING SUPPLEMENTAL REMEDIAL INVESTIGATION DATED DECEMBER 2015

0 15 30 60 Feet

Graphic Scale

NOTES:

1. THE BASE MAP IS FROM THE POST-REMEDIATION GROUNDWATER SAMPLING MAP FOR 131-10/18/24/32 AVERY AVENUE PREPARED BY AIRTEK ENVIRONMENTAL CORPORATION ON NOVEMBER 28, 2016.
2. BOLD RESULTS INDICATE SAMPLE RESULTS EXCEEDING THE 6 NYCRR PART 375 UNRESTRICTED USE SOIL CLEANUP OBJECTIVES (SCOs)
3. BOLD AND SHADED RESULTS INDICATE SAMPLE RESULTS EXCEEDING THE 6 NYCRR PART 375 RESTRICTED RESIDENTIAL USE SOIL CLEANUP OBJECTIVES (SCOs)

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SOIL SAMPLE EXCEEDANCE MAP
131-10 TO 131-18 AVERY AVENUE
SITE ID: C241228
FLUSHING

QUEENS NEW YORK

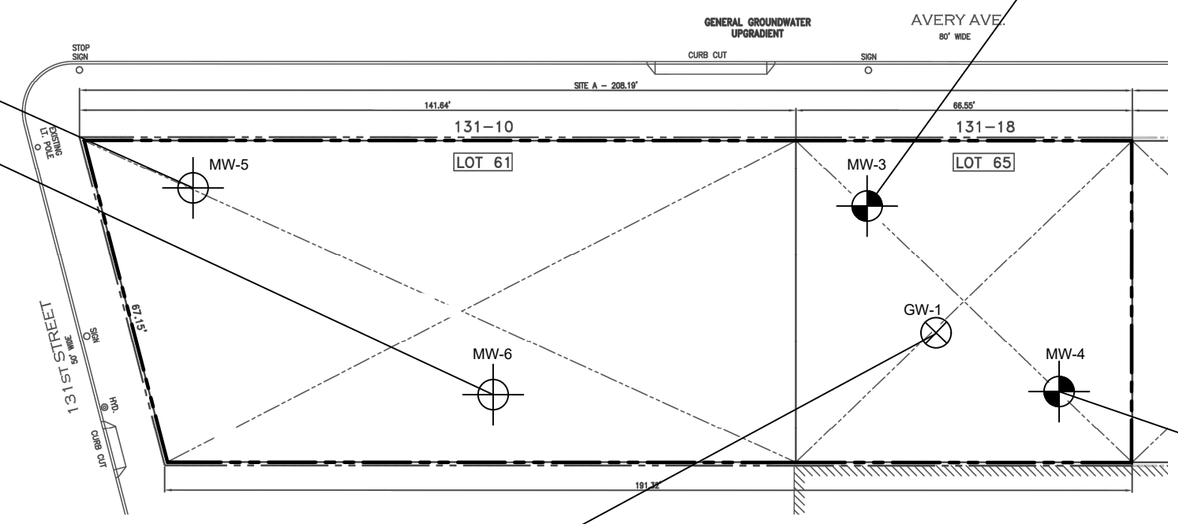
JOB NO.: 17116	SCALE: AS SHOWN	DATE: 06/25/2018	FIG. 4

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Sample ID	Analyte	NYSDEC Class GA Groundwater Standard/Guidance Value (µg/L)	Results (µg/L)
MW-5	**VOCs**		
	cis-1,2-Dichloroethylene	5	**12**
	PCBs		
	Total PCBs	0.09	**0.647**
	TAL Metals		
	Magnesium	35,000	**43,600**
	Manganese	300	**8,880**
	Sodium	20,000	**268,000**

Sample ID	Analyte	NYSDEC Class GA Groundwater Standard/Guidance Value (µg/L)	Results (µg/L)
MW-6	**VOCs**		
	cis-1,2-Dichloroethylene	5	**10**
	Freon 113	5	**8.8**
	Tetrachloroethylene	5	**11**
	Trichloroethylene	5	**80**
	PCBs		
	Total PCBs	0.09	**0.09**
	TAL Metals		
	Barium	1000	**1,452**
	Baryllium	3	**4.5**
	Chromium	50	**140.7**
	Lead	25	**76.7**
	Magnesium	35,000	**43,600**
	Manganese	300	**8,837**
	Nickel	100	**107.6**
	Selenium	10	**16**
	Sodium	20,000	**207,000**

Sample ID	Analyte	NYSDEC Class GA Groundwater Standard/Guidance Value (µg/L)	Results (µg/L)
MW-3	**VOCs**		
	Tetrachloroethylene	5	**48**
	TAL Metals		
	Manganese	300	**1,820**
	Selenium	10	**25**
	Sodium	20,000	**147,000**



Sample ID	Analyte	NYSDEC Class GA Groundwater Standard/Guidance Value (µg/L)	Results (µg/L)
GW-1	**VOCs**		
	1,1-Dichloroethane	5	**6.0**
	Tetrachloroethylene	5	**7.8**
	Trichloroethylene	5	**7.0**
	TAL Metals		
	Sodium	20,000	**132,000**

Sample ID	Analyte	NYSDEC Class GA Groundwater Standard/Guidance Value (µg/L)	Results (µg/L)
MW-4	**VOCs**		
	1,1-Dichloroethane	5	**8.0**
	Tetrachloroethylene	5	**36**
	TAL Metals		
	Manganese	300	**2,530**
	Selenium	10	**30**
	Sodium	20,000	**132,000**

0 15 30 60 Feet

Graphic Scale

LEGENDS:

SITE BOUNDARY

GW- 1 — GROUNDWATER SAMPLES TAKEN BY ATHENICA ENVIRONMENTAL SERVICES ON 05/21/2014 FOR THE FOCUSED PHASE II SUBSURFACE INVESTIGATION REPORT DATED JUNE 2014.

MW- X — GROUNDWATER SAMPLES TAKEN BY ATHENICA ENVIRONMENTAL SERVICES ON 10/31/2014 FOR THE REMEDIAL INVESTIGATION REPORT DATED FEBRUARY 2015.

MW- X — GROUNDWATER SAMPLES TAKEN BY AIRTEK ENVIRONMENTAL CORP. ON 12/21/2015 DURING SUPPLEMENTAL REMEDIAL INVESTIGATION DATED DECEMBER 2015.

NOTES:

1. THE BASE MAP IS FROM THE POST-REMEDIATION GROUNDWATER SAMPLING MAP FOR 131-10/18/24/32 AVERY AVENUE PREPARED BY AIRTEK ENVIRONMENTAL CORPORATION ON NOVEMBER 28, 2016.
2. BOLD AND SHADED DATA INDICATE SAMPLE RESULTS EXCEEDING THE NYSDEC CLASS GA GROUNDWATER STANDARD/GUIDANCE VALUE.

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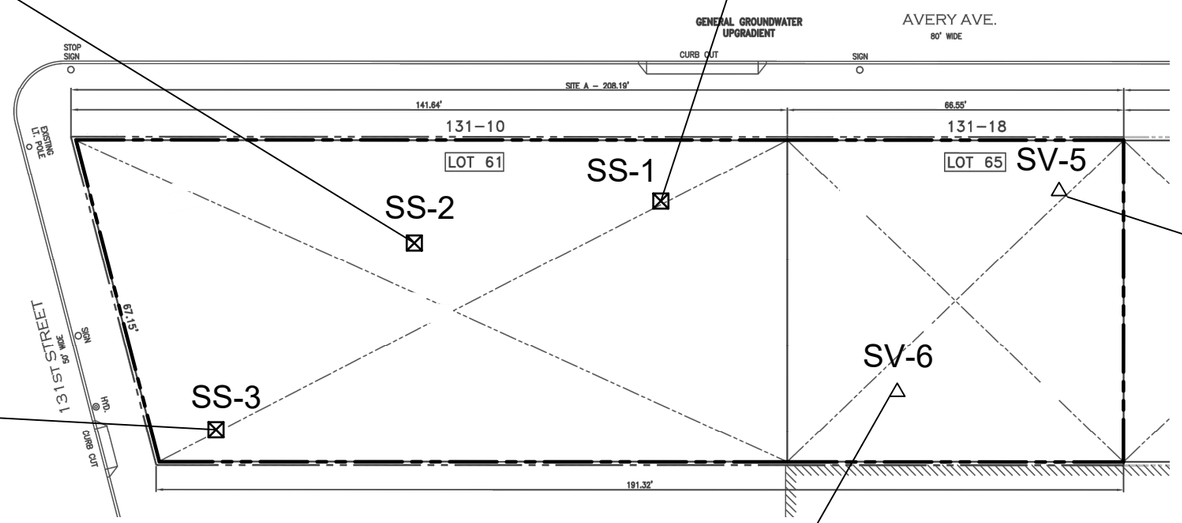
GROUNDWATER SAMPLE EXCEEDANCE MAP
131-10 TO 131-18 AVERY AVENUE
SITE ID: C241228
FLUSHING
QUEENS NEW YORK

JOB NO.: 17116	SCALE: AS SHOWN	DATE: 06/15/2018	FIG. 5

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Sample ID	Analyte	NYSDOH Soil Vapor Intrsion Guidance Air Guideline Values (µg/m3)	Results (µg/m3)
SS-2	**VOCs**		
	Tetrachloroethylene	100	**1,100**
	Trichloroethylene	5	**8,490**

Sample ID	Analyte	NYSDOH Soil Vapor Intrsion Guidance Air Guideline Values (µg/m3)	Results (µg/m3)
SS-1	**VOCs**		
	Tetrachloroethylene	100	**535**
	Trichloroethylene	5	**2,510**



Sample ID	Analyte	NYSDOH Soil Vapor Intrsion Guidance Air Guideline Values (µg/m3)	Results (µg/m3)
SS-3	**VOCs**		
	Tetrachloroethylene	100	**115**
	Trichloroethylene	5	**2,300**

Sample ID	Analyte	NYSDOH Soil Vapor Intrsion Guidance Air Guideline Values (µg/m3)	Results (µg/m3)
SV-5	**VOCs**		
	Tetrachloroethylene	100	**500**
	Trichloroethylene	5	**8,700**

Sample ID	Analyte	NYSDOH Soil Vapor Intrsion Guidance Air Guideline Values (µg/m3)	Results (µg/m3)
SV-6	**VOCs**		
	Tetrachloroethylene	100	**910**
	Trichloroethylene	5	**12,000**

LEGENDS:

SITE BOUNDARY

SV- X △ SOIL VAPOR SAMPLES TAKEN BY ATHENICA ENVIRONMENTAL SERVICES ON 10/31/2014 FOR REMEDIAL INVESTIGATION REPORT DATED FEBRUARY 2015.

SS- X ⊠ SOIL VAPOR SAMPLES TAKEN BY AIRTEK ENVIRONMENTAL CORP. ON 12/21/2015 DURING SUPPLEMENTAL REMEDIAL INVESTIGATION DATED DECEMBER 2015.

0 15 30 60 Feet

Graphic Scale

NOTES:

1. THE BASE MAP IS FROM THE POST-REMEDIATION GROUNDWATER SAMPLING MAP FOR 131-10/18/24/32 AVERY AVENUE PREPARED BY AIRTEK ENVIRONMENTAL CORPORATION ON NOVEMBER 28, 2016.
2. BOLD AND SHADED DATA INDICATE SAMPLE RESULTS EXCEEDING THE NYSDOH SOIL VAPOR INTRUSION GUIDANCE AIR GUIDELINE VALUES.

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SOIL VAPOR SAMPLE EXCEEDANCE MAP
131-10 TO 131-18 AVERY AVENUE
SITE ID: C241228
FLUSHING
QUEENS NEW YORK

JOB NO.: 17116	SCALE: AS SHOWN	DATE: 06/25/2018	FIG. 6

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APPENDIX F – Excavation Work Plan

APPENDIX F – EXCAVATION WORK PLAN (EWP)

Based on the end-point soil sample results, all contaminated soil has been removed from the Site, and a conditional Track 1 Cleanup has been achieved. Track 1 Cleanup may be achieved pending groundwater sampling to demonstrate bulk reduction in groundwater contamination within 5 years as required in 6 NYCRR Part 375-3.8(e)(1)(iv).

F-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the NYSDEC. Table 1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix B of the SMP.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control;
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;
- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix G of this SMP;
- Identification of disposal facilities for potential waste streams; and

- Identification of sources of any anticipated backfill, along with all required chemical testing results.

F-2 FLUIDS MANAGEMENT

All liquids to be removed from the site, including but not limited to, excavation dewatering, decontamination waters and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, and will be managed off-site, unless prior approval is obtained from NYSDEC.

Dewatered fluids will not be recharged back to the land surface or subsurface of the Site. Dewatering fluids will be managed off-Site. Dewatering would be required to prevent surface water and groundwater from entering excavations, from ponding on prepared subgrades, and from flooding the project site and surrounding area. Dewatering will be carried out to protect subgrades from softening, undermining, washout, and damage by rain or water accumulation. Water shall be removed to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Surface water runoff shall be rerouted away from excavated areas; no water will be allowed to accumulate in excavations.

It is anticipated that the amount of dewatering fluids will not exceed 10,000 gallons per day. High vacuum extraction trucks may be applied to accomplish the dewatering activities. The dewatering system may consist of pumps, suction and discharge lines, and other necessary dewatering system components. The system shall be installed and maintained to keep subgrades dry and convey groundwater away from excavations until dewatering is no longer required. Temporary drainage ditches and other diversions outside excavation limits shall be established and maintained to convey rain water and water removed from excavations to collecting or run-off areas. Trench excavations shall not be used as temporary drainage ditches.

The construction manager will submit the proposed dewatering method for Environmental Engineer review and approval prior to commencing dewatering. Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

F-3 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in Table 2. Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

F-4 STORMWATER POLLUTION PREVENTION

The qualified environmental professional will take site-specific actins identified by this plan to minimize soil erosion and sedimentation. The stormwater pollution will

consequently be prevented during remedy implementation. Discharge of surface water will be diverted or limited to avoid soil erosion and migration on the Site. The controls of erosion and sediment will be in accordance with requirements in New York State Guidelines for Urban Erosion and Sediment Control. Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

F-5 COMMUNITY AIR MONITORING PLAN

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. This Site will involve VOC and particulate monitoring.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and soil mixing.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil end-point samples. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while collecting the sample, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

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

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

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

- All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m3 above the upwind level and provided that no visible dust is migrating from the work area.

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

A figure showing the location of air sampling stations based on generally prevailing wind conditions is shown in Figure 1. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

F-6 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site. Specific odor control methods to be used on a routine basis will include periodic staff-monitoring to observe the perceptible odor. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the remedial party's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

F-7 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved though the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

F-8 OTHER NUISANCES

A plan for rodent control will be developed and utilized by the contractor prior to and during site clearing and site grubbing, and during all remedial work.

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

Table 1
Notifications
131-10 Avery Avenue
Queens, NY 11355
Project No. 17116

Name	Contact Information
NYSDEC Project Manager: Javier Perez-Maldonado	(518) 402-8172 javier.perez-maldonado@dec.ny.gov
NYSDEC BURB Section B, Section Chief: John Grathwol	(518)402-9767 john.grathwol@dec.ny.gov
NYSDOH Public Health Specialist: Sarita Wagh	(518)402-7860 beei@health.ny.gov
NYSDEC Site Control Section Chief: Kelly Lewandowski	(518)402-9553 kelly.lewandowski@dec.ny.gov
NYSDEC Regional Remediation Engineer Jane O'Connell	(718)482-4599 jane.oconnell@dec.ny.gov

Note:
Notifications are subject to change and will be updated as necessary.

Table 2
Soil Cleanup Objectives
Remedial Action
131-10 TO 131-18 Avery Ave
Queens, NY 11355
Project No. 17116

Contaminant	CAS Number	Unrestricted Use	Residential Use
Metals			
Arsenic	7440-38-2	13	16
Barium	7440-39-3	350	350
Beryllium	7440-41-7	7.2	14
Cadmium	7440-43-9	2.5	2.5
Chromium, hexavalent	18540-29-9	1	22
Chromium, trivalent	16065-83-1	30	36
Cobalt	7440-48-4	30	30
Copper	7440-50-8	50	270
Total Cyanide		27	27
Iron	7439-89-6	2000	2000
Lead	7439-92-1	63	400
Manganese	7439-96-5	1600	2000
Total Mercury		0.18	0.81
Nickel	7440-02-0	30	140
Selenium	7782-49-2	3.9	36
Silver	7440-22-4	2	36
Vanadium	7440-62-2	100	100
Zinc	7440-66-6	109	2200
PCBs/Pesticides			
2,4,5-TP Acid (Silvex)	93-72-1	3.8	58
4,4'-DDE	72-55-9	0.0033	1.8
4,4'-DDT	50-29-3	0.0033	1.7
4,4'-DDD	72-54-8	0.0033	2.6
Aldrin	309-00-2	0.005	0.019
alpha-BHC	319-84-6	0.02	0.097
beta-BHC	319-85-7	0.036	0.072
Chlordane (alpha)	5103-71-9	0.094	0.91
delta-BHC	319-86-8	0.04	100
Dibenzofuran	132-64-9	7	14
Dieldrin	60-57-1	0.005	0.039
Endosulfan I	959-98-8	2.4	4.8
Endosulfan II	33213-65-9	2.4	4.8
Endosulfan sulfate	1031-07-8	2.4	4.8
Endrin	72-20-8	0.014	2.2
Heptachlor	76-44-8	0.042	0.42
Lindane	58-89-9	0.1	0.28
Polychlorinated biphenyls	1336-36-3	0.1	1
Semivolatile Organic Compounds (SVOCs)			
Acenaphthene	83-32-9	20	100
Acenapthylene	208-96-8	100	100
Anthracene	120-12-7	100	100

Table 2
Soil Cleanup Objectives
Remedial Action
131-10 TO 131-18 Avery Ave
Queens, NY 11355
Project No. 17116

Contaminant	CAS Number	Unrestricted Use	Residential Use
Benz(a)anthracene	56-55-3	1	1
Benzo(a)pyrene	50-32-8	1	1
Benzo(b)fluoranthene	205-99-2	1	1
Benzo(g,h,i)perylene	191-24-2	100	100
Benzo(k)fluoranthene	207-08-9	0.8	1
Chrysene	218-01-9	1	1
Dibenz(a,h)anthracene	53-70-3	0.33	0.33
Fluoranthene	206-44-0	100	100
Fluorene	86-73-7	30	100
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	0.5
m-Cresol	108-39-4	0.33	100
Naphthalene	91-20-3	12	100
o-Cresol	95-48-7	0.33	100
p-Cresol	106-44-5	0.33	34
Pentachlorophenol	87-86-5	0.8	2.4
Phenanthrene	85-01-8	100	100
Phenol	108-95-2	0.33	100
Pyrene	129-00-0	100	100
Volatile Organic Compounds (VOCs)			
1,1,1-Trichloroethane	71-55-6	0.68	100
1,1-Dichloroethane	75-34-3	0.27	19
1,1-Dichloroethene	75-35-4	0.33	100
1,2-Dichlorobenzene	95-50-1	1.1	100
1,2-Dichloroethane	107-06-2	0.02	2.3
cis-1,2-Dichloroethene	156-59-2	0.25	59
trans-1,2-Dichloroethene	156-60-5	0.19	100
1,3-Dichlorobenzene	541-73-1	2.4	17
1,4-Dichlorobenzene	106-46-7	1.8	9.8
1,4-Dioxane	123-91-1	0.1	9.8
Acetone	67-64-1	0.05	100
Benzene	71-43-2	0.06	2.9
n-Butylbenzene	104-51-8	12	100
Carbon tetrachloride	56-23-5	0.76	1.4
Chlorobenzene	108-90-7	1.1	100
Chloroform	67-66-3	0.37	10
Ethylbenzene	100-41-4	1	30
Hexachlorobenzene	118-74-1	0.33	0.33
Methyl ethyl ketone	78-93-3	0.12	100
Methyl tert-butyl ether	1634-04-4	0.93	62
Methylene chloride	75-09-2	0.05	51
n-Propylbenzene	103-65-1	3.9	100
sec-Butylbenzene	135-98-8	11	100

Table 2
Soil Cleanup Objectives
Remedial Action
131-10 TO 131-18 Avery Ave
Queens, NY 11355
Project No. 17116

Contaminant	CAS Number	Unrestricted Use	Residential Use
tert-Butylbenzene	98-06-6	5.9	100
Tetrachloroethene	127-18-4	1.3	5.5
Toluene	108-88-3	0.7	100
Trichloroethene	79-01-6	0.47	10
1,2,4-Trimethylbenzene	95-63-6	3.6	47
1,3,5-Trimethylbenzene	108-67-8	8.4	47
Vinyl chloride	75-01-4	0.02	0.21
Xylene (mixed)	1330-20-7	0.26	100

Notes:
1. The Soil Cleanup Objectives (SCOs) are obtained from 6 NYCRR Part 375 Table 6.8(a) and 6.8(b), and CP-51 Table 1.
2. All soil cleanup objectives are in parts per million (ppm).

APPENDIX G – Health and Safety Plan/ Community Air Monitoring Plan

APPENDIX G

HEALTH AND SAFETY PLAN/ COMMUNITY AIR MONITORING PLAN

131-10 Avery Avenue

Block 5076, Lots 61 & 65

Site ID: C241228

Submitted to:

New York State Department of Environmental Conservation

Division of Environmental Remediation

Remedial Bureau B, 12th Floor

625 Broadway

Albany, NY 12233-7016

Prepared for:

Avery Group LLC

P.O. Box 815

Plandome, NY 11030

Prepared by:

YU & Associates Engineers, P.C.

