

Park Lane Senior
BRONX COUNTY
BRONX, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: C203138

Prepared for:

PL SARA LLC
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Prepared by:

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Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

AUGUST 2023

CERTIFICATION STATEMENT

I, Charles McGuckin, P.E., certify that I am currently a NYS registered professional engineer 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.]

_____ DATE

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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
DUSR	Data Usability Summary Report
EC	Engineering Control
ECL	Environmental Conservation Law
ELAP	Environmental Laboratory Approval Program
ERP	Environmental Restoration Program
EWP	Excavation Work Plan
GHG	Greenhouse 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
P.E. or PE	Professional Engineer
PFAS	Per- and Polyfluoroalkyl Substances
PID	Photoionization Detector
PRP	Potentially Responsible Party
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QEP	Qualified Environmental Professional
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

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ES EXECUTIVE SUMMARY

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:

Site Identification: C203138 - Park Lane Senior 1940 Turnbull Avenue, Bronx New York

Institutional Controls:	1. The 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) use;
	2. Compliance with the Environmental Easement by the Grantee and Grantee's successors and adherence to all elements of the SMP is required.
	3. Restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment, as determined by the New York State Department of Health (NYSDOH) or New York City Department of Health (NYCDOH).
	4. All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP.
	5. Vegetable gardens and farming are prohibited, with the exception of raised plating beds.
	6. All ECs must be inspected at a frequency and in a manner defined in the SMP.
	7. 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.
	8. All future activities on the property that will disturb remaining contaminated material require compliance with the Department approved Site Management Plan.

Site Identification: C203138 - Park Lane Senior 1940 Turnbull Avenue,
Bronx New York

Engineering Controls:	1. Cover system
Inspections:	Frequency
1. Site wide inspection, including cover system	Annually
Monitoring: Not applicable	Not applicable
Maintenance: Not applicable	Not applicable
Reporting:	
Periodic Review Report	Annually /First report 16 months after COC is issued, then annually, until completion and documentation of all development-related construction, then every 3 years thereafter.

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 Park Lane Senior Project located in Bronx, 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.C203138, which is administered by New York State Department of Environmental Conservation (NYSDEC or Department).

PL SARA LLC entered into a Brownfield Cleanup Agreement (BCA), on November 16, 2020, with the NYSDEC to remediate the Site. BCA Amendment No. 1 was executed on October 21, 2022, to change the ownership and request a determination that the Site is eligible for tangible property credits. A figure showing the Site location and boundaries of this site is provided in Figure 1. 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. The application package for the Environmental Easement was submitted on August 3, 2022.

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 Bronx 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); and
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6 NYCRR Part 375 and the BCA (Index #C203138-09-20, Site #C203138) 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 Roux Environmental Engineering and Geology, D.P.C. on behalf of PL SARA LLC and HP Park Lane Senior Housing Development Company, Inc. in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 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 and Alterations

Revisions and alterations to this plan will be proposed in writing to the NYSDEC's project manager. The NYSDEC can also make changes to the SMP or request revisions from the remedial party. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shutdown of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the site conditions. All approved alterations must conform with Article 145 Section 7209 of the Education Law regarding the application of professional seals and alterations. For example, any changes to as-built drawings must be stamped by a New York State Professional Engineer. In accordance with the Environmental Easement

for the Site, the NYSDEC project manager 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:

1. 60-day advance notice of any proposed changes in site use that are required under the terms of the BCA, 6 NYCRR Part 375 and/or Environmental Conservation Law.
2. 7-day advance notice of any field activity associated with the remedial program.
3. 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan. If the ground-intrusive activity qualifies as a change of use as defined in 6 NYCRR Part 375, the above mentioned 60-day advance notice is also required.
4. 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.
5. Notice within 48 hours of any non-routine maintenance activities.
6. 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.
7. 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:

1. 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 the **Brownfield Cleanup Agreement (BCA)**, and all approved work plans and reports, including this SMP.

2. 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 below includes contact information for the above notifications. 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.