200 Riverfront Boulevard

Elmwood Park, NJ 07407

May 19, 2020

TABLE OF CONTENTS

Chapter **Page**

1.0 APPROVALS 1

2.0 GENERAL 2

2.1 SCOPE OF WORK 2
2.2 HASP-RELATED ACTIVITIES 2
2.3 EMERGENCY CONTACTS 4

3.0 HEALTH AND SAFETY STAFF 5

3.1 PROJECT MANAGER 5
3.2 HEALTH AND SAFETY OFFICER 5
3.3 SITE HEALTH AND SAFETY OFFICER 5
3.4 SITE PERSONNEL 6

4.0 SITE HISTORY AND DESCRIPTION 7

4.1 SITE DESCRIPTION 7
4.2 PROJECT BACKGROUND 7

5.0 HAZARD ASSESSMENT 9

5.1 HAZARD BY ACTIVITY ANALYSIS 9
5.2 CHEMICAL HAZARDS 15
5.2.1 Task Hazard Assessment 16
5.3 BIOLOGICAL HAZARDS 16
5.4 PHYSICAL AND OPERATIONAL HAZARDS 16
5.4.1 General 16
5.4.2 Back Injuries Due to Improper Lifting 17
5.4.3 Traffic 17
5.4.4 Overhead Power Lines 17
5.4.5 Below-Ground Utilities 17
5.4.6 Weather 18
5.4.7 Noise 18
5.4.8 Fire and Explosion 18

6.0 TRAINING AND MEDICAL SURVEILLANCE REQUIREMENTS 19

6.1 GENERAL HEALTH AND SAFETY TRAINING 19
6.2 MANAGER/SUPERVISOR TRAINING 19
6.3 ANNUAL 8-HOUR REFRESHER TRAINING 19
6.4 SITE SPECIFIC TRAINING 19
6.5 ON-SITE SAFETY BRIEFINGS 20
6.6 ADDITIONAL TRAINING 20
6.7 SUBCONTRACTOR TRAINING 20
6.8 MEDICAL SURVEILLANCE PROCEDURES 20

7.0 SITE CONTROL, PPE AND COMMUNICATIONS 22

7.1 GENERAL SITE CONTROL 22
7.2 CONTAMINATION CONTROL 22

7.2.1 Support Zone 22
7.2.2 Contamination Reduction Zone 22
7.2.3 Exclusion Zone 22
7.3 PERSONAL PROTECTIVE EQUIPMENT 23
7.3.1 General 23
7.3.2 Personal Protective Equipment Selection 23
7.3.3 Initial Levels of Protection 24
7.3.4 Required Persponal Protection by Remedial Activity 24
7.4 SAFETY EQUIPMENT 26
7.5 COMMUNICATIONS 27

8.0 AIR MONITORING 28

8.1 PERIODIC AIR MONITORING 28
8.2 ACTION LEVELS 28
8.3 INSTRUMENT CALIBRATION 28
8.4 PERSONAL MONITORING 29

9.0 COMMUNITY AIR MONITORING PROGRAM 30

9.1 COMMUNITY AIR MONITORING PLAN 30
9.2 VOC MONITORING, RESPONSE LEVELS, AND ACTIONS 30
9.3 PARTICULATE MONITORING, RESPONSE LEVELS, AND ACTIONS 31

10.0 ADDITIONAL SAFE WORK PRACTICES 32

10.1 GENERAL 32
10.1.1 Operation of Heavy Equipment 33
10.2 PERSONNEL SAFETY 33
10.3 SAFETY PROCEDURES IN EXCLUSION ZONES 34

11.0 DECONTAMINATION PROCEDURES 35

11.1 CONTAMINATION AVOIDANCE 35
11.2 PERSONNEL DECONTAMINATION 35
11.3 EQUIPMENT DECONTAMINATION 35
11.4 EMERGENCY DECONTAMINATION 35
11.5 ONSITE WASTE STORAGE AND DISPOSAL 36

12.0 EMERGENCY PLAN 37

12.1 EVACUATION 37
12.2 POTENTIAL OR ACTUAL FIRE 37
12.3 PERSONNEL INJURY 37
12.4 ACCIDENT/INCIDENT REPORTING 38
12.5 OVERT PERSONNEL EXPOSURE 38
12.6 ADVERSE WEATHER CONDITIONS 39
12.7 SPILL PREVENTION AND CONTROL PLAN 39

13.0 LOGS, REPORTS AND RECORDKEEPING 41

13.1 HASP FIELD CHANGE REQUEST 41
13.2 MEDICAL AND TRAINING RECORDS 41
13.3 ON-SITE LOG 41

13.4 EXPOSURE RECORDS 41
13.5 ACCIDENT/INCIDENT REPORTS 41
13.6 OSHA FORM 300 41
13.7 HEALTH AND SAFETY FIELD LOG BOOKS 41
13.8 MATERIAL SAFETY DATA SHEETS 42
14.0 AUTHORIZATIONS 43
15.0 FIELD TEAM REVIEW 44

ATTACHMENTS

Attachment I Field Change Request Form
Attachment II Material Safety Data Sheets
Attachment III Procedures to Minimize Contamination
Attachment IV Decontamination Procedures
Attachment V Heat Stress
Attachment VI Cold Stress
Attachment VII Accident/Incident Report
Attachment VIII Incident Report Follow-Up
Attachment IX Air Monitoring Results Report
Attachment X Daily Observation Report
Attachment XI OSHA Form
Attachment XII Hospital Maps
Attachment XII Licenses and Certifications

1.0 APPROVALS

By the signatures the undersigned certify that this HASP is approved and will be utilized during the remedial work performed for the site of 131-10 to 131-18 Avery Avenue, Flushing, NY, 11355.

Andrew Leung
YU & Associates Engineers, P.C.
Project Manager Date: _____

Sixuan Wang
YU & Associates Engineers, P.C.
Field Team Leader Date: _____

Chengyu Hang
YU & Associates Engineers, P.C.
Health and Safety Officer/Site Health and Safety Officer Date: _____

_____
Property Owner Representative Date: _____

_____
Client Representative Date: _____

_____
Agency Representative (NYSDEC) Date: _____

2.0 GENERAL

This Health and Safety Plan (HASP) has been prepared in conformance with §29 CFR 1910.120 and project requirements. It addresses the minimum requirements for all the groundwater monitoring and excavation work performed in the proximity of 131-10 to 131-18 Avery Avenue, Flushing, NY as they relate to activities performed in the presence of Controlled Materials, Resource Conservation and Recovery Act (RCRA) hazardous waste, New York Regulated Waste, Occupational Safety and Health Administration (OSHA) Hazardous Materials, regulated substances or otherwise environmentally sensitive conditions.

This plan will be implemented by **YU & Associates Engineers, P.C. (YU)** through the designated Health and Safety Officer (HSO) during site work. Compliance with this HASP is required of all persons and third parties who perform field work for this project. This HASP is prepared for use by all persons coming into contact with contaminated groundwater, soil, and soil vapor at the Site. Other consultants and contractors working on this project should be responsible for the development of their own HASP. Assistance in implementing this HASP can be obtained from the project Health and Safety Officer (HSO) and/or the Project Manager (PM).

The health and safety practices, procedures, and personal protective equipment (PPE) requirements established for this project are based on existing information on the chemical and physical hazards known to be present at this Site. The content of this HASP may change or undergo revision based upon additional information made available to health and safety personnel, monitoring results, or changes in the technical scope of the work. Any changes proposed must be reviewed by the HSO and are subject to approval of the PM. The "HASP Field Change Request Form" provided in *Attachment I* may be used to initiate such changes.

2.1 SCOPE OF WORK

The field operations that this HASP covers are:

- Setup of equipment and material staging area, decontamination area, and site fencing
- Erosion and sedimentation controls
- Excavation and backfill
- Dewatering and the treatment of the extracted groundwater
- Stockpiling of excavated soil
- Materials transport and off-site disposal
- Engineering and institutional controls
- Community air monitoring: perimeter air quality monitoring for VOCs and particulates for the duration of field activities that would produce organic vapors or airborne particulates, in the interest of ensuring ambient and work space air quality and providing for on-site personnel and public safety
- The collection of groundwater samples via monitoring/injection wells
- Follow-up chemical injections (if necessary)

2.2 HASP-RELATED ACTIVITIES

- Develop and implement health and safety plan according to NIOSH and the OSHA standards.
- Medical surveillance for site personnel.
- Provide information, education and training, including HAZWOPER training and certification for site personnel.
- Delineate on-site personnel responsibilities and contact information.

- Monitor air quality with a Photo Ionization Detector (PID) or MultiRAE.
- Establish a decontamination zone (also known as contamination reduction), as well as support and exclusion zones.
- Ensure proper use of PPE and hazard-measurement instruments.
- Maintain a record of work-related illnesses, injuries and accidents.
- Prepare for emergencies.

2.3 EMERGENCY CONTACTS

Project Management/Health and Safety Personnel		Phone Number
Program Manager	Javier Perez-Maldonado NYSDEC	Office: (518) 402-8172
Project Manager	Andrew Leung YU & Associates	Office: (201) 791-0075 Mobile: (201) 773-9038
Corporate Health & Safety Officer	Sixuan Wang YU & Associates	Office: (201) 791-0075 Mobile: (201) 998-3935
Field Health and Safety Officer	Chengyu Hang YU & Associates	Office: (201) 773-9628 Mobile: (201) 956-2078

EMERGENCY TELEPHONE NUMBERS:

Police Emergency	911
Fire	911
Ambulance	911
Primary Hospital – New York Hospital Queens	(718) 670-1100
Poison Control Center	(800) 222-1222
EPA National Response Center	(800) 424-8802
Below Ground Utilities – "CALL BEFORE YOU DIG"	(800) 922-4480
New York Department of Health	(518) 474-2121
CHEMTREC	(800) 424-9300
National Pesticide Information	(800) 845-6733
NYSDEC Spill Hotline	(800) 457-7362

LOCAL HOSPITAL

New York Hospital Queens
56-46 Main Street
Flushing, NY 11355

Emergency Telephone: (718) 670-1100
Non-Emergency Telephone: (718) 670-1100

3.0 HEALTH AND SAFETY STAFF

The responsibilities of the health and safety staff are described in the following sections.

3.1 PROJECT MANAGER

The Project Manager (PM) has the overall responsibilities for the health and safety of site personnel. The PM will also ensure that adequate resources are provided to the field health and safety staff to carry out their responsibilities as described below. The PM will ensure that all activities are conducted in accordance with the HASP, and will have the authority to suspend field activities if employees are in danger of injury or exposure to harmful agents. The PM's responsibilities include:

- Assurance that appropriate health and safety equipment and PPE are available for project personnel;
- Assurance that all personnel have received the appropriate training, and required medical examination before engaging in work activities; and
- Designation of a Health and Safety Officer (HSO) who will assist in enforcing compliance with the HASP.

3.2 HEALTH AND SAFETY OFFICER

The HSO has the responsibility to assist the PM in the implementation of this HASP. The HSO will review changes to this plan due to modification of procedures or newly proposed site activities. The HSO will assist in the resolution of any outstanding safety issues that arise during site work.

The HSO will obtain and keep a log of all personnel meetings, appropriate training, and medical qualifications for personnel involved with site work. The HSO will also maintain all personal exposure monitoring and accident/incident reports. The logs will be kept in the project file in accordance with §29 CFR 1910.1020.

3.3 SITE HEALTH AND SAFETY OFFICER

The SHSO will be responsible for directing and coordinating all health and safety monitoring activities and ensuring that proper personal protective equipment is utilized by field teams. The SHSO will conduct periodic safety briefings and ensure that the field team members comply with this HASP. The SHSO reports to the PM to provide summaries and progress of field operations. The SHSO has stop-work authorization which will be executed upon their determination of an imminent safety hazard, emergency situation, and/or other potentially dangerous situations. Authorization to proceed with work will be issued by the PM after such action. The SHSO shall initiate and execute all contact with support facilities and personnel when this action is appropriate.

The SHSO may direct the site health and safety efforts through an assistant health and safety officer approved by the PM. The assistant will be responsible for implementation of the HASP and may direct or participate in activities, as appropriate, when this does not interfere with primary HSO responsibilities. Other responsibilities of the SHSO include:

- Ensure that all field personnel and visitors in the field comply with the requirements of this HASP.
- Maintain a log of personnel on-site each day. A copy of these logs will be sent to the PM. Originals will be kept in the project file.

- Coordinate periodic safety briefings and notify PM of any changes in work conditions or tasks that may require changes to the HASP.

- Manage health and safety equipment, including monitoring instruments and PPE, and oversee decontamination procedures.

- Maintain a health and safety logbook in which daily site conditions, activities, personnel, calibration records, monitoring results and significant events will be recorded. The original logbooks will become part of the exposure records file and will be maintained by the PM.

- Delegate, if necessary and/or appropriate, some of these responsibilities to other on-site qualified employees.

3.4 SITE PERSONNEL

It is the responsibility of all site personnel to report any unsafe or potentially hazardous conditions to the SHSO. They should maintain knowledge of the information, instructions, and emergency response actions contained in this HASP. Additionally, they will comply with rules, regulations and procedures as set forth in this HASP (and subsequent revisions) and aid in preventing admittance of unauthorized personnel within the work site.

4.0 SITE HISTORY AND DESCRIPTION

4.1 SITE DESCRIPTION

The Site is located at 131-10 to 131-18 Avery Avenue, Flushing, New York (Block 5076, Lot 61 and 65). The Site is situated on an approximately 0.298-acre area bounded by Avery Avenue and commercial properties to the north, commercial/residential property and Fowler Avenue to the south, vacant and commercial properties to the east, and 131st Street and the Van Wyck Expressway to the west. The vicinity of the Site is surrounded by residential, commercial, and manufactural properties. Currents uses of adjoining properties include the Metal Work Shop, Home Depot, Al Oerter Recreation Center, Best Hardware Lumber Inc., Teng Fei Stainless Co., and a BP gas station. Queens Botanical Garden is one block away from the Site. To the west of the Site is the Van Wyck Expressway (I-678). The closest surface waterbody is the Flushing River, located approximately 0.25 miles to the west of the Site. A NYSDEC tidal wetland (classification E1UBL) is located approximately 0.25 miles to the northwest of the Site.

Work will take place within the boundary of the property. The soil, groundwater, and soil vapor encountered during this work is suspected to be mainly contaminated by chlorinated volatile organic compounds (CVOCs) and polychlorinated biphenyls (PCBs). This HASP was written to cover all the work related to the Excavation Work Plan (included as Appendix F of SMP) across the Site.

4.2 PROJECT BACKGROUND

The Site was initially developed in the 1980s as two separate 1-story commercial retail stores. The building at Lot 61 featured a basement. Past tenants included a lighting product retail store and a furniture store.

The Site Remedial Investigation (RI) performed by Athenica in May and October of 2014 and the Supplemental Remedial Investigation (SRI) performed by Airtek in December 2015 indicate the following contamination:

- Surface and sub-surface soils were contaminated with Chlorinated volatile organic compounds (CVOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), pesticides, and metals throughout the Site.
- Groundwater on site were contaminated with Chlorinated VOCs (CVOCs) including Tetrachloroethene(PCE), Trichloroethene(TCE), Dichloroethylene(DCE), PCBs (Aroclor-1254), and metals (manganese, selenium, and sodium).
- CVOCs (TCE and PCE) were detected in subsurface soil vapor samples.

The site was remediated in accordance with the remedy selected by the NYSDEC in the RAWP prepared by YU & Associates dated March 11, 2019. The following are the components of the selected remedy:

1. Prior to the commencement of remedial measures, existing buildings were demolished and removed from the Site in accordance with New York City permit requirements.
2. On-site soil impacted by contaminants (to the depth of the water table, up to 20 ft below ground surface) above Unrestricted Use SCOs was excavated and transported for off-site disposal at an appropriately permitted facility.
3. On-site soil impacted by PCBs above 0.1 ppm was excavated and transported for off-site disposal at a properly approved facility

4. End-point sampling was conducted following soil excavations to demonstrate that the remedy has achieved Track 1 the soil cleanup levels. Over-excavation was performed where the end-point sample results indicate exceedances of Unrestricted Use SCOs criteria;
5. In-Situ chemical treatment of on-site groundwater was implemented to treat the on-site CVOCs groundwater contamination. A chemical reduction agent, zero-valent iron (ZVI) powder was directly applied on the contaminated saturated soil at the bottom of the excavation and mixed with the 2 feet of soils using conventional moving equipment (e.g. backhoe). Follow up quarterly groundwater monitoring will be performed to confirm the effectiveness of the application. If bulk reduction of the groundwater contamination is not achieved, follow-up chemical injections will be performed, if needed.
6. Potential off-site groundwater contamination impact was prevented by installing the permeable reactive barriers (PRB). Upon completion of the soil excavation, the PRBs were installed as continuous trenches with reduction chemical reagent along each perimeter of the property boundary to prevent potential groundwater contamination off-site migration.

5.0 HAZARD ASSESSMENT

5.1 HAZARD BY ACTIVITY ANALYSIS

The purpose of this section is to list the planned activities to be perfored for this project, and identify the hazards associated with these activities. All members of the project team should be aware of the potential hazards as well as the actions taken to mitigate or remove the hazards. Where additional evaluation of potential hazards is required, the table below references additional attachments.

A safety briefing will be performed daily amongst onsite personnel and periodic inspections may be performed to ensure compliance with this HASP and to meet any additional OSHA or insurer requirements.

HAZARDS COMMON TO ALL PROJECTS				
	Activity	**Hazard**	**Actions to Mitigate or Remove Hazard**	**Frequency**
☒	Preparation of Health and Safety Plan.	Unidentified, or misidentified hazards.	Complete Activity by Hazard Analysis.	Per Project
☒	Introduction of New Worker.	Insufficient knowledge of site-specific hazards.	New employee orientation program.	Per Employee
☒	Maintenance of Work Site.	Slips, trips and falls. Fire Prevention.	Maintain a neat and organized work site.	Per Project
☒	Regulatory Inspection.	Citation or fine.	Provide proper response to and cooperation with inspectors.	Per Event
☒	Site Emergency.	Injury or loss of life.	Emergency Action Plan. (See Section 12.0)	Per Project
☒	Identification of Proper Personal Protective Equipment (PPE).	Physical injury or chemical exposure from inappropriate selection of personal protective equipment.	Identify potential chemical hazards	Per Activity
			Selection of appropriate personal protective equipment (See Section 7.3)	Per Employee
			Selection of appropriate respiratory protection.	Per Employee
☒	Work in extreme temperatures.	Heat stress and heat stroke.	Follow appropriate heat stress prevention procedures, and monitor for symptoms.	Per Employee
		Hypothermia and frostbite.	Wear warm clothing, prevent exposure of open skin, take frequent breaks in sheltered area, and monitor for signs of hypothermia and frostbite.	Per Employee

HAZARDS COMMON TO ALL PROJECTS				
	Activity	**Hazard**	**Actions to Mitigate or Remove Hazard**	**Frequency**
☒	Lifting.	Back injury.	Use of proper lifting techniques.	Per Employee
☒	Noise Exposure.	Reduced hearing ability.	Hearing protection should be used when noise levels exceed 85 dBA averaged over an 8-hour day for any length of time. In absence of instrumentation, hearing protection is required when normal conversation is difficult at a distance of two to three feet.	Per Employee
☒	Hazards Communication.	Miscommunication of hand signals resulting in physical harm, chemical exposure, or property damage.	Tailgate meeting prior to start of work to identify and discuss common signals.	Daily, Per Employee, and Upon Arrival at Site
☒	Maintenance of Personal Protective Equipment.	Physical injury or chemical exposure from inappropriate maintenance of personal protective equipment.	Regular and appropriate maintenance of personal protective equipment.	Monthly
☐	Biological Hazards.	Reaction to/diseases caused by pests such as mosquitoes, snakes, and ticks.	Apply insect repellant prior to donning PPE. Check for snakes prior to walking through grassy or debris strewn areas. Maintain first aid kit on site.	Daily, Per Employee, and Per Site

SITE AND PROJECT SPECIFIC HAZARDS				
	Activity	**Hazard**	**Actions to Mitigate or Remove Hazard**	**Frequency**
☒	Accessing Construction Site.	Insufficient knowledge of hazardous conditions at site.	Review site-specific training and safety requirements.	Per Employee
☐	Work at Hazardous Waste Site.	Insufficient worker knowledge of chemical hazards.	Provide training and information on chemical hazards.	Per Employee
		Citation or fine.	Compliance with HAZWOPER requirements for operations at hazardous waste sites.	Per Project
		Exposure to site contaminants.	Wear appropriate personal protective equipment.	Per Employee
		Adverse effects from exposure to site contaminants.	Routine medical monitoring.	Per Employee
☒	Use of Hand Tools or Other Portable Equipment.	Injury from improper use or maintenance of tools or other portable equipment.	Training in proper maintenance and use of hand tools and portable equipment.	Per Employee
☒	Operation of Heavy Equipment.	Injury to operator or ground personnel because of improper operation or maintenance of heavy equipment.	Training in proper maintenance and use of heavy equipment.	Per Employee
			Field personnel ensure that equipment operator sees them before entering the potential swing path of any operable equipment.	
☐	Drilling and Well Installation.	Underground utilities.	Obtain utility clearances before breaking ground.	Per Project
		Pinch points, airborne objects, and overhead hazards.	Wear Appropriate PPE (See Section 7.3)	Per Employee
			Follow appropriate operating procedure.	Per Employee
		Excessive noise.	Wear appropriate hearing protection during drilling.	Per Employee
		Contact with contaminated soil and ground water.	Wear appropriate personal protective equipment. (See Section 7.3)	Per Employee
		Spreading of site contaminants.	Perform equipment and personnel decontamination (See *Attachment III* and	Per Employee

SITE AND PROJECT SPECIFIC HAZARDS				
	Activity	**Hazard**	**Actions to Mitigate or Remove Hazard**	**Frequency**
			Attachment IV.)	
		Physical entanglement.	No excessively loose clothing or clothing with draw strings should be worn near rotary operated equipment	Per Employee
		Inhalation of site contaminants.	Perform air monitoring, and wear respiratory protection as appropriate. (See Section 8.0)	Per Project, Per Employee
☒	Ramp Access, Trenching, and Stockpiling.	Cave in and falling.	Follow required excavation safety procedures under guidance of competent person, examples are shoring, sheeting, step backs as per OSHA revised Subpart P, Excavations, of 29 CFR 1926.650, 29 CFR 1926.651, and 29 CFR 1926.652	Per Project
		Undermining stability of adjacent structures.	Follow required excavation safety procedures under guidance of competent person.	Per Project
		Underground utilities.	Obtain utility clearances before breaking ground.	Per Project
		Pinch points, airborne objects, and overhead hazards.	Wear appropriate PPE. (See Section 7.3)	Per Employee
			Follow appropriate operating procedure.	Per Employee
		Excessive Noise.	Wear appropriate hearing protection during drilling.	Per Employee
		Contact with contaminated soil and ground water.	Wear appropriate PPE. (See Section 7.3)	Per Employee
		Spreading of site contaminants.	Perform equipment and personnel decontamination. Stockpile soil atop and below plastic sheeting, held in place by heavy object.	As Needed: Per Activity, Per Employee
		Inhalation of site contaminants.	Perform air monitoring, and wear respiratory protection as appropriate.	Per Project, Per Employee
☐	Underground Storage	Confined space entry.	Develop and follow	Per Project

SITE AND PROJECT SPECIFIC HAZARDS				
	Activity	**Hazard**	**Actions to Mitigate or Remove Hazard**	**Frequency**
	Tank (UST) Removal.		Confined Space Entry Program.	
		Vapor inhalation and suffocation.	Perform air monitoring and wear respiratory protection as appropriate.	Per Event
		Flame cutting/fire or explosion hazards.	Thoroughly clean tank. Remove all gasoline or oil product from tank/nearby area prior to flame cutting. Perform air monitoring with CGI or calibrated PID. When free product is expected or exposed, use non-sparking tools.	Per Event
		Contact with contaminated media.	Wear appropriate PPE. (See Section 7.3)	Per Employee
☒	Collection of Soil, Sediment, Vapor, Groundwater and Waste Samples. Aquifer Testing, Downhole Geophysical Testing, and Water Level Surveys. Removal of Free Product.	Contact with contaminated media.	Wear appropriate PPE. (See Section 7.3)	Per Employee
		Spreading of site contaminants.	Perform equipment and personnel decontamination (See Section 7.3 and Section 8.0)	Per Employee
		Inhalation of site contaminants.	Perform air monitoring and wear respiratory protection as appropriate. (See Section 7.3 and Section 8.0)	Per Employee
		Exposure of off-site personnel to site contaminants during shipment of samples.	Adherence to required shipping procedures and regulations.	Per Project
☒	Equipment and personnel decontamination.	Contact with contaminated media.	Wear appropriate PPE. (See Section 7.3)	Per Project
		Spreading of site contaminants.	Perform equipment and personnel decontamination. (See *Attachment III* and *Attachment IV*)	Per Project
☒		Inhalation of site contaminants.	Perform air monitoring and wear respiratory protection as appropriate. (See Section 7.3 and Section 8.0)	Per Project

SITE AND PROJECT SPECIFIC HAZARDS				
	Activity	**Hazard**	**Actions to Mitigate or Remove Hazard**	**Frequency**
☒	Cutting, grinding, welding, and other work producing or capable of producing flame or sparks.	Fire and personal injury prevention.	Use of proper work procedures.	Per Activity
		Spreading of fire.	Have fire extinguisher available.	Per Activity
☐	Repair or installation of machinery, electrical components, pneumatics, hydraulics, and pressurized systems. Hazardous line openings.	Injury from unintended activation of machinery or lines, fire, and potential exposure to, or release of hazardous materials.	Follow proper lock-out/tag-out procedures.	Per Activity
☐	Use, repair or installation of electrical components and machinery.	Electrocution and fire.	Adherence to proper electrical safety procedures. Periodic inspection of work sites.	Per Employee, Per Activity
☐	Storage, handling, and use of corrosive and reactive materials.	Explosion, fire and personal injury.	Follow appropriate storage, handling, and inspection procedures.	Per Activity
☐	Storage, handling, and use of flammable and combustible liquids and gases.	Explosion, fire and personal injury.	Follow appropriate storage, handling, and inspection procedures.	Per Activity
☐	Work over, or adjacent to water.	Drowning.	Follow required safety procedures.	Per Activity
☒	Use of portable ladders.	Falling.	Follow appropriate ladder use, inspection and maintenance procedures.	Per Activity
☐	Hazardous materials Survey	Contact with contaminated media	Wear appropriate PPE	Per Employee
☐		Spreading of site contaminants	Perform equipment and personnel decontamination	Per Employee

SITE AND PROJECT SPECIFIC HAZARDS				
	Activity	**Hazard**	**Actions to Mitigate or Remove Hazard**	**Frequency**
☐		Inhalation of site contaminants	Wear appropriate respiratory protection when deemed appropriate based upon friable potential	Per Employee
☐		Exposure of off-site personnel to site contaminants during shipment of samples	Adherence to required shipping procedures and regulations	Per Project

Note in the areas where fall protection is required by OSHA as per 29CFR, 1926.500 through 503, YU will utilize a personal fall protection system with a body harness, deceleration device and lifeline properly anchored to a secure point capable of supporting at least 5,000 pounds.

5.2 CHEMICAL HAZARDS

VOCs

The primary contaminants of concern on Site are PCE and its associated degradation products TCE which is volatile organic compound. The above-mentioned contaminants are anticipated to be encountered at the Site at levels posing a minimal hazard to workers; the most likely risk is contact with contaminated soil or water, causing potential irritation to skin and/or eyes.

PCE is the most commonly used solvent in dry cleaning. It is a clear colorless liquid with low solubility, low flammability, and very high volatility. It is considered an irritant to the skin, eyes, and respiratory tract and is harmful if swallowed, inhaled, or absorbed through the skin. PCE is identified as a suspected carcinogen. Large exposures to PCE can damage the central nervous system, liver and kidneys. As levels of contamination in the breathing zone on Site are expected to be far below both the ACGIH TLV of 25 ppm (TWA) and OSHA PEL of 100 ppm, site personnel should be adequately protected using Level D PPE – long sleeved pants and shirts, steel-toed boots, nitrile gloves and safety goggles, to minimize potential skin contact and irritation, and following proper sanitation procedures to minimize accidental contact or ingestion. TCE and cis-1,2-DCE are similar to PCE in potential health effects and physical properties. Precautions taken to protect personnel from PCE are also considered sufficient in protecting them from its daughter products.

PCBs

Based on Remedial Investigation (RI) by Athenica, PCBs are also primary contaminants of concern on the Site. PCBs are anticipated to be encountered at the Site at levels posing a minimal hazard to workers; the most likely risk is contact with contaminated soil or water, causing potential irritation to skin and/or eyes.

PCB applications include heat transfer media, hydraulic, and other industrial fluids, plasticizers, carbonless copy paper, paints, inks, and adhesives. PCB mixtures range in form and color from clear to amber liquids to white crystalline solids with a mild, distinctive odor. They are not volatile at room temperature. They are considered irritants to the skin, eyes, and respiratory tract. The likely routes of exposure for PCBs are skin contact and inhalation of heated vapors. Numerous epidemiological studies of humans have not demonstrated

any causal relationship between PCB exposure and chronic human illnesses such as cancer or neurological or cardiovascular effects. Prolonged or repeated contact may result in redness, dry skin and defatting based on human experience. Site personnel should be adequately protected using Level D PPE to minimize potential skin contact and irritation, and following proper sanitation procedures to minimize accidental contact or ingestion.

5.2.1 Task Hazard Assessment

Potential exposure to site chemicals for both equipment operators and engineers/geologists (inspectors) is primarily expected to occur through inhalation and/or dermal contact and secondarily through accidental ingestion. Workers should be adequately protected with modified level D personal protective equipment (PPE) or Level C PPE, depending on the activity being carried out, and will make every effort to minimize direct contact with soil and groundwater (see Section 7.3 for details regarding PPE levels). Proper decontamination procedures and general sanitation will reduce the risk of contact or ingestion (decontamination procedures are described in Section 11.0). Work on-site will be monitored with a photo-ionization detector (PID) to determine the concentration of volatile organic compounds in the air, and workers will stop work or increase their level of PPE should airborne concentrations of volatile contaminants become too high, as laid out in section 8.2 – Action Levels.

5.3 BIOLOGICAL HAZARDS

Biological hazards present at the Site may include poisonous plants, insects, and animals.

- **Insect and spider bites** often cause minor swelling, redness, pain, and itching. These mild reactions are common and may last from a few hours to a few days. Home treatment is often all that is needed to relieve the symptoms of a mild reaction to common stinging or biting insects and spiders. Tuck pants into socks, wear long sleeves, use insect repellent, and avoid contact. The personnel should always look ahead to where they are walking, standing, sitting, leaning grabbing, lifting or reaching. Personnel should check for signs of insect/spider bites, such as redness, swelling and flu-like symptoms. Some people have more severe reactions to bites or stings, such as a severe allergic reaction (anaphylaxis) and shock. That can be life-threatening and require emergency care. If the employee knows that they might experience severe reactions, they must notify the HSO and bring any necessary medication or preventive measures to the Site.

- **Mosquitos** can carry West Nile Virus, which can cause milder symptoms including fever, headache, body aches, nausea, vomiting, and rash on the chest, stomach and back. More severe symptoms may include disorientation, tremors and convulsions, muscle weakness, loss of vision, numbness and paralysis. If bitten, monitor for symptoms, notify HSO, and get medical help if needed.

- **Small animals** may be present on the Site. Some animals may carry disease or poison and may cause injury by biting. Avoid unnecessary contact with animals. Use the buddy system in all areas of the Site. If bitten, get medical help immediately. In the event of a snake bite, attempt to identify the snake as poisonous or non-poisonous to assist in the treatment.

5.4 PHYSICAL AND OPERATIONAL HAZARDS

5.4.1 General

A variety of physical hazards may be present during site activities. The most common hazards are slips, trips, falls, and heat and cold stress. Other physical hazards can be caused by motor vehicle and heavy equipment

operation, the use of hand and power tools, and handling and storage of solvents and fuels. These hazards are not unique and are generally familiar to hazardous waste workers. Additional specific safety requirements may be covered during safety briefings at the project Site.

Storage of flammable and combustible liquids shall be in accordance with OSHA requirements specified in §29 CFR 1910.106. Solvents shall be stored in approved secured containers and shall be properly labeled in accordance with the requirement of §29 CFR 1910.1200. Material Safety Data Sheets (MSDS) for hazardous materials brought on Site shall be maintained by the site HSO.

Electrical cords used for hand and power tools shall be Underwriter Laboratories (UL) listed and all tools shall be properly grounded.

During servicing and maintenance of site equipment, appropriate lock-out/tag-out measures shall be implemented as required under §29 CFR 1910.147.

Personnel will be working on Site in groups and will be able to monitor each other periodically during the project.

5.4.2 Back Injuries Due to Improper Lifting

Back injuries due to improper lifting can be prevented utilizing the following:

- Use proper lifting techniques. Lift with the legs, not the back. Keep loads close to the body and avoid twisting.
- Loads heavier than 50 pounds require a second person or mechanical device for lifting.
- Use mechanical devices such as drum dollies, hand trucks, and tool hoists (for lifting augers) to lift heavy loads whenever possible.

5.4.3 Traffic

Most work on Site will be within the property boundary, but near streets. Personnel will maintain a constant awareness of traffic moving in all directions. Safety vests will be worn whenever working on or near a roadway. Equipment and work areas will be appropriately marked with cones, barriers and signage.

5.4.4 Overhead Power Lines

In some areas of the Site overhead power lines are present and may be affected during excavation. Every effort shall be made to maintain a minimum equipment clearance of 10 feet from these power lines. However, should it be necessary to breach the clearance, prior to initiating any such work in/near these areas when there is a possibility that the equipment may touch and/or may potentially fall on the lines creating not only a severe electrocution hazard, but also a situation where power distribution may be affected, the Project Manager shall contact the Power Generation/Distribution Company to notify them of such potential and will work within the guidelines provided by the Power Generation/Distribution Company for safety of personnel and property. When work may be needed to be conducted near high power lines, employees engaged in this operation will be trained appropriately to address hazards associated with high voltage.

5.4.5 Below-Ground Utilities

Prior to any invasive activities, the contractor will be responsible for coordinating a utility mark-out. Upon arrival on Site and before commencing any intrusive work, the contractor will inspect the worksite for any

indication of utilities which are not appropriately marked. If unmarked utilities are suspected, no intrusive activities will take place until the location of utilities has been verified with the appropriate agencies. Either the contractor or the SHSO may at any point require verification of utility locations, or stop work if they suspect a utility hazard.

5.4.6 Weather

The SHSO will monitor for visible symptoms of heat/cold stress in workers. Ambient weather reports will be monitored by the PM, and HSO/SHSO to determine the need to implement control measures for minimizing heat/cold stress. Outdoor work will cease immediately upon the signs of impending thunderstorms and lightening, or other severe weather conditions.

5.4.7 Noise

Project activities such as excavating operations, soil mixing, injection, and backfill could necessitate the use of hearing protection due to elevated noise levels. Hearing protection will be used as directed by the SHSO. As a general rule of thumb, when conversation between workers becomes difficult and normal speech cannot be understood within an arm's length of the persons talking, then hearing protection must be worn.

5.4.8 Fire and Explosion

The HSO will identify, analyze and understand all fire and explosion hazards and associated effects that might be present at the Site. A suitable control and mitigation systems for fire and explosion hazards will be implemented and supported throughout the project duration.

6.0 TRAINING AND MEDICAL SURVEILLANCE REQUIREMENTS

6.1 GENERAL HEALTH AND SAFETY TRAINING

In accordance with the requirements of §29 CFR 1910.120, hazardous waste site workers shall, at the time of job assignment, have received a minimum of 40 hours of initial health and safety training for hazardous waste site operations unless otherwise noted in the above reference. At a minimum, the training shall have consisted of instruction in the topics outlined in the above reference. Personnel who have not met the requirements for initial training, or are not "current" in their training shall not be allowed to work at any site activities in which they may be exposed to hazards (chemical or physical). For a site worker to be considered "current" for training purposes, their date of last training (initial, refresher or manager/supervisory) must be within the last twelve months.

Completion of an accredited Health and Safety Training Course for Hazardous Waste Operations or an approved equivalent will fulfill the requirements of this section.

In addition to the required initial training, each employee will have received 3 days of directly supervised on-the-job training. This training will address the duties the employees are expected to perform, which must be documented.

6.2 MANAGER/SUPERVISOR TRAINING

In accordance with §29 CFR 1910.120, on-site management and supervisors who will be directly responsible for, or who supervise employees engaged in hazardous waste operations shall receive training as required by Section 6.1 above and at least 8 additional hours of specialized training on managing such operations at the time of the job assignment.

6.3 ANNUAL 8-HOUR REFRESHER TRAINING

Annual 8-hour refresher training will be required in accordance with §29 CFR 1910.120 of all hazardous waste site field personnel in order to maintain their qualifications for field work. The following topics will be reviewed: toxicology, respiratory protection, including air purifying and air supplied devices, medical surveillance, PPE and decontamination procedures.

6.4 SITE SPECIFIC TRAINING

Prior to commencement of field activities, all field personnel assigned to the project will be provided training that will specifically address the activities, procedures, monitoring and equipment for the site operations. It will include site and facility layout, hazards, and emergency services at the Site, and will highlight all provisions contained within this HASP. This training will also allow field workers to clarify anything they do not understand and to reinforce their responsibilities regarding safety and operations for their particular activity. In addition, topics deemed necessary by the HSO/SHSO may be added to the above list.

The Site specific training shall also provide information regarding potential health hazards specific to the Site contaminants, the likelihood of exposure and the precautionary measures including PPE, air and medical monitoring procedures to be implemented to protect against these hazards.

6.5 ON-SITE SAFETY BRIEFINGS

Project personnel and visitors will be given periodic on-site health and safety briefings by the HSO/SHSO, or designee, to assist site personnel in safely conducting their work activities. The briefings will include information on new operations to be conducted, changes in work practices or the Site's environmental conditions. The briefings will also provide a forum to facilitate conformance with health and safety requirements and to identify health and safety performance deficiencies noted during daily activities or as a result of Health and Safety (H&S) audits.

6.6 ADDITIONAL TRAINING

Additional training, if required for completion of field tasks during the project, will be identified and provided for field personnel as the work progresses.

6.7 SUBCONTRACTOR TRAINING

All field subcontractor personnel conducting work onsite that fall under the scope of this HASP will meet the requirements of §29 CFR 1910.120(e) and addressed in Sections 6.1 through 6.7 above.

6.8 MEDICAL SURVEILLANCE PROCEDURES

All site personnel performing field work at the Site under the scope of this HASP are required to have passed a complete medical surveillance examination in accordance with 29 CFR 1910.120(f) (Hazardous Waste Operations). A physicians' medical release for work will be confirmed by the PM before an employee can begin site activities. The medical examination will, at a minimum, be provided annually and upon termination of hazardous waste site work if the last examination was not within the previous six months. Additional medical testing may be recommended by the HSO/SHSO in consultation with the consulting occupational physician if an overt exposure accident occurs, or if other site conditions warrant further medical surveillance.

A medical data sheet is provided in Figure 6-1. This medical data sheet will be completed by all on-site personnel and kept at the Site. Where possible, this medical data sheet will accompany the personnel needing medical assistance or transport to hospital facilities.

FIGURE 6-1

MEDICAL DATA SHEET

This brief Medical Data Sheet will be completed by all on-site personnel and will be kept in the Command Post during the conduct of site operations. It is in no way a substitute for the Medical Surveillance Program requirements consistent with the health and safety policies established for hazardous waste operations at this Site. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

PROJECT: **131-10 TO 131-18 Avery Avenue, FLUSHING, NY**

Name: _____

Home Telephone: _____

EMERGENCY CONTACT:

Name: _____

Relationship: _____

Phone number: _____

MEDICAL INFORMATION:

Allergies: _____

_____

Do you wear contact lenses: _____

Name of personal physician: _____

Telephone number: _____

7.0 SITE CONTROL, PPE AND COMMUNICATIONS

7.1 GENERAL SITE CONTROL

At all times during site operations site control will be maintained not only to prevent spread of contamination within the Site, but also to prevent unauthorized entry into the Site. Site control also includes the control of traffic to and from the Site to least impact the general population in the area.

Visitors will be required to first contact the HSO prior to allowing access to the Site.

7.2 CONTAMINATION CONTROL

A three-zone approach will be employed in order to contain the potential spread of contamination from the Site. The three zones will include the Exclusion Zone (EZ), the Contamination Reduction Zone (CRZ) and the Support Zone (SZ).

7.2.1 Support Zone

The SZ is an uncontaminated area that will be the field support area for most operations. The SZ provides for field team communications and staging for emergency response. Appropriate sanitary facilities and safety equipment will be located in this zone. Potentially contaminated personnel/materials are not allowed in this zone. The only exception will be appropriately packaged/decontaminated and labeled samples. Meteorological monitoring will be observed and noted from this zone, as well as those factors pertaining to heat or cold stress.

7.2.2 Contamination Reduction Zone

The CRZ is established between the EZ and the SZ. The CRZ contains the contamination reduction corridor and provides for an area for decontamination of personnel and portable equipment. The CRZ will be used for general site entry and egress in addition to access for heavy equipment and emergency support services.

7.2.3 Exclusion Zone

The area where contamination exists and where excavation, soil mixing, and backfill are conducted is considered to be the exclusion zone. The HSO/SHSO may establish more than one EZ where different levels of protection may be employed or different hazards exist. Personnel are not allowed in the EZ without each of the following:

- A buddy
- Appropriate personal protective equipment
- Medical authorization
- Training certification.

Any observation of activities will be conducted from an area upwind of the EZ as established by the HSO/SHSO.

7.3 PERSONAL PROTECTIVE EQUIPMENT

7.3.1 General

The level of protection worn by field personnel will be enforced by the SHSO. Levels of protection for general operations are provided below and are defined in this section. Levels of protection may be upgraded or downgraded at the discretion of the HSO/SHSO. This decision will be based on real-time air monitoring and prior site experience. Any changes in the level of protection will be recorded in the health and safety field logbook.

7.3.2 Personal Protective Equipment Selection

For tasks requiring level B personal protective clothing (PPE), the following shall be used:

- Chemical protective suit (Saran)
- Gloves, inner and outer (nitrile)
- Boots, steel toe
- Boot covers
- Hard hat
- Hearing protection (as needed)

For tasks requiring level C PPE, the following shall be used:

- Chemical protective suit (Polycoated Tyvek)
- Gloves, inner and outer (nitrile)
- Boots, steel toe
- Boot covers
- Hard hat
- Eye protection (if not wearing full face respirators)
- Hearing protection (as needed)

For tasks requiring level D PPE, the following shall be used:

- Work clothes or plain uncoated coveralls
- Work gloves
- Boots, steel toe
- Hard hat
- Hearing protection (as needed)
- Eye protection

For tasks requiring level modified level D PPE, the following shall be used:

- Work clothes or plain uncoated coveralls
- Gloves – inner and outer nitrile gloves
- Boots, steel toe
- Hard hat

- Hearing protection (as needed)
- Eye protection

For tasks requiring respiratory protection, the following equipment shall be used:

Level B: Air supplied respirators - Airline with escape pack or SCBA
Level C: Half-face air purifying respirator equipped with organic vapor/HEPA cartridges
Level D: No respiratory protection

All outer gloves and boot covers shall be securely taped to the protective clothing.