Table 1: Notifications*

<u>Name</u>	<u>Contact Information</u>	<u>Required Notification**</u>
Christopher Allan NYSDEC Project Manager	(718) 482-4065 Christopher.Allan@dec.ny.org	All Notifications
Jane O'Connell NYSDEC Project Manager's Supervisor	(718) 482-4599 jane.oconnell@dec.ny.gov	All Notifications
NYSDEC Site Control	(518) 402-9553 derweb@dec.ny.gov	Notifications 1 and 8
Sally Rushford [NYSDOH Project Manager]	(518) 402-5465 Sally.Rushford@health.ny.gov	Notifications 4, 6, and 7

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

** Note: Numbers in this column reference the numbered bullets in the notification list in this section.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The site is located in the Bronx, Bronx County, New York and is identified as Section 2. Block 3672 and Lot 30 on the New York City and Borough of the Bronx Tax Map (see Figure 2). The site is an approximately 0.3-acre area and is bounded by Turnbull Avenue and commercial retail stores to the north, Lafayette Avenue and a parking lot to the south, Pugsley Avenue and Mitchell Lama residential housing building to the east, and White Plains Road and commercial retail stores to the west (see Figure 3 – Site Layout Map). The boundaries of the Site are more fully described in Appendix A –Environmental Easement. The owners of the Site parcel at the time of issuance of this SMP are:

- Fee Owner – HP Park Lane Senior Housing Development Fund Company, Inc.
- Beneficial Owner – PL SARA LLC.

2.2 Physical Setting

2.2.1 Land Use

The Site consists of the following: a parking lot and multi-family residential building. The Site is zoned residential with a commercial overlay (R8/ C2-4) and is currently undergoing redevelopment. Prior to the start of remedial activities, the Site was part of a wetland river system until the mid-1950s when it was filled with unknown fill material. The site was then improved to a paved parking lot in the early 1970s.

The properties adjoining the Site and in the neighborhood surrounding the Site primarily include commercial and residential use properties. The properties immediately south of the Site include residential, public facility, and institutional properties; the properties immediately north of the Site include commercial retail and office properties;

the properties immediately east of the Site include residential properties; and the properties to the west of the Site include commercial retail and office properties.

2.2.2 Geology

The shallow deposits on the Site are typical fill material found in urban environments and extends to depths between 15 and 18 feet below land surface (ft bls) across the Site. The urban fill overlies native deposits consisting mostly of silty clay. Bedrock was not encountered during the RI; however prior geotechnical investigations indicate the bedrock depth is variable across the Site, and at its shallowest point was encountered at 40 ft bls at certain portions of the Site.

A geologic cross section is shown in Figure 4.

2.2.3 Hydrogeology

Groundwater at the Site is present at depths between 10.43 ft bls and 11.32 ft bls (Elevation 5.27 to 5.50 ft North American Vertical Datum of 1988 [NAVD88]) based on a gauging event of four onsite monitoring wells completed on June 14, 2021 during the Remedial Investigation (RI). Based upon Site measurements groundwater generally flows southeast. Groundwater in this area of the Bronx is not used as a source of potable water.

A groundwater contour map is shown in Figure 5. As a result of the construction activity and implementation of the Remedial Action, all monitoring wells installed for the RI have since been removed.

2.3 Investigation and Remedial History

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.

The following environmental reports were available for review:

- Environmental Assessment Statement (EAS) prepared by Philip Habib & Associates (PHA), dated June 2017;
- Phase I Environmental Site Assessment (ESA), prepared by Roux, dated April 2020;
- Phase II ESA, prepared by Roux, dated April 2020;
- Remedial Investigation Report (RIR)/Remedial Action Work Plan (RAWP), prepared by Roux, dated November 2021;
- Waste Characterization Report, prepared by PT Consultants, Inc., dated June 2022.

Based on the Roux Phase II ESA, the Site appeared to have been impacted by polycyclic aromatic hydrocarbons (PAHs) and metals originating from prior site operations most likely associated with placement of historic urban fill to fill the marshland historically present at the Site and surrounding area. As part of the NYSDEC BCP, the Site underwent additional investigations to delineate the nature and extent of contamination.

Nature and Extent of Contamination Prior to Remediation

As part of prior investigations to support diligence and investigate the Site for remedial planning, soil and groundwater samples were collected and analyzed for Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), pesticides, per- and polyfluoroalkyl substances (PFAS). Soil vapor was analyzed for VOCs. These investigations identified that the primary contaminants of concern are SVOCs and metals in soil and groundwater. The investigations also identified low-level concentrations of VOCs in soil vapor that did not warrant mitigation.

Soil

SVOCs were detected in soil at concentrations exceeding Restricted Residential SCOs (RRSCOs), including benzo(a)anthracene at a maximum concentration of 108 parts per million (ppm) (RRSCO is 1 ppm), benzo(a)pyrene at a maximum concentration of 110 ppm (RRSCO is 1 ppm), benzo(b)fluoranthene at a maximum concentration of 95.3 ppm (RRSCO is 1 ppm), benzo(k)fluoranthene at a maximum of 83 ppm (RRSCO is 3.9

ppm), chrysene at a maximum of 96.8 ppm (RRSCO is 3.9 ppm), dibenz(a,h)anthracene at a maximum of 19 ppm (RRSCO is 0.33 ppm), and indeno(1,2,3-cd)pyrene at a maximum of 92.9 ppm (RRSCO is 0.5 ppm).