7.3.3 Initial Levels of Protection

The following are the initial levels of protection that will be used for each planned field activity:

Activity	Level of Personal Protective Equipment	Level Respiratory Protection
Excavation, Backfill		
Inspector	Modified D	D
Contractor	Modified D	D
Groundwater Sampling		
Inspector	Modified D	D

7.3.4 Required Personal Protection by Remedial Activity

The following are the required elements of PPE required for each remedial activity:

REQUIRED PERSONAL PROTECTIVE EQUIPMENT BY ACTIVITY

Activity	Hard Hat	Safety Glasses	Safety Boots	Gloves	Respirator	Clothing	Other
Setup of Equipment and Material Staging Area, Decontamination Area, and Site Fencing	☒	☒	☒	Inner and outer nitrile gloves	Dust masks (if required)	Work clothes or plain uncoated coveralls	Steel toe boots. Hearing protection (as needed). Reflective safety vest.
Erosion and Sedimentation Controls	☒	☒	☒	Inner and outer nitrile gloves	Dust masks (if required).	Work clothes or plain uncoated coveralls	Steel toe boots. Hearing protection (as needed). Reflective safety vest

Activity	Hard Hat	Safety Glasses	Safety Boots	Gloves	Respirator	Clothing	Other
							(as needed).
Excavation and Backfill	☒	☒	☒	Inner and outer nitrile gloves	Dust masks, half-face air purifying respirator equipped with organic vapor/HEPA cartridges (if required)	Work clothes or plain uncoated coveralls	Steel toe boots. Hearing protection (as needed). Reflective safety vest.
Excavation and Handling of PCB Cleanup Verification Sampling	☒	☒	☒	Inner and outer nitrile gloves	Half-face air purifying respirator equipped with organic vapor/HEPA cartridges.	Tyvek® or Saranex® coveralls.	Steel toe boots. Boot covers. Hearing protection (as needed). Reflective Safety vest.
Dewatering and the Treatment of Extracted Groundwater	☒	☒	☒	Inner and outer nitrile gloves	Dust masks, half-face air purifying respirator equipped with organic vapor/HEPA cartridges (if required)	Work clothes or plain uncoated coveralls	Steel toe boots. Hearing protection (as needed). Reflective safety vest. Eye protection when handling open containers of liquids.
Stockpiling of Excavated Soil	☒	☒	☒	Inner and outer nitrile gloves	Dust masks, half-face air purifying respirator equipped with organic vapor/HEPA cartridges (if required)	Work clothes or plain uncoated coveralls	Steel toe boots. Hearing protection (as needed). Reflective safety vest.
Materials Transport and Off-site Disposal	☒	☒	☒	Inner and outer nitrile gloves	Dust masks, half-face air purifying respirator	Work clothes or plain uncoated	Steel toe boots. Hearing protection

Activity	Hard Hat	Safety Glasses	Safety Boots	Gloves	Respirator	Clothing	Other
					equipped with organic vapor/HEPA cartridges (if required)	coveralls	(as needed). Reflective safety vest.
Engineering and Institutional Controls	☒	☒	☒	Inner and outer nitrile gloves	Dust masks, half-face air purifying respirator equipped with organic vapor/HEPA cartridges (if required)	Work clothes or plain uncoated coveralls	Steel toe boots. Hearing protection (as needed). Reflective safety vest.
Groundwater Monitoring/Injection Well Installation and Sampling	☒	☒	☒	Inner and outer nitrile gloves	Dust masks, half-face air purifying respirator equipped with organic vapor/HEPA cartridges (if required)	Work clothes or plain uncoated coveralls	Steel toe boots. Hearing protection (as needed). Reflective safety vest. Eye protection when handling open containers of liquids.
Follow-up Chemical Injections	☒	☒	☒	Inner and outer nitrile gloves	Dust masks, half-face air purifying respirator equipped with organic vapor/HEPA cartridges (if required)	Work clothes or plain uncoated coveralls	Steel toe boots. Hearing protection (as needed). Reflective safety vest.

7.4 SAFETY EQUIPMENT

Safety and first aid equipment will be accessible in the support vehicle/area for the field crew. The following safety equipment will be available:

- Standard Industrial First Aid Kits, fully stocked

- Portable emergency Eyewash Unit (capable of providing at least 15 minutes of continuous flushing ability)
- Field wash equipment

7.5 COMMUNICATIONS

Site personnel will have access to mobile telephones. If intrinsically safe radios are used then they will be rated as class I, division I, group c, d as defined by the National Electrical Code (NEC). The following hand signals shall be reviewed during site specific training, shall be understood by the entire field team prior to commencement of site activities, and shall be used when necessary during site operations.

Hand Signal	Meaning
Hand gripping throat	Out of air, can't breathe
Gripping partner's wrist/ place hands on waist	Leave area immediately, no debate
Hands on top of head	Need assistance
Thumbs up	OK, all right, I understand
Thumbs down	No, negative

8.0 AIR MONITORING

8.1 PERIODIC AIR MONITORING

The following monitoring instrument will be available for use during field operations:

- Photoionization Detector (PID)

The HSO/SHSO or designee will conduct periodic site air monitoring during pertinent project operations. Organic vapor concentrations will be measured using a PID during all site operations where existing site soils or water contaminated with VOCs are visually identified or otherwise suspected by the HSO/SHSO and during any site invasive operations identified in Section 2.0. Air monitoring results will be interpreted conservatively to be protective of worker health. Organic vapor concentrations will be measured upwind of the work site(s) to determine background concentrations at least twice a day, (once in the morning and once in the afternoon). Measurements will be obtained in the breathing zones of personnel as well as in the area of the source.

8.2 ACTION LEVELS

Action levels for periodic monitoring instruments have been set in Table 8-1. The HSO/SHSO will use professional judgment in interpreting the instrumentation response. These action levels may be modified as additional information becomes available regarding the extent, type of contamination and the potential for exposure to those contaminations during planned site activities. The SHSO will direct personnel to upgrade to the specified level of personal protective equipment (PPE) when warranted by air monitoring results or other pertinent site conditions. The PPE may be downgraded when conditions warrant as dictated by air monitoring results and site conditions. The SHSO will make this decision upon review with the HSO.

The action levels for organic vapors have been set based on the potential presence of PCE.

8.3 INSTRUMENT CALIBRATION

Monitoring equipment will be calibrated and checked for proper operation daily, before the start-up of any field activities requiring monitoring. Before initiating field activities, background measurements will be obtained with each instrument upwind and away from potential site influences. Instrument calibration and background levels will be documented on daily air monitoring logs.

8.4 PERSONAL MONITORING

Personal monitoring will be initiated based on periodic monitoring data. If site-monitoring efforts indicate the presence of PCE then personal monitoring will be conducted for those individuals with the potential exposure to PCE. Personal air monitoring will be conducted using established OSHA/NIOSH protocol. Air samples, including blanks will be submitted to an American Industrial Hygiene Association (AIHA) accredited laboratory for sample analysis.

When periodic air monitoring action levels are exceeded on a routine basis, personal air monitoring will be conducted to confirm that employee exposures are within currently published occupational exposure limits and implemented site controls are adequate to continue to control worker exposures. Personal air monitoring for lead will be conducted in accordance with established NIOSH/OSHA air sampling protocols and submitted to an AIHA accredited laboratory for analysis.

TABLE 8-1 ACTION LEVELS	
Monitoring Method: PID Instrument	
Activities Requiring Monitoring: Excavation, soil mixing, chemical treatment, backfill, end-point sampling	
Monitoring Conducted By: Site Safety Officer	
Instrument Reading	Required Action
0 to 50 ppm	Level D
>50 to 100 ppm	Introduce engineering controls to reduce to background (e.g. fan) or respirator (Level C). Leave area if applicable.
> 100 ppm	Stop Work and Consult HSO/SHSO

9.0 COMMUNITY AIR MONITORING PROGRAM

Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

9.1 COMMUNITY AIR MONITORING PLAN

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. This Site will involve VOC and particulate monitoring.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and soil mixing.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil end-point samples. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while collecting the sample, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

9.2 VOC MONITORING, RESPONSE LEVELS, AND ACTIONS

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or

residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.
4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

9.3 PARTICULATE MONITORING, RESPONSE LEVELS, AND ACTIONS

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.
2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.
3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

10.0 ADDITIONAL SAFE WORK PRACTICES

Work will be conducted in accordance with relevant OSHA regulations (1926 and 1910 CFR).

10.1 GENERAL

- Ignition sources such as open flames in the vicinity of the potentially flammable material are prohibited.
- When working in areas where flammable vapors may be present particular care must be exercised with tools and equipment that may be sources of ignition. All tools and equipment provided must be properly bonded and/or grounded.
- Approved and appropriate safety equipment as specified in Section 7.2 of this HASP shall be worn where required.
- Eye protection must be worn while working on site.
- Beards that interfere with respirator fit are not allowed for field personnel within the Site boundaries as all site field personnel may be called upon to use respirator protection in some situation, and beards do not allow for proper respirator fit.
- No smoking, eating, drinking or applying of cosmetics is allowed in the contaminated areas.
- Contaminated tools and hands must be kept away from the face. Do not unnecessarily touch a contaminated surface or allow your clothing, tools or other equipment to do so.
- Persons with long hair and/or loose fitting clothing that could become tangled in power equipment must take adequate precaution.
- Report the presence of open wounds to the HSO prior to work in contaminated areas. If a wound occurs within such an area, report immediately to HSO and attend to the wound.
- Horseplay is prohibited in the work area.
- Follow good "housekeeping" practices to minimize the amount of material and equipment that has to be decontaminated or disposed of as contaminated wastes.
- Work under the influence of intoxicants, narcotics, or controlled substances is prohibited.
- All safety equipment shall be inspected regularly to ensure proper operation.
- All respiratory protective equipment use and maintenance shall meet, at a minimum, the OSHA requirements of 29 CFR 1910.134, including prohibitions on facial hair and other face piece-seal obstructions.

- All personnel entering the Site during site operational hours shall be instructed in emergency procedures including locations of emergency equipment, procedures for site evacuation, emergency assembly areas and head count procedures, alarm systems and site communications.

- Personnel shall avoid walking directly through areas of obvious contamination and avoid handling contaminated materials directly.

- If field personnel perceive an unsafe condition or situation, the HSO or Field Operations Lead (FOL) will be notified immediately.

- All operations shall be planned and discussed with field personnel prior to beginning operations.

10.1.1 Operation of Heavy Equipment

Only trained equipment operators will be allowed to operate heavy machinery on-site. The number of personnel in the vicinity of heavy equipment operations and in contaminated areas shall be kept to a minimum. Those individuals not directly involved in work operations will be required to maintain a 30-foot distance so as not to interfere. All heavy equipment shall be properly maintained in a safe operating condition and be equipped with an audible back-up alarm.

10.2 PERSONNEL SAFETY

- Do not climb over or under obstacles.

- Always use the buddy system and line-of-sight.

- Practice contamination prevention on and off-site.

- Plan activities ahead of time.

- Apply immediate first aid to any and all cuts, scratches and abrasions.

- Report all accidents, no matter how minor, immediately to the HSO.

- Be alert to your own physical condition. Watch your buddy for signs of fatigue and/or exposure.

- Initiate a work/rest regime if ambient temperatures and protective clothing create a potential heat/cold stress situation.

- Do not proceed with work unless adequate natural light exists and appropriate supervision is present.

- Safety briefings will be held prior to the onset of remedial activities and regularly during the progress of site activities.

10.3 SAFETY PROCEDURES IN EXCLUSION ZONES

- The exclusion zone will be maintained visually by the HSO/SHSO
- Only authorized personnel will be allowed in the exclusion zone. All unauthorized persons must remain a safe distance upwind during field activities in order to prevent exposure to potential hazards.
- Line of sight and the buddy system shall be mandatory at all times.
- Prior to the start of activities in the exclusion zone, the HSO/SHSO will establish a well-defined emergency exit escape route from each operating area of the exclusion zone. The emergency escape routes shall be familiar to all field personnel involved with the operation and shall be reviewed by the HSO/SHSO at site briefings.
- The number of authorized personnel within the exclusion zone during each task will be minimized to include only those personnel essential for that task.
- The size of the exclusion area around all work locations will be determined by the HSO in and will be large enough to easily accommodate only those members of the field team actively engaged in the work, fire, emergency and site operations equipment.
- Immediate access to a source of water with sufficient volume, flow rate and pressure must be available for quick drenching in cases of emergency.
- Proper absorbent material will be available in the exclusion zone and will be used promptly in areas where spills or leaks occur.
- Instrumentation used for monitoring shall consist of those devices specified in Section 8.1. Members of the field team will not proceed with any task until the field team is wearing the task-designated personnel protective equipment specified in Section 7.2.3 (or as modified by the HSO in response to measured site conditions), all instruments present will be fully charged and properly calibrated.

11.0 DECONTAMINATION PROCEDURES

11.1 CONTAMINATION AVOIDANCE

One of the most important aspects of decontamination is the prevention of contamination. Good contamination prevention will minimize worker exposure and help ensure valid sample results by precluding cross-examination. Procedures for contamination avoidance include:

Personnel

- Do not walk through areas of obvious or known contamination
- Do not directly handle or touch contaminated materials
- Make sure that there are no cuts or tears on PPE
- Fasten all closures in suits, covering with tape, if necessary
- Particular care should be taken to protect any skin injuries
- Stay upwind of airborne contaminants
- Do not carry cigarettes, cosmetics, gum, etc., into contaminated areas

Heavy Equipment

- Care will be taken to limit the amount of contamination that comes in contact with the heavy equipment (e.g. tires)
- If contaminated tools are to be placed on non-contaminated equipment for transport to a decontamination area, plastic will be used to keep the equipment clean

11.2 PERSONNEL DECONTAMINATION

All personnel will pass through an outlined decontamination procedure when exiting the exclusion zone at each location. *Attachment IV* provides guidelines for decontamination procedures. The system will include a gross wash and rinse for all clothing and boots worn in the EZ as appropriate. All personnel will wash their hands, arms, neck and face after removing PPE in the wash facility located at the Site. Respirators, airline and any other personnel equipment that comes in contact with contaminated soils will pass through a field wash/cleaning in the CRZ and a final wash/cleaning at the end of the day.

11.3 EQUIPMENT DECONTAMINATION

Heavy equipment used at the Site, which is potentially contaminated, will be decontaminated to prevent migration of hazardous material outside the Site. All equipment will be decontaminated at a designated location in the Site. This area will provide for the containment of any wastewater from the decontamination process. The HSO/SHSO will engage designated personnel to ensure that all trucks/vehicles exiting the Site are covered, material is stabilized with no free liquid and truck tires are free of contaminated soil.

Personnel responsible for decontamination of equipment that came in contact with the PCBs contaminated soils in the north alley of the Site will use Level C PPE during decontamination.

11.4 EMERGENCY DECONTAMINATION

If emergency life-saving first aid and/or medical treatment is required, normal decontamination procedures may need to be abbreviated or omitted. The HSO/SHSO or designee will accompany contaminated victims to the medical facility to advise on matters involving decontamination, when necessary. The outer garments can be removed if they do not cause delays, interfere with treatment or aggravate the problem. Respiratory equipment

must always be removed. Protective clothing can be cut away. If the outer contaminated garments cannot be safety removed, a plastic barrier between the individual and clean surfaces will be used to help prevent contaminating the inside of ambulances and/or medical personnel. Outer garments are then removed at the medical facility. No attempt will be made to wash or rinse the victim, unless it is known that the individual has been contaminated with an extremely toxic or corrosive material, which could also cause severe injury or loss of life to emergency response personnel. For minor medical problems or injuries, the normal decontamination procedures will be followed. Note that heat stroke requires prompt treatment to prevent irreversible damage or death. Protective clothing must be promptly removed. Less serious forms of heat stress also require prompt attention and removal of protective clothing immediately. Unless the victim is obviously contaminated, decontamination will be omitted or minimized to allow for treatment to begin immediately.

11.5 ONSITE WASTE STORAGE AND DISPOSAL

All discarded materials, waste materials, or other objects will be handled in such a way as to preclude the potential for spreading contamination, creating a sanitary hazard, or causing litter to be left on Site. All potentially contaminated materials, e.g., clothing, gloves, etc., will be bagged or drummed as necessary, containers and/or bags properly secured, labeled and segregated for disposal.

All non-contaminated materials will be collected and bagged for appropriate disposal as normal domestic waste. The prime contractor will be responsible for disposal of all waste material at the Site following applicable DOT, OSHA and RCRA requirements.

12.0 EMERGENCY PLAN

The emergency plan outlined in this section will be known by all personnel who will be working at the Site prior to the start of work. The emergency plan will be available for use at all times during site work. As part of the onsite initial safety briefing the HSO/SHSO or designee will review this Emergency Plan with site personnel.

Various individual site characteristics will determine preliminary actions taken to assure that this emergency plan is successfully implemented in the event of a site emergency.

The HSO/SHSO will inform the site personnel about the nature and duration of work expected on the Site and the type of contaminants and possible health or safety effects of emergencies involving these contaminants. The Project Manager will make necessary arrangements to be prepared for any emergencies that could occur.

The HSO/SHSO will implement the emergency plan whenever conditions at the Site warrant such action. The HSO/SHSO will be responsible for coordination of the evacuation, emergency treatment, and emergency transport of site personnel as necessary, and notification of emergency response units and the appropriate management staff.

12.1 EVACUATION

In the event of an emergency situation, such as fire, explosion, or significant release of toxic gases, an air horn or other appropriate device will be sounded for approximately 10 seconds indicating the initiation of evacuation procedures. All personnel will evacuate and assemble near the Support Zone or a pre-determined location. The location shall be upwind of the Site where possible. For efficient and safe site evacuation and assessment of the emergency situation, the emergency coordinator will have authority to initiate action if outside services are required. Under no circumstances will incoming personnel or visitors be allowed to proceed into the area once the emergency signal has been given. The HSO/SHSO or designee must see that access for emergency equipment is provided and that all equipment has been shut down and secured once the alarm has sounded. Once the safety of all personnel is established, the emergency response groups, as necessary, will be notified by telephone of the emergency.

While working inside buildings and enclosed areas, the HSO/SHSO will ensure that all workers are familiar with the general layout of the area as well as nearest viable escape routes to minimize disorientation in the event of an emergency.

12.2 POTENTIAL OR ACTUAL FIRE

Immediate evacuation of Site (air horn will sound in 10 seconds intervals), notify local fire and police department, and other appropriate emergency response groups if an actual fire or explosion takes place.

Police	911
Fire	911

12.3 PERSONNEL INJURY

Emergency first aid will be applied on Site as deemed necessary. Then decontaminate and transport the individual to the nearest medical facility, if needed. The HSO/SHSO will supply medical data sheets to the

medical personnel and complete the accident/incident reports in accordance with Section 12.4 of the HASP (see *Attachment VII*).

The ambulance/rescue squad will be contacted for transportation to the hospital as necessary in an emergency situation. However, since some situations may require transport of an injured person by other means, the hospital route is identified below. Only in non-emergency situations shall an injured person be transported to the hospital by means other than an ambulance.

Primary hospital:

New York Hospital Queens
56-46 Main Street
Flushing, NY 11355

Emergency Telephone: (718) 670-1100
Non-Emergency Telephone: (718) 670-1100

A map and directions to the hospital are provided in *Attachment XII.*

12.4 ACCIDENT/INCIDENT REPORTING

As soon as first aid and/or emergency response needs have been met, the following parties are to be contacted by telephone:

1. Health and Safety Officer
2. Project Manager
3. The employer of any injured worker, if not an employee

Written confirmations of verbal reports are to be submitted within 24 hours by the HSO/SHSO or designee. The report form entitled "Accident/Incident Report" found in *Attachment VII*, is to be used for this purpose. All representatives contacted by telephone are to receive a copy of this report.

For reporting purposes, the term accident refers to fatalities, lost time injuries, spill or exposure to hazardous materials (radioactive, toxic, explosive, flammable or corrosive), fire, explosion, damage to property, or potential occurrence of the above.

Any information released from the health care provider, which is not deemed confidential patient information, is to be attached to the appropriate form. Any medical information, which is released by patient consent, is to be filed in the individual's medical records and treated as confidential.

12.5 OVERT PERSONNEL EXPOSURE

SKIN CONTACT:	Use copious amounts of soap and water. Wash/rinse affected area thoroughly, and then provide appropriate medical attention.
INHALATION:	Move to fresh air and/or, if necessary, decontaminate/transport to hospital.
INGESTION:	Decontaminate and transport to emergency medical facility.
PUNCTURE WOUND OR	

LACERATIONS: Decontaminate and transport to medical facility.

12.6 ADVERSE WEATHER CONDITIONS

In the event of adverse weather conditions, the HSO/SHSO or designee will determine if work can continue without compromising the health and safety of field personnel. Some of the items to be considered prior to determining if work should continue are the following:

- Potential for heat stress and heat-related illnesses
- Potential for cold stress and cold-related illnesses
- Treacherous weather-related working conditions
- Potential for electric storms

Site activities will be limited to daylight hours (unless adequate artificial lighting is provided) and acceptable weather conditions. Inclement working conditions include heavy rain, fog, high winds, and lightning. Observe daily weather reports and evacuate if necessary in case of inclement weather conditions.

12.7 SPILL PREVENTION AND CONTROL PLAN

All small spills/environmental releases will be contained as close to the source as possible. Whenever possible, the Material Safety Data Sheet (MSDS) will be consulted to assist in determining proper waste characterization and the best means of containment and cleanup. For small spills, sorbent materials such as sand, sawdust or commercial sorbents will be placed directly on the substance to contain the spill and aid recovery. Any acid spills will be diluted or neutralized carefully prior to attempting recovery. Berms of earthen or sorbent materials can be used to contain the leading edge of the spills. Drains or drainage areas will be blocked. All spill containment materials will be properly disposed. An exclusion zone of 50 to 100 feet around the spill area will be established depending on the size of the spill.

Construction vehicles shall have spill kits on them with enough material to contain and absorb the worst-case spill from that vehicle. All vehicles and equipment will be inspected prior to being admitted on Site. Any vehicle or piece of equipment that develops a leak while on Site will be taken out of service and removed from the job Site.