Metals including arsenic, barium, chromium, lead, and mercury were found in soil exceeding the RRSCOs. Arsenic was found at a maximum concentration of 92.7 ppm (RRSCO is 16 ppm). Barium was found at a maximum concentration of 2,810 ppm (RRSCO is 400 ppm). Chromium was found at a maximum concentration of 670 ppm (RRSCO is 180 ppm). Lead was found at a maximum concentration of 60,700 ppm (RRSCO is 400 ppm). Mercury was found at a maximum concentration of 3.44 ppm (RRSCO is 0.81 ppm).

These contaminants were detected in soil borings throughout the Site ranging from 0 to 15 ft bls. No VOCs, PCBs, or pesticides were detected at concentrations exceeding RRSCOs. No PFAS compounds were found at concentrations exceeding the Restricted Residential Guidance Values. The data does not indicate any off-site impacts in soil related to this site.

Groundwater

SVOCs were detected in groundwater at concentrations exceeding Ambient Water Quality Standard and Guidance Values (AWQSGVs), including benzo(a)anthracene at a maximum of 0.2 parts per billion (ppb) (AWQSGV is 0.002 ppb), benzo(a)pyrene at a maximum of 0.156 parts per billion (ppb) (AWQSGV is 0.002 ppb), benzo(b)fluoranthene at a maximum of 0.122 parts per billion (ppb) (AWQSGV is 0.002 ppb), benzo(k)fluoranthene at a maximum of 0.133 parts per billion (ppb) (AWQSGV is 0.002 ppb), chrysene at a maximum of 0.178 parts per billion (ppb) (AWQSGV is 0.002 ppb), and indeno(1,2,3-cd)pyrene at a maximum of 0.078 parts per billion (ppb) (AWQSGV is 0.002 ppb).

Only naturally occurring metals were found at concentrations exceeding AWQSGVs.

PFAS detections in exceedance of NYSDOH Maximum Contaminant Levels (MCLs) included perfluorooctanoic acid (PFOA) (max of 21.3 parts per trillion (ppt); MCL of 10 ppt).

No pesticides or PCBs were found exceeding AWQSGVs.

The data does not indicate any off-site impacts in groundwater related to this site.

Soil Vapor

VOCs were detected in soil vapor including tetrachloroethene (PCE) found at a maximum of 75.5 micrograms per cubic meter (ug/m³) and trichloroethene (TCE) found at a maximum of 0.261 ug/m³. The data does not indicate any off-site impacts in soil vapor related to this site.

The data generated during the RI indicated the following about site-wide conditions:

- The only VOC detected in soil exceeding NYSDEC PGWSCOs was acetone, which is a common laboratory contaminant. There were no exceedances of AWQSGVs in groundwater and there is no indication that there is a source of groundwater contamination at the Site for VOCs. According to the NYSDOH Soil Vapor/Indoor Air Matrix 1, the VOCs detected in soil vapor do not exceed the “reasonable and practical” level for sub-slab vapor.
- SVOCs, exclusively PAHs, were detected at elevated concentrations above NYSDEC RRSCOs and PGWSCOs in most soils across the Site as well as detected in groundwater above the AWQSGV in two samples. It is likely that SVOCs present in the unfiltered groundwater samples were a result of sediment present in the samples and are not representative of dissolved impacts in groundwater. This data indicates that SVOCs in soil are not a significant source of groundwater contamination at the Site.
- Metals were detected in soil at elevated concentrations above NYSDEC SCOs across the Site. Arsenic, Barium, Cadmium, Chromium III, Copper, Lead, and Mercury were detected at concentrations exceeding NYSDEC RRSCOs. Metals contamination is related to the use of urban fill at the Site. A notable detection of lead was detected in soil at a concentration of 60,700 mg/kg, at one location (RXSB-7) at a depth interval of 5-7 feet ft bls. Based on nearby data, this condition appears to be isolated and was co-located with historic fill

material consisting of fine to coarse sand, gravel, brick, and asphalt. A corresponding sample was collected from RXSB-7/5-7 for leachable lead analysis using the Toxicity Characteristic Leaching Procedure (TCLP), which yielded leachable lead results of 120 mg/L, which is over the United State Environmental Protection Agency's Resource Conservation and Recovery Act (RCRA) threshold for determining presence of characteristic hazardous waste (i.e., 5.0 mg/L). Metals detected in groundwater above the AWQSGV were Iron, Magnesium, Manganese, and Sodium. The metals detected at concentrations above NYSDEC PGWSCOs in soil were not detected in dissolved groundwater indicating that metals in soil are not a source of groundwater contamination at the Site.