The HSO/SHSO or designee will take the following seven steps:

1. Determine the nature, identity and amounts of major spills.

2. Make sure all unnecessary persons are removed from the spill area.

3. Notify the Project Manager and Health and Safety Officer.

4. Use proper PPE

5. If a flammable liquid, gas or vapor is involved, remove all ignition sources and use non-sparking and/or explosive proof equipment to contain or clean up the or clean up the spill (diesel only vehicles, air operated pumps, etc.).

6. If possible, try to stop the leak with appropriate material.

7. Remove all surrounding materials that can react or compound with the spill.

In addition to the spill control and response procedures described above, onsite HSO/SHSO will coordinate activities relative to spill response and control actions. Notification to the Project Manager must be immediate and, to the extent possible, include the following information:

- Time and location of the spill;
- Type and nature of the material spilled;
- Amount spilled;
- Whether the spill has affected or has a potential to affect a waterway or sewer;
- A brief description of affected areas/equipment;
- Whether the spill has been contained; and
- Expected time of cleanup completion. If spill cleanup cannot be handled by on site personnel alone, such fact must be conveyed to the Project Manager immediately.

13.0 LOGS, REPORTS AND RECORDKEEPING

The following is a summary of required health and safety logs, reports and recordkeeping for 131-24 to 131-32 Avery Avenue, Flushing, NY.

13.1 HASP FIELD CHANGE REQUEST

In order to initiate a change to this HASP during field operations a HASP field change request must be completed. The Project Manager approval is required. The original will be kept in the project file.

13.2 MEDICAL AND TRAINING RECORDS

Medical and training records are to be maintained by the individual employer. Subcontractor employer must provide verification of training and medical qualification to the HSO/SHSO. The HSO/SHSO will keep a log of personnel meeting appropriate training and medical qualifications for site work. The log will be kept in the project file. Medical records will be maintained in accordance with §29 CFR 1910.20, Project Manager.

13.3 ON-SITE LOG

The on-site HSO/SHSO or designee will keep a daily personnel log. A copy of these logs will be sent to the Project Manager. Originals will be kept in the project file.

13.4 EXPOSURE RECORDS

Any personal monitoring results, laboratory reports, calculations and air sampling data sheets are part of an employee exposure record. These records will be kept in accordance with §29 CFR 1910.1020. The originals will be sent to the employer of the employee with a copy kept in the project file.

Employees will be notified of their personal monitoring results in accordance with applicable OSHA Standard.

13.5 ACCIDENT/INCIDENT REPORTS

An accident/incident report must be completed following procedures given in Section 11.4 of this HASP. The originals will be sent to the employer of the affected employee. A copy of the forms will be kept in the project file.

13.6 OSHA FORM 300

An OSHA Form 300 (Log of Occupational Injuries and Illnesses) will be kept at the project Site. All recordable injuries or illnesses will be recorded on this form. At the end of the project, the original will be sent to the Project Manager for filing. Subcontractor employees must also meet the requirements of maintaining an OSHA 300 Form.

13.7 HEALTH AND SAFETY FIELD LOG BOOKS

The HSO/SHSO or designee will maintain a health and safety logbook in which daily site conditions, activities, personnel, calibration records, monitoring results and significant events will be recorded. The original logbooks will become part of the exposure records file and will be maintained in the project files.

13.8 MATERIAL SAFETY DATA SHEETS

Material Safety Data Sheets (MSDS) will be obtained and kept on file at the project Site for each hazardous chemical brought to, used, or stored at the Site. MSDS for contaminants of concern are provided in *Attachment II*.

14.0 AUTHORIZATIONS

Personnel authorized to enter the Site while operations are being conducted must be approved by the HSO. Authorization will involve completion of appropriate training courses and medical examination requirements as required by OSHA 29 CFR 1910.120 and review and sign-off on this HASP.

1. Contractor and subcontractor personnel authorized to perform work at 131-10 to 131-18 Avery Avenue, Flushing, NY.

1. _____	11. _____
2. _____	12. _____
3. _____	13. _____
4. _____	14. _____
5. _____	15. _____
6. _____	16. _____
7. _____	17. _____
8. _____	18. _____
9. _____	19. _____
10. _____	20. _____

2. Other Personnel Authorized to Enter Site:

1. _____	11. _____
2. _____	12. _____
3. _____	13. _____
4. _____	14. _____
5. _____	15. _____
6. _____	16. _____
7. _____	17. _____
8. _____	18. _____
9. _____	19. _____
10. _____	20. _____

15.0 FIELD TEAM REVIEW

Each field team member shall sign this section after Site-specific training is completed and before being permitted to work on Site.

Team Members:
I have read the plan and/or been verbally advised about the plan, understand it, and agree to comply with all of its provisions. I understand that I could be prohibited from working on the project and may be subject to disciplinary actions for violating any of the safety requirements specified in the Health and Safety Plan.

Print Name	Signature	Affiliation/Title	Date

APPENDIX H – Quality Assurance Project Plan

APPENDIX H

Quality Assurance Project Plan

131-10 To 131-18 Avery Avenue

Block 5076, Lot 61 & 65

Site ID: C241228

Submitted to:

New York State Department of Environmental Conservation

Division of Environmental Remediation

Remedial Bureau B, 12th Floor

625 Broadway

Albany, NY 12233-7016

Prepared for:

Avery Group LLC

P.O. Box 815

Oakland Garden, NY 11030

Prepared by:

YU & Associates Engineers, P.C.

200 Riverfront Boulevard

Elmwood Park, NJ 07407

September 14, 2020

TABLE OF CONTENTS

Chapter **Page**

1.0 INTRODUCTION 1
1.1 SITE DESCRIPTION 1
1.2 PROJECT SCOPE OF WORK 1
2.0 PROJECT ORGANIZATION 3
3.0 GENERAL QAPP PROCEDURES 4
4.0 QUALITY MANAGEMENT SYSTEM 5
4.1 GENERAL REQUIREMENTS 5
4.2 OBJECTIVES 6
5.0 SAMPLE HANDLING 7
5.1 SAMPLING PRECEDURES 7
5.1.2 Groundwater Monitoring 7
5.2 SAMPLING IDENTIFICATION/LABELING 7
5.3 SAMPLING PRESERVATION AND HOLDING TIME 7
5.3.1 Sample Preservation 8
5.3.2 Holding Time 8
5.4 CHAIN-OF-CUSTODY AND SHIPPING 8
6.0 DECONTAMINATION 9
7.0 DATA QUALITY REQUIREMENTS 10
7.1 ANALYTICAL METHODS 10
7.2 QUALITY ASSURANCE OBJECTIVES 10
7.2.1 Precision 10
7.2.2 Accuracy 11
7.2.3 Representativeness 11
7.2.4 Comparability 11
7.2.5 Completeness 11
7.2.6 Sensitivity 12
7.3 FIELD QUALITY ASSURANCE 12
7.3.1 Equipment (Rinsate) Blanks 12
7.3.2 Field Duplicate Samples 12
7.3.3 Trip Blanks 12
7.4 LABORATORY QUALITY ASSURANCE 12
7.4.1 Instrument Performance Check 13
7.4.2 Calibration Checks 13
7.4.3 Method Blanks 13
7.4.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD) 13
7.4.5 Internal Standards 13
8.0 SUBCONTRACTOR & QA OVERSIGHT 14
8.1 PURCHASING PROCESS 14

8.2 PURCHASING INFORMATION 14
9.0 QUALITY MANAGEMENT 15
10.0 DATA REDUCTION, VALIDATION, AND REPORTING 16
10.1 LABORATORY DATA REPORTING AND REDUCTION 16
10.2 DATA VALIDATION 16
10.3 DATA USABILITY 16
10.4 FIELD DATA 17
11.0 TRAINING 18
12.0 GLOSSARY 19

1.0 INTRODUCTION

The purpose of this Quality Assurance Project Plan (QAPP) is to document planned post-remediation groundwater sampling activities and establish the criteria for performing these activities at a pre-determined quality at the 131-24 to 131-32 Avery Avenue, Flushing, New York. The QAPP describes the proposed sampling and analytical methods for the post-remediation groundwater sampling activities as part of the Site Management Plan (SMP).

The work will follow the same protocols as those for the Remedial Investigation of this project and be performed in accordance with New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation DER-10 Technical Guidance for Remedial Investigation and Remediation (May 2010)..

1.1 SITE DESCRIPTION

The site is located in Flushing, Queens County, New York and is identified as Block 5076 and Lot 61 and 65 on the New York City Tax Map. The site is an approximately 0.298-acre area and is bounded by Avery Avenue and commercial properties to the north, manufactural, commercial/residential property and Fowler Avenue to the south, commercial and residential property under construction to the east, and 131st Street and the Van Wyck Expressway to the west. The Site is currently under redevelopment into a residential/commercial building.

Remedial actions were performed at the Site, and based on the soil end-point sample results, the Track 1 Unrestricted Use Soil Cleanup Objectives were achieved. Remaining contamination at the Site includes the groundwater located beneath the cover system, of which the elevation is approximately el. -2.5. Based on the most recent groundwater sample results on June 23, 2020, CVOCs including trichloroethene (TCE), tetrachloroethene (PCE), 1,2-Dichloroethane (DCE), cis-1,2-Dichloroethene and PCBs were detected at several locations at the concentrations exceeding the TOGS Class GA criteria. The concentrations of PCBs (Maximum PCBs concentration of 0.152 ppb µg/L) detected in two groundwater samples collected from the south portion of the Site were slightly exceeding the TOGS Class GA criteria of 0.09 µg/L. The concentrations of CVOCs detected in groundwater samples collected site-wide were slightly exceeding the TOGS Class GA criteria of 5 ppb (Maximum PCE concentration of 31 ppb; Maximum TCE concentration of 10 ppb; Maximum 1,1-Dichloroethane concentration of 10 ppb; Maximum cis-1,2-Dichloroethene concentration of 5.1 ppb).

1.2 PROJECT SCOPE OF WORK

The project achieved a Track 1 cleanup for the soil remediation. A summary of the selected remedial action is as follows:

1. Prior to the commencement of remedial measures, existing buildings were demolished and removed from the Site in accordance with New York City permit requirements.
2. On-site soil was excavated to the groundwater level with over-excavation in localized areas up to 7 feet below groundwater level. A total of 8,040 cubic yards of soil was excavated, transported, and disposed off-site at appropriately permitted facilities;
3. On-site PCB hazardous soil were disposed of in accordance with TSCA. On-site soil impacted by PCBs above 0.1 parts per million (ppm) was excavated to the extent of practical, which is 1-3 feet below groundwater level and transported for off-site disposal at a properly approved facility.

4. End-point sampling was conducted following soil excavations to demonstrate that the remedy has achieved Track 1 the soil cleanup levels. Over excavation was performed where the end-point sample results indicate exceedances of Unrestricted Use SCOs criteria.

5. In-Situ chemical treatment of on-site groundwater was implemented to treat the on-site CVOCs groundwater contamination. A chemical reduction agent will be directly sprayed on the contaminated saturated soil at the bottom of the excavation and mixed with the 2 feet of soils using conventional moving equipment (e.g. backhoe). Follow up groundwater monitoring will be performed to confirm the effectiveness of the application and follow-up chemical injections will be performed.

6. Potential off-site groundwater contamination impact was prevented by installing the permeable reactive barriers (PRB). Upon completion of the soil excavation, the PRBs were installed as continuous trenches with reduction chemical reagent along each perimeter of the property boundary to prevent potential groundwater contamination off-site migration.

7. Construction and maintenance of a soil cover system consisting of a 20-inch ASTM #57 stone, a layer of Mirafi 140N geotextile fabric, a 4-inch mud slab, a layer of grace Preprufe 300R (0.75 mm thickness vapor barrier), and 33-inch concrete slab to prevent human exposure to remaining contaminated soil/fill remaining at the site.

8. An environmental easement will be included as an institutional control. An environmental easement is required when residual contamination is left on-site after the Remedial Action is complete. As part of this remedy, an Environmental Easement approved by NYSDEC was filed and recorded with the Queens County Office of the City Register. The Environmental Easement will be submitted as part of the Final Engineering Report.

9. A Site Management Plan will be developed to provide details regarding management of remaining on-site contamination left in place at the Site following the completion of the Remedial Action. The Site Management Plan will be submitted as part of the Final Engineering Report (FER), and as an independent document.

2.0 PROJECT ORGANIZATION

- Project Manager: Andrew Leung — Phone: (201) 773-9038, Mobile: (201) 310-2501
- Quality Assurance Officer: Sixuan Wang — Mobile: (201) 988-3935
- Field Coordinator: Chengyu hang — Phone: (201)791-0075, Mobile: (412) 313-3795

Resumes of key personnel are attached in *Appendix A* of the SMP.

3.0 GENERAL QAPP PROCEDURES

In order to ensure proper sampling and analysis protocols, as well as quality assurance/quality control (QA/QC) procedures for data collection and data analysis activities at the Site, YU will follow the sampling, sample handling and storage, and sample equipment decontamination procedures specified by Appendix J – Field Sampling Plan of the SMP. Equipment functionality, chain-of-custody, and other relevant notes will be recorded in the field. Data validation activities will include the manual check of laboratory data tables and reduced data summary tables. Conclusions and/or recommendations will be reviewed by one or more qualified peers of the professional who developed them to verify their accuracy on the basis of acquired data and conducted analyses.

4.0 QUALITY MANAGEMENT SYSTEM

4.1 GENERAL REQUIREMENTS

YU has established, documented, implemented, maintained and is continually improving its Quality Management System (QMS) in accordance with the requirements of the ISO 9001-2008 standard. In order to implement the QMS, YU has developed the following matrix that identifies:

- The processes needed for the QMS;
- The sequence and interaction of these processes;
- The criteria and methods to ensure effective operation and control of the processes; and
- The availability of information necessary to support the effective operation and monitoring of these processes.

QUALITY PROCESS	OBJECTIVES	RISKS TO ACHIEVE OBJECTIVES	CONTROLS	INTERNAL MEASUREMENT
Design Concepts	Understand requirements of the Project / customer / Agencies	Inexperienced personnel and/or inadequate preparation. Failure to understand requirements.	Review by experienced professional.	Did you meet your project requirements?
Preparation	Prepare for Fieldwork	Subconsultant agreements not in place. Inexperienced personnel and/or inadequate preparation. Permits not obtained.	Process checklist. Customer-related processes.	Did you meet the schedule? Were scope and design criteria clearly defined?
Preliminary Design	Progress RAWP to appropriate level for review	Poor customer information. Inexperienced personnel. Failure to understand requirements. Insufficient staff.	Reference to DER-10. Timely review of progress well ahead of deadline.	Did you meet the requirements in the Contract for technical content and transmit for customer review on time?
Data Collection	Obtain all necessary data	Failure to collect important data prior to and during the fieldwork process.	Checklists and RAWP. Review by experienced professional. Reference to DER-10 and/or CP-51.	Was all necessary data collected? Does project team have adequate information to make sound judgment of existing conditions? Was the proper investigation approach selected? Were samples collected and analyzed properly? Were all in scope media (soil and groundwater) assessed? Were

QUALITY PROCESS	OBJECTIVES	RISKS TO ACHIEVE OBJECTIVES	CONTROLS	INTERNAL MEASUREMENT
				supplemental assessment tools needed and/or used?
Reporting	Document fieldwork and findings	Inexperienced personnel. Failure to clearly explain activities. Improper analysis. Flawed findings.	Review by experienced professional.	Does the report clearly describe the objectives of the project, the steps taken to achieve the objectives, the analyses performed, and the findings? Does the report meet NYSDEC standards for remedial action? Was the data compared to the correct screening levels?

YU will verify that quality process objectives are met and any deviations from the guidelines or procedures will be documented. Recommendations to improve the process and/or work product(s) from staff or clients will be reviewed by YU's management and addressed, as needed.

4.2 OBJECTIVES

The data quality objectives are to generate usable and valid data. Sampling will be performed to gather the necessary data to adequately assess the condition of hazardous materials on Site. Field protocols for sample collection will follow relevant standards as described in the SMP. Relevant health and safety field screening will be performed and documented in accordance with YU's Health and Safety Plan.

Samples sent to the analytical laboratory will be analyzed for parameters consistent with the project scope of work defined in the SMP. Analyses will be performed in accordance with the most current USEPA Methods or other recognized methods specified in the SMP. Satisfactory completion and compliance with the data quality objectives will be assured by performing analyses in accordance with the stated methods and by requesting QA/QC procedures and deliverables to be sufficiently comprehensive that a data validation assessment may be performed, as needed. Analytical data will be requested in electronic format.

5.0 SAMPLE HANDLING

5.1 SAMPLING PRECEDURES

Following the completion of remediation of the subject property, a post-remediation groundwater sampling program will be implemented. The post-remediation samples are to demonstrate that the remedy has facilitated a bulk reduction of chlorinated VOCs in the groundwater.

5.1.1 Groundwater Monitoring

During the process of remediation, monitoring wells were installed across the Site to monitor the effectiveness of the groundwater treatment. Groundwater sampling will be done in compliance with DER-10 (NYSDEC, May 2010).

5.2 SAMPLING IDENTIFICATION/LABELING

Soil and groundwater sample containers will be labeled at the time of sampling with the following information:

- Project name and number
- Sample location ID
- Sample number
- Sample depth
- Date and time of collection
- Sampler initials
- Analysis required

For example,

Field duplicates will have the same number as the original sample, with 50 added to the sample location ID. For example, the field duplicate of B-01 will be labeled as B-51.

Trip blanks will be identified as "TB" followed by a six-digit date code indicating the date of shipment. For example, the trip blank shipped on August 15, 2015 will be labeled TB081515.

Field (rinsate) blanks will be identified as "Field Blank" followed by a matrix code. For example, the field blank for soil will be labeled as Field Blank Soil.

Matrix spikes and matrix spike duplicates will have the same number as the duplicates followed by MS and MSD, respectively. For example, the matrix spike for B-01 will be labeled as B-51 MS.

Pre-printed sample labels will be provided by the laboratory along with the sample containers. Sample labels will be completed and as described above. At a minimum, they will include the site name or number, sample ID, date of sample, and the analysis required.

5.3 SAMPLING PRESERVATION AND HOLDING TIME

Sample container, preservation, and holding time requirements are summarized as below.

5.3.1 Sample Preservation

Groundwater samples submitted for VOC analysis will be preserved to a pH of ≤ 2 with hydrochloric acid (HCl). Groundwater samples submitted for metals analysis will be preserved to a pH of ≤ 2 with nitric acid (HNO3). The laboratory will provide pre-preserved 40-mL VOA vials and 1-L poly containers for the respective analysis.

5.3.2 Holding Time

Holding times are judged from the verified time of sample receipt (VTSR) by the laboratory. Laboratory will pick up soil and groundwater samples the morning after collection (e.g, Monday's samples will be picked up on Tuesday morning for laboratory delivery). Samples collected on Friday will be hand delivered to the laboratory by YU staff. For the purposes of determining holding time conformance, trip blanks will be considered to have been generated on the same day as the environmental samples with which they are shipped and delivered.

5.4 CHAIN-OF-CUSTODY AND SHIPPING

A Chain-of-Custody form will trace the path of sample containers from the Site to the laboratory. Sample/bottle tracking sheets or the Chain-of-Custody will be used to document the custody of the samples within the laboratory from sample receipt though completion of analysis. The project manager will notify the laboratory of upcoming field sampling events and the subsequent transfer of samples. This notification will include information concerning the number and type of samples and the anticipated date of arrival. Sample shipping containers (e.g., coolers) will be provided by the laboratory for shipping samples. All sample containers within each shipment will be individually labeled with an adhesive identification label provided by the laboratory. In addition, each sample shipping container will be sealed with two adhesive custody seals. The custody seals will be initialed by a member of the field sampling team.

6.0 DECONTAMINATION

Decontamination procedures are intended to prevent the cross-contamination of environmental samples, and minimize the exposure to individuals involved in sampling and communities living near the Site. Deionized water will be utilized for decontamination purposes and the decontamination water will be handled as investigative derived waste (IDW) and containerized in an open-top 55-gallon steel drum, properly labeled and sealed. All non-dedicated equipment and tools used to collect samples will be decontaminated prior to sampling, and between each sample interval using an Alconox rinse and deionized water rinse prior to reuse. Any excess sample soil will be included as IDW and containerized in a separate open-top 55-gallon steel drum, properly labeled and sealed. Used personal protective equipment (PPE) will be decontaminated to the extent possible and disposed of in the 55-gallon drum. Field equipment rinsate blanks will be generated and analyzed to monitor the effectiveness of field decontamination procedures.

7.0 DATA QUALITY REQUIREMENTS

Analytical methods and data quality requirements are discussed below. All sample containers and sample analyses will be provided by a NYSDOH ELAP-certified laboratory.

7.1 ANALYTICAL METHODS

The samples collected during remedial actions will be subject to analytical testing methodologies that follow United State Environmental Protection Agency (USEPA) SW-846 methods with an equivalent Category B deliverables package and third-party data validation.

Groundwater samples will be analyzed using the following analytical methods:

- VOCs by EPA Method 8260C
- PCBs by EPA Method 8082

7.2 QUALITY ASSURANCE OBJECTIVES

Data quality objectives (DQOs) for measurement data in terms of sensitivity and parameters including precision, accuracy, representativeness, comparability, and completeness (PARCC) are established so that the data collected are sufficient and of adequate quality for their intended use. Data collected and analyzed in conformance with the DQO process described in this QAPP will be used in assessing the uncertainty associated with decisions related to this Site.

7.2.1 Precision

Precision measures the reproducibility of measurements under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements compared to their average value. The overall precision of measurement data is a mixture of sampling and analytical factors. Analytical precision is easier to control and quantify than sampling precision; there are more historical data related to individual method performance and the "universe" is not limited to the samples received in the laboratory. In contrast, sampling precision is unique to each site or project. Overall system (sampling plus analytical) precision will be determined by analysis of field duplicate samples. Analytical results from laboratory duplicate samples will provide data on measurement (analytical) precision.