- PCBs were not detected in any of the soil or groundwater samples.
- Pesticides and Herbicides were detected sporadically throughout Site soils at concentrations exceeding NYSDEC UUSCOs, but none in exceedance of their RRSCOs and they were not detected in groundwater.
- PFAS compounds were detected in both the soil fill layer and groundwater. There were no exceedances of the NYSDEC guidance values for RRSCOs and one exceedance for PFOA of the NYSDEC PGWSCOs guidance values. Concentrations of PFOS were above the NYSDEC UUSCOs guidance values at five locations. The presence of PFAS is likely due to background levels of these compounds in New York City and they are not considered contaminants of concern.
- Low level concentrations of VOCs TCE and PCE were present in soil vapor and were not indicative of a source. A single detection of TCE (0.261 ug/m³) was present in soil vapor sampled from SV-4, and the highest concentration of PCE was detected in soil vapor at SV-6 at a concentration of 75.5 ug/m³. According to water-level data collected during the RI, the elevation of the water table at the Site ranges from approximately 5.27 ft NAVD 88 at the northeast portion of the Site to approximately 5.50 ft NAVD 88 in the northwest portion of the Site. Groundwater depth at the Site varied from 10.43 ft bls to 11.32 ft bls. Groundwater gauging data is included as **Table 1**. A groundwater flow map is provided in **Figure 5** and it shows that the flow is generally to the southeast towards the Harlem River.

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site as listed in the Decision Document dated December 8, 2021, are as follows:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

RAOs for Environmental Protection

- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated 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

Remaining contamination is present in soil after the remedial action was completed. The building footprint achieved a Track 2 Restricted Residential Use cleanup and the paved area of the Site achieved a Track 4 Restricted Residential Use cleanup through the implementation of EC (Site Cover System).

Based on the endpoint samples collected during the remedial action, the remaining contamination is primarily limited to SVOCs and metals. All remaining contamination is located under the building foundation slab or asphalt surfaces. Long term management of the EC/ICs will be performed in accordance with this SMP. The areas that achieved Track 2 and Track 4 are shown in Figure 7.

Tables 2 through 7 and Figure 6 summarize the results of all soil samples collected that exceed the Unrestricted Use SCOs and the Restricted Residential Use SCOs at the Site after completion of remedial action.

Soil vapor data was collected during the RI, as discussed in Section 2.3. Soil vapor analytical data tables from the RI are included in Table 10. Soil vapor concentrations were generally low and have been addressed through the excavation and offsite disposal of soil down to at least 15 ft bls to facilitate installation of the building's foundation. As part of the Site's redevelopment, a waterproofing system was installed beneath the building as an element of construction. It consists of:

- 47-mil Preprufe 300R waterproofing membrane applied beneath the cellar floor and elevator pit slab;
- 31-mil Preprufe 160R waterproofing membrane applied outside all sub-grade single formed foundation sidewalls in the cellar area;
- Bituthene System 4000 waterproofing membrane applied to double formed walls;
- Bituthene liquid sealant applied around piles and other penetrations.

These products will act as a vapor barrier and mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into the building.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

Since remaining contamination exists at the Site, Institutional Controls (ICs) and Engineering Controls (ECs) are required to protect human health and the environment. This IC/EC Plan describes the procedures for the implementation and management of all IC/ECs at the Site. The IC/EC Plan is one component of the SMP and is subject to revision by the NYSDEC project manager.

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 C) 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 project manager.

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, and/or 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 7.

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 Bronx 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 7, and any potential impacts that are identified must be monitored or mitigated;
- Vegetable gardens and farming on the Site are prohibited; and
- An evaluation shall be performed to determine the need for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible.

3.3 Engineering Controls

3.3.1 Cover (or Cap)

Exposure to remaining contamination at the Site is prevented by a cover system placed over the Track 4 area of the Site. This cover system is comprised of a minimum of 24 inches of clean soil, asphalt pavement, concrete-covered sidewalks, or sub-base aggregate backfill. Figure 7 presents the location of the cover system and applicable demarcation layers. The Excavation Work Plan (EWP) provided in Appendix C outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed. Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and associated Community Air Monitoring Plan (CAMP) prepared for the Site and provided in Appendix E. Any breach of the Site's cover system must be overseen by a Professional Engineer (PE) who is licensed and registered in New York State or a qualified person who directly reports to a PE who is licensed and registered in New York State.