The laboratory objective for precision is to equal or exceed the precision demonstrated for the applied analytical methods on similar samples. Precision is evaluated by the analyses of laboratory and field duplicates. Field duplicates will be collected at a frequency of one per 20 environmental samples of each type. Relative Percent Difference (RPD) criteria are used to evaluate precision between duplicates, using the equation below:

$$RPD = 100 \times [2(X_1 - X_2) / (X_1 + X_2)]$$

where:

X_1 and X_2 are reported concentrations for each duplicate sample and subtracted differences represent absolute values.

Criteria for evaluation of laboratory duplicates are specified in the applicable methods. The objective for field duplicate precision is $\leq$ 50% RPD for all matrices. Precision is not calculable where the analyte is not detected in one or both of the sample and duplicate. The absolute difference between the results ($X_1 - X_2$) may be a more appropriate measure of analytical precision where the reported concentrations are low (i.e., less than five times the RL).

7.2.2 Accuracy

The laboratory objective for accuracy is to equal or exceed the accuracy demonstrated for the applied analytical method on similar samples. Percent Recovery Criteria, published by the NYSDEC as part of the ASP, and those determined from laboratory performance data are used to evaluate accuracy in matrix (sample) spike and blank spike quality control samples. A matrix spike and blank spike will be performed once for every sample delivery group (SDG) as specified in the ASP-CLP. Other method-specific laboratory QC samples (such as laboratory control samples and continuing calibration standards) may also be used in the assessment of analytical accuracy. Sample (matrix) spike recovery is calculated as:

%R = (SSR-SR)/SA x 100,
where:
SSR = Spiked Sample Result
SR = Sample Result, and
SA = Spike Added

7.2.3 Representativeness

The representativeness of data is only as good as the representativeness of the samples collected. Sampling and handling procedures, and laboratory practices are designed to provide a standard set of performance-driven criteria to provide data of the same quality as other analyses of similar matrices using the same methods under similar conditions. Representativeness is assessed qualitatively (there are no equations or numerical criteria for this data quality indicator).

7.2.4 Comparability

Comparability of analytical data among laboratories becomes more accurate and reliable when all labs follow the same procedure and share information for program enhancement. Some of these procedures include:

- Instrument standards traceable to National Institute of Standards and Technology (NIST), USEPA, or the New York State Department of Health or Environmental Conservation;
- Using standard methodologies;
- Reporting results for similar matrices in consistent units;
- Applying appropriate levels of quality control within the context of the laboratory quality assurance program; and,
- Participation in inter-laboratory studies to document laboratory performance.

By using traceable standards and standard methods, the analytical results can be compared to other labs operating similarly. The QA Program documents internal performance. Periodic laboratory proficiency studies are instituted as a means of monitoring intra-laboratory performance. Comparability is assessed qualitatively (there are no equations or numerical criteria for this data quality indicator).

7.2.5 Completeness

The goal of completeness is to generate the maximum amount possible of valid data. The highest degree of completeness would be to find all deliverables flawless, valid, and acceptable. The lowest level of completeness is excessive failure to meet established acceptance criteria and consequent rejection of data. The completeness goal is 95 percent useable data. However, it is acknowledged that this goal may not be fully achievable; for example, individual analytes may be rejected within an otherwise acceptable analysis; or some sampling locations may not be accessible. The impact of rejected or unusable data will be determined on a

case-by-case basis. If the study can be completed without the missing datum or data, no further action would be necessary. However, loss of critical data may require re-sampling or reanalysis.

7.2.6 Sensitivity

Sensitivity criteria are established so that reporting limits are adequate to verify the absence of a non-detected analyte at the applicable threshold concentration (e.g., regulatory limits or guidance values). Laboratory reporting limits will be reviewed prior to sample collection to verify that limits are appropriate for the specific analytes and matrices.

7.3 FIELD QUALITY ASSURANCE

Field quality assurance/quality control samples associated with the generation of environmental data typically include field (equipment rinsate) blanks; field duplicates; and trip blanks. The rationale and frequency of each of these are discussed below.

7.3.1 Equipment (Rinsate) Blanks

Equipment blanks are not required when laboratory-decontaminated, dedicated sampling equipment is used. One equipment rinsate blank will be collected each week for the sampling equipment used to collect groundwater samples in order to verify that it has not become contaminated through shipment and storage. Equipment blanks will be collected once per week or once per each group of 20 (or fewer) samples for soil sample collection.

7.3.2 Field Duplicate Samples

Duplicates will be collected at a frequency of one per 20 samples of each type, and will be analyzed for the same parameters as the environmental sample. Duplicate groundwater samples will be collected by alternately filling laboratory-provided VOA vials and pre-preserved bottles for metals. Duplicate soil samples for parameters other than VOCs will be generated by mixing the soil in a clean (decontaminated) container such as a bowl, and then alternately filling the laboratory-provided sample containers. Soil sample duplicates for VOC analysis will be co-located grab samples; samples for VOC analysis will not be mixed to avoid loss of volatile constituents.

7.3.3 Trip Blanks

The purpose of a trip blank is to place a mechanism of control on sample container preparation, quality, and sample handling. The trip blank travels from the lab to the Site with the empty sample container and back from the Site with the collected samples. One trip blank will be submitted with each sample shipment of water samples and analyzed for VOCs.

7.4 LABORATORY QUALITY ASSURANCE

Method-required laboratory quality assurance includes an instrument performance check; calibration check; and method blank analysis for each group of 20 or fewer samples. In addition, internal standards are added to every sample (environmental samples and laboratory QA/QC samples).

Laboratories typically perform additional QC, such as spikes, laboratory duplicates, and laboratory control samples. The frequency of these analyses is specified in the laboratory's analytical standard operating procedure (SOP) for the method.

7.4.1 Instrument Performance Check

The instrument performance check verifies the operation of the gas chromatography/mass spectrometry (GC/MS) and verifies that it meets tuning and mass spectral abundance criteria prior to sample data acquisition.

7.4.2 Calibration Checks

An initial five-point calibration check must be performed after the instrument performance check but prior to the analysis of blanks and samples. Concentrations of the calibration standards should be selected to span the concentration range of interest. One of the concentrations of the initial calibration must be the same as the daily calibration check.

On a daily basis, a single-point calibration check must be analyzed (with each group of 20 or fewer samples). The percent difference (%D) for each compound in the daily calibration check should be within ±30 percent of the response determined in the initial calibration in order to proceed with sample analysis. If the %D criteria are not met, a new five-point calibration should be performed.

7.4.3 Method Blanks

Method blanks are used to assess the background variability of the method and to assess the introduction of contamination to the samples by the method, technique, or instrument as the sample is prepared and analyzed in the laboratory.

The method blank should not contain any target analytic at a concentration greater than its quantitation level (reporting limit; typically, three times the MDL) or its action level, whichever is more stringent. Method blanks are analyzed at a frequency of one for every 20 samples analyzed, or every analytical batch, whichever is more frequent.

7.4.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Site-specific MS/MSD samples will be submitted during sampling at a rate of one per 20 samples.

7.4.5 Internal Standards

Internal standards (IS) are added to every sample analyzed for VOCs (in either matrix). Sample-specific IS recovery should be ±40 percent of the mean response in the most recent valid calibration.

8.0 SUBCONTRACTOR & QA OVERSIGHT

8.1 PURCHASING PROCESS

Where sub-consultants/Subcontractors are engaged to work on projects, their capability to perform the assigned scope of services shall be evaluated by the Project Manager (PM). The PM is responsible for follow-up on identified areas of poor performance. Records of performance for the various sub-consultants/Subcontractors will be maintained by the PM. Sub-consultants with a record of poor performance will be excluded from future consideration.

8.2 PURCHASING INFORMATION

Purchase Orders and Contracts with sub-consultants/Subcontractors will define product requirements, QMS requirements, applicable procedures, processes, equipment, and personnel qualifications in sufficient detail to ensure the work performed meets the purchase order requirements. The Contract/Agreement between YU and respective sub-consultants/Subcontractors will define the above requirements in sufficient detail to verify the work performed meets the purchase order requirements.

On this Project, the sub-consultants/Subcontractors will be performing work under their own Quality Plan which shall be reviewed and approved by YU. The PM, or his designee, will perform an evaluation of the sub-consultants/Subcontractors' implementation of their Quality Plan on a periodic basis as appropriate to the activities of the sub-consultants/Subcontractors. Reports of this evaluation will be maintained by the PM for the duration of the project. Any noncompliance shall be resolved to the satisfaction of the Client, and records maintained.

Verification of Purchased Product Work prepared by the sub-consultants/Subcontractors will be reviewed for conformance to Agreement/Contract requirements, accepted by the PM, and documented by written notification that the sub-consultants/Subcontractors work is in conformance with Contract requirements.

9.0 QUALITY MANAGEMENT

A senior YU employee will serve as the Quality Assurance Officer for the project. This individual will not have direct project responsibility but will independently monitor the implementation of YU's QMS. The duties of the QAO will be:

- Monitor the project in accordance with YU's QMS.
- Review the project to ensure that goals of the project are adequately addressed.
- Record any deviation from the QMS pertaining to any aspect of the project and ensure the PM is aware of said deviation.
- Meet with the PM on an as needed basis to discuss adherence to the QMS.
- Advise the PM of findings and make recommendations on methods to improve quality.
- Coordinate activities with other sub-consultants/Subcontractors and Client.
- Verify that outside services from sub-consultants/Subcontractors meet with plan and contract requirements.

10.0 DATA REDUCTION, VALIDATION, AND REPORTING

Data validation activities will include the manual check of laboratory data tables and reduced data summary tables. A cycle of markup, revision, and trace checking shall be performed and a check by the PM will ensure data quality.

Conclusions and/or recommendations will be reviewed by one or more qualified peers of the professional who developed them to ensure their accuracy on the basis of acquired data and conducted analyses.

The guidance followed to perform quality data validation, and the methods and procedures outlined herein and elsewhere in the RAWP, pertain to initiating and performing data validation, as well as reviewing data validation performed by others (if applicable). An outline of the data validation process is presented here, followed by a description of data validation review summaries.

10.1 LABORATORY DATA REPORTING AND REDUCTION

The laboratory will meet the applicable documentation, data reduction, and reporting protocols as specified in the NYSDEC ASP Category B deliverable requirements. In addition to the hard copy of the data report, the laboratory will be asked to provide the sample data electronically in spreadsheet form, generated to the extent possible directly from the laboratory's electronic files or information management system to minimize possible transcription errors resulting from the manual transcription of data. The laboratory will also provide the electronic deliverable in NYSDEC "EZ-EDD" format, as described in ASP 2005 Exhibit H, Section 1.1.1.

10.2 DATA VALIDATION

A subcontractor to YU will review and validate the soil and groundwater data. The data validator will be independent of the laboratory and independent of YU. Data validation will be performed by following guidelines established in the specific USEPA Region 2 SOPs.

Where necessary and appropriate, supplemental validation criteria may be derived from the EPA Functional Guidelines (USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA 540/R-99/008; October 1999, and National Functional Guidelines for Inorganic Data Review, EPA 540/R-04-004; October 2004), as appropriate.

Validation reports will consist of text results of the review and marked up copies of Form I (results with qualifiers applied by the validator). Validation will consist of target and non-target compounds with corresponding method blank data, spike and surrogate recoveries, sample data, and a final note of validation decision or qualification, along with any pertinent footnote references. Qualifiers applied to the data will be documented in the report text. The results of the data validation will be presented in a Data Usability Summary Report (DUSR) prepared by the validation subcontractor.

10.3 DATA USABILITY

Subsequent to review of the items evaluated in the subcontractor's DUSR and accompanying tables, YU will then prepare a brief data usability summary. The data usability summary, which will be provided as part of the Final Engineering Report (FER), encompasses both quantitative and qualitative aspects, although the qualitative element is the most significant.

The quantitative aspect is a summary of the data quality as expressed by qualifiers applied to the data; the percent rejected, qualified (i.e., estimated), missing, and fully acceptable data are reported. As appropriate, this quantitative summary is broken down by matrix, laboratory, or analytical fraction or method. The qualitative element of the data usability summary is the QA officer's translation and summary of the validation reports into a discussion useful to data users. The qualitative aspect will discuss the significance of the qualifications applied to the data, especially in terms of those most relevant to the intended use of the data. The usability report will also indicate whether there is a suspected bias (high or low) in qualified data, and will also provide a subjective overall assessment of the data quality.

10.4 FIELD DATA

Field data collected during the field activity will be presented in tabular form with any necessary supporting text. Unless activities resulted in significant unexpected results, field data comments can be added as footnotes to the tables.

11.0 TRAINING

YU will:

- Identify competency needs for personnel performing activities affecting quality. YU has developed position descriptions for those personnel performing activities affecting quality, which identify competency requirements. The PM maintains the latest issue of such position descriptions.
- Provide training to satisfy competency needs. The PM is responsible for identifying training needs and assuring that training is performed.
- Only employ qualified personnel to execute the scope of work.

The PM is responsible for verifying that each employee assigned to the project has read and understands the QMS, and is familiar with the procedures/instructions unique to the project. Training will consist of in-house technical and non-technical seminars given by qualified and experienced senior staff members. In addition, specifically conducted meetings will be designed to review quality of work and address any corrective measures needed to correct any nonconformance discovered. Project specific staff will be required to attend. The PM will maintain training and other records of proficiency at YU's office located on the 2nd floor of 200 Riverfront Blvd., Elmwood Park, NJ 07407.

12.0 GLOSSARY

1. "Alteration" means altering a sample collected for analysis in any way other than by adding a preservative, such as nitric acid to lower pH. Examples of alteration include, but are not limited to: filtering, settling and decanting, centrifuging and decanting and acid extracting.

2. “Analytical Services Protocol” or "ASP" means DEC’s compilation of approved EPA laboratory methods for sample preparation, analysis and data handling procedures.

3. “Correlation sample” means a sample taken, when using a field-testing technology, to be analyzed by an ELAP-certified laboratory to determine the correlation between the laboratory and field analytical results.

4. "Effective solubility" means the theoretical aqueous solubility of an organic constituent in groundwater that is in chemical equilibrium with a separate-phase (NAPL) mixed product (product containing several organic chemicals). The effective solubility of a particular organic chemical can be estimated by multiplying its mole fraction in the product mixture by its pure-phase solubility.

5. “Environmental Laboratory Accreditation Program” or “ELAP” means a program conducted by the NYSDOH which certifies environmental laboratories through on-site inspections and evaluation of principles of credentials and proficiency testing. Information regarding ELAP is available at the NYSDOH Wadsworth Laboratory website.

6. "Filtration" means the filtering of a groundwater or surface water sample, collected for metals analysis, at the time of collection and prior to preservation. Filtering includes but is not limited to the use of any membrane, fabric, paper or other filter medium, irrespective of pore size, to remove particulates from suspension.

7. “Final delineation sample” means a sample taken to make a decision regarding the extent of contamination at a site during the investigation and the design of the remedy or confirmation/documentation sampling during remedial construction, which is to be analyzed by an ELAP-certified laboratory.

8. “Intermediate sample” means a sample taken during the investigation or remediation process that will be followed by another sampling event to confirm that remediation was successful or to confirm that the extent of contamination has been defined to below a level of concern.

9. "Method detection limit" or "MDL" means the minimum concentration of a substance that can be measured and reported with a 99 percent confidence that the analyte concentration is greater than zero and is determined from the analysis of a sample in a given matrix containing the analyte.

10. “Minimum reporting limit” means the lowest concentration at which an analyte can be detected and which can be reported with a reasonable degree of accuracy. It is the lowest concentration that can be measured, a lab-specific number, developed from minimum detection limits, and is also referred to as the practical quantitation limit (PQL).

11. “Nephelometric Turbidity Unit” or "NTU" is the unit by which turbidity in a sample is measured.

12. "Preservation" means preventing the degradation of a sample due to precipitation, biological action, or other physical/chemical processes between the time of sample collection and analysis. The most common examples involve refrigeration at 4 degrees Celsius and lowering sample pH by the addition of acid to keep dissolved metals in solution or to reduce the biodegradation of dissolved organic analytes.

13. "Target analyte list" or "TAL" means the list of inorganic compounds/elements designated for analysis as contained in the version of the EPA Contract Laboratory Program Statement of Work for Inorganics Analysis, Multi-Media, Multi-Concentration in effect as of the date on which the laboratory is performing the analysis. "TAL Metals" refers to just the 23 metals, but without analysis for cyanide.

14. "Targeted compound" means a contaminant for which a specific analytical method is designed to detect that potential contaminant both qualitatively and quantitatively.

15. "Target compound list plus 30" or "TCL+30" means the list of organic compounds designated for analysis (TCL) as contained in the version of the EPA Contract Laboratory Program Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration in effect as of the date on which the laboratory is performing the analysis, and up to 30 non-targeted organic compounds (plus 30) as detected by gas chromatography/mass spectroscopy (GC/MS) analysis.

16. "Tentatively identified compound or TIC" means a chemical compound that is not on the target compound list but is detected in a sample analyzed by a GC/MS analytical method. TICs are only possible with methods using mass spectrometry as the detection technique. The compound is tentatively identified using a mass spectral instrumental electronic library search and the concentration of the compound estimated.

17. "Well development" means the application of energy to a newly installed well to establish a good hydraulic connection between the well and the surrounding formation. During development, fine-grained formation material that may have infiltrated the sand pack and/or well during installation is removed, allowing water from the formation to enter the well without becoming turbid and unrepresentative of groundwater in the formation.

Attachment A — Environmental Personnel Resume

SIXUAN WANG, P.E.

Assistant Project Manager

EDUCATION

Texas Tech University, Master of Science in Environmental Engineering, 2011
Huazhong University of Science and Technology, Bachelor of Engineering in Environmental Engineering, 2008

REGISTRATION & CERTIFICATION

Professional Engineer
ArcGIS – 9 hours of ESRI Training
Asbestos Inspector, New York, New Jersey
40-Hour OSHA HAZWOPER
Heartsaver First Aid CPR AED
Basics of a Part 58 Environmental Review for HUD-Assisted Projects Training

EXPERIENCE SUMMARY

Sixuan Wang is responsible for planning, directing and implementing environmental remediation and management projects in the New York City metropolitan area. Ms. Wang has over six years of experience in project management/supervision, consulting, engineering analyses, design of remediation actions, engineering controls, interaction with architect and structure engineer, reports and specifications, construction monitoring, quality control, and R&D. She has extensive experience in Environmental Due Diligence, Remedial Investigation, Remediation Design and Environmental Compliance with Federal, State and local acts, laws and regulations. She is familiar with Brownfield Cleanup Program, New York State Superfund Csleanup program, and local E-designation program requirements. Ms. Wang is also specialized in environmental management with expertise in EA, air and noise modeling, air quality and noise study, and site contamination analysis, regulation study, permit identification and application preparation, and report drafting for environmental review during project planning phase. She is familiar with technology applied to environmental monitoring, environmental data management, air modeling, noise modeling, and groundwater modeling. Her major projects include transportation infrastructure design, waterfront park redevelopment, and residential and commercial building development.

REPRESENTATIVE PROJECTS

Queens West Waterfront Redevelopment at Hunter's Point South, Environmental Engineering Services, NY – Project engineer work in the environmental engineering team of this waterfront redevelopment design project as a member of the Architectural/ Engineering team. Situated on approximately 30 acres of prime waterfront property, Hunters Point South redevelopment is recognized as an international model of urban ecology and a world laboratory for innovative sustainable thinking. Environmental conditions varies from industrial activities to residential heating oil tank. A large volume of environmental data since 1986 was reviewed and converted from difference regulation frameworks and formats to reframe the site contamination conditions together with new site investigation data. Polycyclic Aromatic Hydrocarbons (PAHs), petroleum contamination and heavy metals were detected site wide. A site wide soil remediation program was developed to compensate the landscape architect's envision of a recreational and cultural destination. Human exposure assessment was conducted to ensure elimination of all possible migration pathways from contaminated media. Worked closely with site/civil engineer to develop alternative design to provide engineering control as protection without deviate the design goal. Remedial Action Workplan (RAP) was developed and approved by regulating agency. Environmental design plan and specification was submitted as part of the construction documents. Construction support was provided during the Phase I development. As the completion of Phase I construction, a contaminated and post-industrial land was transformed into a recreational and cultural destination safe for children and animals. As

designed in Phase II, this project will also serve as part of the resilience masterplan of New York City after Superstorm Sandy and also the New York City's largest affordable housing initiative since the 1970s.

Former Gasoline Station, Lower Manhattan, NY, Project engineer worked on the remediation for the development of a 65,000 SF commercial building at a former gasoline station site in downtown Manhattan. The site has been under a state consent order for more than two decades. Several in-situ and ex-situ remedies have been implemented on site by others and couldn't reach the site cleanup goal. Leading a design team to provide a remedy and to get approval from NYSDEC. Remedial design included excavation and disposal, In-situ solidification, in-situ chemical oxidation, soil mixing, hot spot over excavation in groundwater, a composite cover system and a passive sub-slab depressurization system to protect tenants, and off-site migration control. The remedy was designed to be successfully incorporated with the $100 million developing without major impact to the construction schedule and proposed use.

Coney Island Hospital Flood Mitigation Design, Environmental Engineering Services, NY – Project engineer work in the environmental engineering team of this waterfront redevelopment design project as a member of the Architectural/ Engineering team. Situated on approximately 30 acres of prime waterfront property, Hunters Point South redevelopment is recognized as an international model of urban ecology and a world laboratory for innovative sustainable thinking. Environmental conditions varies from industrial activities to residential heating oil tank. A large volume of environmental data since 1986 was reviewed and converted from difference regulation frameworks and formats to reframe the site contamination conditions together with new site investigation data. Polycyclic Aromatic Hydrocarbons (PAHs), petroleum contamination and heavy metals were detected site wide. A site wide soil remediation program was developed to compensate the landscape architect's envision of a recreational and cultural destination. Human exposure assessment was conducted to ensure elimination of all possible migration pathways from contaminated media. Worked closely with site/civil engineer to develop alternative design to provide engineering control as protection without deviate the design goal. Remedial Action Workplan (RAP) was developed and approved by regulating agency. Environmental design plan and specification was submitted as part of the construction documents. Construction support was provided during the Phase I development. As the completion of Phase I construction, a contaminated and post-industrial land was transformed into a recreational and cultural destination safe for children and animals. As designed in Phase II, this project will also serve as part of the resilience masterplan of New York City after Superstorm Sandy and also the New York City's largest affordable housing initiative since the 1970s.