3.3.2 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.

3.3.2.1 Cover (or Cap)

The composite cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in accordance with this SMP in perpetuity.

4.0 MONITORING PLAN

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring Plan may only be revised with the approval of the NYSDEC project manager.

This Monitoring Plan describes the methods to be used for:

- Monitoring the EC; 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 Plan provides information on:

- 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 annually. These periodic inspections must be conducted when the ground surface is visible (i.e. no snow cover). Site-wide inspections will be performed by a qualified environmental professional as defined in 6 NYCRR Part 375, a Professional Engineer (PE) who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State. Modification to the frequency or duration of the inspections will require approval from the NYSDEC project manager. 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 F – 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.

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 project manager 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 defined in 6 NYCCR Part 375. Written confirmation must be provided to the NYSDEC project manager 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. The remedial party will submit follow-up status reports to the NYSDEC within 45 days of the event on actions taken to respond to any emergency event requiring ongoing responsive action, describing and documenting actions taken to restore the effectiveness of the ECs.

4.3 Treatment System Monitoring and Sampling

There are no active ECs; therefore, Treatment System Monitoring and Sampling is not included in this SMP.

4.4 Post-Remediation Media Monitoring and Sampling

There is no media to be monitored and sampled after the remediation is completed; therefore, it is not included in this SMP. The remedial elements including excavation within the Track 2 area and the site cover system within the Track 4 area addressed the remaining soil contamination. Based on the RI data, groundwater is not significantly impacted and is not used for drinking or other potable uses, and there is no direct contact with or ingestion by the general public. Based on the soil vapor data from the RI and no on-Site source identified during the remediation, there is no current vapor intrusion risk for the building currently under construction at the time this SMP was prepared.

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.

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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: The Site is not located in the 100-year flood zone, but it is located in the 500-year flood zone.
- Site Drainage and Storm Water Management: A building encompasses the majority of the Site. Onsite stormwater from the roof of the building and in the area surrounding the building will be managed via trench drains, planter drains, and catch basins. Storm water will pass through a detention tank that will capture and retain any sediment prior to discharge into the NYC sewer system. The offsite surrounding area drains to the NYC sewer system through catch basins near the Site.
- Erosion: The Site will be primarily covered by buildings, pavers, and pavement; these improvements will prevent erosion.
- High Wind: There are no remedial aspects of the Site that would be affected by high wind.
- Spill/Containment Release: No areas of the Site have been identified that may be susceptible to a spill or other containment release due to storm-related damage caused by flooding, erosion, high winds, loss of power, etc.

6.2 Green Remediation Evaluation

NYSDEC's DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program including site management, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology. This section of the SMP provides a summary of any green remediation evaluations to be completed for the Site during site management, and as reported in the Periodic Review Report (PRR).

In the selection of the remedy several components of sustainability were evaluated, including waste generation, energy usage, emissions, water usage, and land and/or ecosystems.

The current ECs have no mechanical systems; require no operations or maintenance; and therefore, generate no waste, use no energy, produce no emissions, require no water, and shouldn't require any disturbances of land and/or ecosystems.

If alterations are made to the ECs at the Site, to reduce energy consumption, resource usage, waste generation, and water usage, etc. will be included in the PRR.

6.2.1 Timing of Green Remediation Evaluations

For major remedial system components, green remediation evaluations and corresponding modifications will be undertaken as part of a formal Remedial System Optimization (RSO), or at any time that the NYSDEC project manager feels appropriate, e.g., during significant maintenance events or in conjunction with storm recovery activities.

Modifications resulting from green remediation evaluations will be routinely implemented and scheduled to occur during planned/routine operation and maintenance activities. Reporting of these modifications will be presented in the PRR.

6.2.2 Frequency of Periodic Activities

Transportation to and from the Site, use of consumables in relation to visiting the Site in order to conduct system checks and/or collect samples, and shipping samples to a laboratory for analyses have direct and/or inherent energy costs. The schedule and/or means of these periodic activities have been prepared so that these tasks can be accomplished in a manner that does not impact remedy protectiveness but reduces expenditure of energy or resources.

Consideration shall be given to:

- Reduced sampling frequencies;
- Reduced site visits and system checks;
- Coordination/consolidation of activities to maximize labor time; and
- Use of mass transit for site visits, where available, and carpooling.

6.2.3 Metrics and Reporting

As discussed in Section 7.0 and as shown in Appendix F – Site Management Forms, information on energy usage, solid waste generation, transportation and shipping, water usage and land use and ecosystems will be recorded to facilitate and document consistent implementation of green remediation during site management and to identify corresponding benefits. A set of metrics has been developed.

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 F. These forms are subject to NYSDEC revision. All site management inspection, maintenance, and monitoring events will be conducted by a qualified environmental professional as defined in 6 NYCRR Part 375, a Professional Engineer (PE) who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State.

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 11 and summarized in the Periodic Review Report.

Table 11: Schedule of Interim Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
Periodic Review Report	Annually

* The frequency of events will be conducted as specified until otherwise approved by the NYSDEC project manager.

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);

- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation);
- 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 NYSDEC project manager 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 NYSDEC project manager or at another frequency as may be required by the NYSDEC project manager. 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, fire inspections and severe condition inspections, if applicable.
- Description of any change of use, import of materials, or excavation that occurred during the certifying period.
- 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.
- Identification of any wastes generated during the reporting period, along with waste characterization data, manifests, and disposal documentation.
- 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 tables and figures will include a presentation of past data as

part of an evaluation of contaminant concentration trends, including but not limited to:

- Trend monitoring graphs that present groundwater contaminant levels from before the start of the remedy implementation to the most current sampling data;
- Trend monitoring graphs depicting system influent analytical data on a per event and cumulative basis;
- O&M data summary tables;
- A current plume map for sites with remaining groundwater contamination; and
- A groundwater elevation contour map for each gauging event.
- 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™ 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 Remedial Action Work Plan (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;
 - An evaluation of trends in contaminant levels in the affected media to determine if the remedy continues to be effective in achieving remedial goals as specified by the RAWP, ROD or Decision Document; and
 - 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 as defined in 6 NYCRR Part 375 or Professional Engineer licensed to practice and registered 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, Charles McGuckin, of Roux Environmental Engineering and Geology, D.P.C., am certifying as Owner’s Designated Site Representative.”

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

The Periodic Review Report will be submitted, in electronic format, to the NYSDEC project manager and the NYSDOH project manager. The Periodic Review Report may also need to be submitted in hard-copy format if 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 or failure to conduct site management activities, a Corrective Measures Work Plan will be submitted to the NYSDEC project manager 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 project manager.

8.0 REFERENCES

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

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).

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

NYSDEC, December 2021. Declaration Statement – Decision Document.

NYSDEC, January 2021. Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC’s Part 375 Remedial Programs.

Philip Habib & Associates (PHA) Environmental Assessment Statement (EAS) CEQR#17DCP172X ULURP #s C170392ZMX & N170393ZRX, dated June 2, 2017;

Roux Phase I ESA: Park Lane Senior Block 3672, Lot 30 Bronx, New York, dated April 30, 2020

Roux Phase II ESA: Park Lane Senior Block 3672, Lot 30 Bronx, New York, dated April 17, 2020.

Roux Remedial Investigation Report / Remedial Action Work Plan: Park Lane Senior, dated November 16, 2021.

TABLES

1. Notifications (Embedded in Text in Section 1.3)
2. Summary of Volatile Organic Compounds in Documentation Soil Samples in Track 2 and Track 4 Areas
3. Summary of Semivolatile Organic Compounds in Documentation Soil Samples in Track 2 and Track 4 Areas
4. Summary of Metals in Documentation Soil Samples in Track 2 and Track 4 Areas
5. Summary of Polychlorinated Biphenyls in Documentation Soil Samples in Track 2 and Track 4 Areas
6. Summary of Pesticides and Herbicides in Documentation Soil Samples in Track 2 and Track 4 Areas
7. Summary of Per- and Polyfluoroalkyl Substances in Documentation Soil Samples in Track 2 and Track 4 Areas
8. Summary of TCLP Metals in Soil
9. List of Soil Cleanup Objectives
10. Summary of Volatile Organic Compounds in Soil Vapor
11. Schedule of Interim Monitoring/Inspection Reports

Notes Utilized Throughout Tables

Soil Tables

J - Estimated value

J+ - Estimated value, high bias

J- - Estimated value, low bias

U - The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit

UJ - Analyte was not detected. The associated reported quantitation limit is an estimate