BAM Park Civil Engineering and Landscape Design Services, Brooklyn, NY – Environmental Engineer work in the design team for the BAM Park redevelopment design. BAM Park is situated on approximately 8,500 square feet of urban area predominately comprised of low-rise commercial structures and residential buildings. Previous environmental data was reviewed and converted from difference regulation frameworks and formats to reframe the site contamination conditions together with new site investigation data. Low levels of Polycyclic Aromatic Hydrocarbons (PAHs) and heavy metals were detected site wide. A site wide soil remediation program was developed to compensate the landscape architect's envision of a recreational destination. Human exposure assessment was conducted to ensure elimination of all possible migration pathways from contaminated media. Worked closely with Architect to develop design to provide engineering control as protection without deviate the design goal. Remedial Action Workplan (RAP) was developed and approved by regulating agency. Environmental design plan and specification was submitted as part of the construction documents.

Spill Closure, Hotel Building Construction Site, Long Island City, NY – Environmental Engineer responsible for remedial activities on site, including contamination delineation, field activity plan, Health and Safety Plan, underground storage tank (UST) decommissioning, groundwater

monitoring plan, indoor air sampling, forensic UST analysis, NYSDEC and client communications, and reporting. Responsibilities also include contractor management, remediation site oversight, submission of the final closure report to NYSDEC and acquisition of No Further Action (NFA) letter from NYSDEC.

Northern Blvd, Flushing, NY – Environmental Consultant work for purchaser during the property transaction. Performed Phase I Environmental Site Assessment and Phase II Site Investigation for the buyer during the

Crescent Street, Long Island City, NY – Environmental Engineer Environmental engineer responsible for the cleanup of the former scrap metal yard. The heavy metal contaminated soil was removed properly disposed off-site. Team collected soil samples for waste classification and conducted end-point PID screening.

Brooklyn Bridge Rehabilitation Tower Base Protection – Environmental Engineer work with the construction team

CUNY Brooklyn College – Science & Resilience Institute

NYSDEC Brownfield Cleanup Site, Flushing, New York City – Project engineer lead this NYSDEC brownfield cleanup site for an $80 million mixed use building with gross area of more than 95,000 square feet. The site was used as a major plant for electrical filter and capacitors from half a century ago. Significant amount of chlorinated solvent and Polychlorinated biphenyl (PCB) were found in all the media of the site. Leading an engineer/scientist team to provide services including coordinating among City, State and Federal agencies, enrolling the site into brownfield cleanup program to protect the client from liability, developing a remedy to clean up the site and to facilitate the development plan. A comprehensive and low-impact remedial action workplan (RAP) was developed after working closely with all the stakeholders. The remedy will be implemented with contaminated soil removal/disposal, groundwater dehalogenation using Ferox Zero Valent Iron (ZVI). The remedial design successfully incorporated the construction activities and facilitated the architectural design. The RAP was approved by EPA, NYSDEC, and NYC OER, and implemented as part of the construction without delay the schedule.

NYCOER Brownfield Cleanup Site, Flushing, New York City, Project engineer lead this NYSDEC brownfield cleanup site for an $80 million mixed use building with gross area of more than 95,000 square feet. The site was used as a major plant for electrical filter and capacitors from half a century ago. Significant amount of chlorinated solvent and Polychlorinated biphenyl (PCB) were found in all the media of the site. Leading an engineer/scientist team to provide services including coordinating among City, State and Federal agencies, enrolling the site into brownfield cleanup program to protect the client from liability, developing a remedy to clean up the site and to facilitate the development plan. A comprehensive and low-impact remedial action workplan (RAP) was developed after working closely with all the stakeholders. The remedy will be implemented with contaminated soil removal/disposal, groundwater dehalogenation using Ferox Zero Valent Iron (ZVI). The remedial design successfully incorporated the construction activities and facilitated the architectural design. The RAP was approved by EPA, NYSDEC, and NYC OER, and implemented as part of the construction without delay the schedule.

Construction Noise Impact Assessment for Henry Hudson Bridge retrofit/repair of skewbacks, approach concrete piers and north abutment – Environmental Engineer responsibilities include assisted project manager for the development of site construction noise monitoring plan, conducted construction noise screening analysis and field study, prepared construction noise assessment report submit as one part of preliminary design report. Conducted noise field measurement during the bridge repair pilot study.

Construction Noise Impact Assessment for Miscellaneous Structural Repairs/Replacement of the Overcoat System at the Henry Hudson Bridge – Environmental Engineer on a design team for the Henry Hudson Bridge design and design support services. Responsibilities include development of site construction noise monitoring plan, conducted construction noise screening analysis and field study, prepared construction noise assessment report submit as one part of preliminary design report. Noise specification preparation.

Environmental Review for PANYNJ Sandy Holland Tunnel Storage Building at Holland Tunnel – Environmental Engineer responsible for the preparation of CATEX in compliance with National Environmental Policy Act. Responsibilities include document review, client communication, design team coordination, and environmental review study. Concerns include Zoning, Air Quality, Hazardous Material, Environmental Justices, Floodplains, Coastal Zone Consistency, endangered or threatened plant and animal species, and cultural resources.

Environmental Review for Marine Parkway and Cross Bay Bridges – Environmental Engineer on a design team for the 10% design services for the Marine Parkway Bridge and Cross Bay Bridge toll plazas. Responsibilities include document review, assist project manager for client communication and environmental review study.

Environmental Review for Caleb Smith State Park, Phillips Mill Pond Dam Hazard Class Evaluation, Stability Evaluation, and Alternative Analysis project, Smithtown, NY – Environmental Engineer responsible for feasibility study associated with proposed alternatives, document review, site investigation, environmental assessment, and permit identification. Concerns include wetlands; wild, scenic and recreational rivers; Coastal Zone Consistency; aquatic plant management; Essential Fish Habitat; endangered or threatened plant and animal species; cultural resources; and alternative analysis.

Site Investigation for Henry Hudson Bridge – Project Lead on a design team for Henry Hudson Bridge retrofit/repair of skewbacks, approach concrete piers and north abutment. Responsibilities include assisted project manager for the development of site investigation plan, field lead for the site investigation field sampling program, prepared site investigation report for TBTA submission.

Remediation Cost Estimate for Outlet Plaza – Staff Engineer assisted project manager for the environmental cost estimate to support client as the due diligence services during property transaction.

Remedial Investigation for 337 62nd Street, NY – Staff Engineer responsible for urgent UST response services including UST decommissioning and disposal, and remedial action. Project activities include soil sampling, soil excavation, waste disposal, temporary and monitoring well installation, and groundwater sampling in compliance with NYSDEC DER-10 during the remedial investigation and remedial action phase.

Subsurface Investigation for TBTA Maintenance Facility, NY – Staff Engineer on a design-build team for the TBTA new maintenance building project. Responsibilities include conducting soil, groundwater, and soil vapor investigation at an approximate 30,000 ft^2 site under the guidance of NYSDEC DER-10. Assisted project manager for soil, groundwater, and soil vapor sampling plan development. Conducted soil, groundwater, and soil vapor sampling. Prepared contamination location and site location drawings using AutoCAD for subsurface investigation report.

Sub-Slab Depressurization System (SSDS) Design for TBTA Maintenance Building, NY – Staff Engineer with the responsibility of assist project manager to design SSDS as remedial action system for conversion from a vacant property to a mixed use development. Conduct SSDS design calculation under the guidance of EPA/625/R-92/016 June 1994.

Subsurface Investigation for DDC Bronx River House, NY – Staff Engineer with the responsibility of conducting environmental field screening for the purpose of determining whether the effluent of the geothermal well could be discharged to the NYCDEP combined sewer system. Assisted the project manager to develop soil and groundwater sampling plan, studied NYCDEP Limitation for Effluent to Sanitary or Combined Sewers Table A, negotiated with laboratory to develop soil and groundwater analytical compound list. Conducted soil sampling at above the bedrock and groundwater sampling up to the depth of 250 feet below ground surface. Analyzed laboratory analytical data and prepared sample analytical result tables. Drafted the environmental site investigation session as part of the subsurface investigation report.

CHENGYU HANG, E.I.T

Staff Engineer

EDUCATION

Carnegie Mellon University, Master of Science in Civil and Environmental Engineering, 2015
Tongji University, Bachelor of Engineering in Environmental Engineering, 2014

REGISTRATION & CERTIFICATION

Engineer in Training
10-Hour OSHA Construction Industry
40-Hour OSHA HAZWOPER
8-Hour OSHA HAZWOPER Refresher
DOT Hazmat: General Awareness/Function Specific

COMPUTER & SOFTWRE SKILL

ArcGIS, EQuIs, AutoCAD

EXPERIENCE SUMMARY

Chengyu Hang is working on the environmental remediation and noise study projects in the New York City metropolitan area. Mr. Hang has two years of experience in consulting, engineering analyses, design of remediation actions, engineering controls, reports and specifications, and construction monitoring. He has experience in Remedial Investigation, Remediation Design and Environmental Compliance with Federal, State and local acts, laws and regulations. He is familiar with Brownfield Cleanup Program and local E-designation program requirements. Mr. Hang also has experience in noise study, site contamination analysis, and report drafting for environmental review procedures. He is familiar with technology applied to environmental monitoring, noise modeling, and groundwater modeling. His major projects include noise study, park redevelopment, and residential and commercial building development.

REPRESENTATIVE PROJECTS

Construction Noise Impact Assessment for RFK Bridge replace/repair of roadway side barriers and suspension span stringer to floor-beam – Staff Engineer responsibilities include assisted project manager for the development of site construction noise monitoring plan, conducted construction noise screening analysis and field study, prepared construction noise assessment report submit as one part of preliminary design report. Conducted noise modeling with the Federal Highway Adminstration (FHWA) Traffic Noise Model using raw monitor data.

Coney Island Hospital Flood Mitigation Design, Environmental Engineering Services, NY – Staff Engineer work in the environmental engineering team of this hospital flood mitigation design project as a member of the Architectural/ Engineering team. Conducted Phase II site investigation, permeability studies, and specifications. Worked closely with environmental engineer to develop alternative design to provide engineering control as protection without deviate the design goal. Remedial Action Workplan (RAP) was developed and approved by regulating agency. Environmental design plan and specification was submitted as part of the construction documents.

NYCOER Brownfield Cleanup Site, Flushing, New York City – **Staff engineer** Staff engineer work on the remediation of this NYSDEC brownfield cleanup site for a mixed-use building with gross area of more than 21,640 square feet. Significant amount of Polychlorinated biphenyl (PCB) was found in all the media of the site. Working in an engineer/scientist team to provide services including developing a remedy to clean up the site and to facilitate the development plan. A comprehensive and low-impact supplemental remedial action workplan (RAP) was developed after reviewing the documents from previous consultants. Waste classification was implemented.

NYSDEC Brownfield Cleanup Site, Flushing, New York City – **Staff engineer** work on the remediation of this NYSDEC brownfield cleanup site for an $80 million mixed use building with gross area of more than 95,000 square feet. The site was used as a major plant for electrical filter and capacitors from half a century ago. Significant amount of chlorinated solvent and Polychlorinated biphenyl (PCB) were found in all the media of the site. The remedy has been implemented with contaminated soil removal/disposal, groundwater dehalogenation using Ferox Zero Valent Iron (ZVI). Responsibilities include construction oversight, implementing dust monitoring program, preparing daily report, taking endpoint samples, groundwater monitoring/injection well installation oversight, vapor barrier installation oversight, final engineer report drafting, and QA/QC review of Electronic Data Deliverables (EDD) with EQuIS.

NYCOER Voluntary Cleanup Site, 140-35 Queens Blvd, Queens NY – Staff Engineer performed on-site oversight and photographic documentation for excavation of non-hazardous contaminated soils. Performed oversight of soil load-out for soil disposal and signed non-hazardous waste manifests on behalf of the client. Performed dust monitoring and prepared Daily Observation Reports for submission to the client and NYCOER. Designed vapor barrier system under supervision of the supervising engineer and sent to OER for approval. Performed on-site inspection of vapor barrier installation as part of site remedial activities. Prepared Remedial Action Report after the completion of remedial activities.

NYCOER Voluntary Cleanup Site, 333 W38th Street, New York City NY – Staff Engineer responsible for remediation for the development of a 2475 square feet commercial building in middle town Manhattan. Project activities include soil sampling, soil excavation, waste disposal, construction air monitoring in compliance with NYSDEC DER-10 during the remedial action phase. Performed on-site inspection of vapor barrier installation as part of site remedial activities.

NYSDEC Superfund Site standby AECOM, Bayshore, NY – Staff Engineer performed monitoring wells inspection, determined depth to groundwater, collected groundwater samples for analysis, and coordinated with sub-contractors and Suffolk County Department of Economic Development to complete sampling program.

Subsurface Investigation for BAM Park, Brooklyn NY – Staff Engineer on a design team for the renovation and repair of a public park. Responsibilities include conducting soil investigation at an approximate 8,500 square feet site under the guidance of NYSDEC DER-10. Conducted soil and sampling and preserved soil samples as required and shipped samples under proper Chain of Custody procedure to laboratory. Prepared contamination location and site location drawings using AutoCAD for subsurface investigation report.

Spill Case Closure for 38-74 12th street, Long Island City NY – Staff Engineer conducted remediation work for the spill case on a construction site. Performed oversight of soil load-out for soil disposal and signed non-hazardous waste manifests on behalf of the client. Took soil and groundwater endpoint samples and prepared letter report. Report was approved and No Further Action letter was released by NYSDEC after the remediation had been implemented.

Phase I Environmental Site Assessment for CUNY Brooklyn College – Science & Resilience Institute Conceptual Design, Brooklyn NY – Staff Engineer prepared Phase I Environmental Site Assessment (ESA) under the supervision of the supervising engineer in accordance with ASTM standards to identify on and off-site recognized environmental conditions (RECs).

City View Tower, Long Island City NY – Staff Engineer performed waste classification soil sampling for the 38,000 square feet site under the guidance of NYSDEC DER-10. Designed soil boring locations under the supervision of the project engineer and sent the drawings to MTA for approval.

TBTA ORT Design for Five Bridges, NY – Staff Engineer on a design team for the TBTA new open road tolling project. Conducted soil investigation at five bridges including Bronx Whitestone Bridge, Cross Bay Bridge, Marine Parkway Bridge, Throgs Neck Bridge, and Verrazano Narrows Bridge under the guidance of NYSDEC DER-10. Conducted soil sampling. Preserved soil and groundwater samples as required and shipped samples under proper Chain of Custody procedure to laboratory. Prepared contamination location and site location drawings using AutoCAD for subsurface investigation report.

HUIBIN LUO, E.I.T
Staff Engineer

EDUCATION
Master of Science in Engineering, Geography and Environmental Engineering, Johns Hopkins University, 2018
Bachelor of Science in Environmental Science, Rutgers University, 2016
Bachelor of Engineering in Environmental Engineering, South China University of Tech, 2016

REGISTRATION
Engineer in Training (February 2019)

YEARS EXPERIENCE
1 year 9 months with YU & Associates, Inc.
2 months with AECOM

TRAINING & CERTIFICATIONS
OSHA 10-Hour Construction Industry (June 2018)
OSHA 40-Hour HAZWOPER (June 2018)
DOT Hazmat Advanced General Awareness Training (October 2019)

COMPUTER & SOFTWRE SKILL
ArcGIS, AutoCAD, EQuIs

EXPERIENCE SUMMARY
Huibin Luo is working on environmental investigation and remediation projects in the New York City metropolitan area including Phase I ESA, Phase II Site Investigation, Remedial Investigation, Remediation/Construction Oversight, and report preparation. Mr. Luo is familiar with NYSDEC and NYCDEP regulations, permit application preparation, Brownfield Cleanup Program and local E-designation program requirements. Mr. Luo also has expertise of the technology applied to environmental monitoring, data management and modeling. His major projects include residential and commercial building development.

REPRESENTATIVE PROJECTS
NYSDEC Brownfield Cleanup Site, 131-10 and 131-25 Avery Ave, Flushing, NY (2019) – Staff Engineer – Worked with project manager and senior engineer to perform environmental remediation of this NYSDEC brownfield cleanup site for two $50 million mixed use building with site area of more than 20,000 square feet. The site was part of a major plant for electrical filter and capacitors from half a century ago. Significant amount of chlorinated solvent and Polychlorinated biphenyl (PCB) were found in all the media of the site. Servicing as an engineer team member to implement the remedy including waste classification, contaminated soil removal/disposal, groundwater dehalogenation using Ferox Zero Valent Iron (ZVI), permeable reactive barrier, and vapor barrier installation. Responsibilities include oversight, control and documentation of the contaminated soil excavation, stockpile, transport and disposal in compliance with NYSDEC-approved Remedial Action Work Plan (RAWP). Performed Community Air Monitoring Plan (CAMP) including dust and VOCs monitoring, oversight of the implementation of environmental Health and Safety Plan (HASP), and daily report preparation for submission to the client and NYSDEC. Worked with project manager and senior engineer to prepare the Final Engineering Report and data submission to NYSDEC.

Mixed-Used Building Development Project, 6317 Fort Hamilton Parkway, Brooklyn, NY (2019) – Staff Engineer – Worked with project manager to perform on-site remediation oversight under E-designation Program on a 5,000 square feet site for development of five residential and commercial mixed-use buildings. Responsibilities include oversight, control and documentation of the contaminated soil excavation, stockpile, transport and disposal in compliance with NYCOER-approved Remedial Action Work Plan (RAWP). Performed the implementation of Community Air Monitoring Plan (CAMP) and the oversight of the environmental Health and Safety Plan (HASP). Worked with project manager to perform underground storage tank closure including oversight of the tank removal, soil end-point sampling, sample result review and analysis, documentation and tank closure report preparation. The three tanks on site were closed with NYSDEC approval in timely manner during the construction phase of the development project.

NYCOER Voluntary Cleanup Site, 131-19 Fowler Avenue, Flushing, NY (2019) – Staff Engineer – Worked with project manager and senior engineer to perform remediation for the development of a 5,500 square feet residential building in Queens. The remedy includes contaminated material removal, permeable reactive barrier, sub-slab depressurization system and vapor barrier system. Responsibilities included remediation/construction oversight and assistance in the field work team management to facilitate the implementation of the remedial elements without delaying the construction schedule.

Dewatering Design and Permit Application, 141-51 Northern Boulevard, Flushing, NY (2019) – Staff Engineer – Worked with project manager and dewatering subcontractor to design a dewatering system and prepare a NYC Groundwater Discharge to Sewer Permit and a NYS Long Island Well permit for the development of a 48,000 square feet 17-story mixed-used in Queens. The design and permits were prepared for the dewatering activities during the deep excavation and construction of the proposed project. Duties included historical environmental document review, SOE/Construction Plan Review, groundwater sampling and data analysis, groundwater flow modeling, estimation of the discharge quantity, design drawing, and permit application package preparation. Design and permit application were submitted in timely manner without delaying the construction schedule. A NYC Groundwater Discharge to Sewer Permit was approved by NYCDEP and a NYS Long Island Well permit was approved by NYSDEC before the construction phase of the development project.

NYSDEC Brownfield Cleanup Site, 131-05 Fowler Avenue, Flushing, NY (2018 - 2019) – Staff Engineer – Worked with Senior Engineer to perform groundwater sampling, sample result review and analysis, chemical injection remediation system research and analysis, final engineering report preparation, and preparation of Electronic Data Deliverables (EDD) with EQuIs software for submission to NYSDEC.

NYSDEC Superfund Site standby AECOM, Bayshore, NY (2018 - 2019) – Staff Engineer – Performed monitoring wells inspection and groundwater sampling groundwater for this long-term monitoring plan of the NYSDEC Superfund Standby Program. Responsibilities also included field coordination with sub-contractors and local agencies, field team management and documentation preparation to facilitate this sampling program.

Off-Site Spill Investigation and Remediation, Commercial Building Development Project, Lower Manhattan, NY (2018 - 2019) – Staff Engineer – Worked with project manager and senior engineer to perform an off-site remedial investigation plan for potential off-site groundwater

contamination for this former gasoline station site. Responsibilities included groundwater monitoring well gauging and sampling, field documentation, data analysis and report preparation. Previous duties also included product gauging, removal and sampling from an existing ConEdison monitoring well nearby the site.

Phase I Environmental Site Assessment and Phase II Site Investigation for Mixed-used Building and School Development Project, Queens, NY (2019) – Staff Engineer – Worked with project manager and senior engineer to perform Phase I Environmental Site Assessment (ESA) and Phase II Site Investigation for the development of a mixed-use building and a school in Queens. Responsibilities include environmental due diligence, historical review, site reconnaissance, client interviews and report preparation. Duties in field also include soil sampling, soil vapor sampling, and boring log preparation.

Phase I Environmental Site Assessment for NYCEDC 79th Street Boat Basin Reconstruction, Manhattan, NY (2019) – Staff Engineer – Worked with project manager to perform Phase I Environmental Site Assessment (ESA) in accordance with ASTM standards to identify on and off-site recognized environmental conditions (RECs). Responsibilities include environmental due diligence, historical review, site reconnaissance, client interviews and report preparation.

Phase I Environmental Site Assessment for DOT 183rd Street Bridge Rehabilitation, Bronx, NY (2019) – Staff Engineer – Worked with project manager to perform Phase I Environmental Site Assessment (ESA) in accordance with ASTM standards to identify on and off-site recognized environmental conditions (RECs). Responsibilities include environmental due diligence, historical review, site reconnaissance, client interviews and report preparation.