R - Sample results rejected by validator

T - Indicates that a quality control parameter has exceeded laboratory limits

ft bls - Feet below land surface

FD - Duplicate sample

µg/kg - Micrograms per kilogram

mg/kg - Milligrams per kilogram

NYSDEC - New York State Department of Environmental Conservation

SCO - Soil Cleanup Objectives

-- No SCO available

Bold data indicates that parameter was detected above the NYSDEC Part 375 Restricted Residential SCO

Shaded data indicates that parameter was detected above the NYSDEC Part 375 Protection of Groundwater SCO

Per- and Polyfluoroalkyl Substances (PFAS)

GV - Guidance Values

Bold data indicates that parameter exceeded the NYSDEC Restricted Residential Guidance Values

Shaded data indicates that parameter exceeded the NYSDEC Protection of Groundwater Guidance Values

TCLP Tables

mg/L - Milligrams per liter

USEPA - United States Environmental Protection Agency

TCLP - Toxicity Characteristic Leaching Procedure

USEPA Regulatory Levels - United States Environmental Protection

Agency Limits for RCRA Characteristic Waste for Toxicity

RCRA - Resource Conservation and Recovery Act

Bold - Parameter was detected above USEPA Regulatory Levels

**Table 2. Summary of Volatile Organic Compounds in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

Sample Designation:				BDS-1	BDS-2	BDS-3	BDS-4	BDS-5	BDS-6
Sample Date:				11/22/2022	12/08/2022	11/22/2022	12/08/2022	11/18/2022	11/08/2022
Sample Depth (ft bls):				15 - 17	15 - 17	15 - 17	15 - 17	15 - 17	19 - 20
Normal Sample or Field Duplicate:				N	N	N	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units						
1,1,1-Trichloroethane (TCA)	100	0.68	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
1,1-Dichloroethane	26	0.27	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
1,1-Dichloroethene	100	0.33	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
1,2,4-Trimethylbenzene	52	3.6	MG/KG	0.0024 UJ	0.0022 J-	0.0017 UJ	0.0021 U	0.0047 U	0.0028 UJ
1,2-Dichlorobenzene	100	1.1	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
1,2-Dichloroethane	3.1	0.02	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
1,3,5-Trimethylbenzene (Mesitylene)	52	8.4	MG/KG	0.0024 UJ	0.00087 J-	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
1,3-Dichlorobenzene	49	2.4	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
1,4-Dichlorobenzene	13	1.8	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
Acetone	100	0.05	MG/KG	0.42 J-	0.23 J-	0.44 J-	0.05	0.24	0.41
Benzene	4.8	0.06	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
Carbon Tetrachloride	2.4	0.76	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
Chlorobenzene	100	1.1	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
Chloroform	49	0.37	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 UT	0.0047 U	0.0028 U
Cis-1,2-Dichloroethylene	100	0.25	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 UT	0.0047 U	0.0028 U
Ethylbenzene	41	1	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
Methyl Ethyl Ketone (2-Butanone)	100	0.12	MG/KG	0.06 J-	0.029 J-	0.073 J-	0.01 U	0.024 U	0.055
Methylene Chloride	100	0.05	MG/KG	0.0047 UJ	0.0042 UJ	0.0033 UJ	0.0041 U	0.0095 U	0.0055 U
N-Butylbenzene	100	12	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
N-Propylbenzene	100	3.9	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
Sec-Butylbenzene	100	11	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 UT	0.0047 U	0.0028 U
T-Butylbenzene	100	5.9	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 UJ
Tert-Butyl Methyl Ether	100	0.93	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 UT	0.0047 U	0.0028 U
Tetrachloroethylene (PCE)	19	1.3	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
Toluene	100	0.7	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
Trans-1,2-Dichloroethene	100	0.19	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
Trichloroethylene (TCE)	21	0.47	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 UT	0.0047 U	0.0028 U
Vinyl Chloride	0.9	0.02	MG/KG	0.0024 UJ	0.0021 UJ	0.0017 UJ	0.0021 U	0.0047 U	0.0028 U
Xylenes	100	1.6	MG/KG	0.0047 UJ	0.0042 UJ	0.0008 J	0.0041 U	0.0095 U	0.0055 U