Hotel-Condominium Development Project, 134-03 35th Street, Flushing, NY (2018 - 2019) – Staff Engineer – Worked with project manager to perform on-site remediation oversight under E-designation Program on a residential and commercial mixed-use building construction site in compliance with NYCOER-approved Remedial Action Work Plan (RAWP). Responsibilities include remediation/construction oversight and field coordination. Worked with project manager to perform underground storage tank closure including oversight of the tank removal, soil end-point sampling, sample result review and analysis, documentation and tank closure report preparation. The five tanks on site were closed with NYSDEC approval in timely manner during the construction phase of the development project.

Phase I Environmental Site Assessment for Queens College Chiller Plant Construction, Queens, NY (2018) – Staff Engineer – Worked with project manager to perform Phase I Environmental Site Assessment (ESA) in accordance with ASTM standards to identify on and off-site recognized environmental conditions (RECs).

Tank Closure and Spill Case Closure for CUNY LaGuardia Community College, Long Island City, NY (2018) – Staff Engineer – Worked with Project manager to perform underground storage tank closure and spill case closure on a public building construction site. Responsibilities include oversight, control and documentation of the tank removal, contamination soil removal including excavation, stockpile, transport and disposal, and groundwater monitoring well installation. Performed monitoring well groundwater sampling and soil end-point soil sampling. Performed sample analytical data review and analysis, tank removal report preparation, and spill case closure report preparation. The tank on site was closed with NYSDEC approval in timely manner

during the construction phase of the project and a No Further Action letter was issued to the spill case by the NYSDEC headquarter office after the remediation implementation.

APPENDIX I – Site Management Forms

SITE MANAGEMENT FORM

Report No.: 17116 **BCP #:** C241228 **Date:** _____

Agency: NYSDEC

Division of Environmental Remediation
Remedial Investigation
NYSDEC BCP # C241228

Site: 131-10 Avery Avenue

Address:131-10 to 131-18 Avery Avenue, Flushing, Queens, New York

Temperature: (F) _____ (am) ____(pm)

Wind Direction: _____ (am) _____(pm)

Weather: (am)

(pm)

Arrive at site: (am)

Leave site: (pm)

HEALTH & SAFETY:

Are there any changes to the Health & Safety Plan? Yes ( ) No ( )
(If yes, list the deviation under items for concern)

OTHER ITEMS:

Site Sketch Attached: Yes ( ) No ( )

Photos Taken: Yes ( ) No ( )

SITE MAP:

DESCRIPTION OF DAILY WORK PERFORMED:

•

SITE MANAGEMENT FORM

Report No.: 17116 **BCP #:** C241228 **Date:** _____

CONTRACTOR/SUBCONTRACTOR PERSONNEL ON SITE:

Name	Company Representing	Reason Onsite	Hours on-site

EQUIPMENT ON SITE:

Equipment	Hrs	Equipment	Hrs	Equipment	Hrs	Equipment	Hrs
					0		

1 – Active Equipment 2 – Inactive Equipment

VISITORS TO SITE:

SITE MANAGEMENT FORM

Report No.: 17116 **BCP #:** C241228 **Date:**

PROJECT SCHEDULE ISSUES:

PROJECT BUDGET ISSUES:

OFF-SITE WASTE TRANSPORTATION/DISPOSAL PRODUCTION:

Waste Stream	Method of Transport	Estimated Volume

ITEMS OF CONCERN:

COMMENTS:

ATTACHMENT(S) TO THIS REPORT: (photo log, sketches)

Photo Log below

ON-SITE REPRESENTATIVE/GEOLOGIST:

Name: (*signature*)

Date:

xc: Javier Perez-Maldonado – NYSDEC

SITE MANAGEMENT FORM

Report No.: 17116 **BCP #:** C241228 **Date:** _____

DAILY PHOTOLOG

Date	Photo ID	Description

Photo 1

YU & Associates, Inc.
Geotechnical, Environmental and Civil Engineering

WELL MONITORING & GAUGING FORM

Project: 131-10 Avery Ave Sampled by: _____

Location and Site Code: 131-10 Avery Ave Flushing, NY

Date: _____ Weather: _____

FIELD MEASUREMENTS:

Well ID	Time	Product Level (ft BTOC)	DTW (ft BTOC)	Total Well Depth (ft BTOC)

YU & Associates, Inc.
Geotechnical, Environmental and Civil Engineering

WELL PURGING & SAMPLING FORM

Project: 131-10 Avery Avenue_____ Sampled by: _____

Location and Site Code: 131-10 Avery Ave Flushing, NY _____

Well No.:_____ Well Diameter: _____

Date: _____ Weather: _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION:

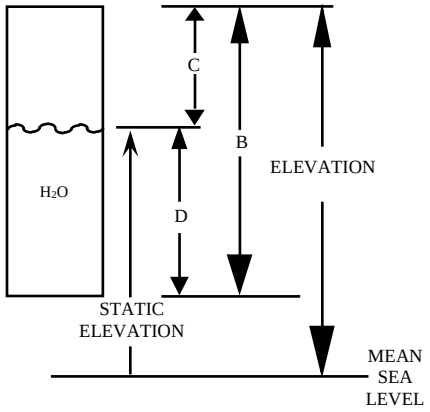
Measured Well Depth (B) _____ft.

Measured Water Level Depth (C)_____ft.

Length of Static Water Column (D) = _____ - _____ = _____ ft.
(B) (C) (D)

Casing Water Volume (E) = _____ x _____ = _____ gal
(A) (D)

Minimum Purge Volume= _____ gal (3 well volumes)



Purge Date and Method: _____

Physical Appearance/Comments: _____

FIELD MEASUREMENTS:

TIME (LOG TIME)	VOLUME REMOVED (gal)	pH	EC (mS/cm)	TEMP (°F or °C)	TURBIDITY (NTU)	D.O. (mg/L)	ORP (mV)
Max Range:		± 0.1	± 3%	± 3%	10% or <5NTU	10% or < 0.5	±10

Sample Time: _____ Sample ID: _____

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+}, CH_4, H_2S) parameters should be sampled first.

APPENDIX J – Field Sampling Plan

APPENDIX J

FIELD SAMPLING PLAN

131-10 To 131-18 Avery Avenue Site

Block 5076, Lot 61 & 65

Site ID: C241228

Submitted to:

New York State Department of Environmental Conservation

Division of Environmental Remediation

Remedial Bureau B, 12th Floor

625 Broadway

Albany, New York 12233-7016

Prepared for:

Avery Group LLC

P.O. Box 815

Plandome, NY 11030

Prepared by:

YU & Associates Engineers, P.C.

200 Riverfront Boulevard

Elmwood Park, NJ 07407

December 8, 2020

TABLE OF CONTENTS

Chapter		Page
1.0	**INTRODUCTION**	**1**
1.1	PURPOSE	2
1.2	SITE DESCRIPTION	2
1.3	SITE ACCESS	2
2.0	**GENERAL FIELD ACTIVITIES**	**3**
2.1	MOBILIZATION	3
2.2	DECONTAMINATION PROCEDURES AND HANDLING OF INVESTIGATION DERIVED WASTE	3
3.0	**GROUNDWATER SAMPLING PROCEDURES**	**4**
3.1	MONITORING WELL SURVEY	4
3.2	PERMANENT MONITORING WELL DEVELOPMENT AND GAUGING	4
3.3	GROUNDWATER SAMPLING	4
4.0	**FIELD EQUIPMENT CALIBRATION AND MAINTENANCE**	**6**
4.1	PORTABLE PHOTO-IONIZATION DETECTOR (PID)	6
4.2	HORIBA U-22 WATER QUALITY MONITORING SYSTEM	6
4.2.1	pH	6
4.2.2	Specific Conductivity	6
4.2.3	Turbidity	6
4.2.4	Temperature/Dissolved Oxygen	7
4.2.5	Oxygen Reduction Potential	7
5.0	**QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES**	**8**
5.1	CHAIN-OF-CUSTODY	8
6.0	**SAMPLE IDENTIFICATION, NUMBERING, AND LABELING**	**9**
7.0	**EQUIPMENT DECONTAMINATION AND IDW DISPOSAL**	**10**
8.0	**FIELD DOCUMENTATION**	**11**

1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this Field Sampling Plan (FSP) is to describe activities planned for the field sampling and related activities of the post-remediation media sampling at the 131-10 to 131-18 Avery Avenue site (hereafter referred to as the "Site") to include in the Site Management Plan (SMP) as an Appendix. The work will be performed using the same protocols developed during the investigation phase of this project and in accordance with New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation DER-10 Technical Guidance for Remedial Investigation and Remediation (May 2010) and the New York State Department of Health (NYSDOH) Soil Vapor Guidance (October 2006). The FSP provides the detailed procedures for the collection of groundwater samples.

The quality assurance protocols applicable to this project are presented in the Quality Assurance Project Plan (QAPP), provided as Attachment H of the SMP. The health and safety plan (HASP) is provided as Attachment G of the SMP.

1.2 SITE DESCRIPTION

The site is located in Flushing, Queens County, New York and is identified as Block 5076 and Lot 61 and 65 on the New York City Tax Map. The site is an approximately 0.298-acre area and is bounded by Avery Avenue and commercial properties to the north, manufactural, commercial/residential property and Fowler Avenue to the south, manufactural and industrial properties to the east, and commercial and residential property under construction, 131st Street and the Van Wyck Expressway to the west. The subject site is currently under redevelopment of a six-story building with a full basement.

1.3 SITE ACCESS

YU & Associates Engineers, P.C. (YU) obtained permissions associated with the monitoring well development, and groundwater sampling.

2.0 GENERAL FIELD ACTIVITIES

The following field activities will be performed as part of the post-remediation media sampling:

- Groundwater sampling – there are nine (9) monitoring wells already installed at the Site. Groundwater samples will be collected from these wells.

2.1 MOBILIZATION

YU will mobilize necessary materials and equipment to the Site.

2.2 DECONTAMINATION PROCEDURES AND HANDLING OF SAMPLING DERIVED WASTE

All dedicated equipment and tools used to develop monitoring wells or collect samples for chemical analysis will be decontaminated prior to and between each sample interval using an Alconox rinse and potable water rinse prior to reuse.

A temporary decontamination area lined with polyethylene sheeting will be constructed on site for use during decontamination of the sampling equipment. Purge water will be staged in appropriate containers and analyzed to determine the appropriate disposal methods. Based on the analytical results, YU will dispose of the purge water at a NYSDEC approved disposal facility.

3.0 GROUNDWATER SAMPLING PROCEDURES

Groundwater investigation and sampling will be done in compliance with NYSDEC's DER-10 "Technical Guidance for Site Investigation and Remediation" (NYSDEC, May 2010). This section outlines the procedures that will be used in groundwater sampling.

3.1 MONITORING WELL SURVEY

All permanent monitoring wells have been surveyed by a New York State licensed surveyor.

3.2 PERMANENT MONITORING WELL DEVELOPMENT AND GAUGING

The permanent monitoring wells will be developed by purging and pumping after a minimum of 24 hours after installation. Purging will be performed using a bailer or a Peristaltic Pump. Pumping methods may include using a peristaltic pump and dedicated polyethylene tubing, using a Waterra™ positive displacement pump and dedicated polyethylene tubing, or other methods at the discretion of the field personnel.

The permanent monitoring wells will be developed until field parameters (temperature, pH, conductivity and turbidity) are stabilized and achieve a turbidity reading of 50 Nephelometric Turbidity Units (NTU) or less. Purging will be considered complete when the indicator parameters have stabilized over three consecutive readings. Stabilization parameters are:

- Depth to water: less than 0.3 ft drawdown during purging;
- pH: ± 0.1
- Conductivity: ± 3%
- DO: ± 10%
- ORP: ±10 mV and
- Turbidity: less than 50 NTU.

If stabilization is not achieved after more than three well volumes of purging, the field team leader will notify the YU Project Manager who will make a decision on when to terminate the purging (unless default contingencies are established in advance). In low yield wells, the sample may be collected after the well recharges if purged dry. Pumped or purged water will be contained and properly disposed. Following development, wells will be allowed to recover for at least 14 days before groundwater is purged and sampled. Permanent monitoring well development will be performed or overseen by a field geologist and recorded in the field book.

Immediately prior to the groundwater sampling, the depth to water in each monitoring well will be gauged to provide information on groundwater flow in the vicinity of the Site. Water level measurements will be recorded in the field notebook. Based on field measurements and an established survey datum, YU will generate a groundwater elevation contour map.

3.3 GROUNDWATER SAMPLING

Prior to sampling, approximately three to five times the volume of standing water within the wells will be purged. Groundwater from permenant monitoring wells will be sampled using low-flow techniques to the extent practical according to the EPA Region II Low Flow Sampling Guidance. Groundwater samples will be collected in laboratory supplied pre-cleaned sampling

container, placed in storage/transportation coolers, preserved with ice, and shipped under proper chain of custody procedures to a certified laboratory.

Groundwater stabilization parameters will be interpreted to determine when to collect from permanent monitoring wells. Groundwater stabilization parameters will be screened with the use of a Horiba U-22 Water Quality Monitoring System with a flow-through cell. These forms include purge logs which will provide details on the groundwater conditions prior to sampling.

4.0 FIELD EQUIPMENT CALIBRATION AND MAINTENANCE

The following field instruments will be used during the post-remediation media sampling:

- Photo-ionization detector (PID)
- Horiba U-22 Water Quality Monitoring System (pH, specific conductivity, dissolved oxygen, oxidation reduction, turbidity, and temperature meter)

4.1 PORTABLE PHOTO-IONIZATION DETECTOR (PID)

- The photo-ionization detector will be equipped with either a 10.2 or 10.6 eV lamp. In this configuration, the PID is capable of ionizing and detecting compounds that account for over 70% of the VOCs on the USEPA Target Compound List.
- Calibration must be performed at the beginning of each day of use with a standard calibration gas having a concentration of 100 parts per million of isobutylene. If the unit experiences abnormal perturbation or erratic readings, more frequent or additional calibration will be required.
- All calibration data must be recorded in the project field notebooks.
- A battery check must be completed at the beginning and end of each working day.
- All changes to the PID will be noted in the field notes (such as lamp or filter cleaning or replacement or change of instrument).

4.2 HORIBA U-22 WATER QUALITY MONITORING SYSTEM

4.2.1 pH

The pH will be calibrated each morning prior to initial use, using two standards bracketing the range of interest (generally 4.0 and 7.0). If the pH QC control sample (a pH buffer, which may be the same or different than those used to initially calibrate the instrument) exceeds $\pm$ 0.1 pH units from the true value, the source of the error will be determined and the instrument recalibrated. If a continuing calibration check with pH 7.0 buffer is off by $\pm$ 0.1 pH units, the instrument will be recalibrated. Expired buffer solutions will not be used.

4.2.2 Specific Conductivity

A vendor-provided conductivity standard will be used to check the calibration of the conductivity meter each morning prior to initial use. Specific conductivity will be calibrated using a standard of 4.49 mS/cm in accordance with manufacturer's recommendations. The Specific conductivity QC sample will be a commercially prepared polymer standard (Advanced Polymer System, Inc., or similar).

4.2.3 Turbidity

The turbidity meter will be calibrated using a standard of 0.0 nephelometric turbidity units (NTU). The turbidity meter will be calibrated and checked prior to initial use. The turbidity QC sample will be a commercially prepared polymer standard (Advanced Polymer System, Inc., or similar).

4.2.4 Temperature/Dissolved Oxygen

Temperature and Dissolved Oxygen probes associated with the Horiba U-22 are not subject to field calibration, but the calibration should be checked to monitor instrument performance. The Horiba U-22 will be calibrated by the vendor prior to delivery based on the manufacturer's recommendations. The instrument manual will be referenced for corrective actions if accurate readings cannot be obtained and/or, if necessary, replaced with a recently calibrated instrument.

4.2.5 Oxygen Reduction Potential

The oxygen reduction potential (ORP) meter will be calibrated using a calibration standard of 240 mV. The ORP meter will be calibrated and checked prior to initial use. The ORP QC sample will be a commercially prepared polymer standard (Advanced Polymer System, Inc., or similar).

5.0 QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

5.1 CHAIN-OF-CUSTODY

- A Chain-of-Custody (COC) record will accompany the sample containers during selection and preparation at the laboratory, during shipment to the field, and during return shipment to the laboratory.
- The COC will include the sample identities of each sample container and the analytical parameters for each, and will list the field personnel that collected the samples, preservation method, the project name and number, the name of the analytical laboratory that will receive the samples, and the method of sample shipment.
- If samples are split and sent to different laboratories, a copy of the COC record will be sent with each sample shipment.
- The COC will be completed by field personnel as samples are collected.
- Erroneous markings will be crossed-out with a single line and initialed by the author.
- The REMARKS space will be used to indicate if the sample is a matrix spike, matrix spike duplicate, or matrix duplicate.
- Trip and field blanks will be listed on separate rows.
- Field duplicates will be given fictitious sample IDs (e.g., by adding 50 to the sample ID of the original sample) and be submitted blind to the laboratory.
- After the samples have been collected and sample information has been listed on the COC form, the method of shipment, the shipping cooler identification number(s), and the shipper airbill number will be entered on the COC.
- A member of the sampling team will write his/her signature, the date, and time on the first RELINQUISHED BY space.
- One copy of the COC will be retained by sampling personnel. The other copy and the original will be sealed in a plastic bag and taped inside the lid of the shipping cooler.
- Sample shipments will be refrigerated at 4°C, typically by packing with bagged ice, to preserve the samples during shipment.
- After the shipping cooler is closed, custody seals provided by the laboratory will be affixed to the latch and across the front and back of the cooler lid, and signed by the person relinquishing the samples to the shipper.
- The seal will be covered with clear tape, and the cooler lid will be secured by wrapping with packing tape.
- The cooler will be relinquished to the shipper, typically an overnight carrier.
- The COC seal must be broken to open the container. Breakage of the seals before receipt at the laboratory may indicate tampering. If tampering is apparent, the laboratory will contact the Project Manager, and the samples will not be analyzed until directed to do so.
- The samples must be delivered to the laboratory within 48 hours of collection.

6.0 SAMPLE IDENTIFICATION, NUMBERING, AND LABELING

Soil and groundwater sample containers will be labeled at the time of sampling with the following information:

- Project name and number
- Sample location ID
- Sample number
- Sample depth
- Date and time of collection
- Sampler initials
- Analysis required

For groundwater samples collected at permanent monitoring well A-MW-01 at 2:30 pm on July 15, 2020 from a depth of 20-30 ft bgs by Sample Inspector, the first groundwater container will be labeled as follows: 131-10 Avery Avenue, 1711601, A-MW-01, 01, 20-30ft bgs, 7/15/2020, GW, CVOCs + PCBs. The sample ID would be A-MW-01.

Field duplicates will have the same number as the original sample, with 50 added to the sample location ID. For example, the field duplicate of A-MW-01 will be labeled as A-MW-51.

Trip blanks will be identified as "TB" followed by a six-digit date code indicating the date of shipment. For example, the trip blank shipped on July 15, 2020 will be labeled TB071520.

Equipment (rinsate) blanks will be identified as "EB" followed by a matrix code, (as only groundwater field blanks are planned, the code will be "GW") and the six-digit date code, ex. EB071520.

Pre-printed sample labels will be provided by the laboratory along with the sample containers. Sample labels will be completed and as described above. At a minimum, they will include the site name or number, sample ID, date of sample, and the analysis required.

7.0 EQUIPMENT DECONTAMINATION AND DERIVED WASTE DISPOSAL

A temporary decontamination area lined with polyethylene sheeting will be prepared on site for use during decontamination of the drilling and test pitting equipment. Water collected from the decontamination of activities will be collected in 55-gallon drums or a bulk tank. Decontamination fluid will be discharged directly to the ground away from any surface water. As a contingency, the boring contractor will have drums available for containerization.

All drilling equipment including the backhoe, bucket, and drilling rig; augers; rods; tools; split spoon samplers; and tremie pipes will be cleaned with a high-pressure, water pressure washing unit between investigation locations. Tools, drill rods, and augers will be placed on polyethylene plastic sheets following pressure washing. Direct contact with the ground will be avoided. The back of the drill rig and all tools, augers, and rods will be decontaminated at the completion of the work and prior to leaving the site.

All non-dedicated hand equipment and tools will be decontaminated using the following procedures:

- Scrub/wash with a laboratory grade detergent (e.g., Alconox);
- Tap water rinse or distilled/de-ionized water rinse; and
- Distilled/de-ionized water rinse.

If equipment is to be stored for future use, it will be allowed to air dry, and then wrapped in aluminum foil or sealed in plastic bags.

General trash generated during the investigation (e.g., packaging materials, personal protective equipment which is not grossly contaminated) will be bagged and disposed as ordinary solid waste.

8.0 FIELD DOCUMENTATION

Field notebooks will be initiated at the start of on-site work. The field notebook will include the following daily information for all site activities (except that information that is recorded on standard forms need not be repeated in the log book):

- Date;
- Meteorological conditions (temperature, wind, precipitation);
- Site conditions (e.g., dry, damp, dusty, etc.);
- Identification of crew members (YU and subcontractor present) and other personnel (e.g., agency or site owner) present;
- Description of field activities;
- Location(s) where work is performed;
- Problems encountered and corrective actions taken;
- Records of field measurements or descriptions recorded; and
- Notice of modifications to the scope of work.

During sampling of wells, field samplers will add the following:

- Sampling point locations and test results such as pH, conductance, etc.;
- Information about sample collection (e.g., duplicate sample location);
- Chain of custody information; and
- Field equipment calibration.

Field Forms will be used to standardize data collection and documentation, including the following:

- Well construction logs will be provided for permanent monitoring wells;
- Purge logs will be provided for groundwater sample collection;
- A photo log will be developed that documents site conditions, sampling procedures, and problems encountered.