**Table 2. Summary of Volatile Organic Compounds in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

Sample Designation:				BDS-7	BDS-8	BDS-9	BDS-10	BDS-11	BDS-11
Sample Date:				11/17/2022	11/17/2022	11/17/2022	11/10/2022	03/01/2023	03/01/2023
Sample Depth (ft bls):				15 - 17	15 - 17	15 - 17	15 - 16	2 - 4	2 - 4
Normal Sample or Field Duplicate:				N	N	N	N	N	FD
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units						
1,1,1-Trichloroethane (TCA)	100	0.68	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
1,1-Dichloroethane	26	0.27	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
1,1-Dichloroethene	100	0.33	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
1,2,4-Trimethylbenzene	52	3.6	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0015 J	0.0014 U	0.0015 U
1,2-Dichlorobenzene	100	1.1	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
1,2-Dichloroethane	3.1	0.02	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
1,3,5-Trimethylbenzene (Mesitylene)	52	8.4	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
1,3-Dichlorobenzene	49	2.4	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
1,4-Dichlorobenzene	13	1.8	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
Acetone	100	0.05	MG/KG	0.15	0.2	0.092	0.17	0.0087 U	0.0087 U
Benzene	4.8	0.06	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
Carbon Tetrachloride	2.4	0.76	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
Chlorobenzene	100	1.1	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
Chloroform	49	0.37	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
Cis-1,2-Dichloroethylene	100	0.25	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
Ethylbenzene	41	1	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
Methyl Ethyl Ketone (2-Butanone)	100	0.12	MG/KG	0.012 U	0.027	0.013	0.02	0.0072 U	0.0073 U
Methylene Chloride	100	0.05	MG/KG	0.0049 U	0.0045 U	0.0027 J	0.0042 U	0.0029 U	0.0029 U
N-Butylbenzene	100	12	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
N-Propylbenzene	100	3.9	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
Sec-Butylbenzene	100	11	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
T-Butylbenzene	100	5.9	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
Tert-Butyl Methyl Ether	100	0.93	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
Tetrachloroethylene (PCE)	19	1.3	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
Toluene	100	0.7	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0012 J	0.0014 U	0.0015 U
Trans-1,2-Dichloroethene	100	0.19	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
Trichloroethylene (TCE)	21	0.47	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
Vinyl Chloride	0.9	0.02	MG/KG	0.0024 U	0.0022 U	0.0021 U	0.0021 U	0.0014 U	0.0015 U
Xylenes	100	1.6	MG/KG	0.0049 U	0.0045 U	0.0041 U	0.0014 J	0.0029 U	0.0029 U

**Table 2. Summary of Volatile Organic Compounds in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

Sample Designation:				BDS-12	BDS-13	BDS-14	B1	SE1	SN1
Sample Date:				03/01/2023	03/01/2023	09/29/2022	08/31/2022	08/30/2022	08/30/2022
Sample Depth (ft bls):				2 - 4	2 - 4	2 - 4	13 - 14	5 - 7	7 - 8
Normal Sample or Field Duplicate:				N	N	N	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units						
1,1,1-Trichloroethane (TCA)	100	0.68	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0023 U	0.0015 U	0.0015 U
1,1-Dichloroethane	26	0.27	MG/KG	0.0012 U	0.0013 U	0.0012 U	0.0023 U	0.0015 U	0.0015 U
1,1-Dichloroethene	100	0.33	MG/KG	0.0012 U	0.0013 U	0.0012 U	0.0023 U	0.0015 U	0.0015 U
1,2,4-Trimethylbenzene	52	3.6	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0023 U	0.0015 U	0.0015 U
1,2-Dichlorobenzene	100	1.1	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0023 U	0.0015 U	0.0015 U
1,2-Dichloroethane	3.1	0.02	MG/KG	0.0012 U	0.0013 U	0.0012 U	0.0023 U	0.0015 U	0.0015 U
1,3,5-Trimethylbenzene (Mesitylene)	52	8.4	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0023 U	0.0015 U	0.0015 U
1,3-Dichlorobenzene	49	2.4	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0023 U	0.0015 U	0.0015 U
1,4-Dichlorobenzene	13	1.8	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0023 U	0.0015 U	0.0015 U
Acetone	100	0.05	MG/KG	0.0069 U	0.0078 U	0.0091 J	0.014 U	0.0088 U	0.0058
Benzene	4.8	0.06	MG/KG	0.0012 U	0.0013 U	0.0012 U	0.0023 U	0.0015 U	0.0015 U
Carbon Tetrachloride	2.4	0.76	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0023 U	0.0015 U	0.0015 U
Chlorobenzene	100	1.1	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0023 U	0.0015 U	0.0015 U
Chloroform	49	0.37	MG/KG	0.0012 U	0.0028	0.0012 U	0.0023 U	0.0015 U	0.0015 U
Cis-1,2-Dichloroethylene	100	0.25	MG/KG	0.0012 U	0.0013 U	0.0012 U	0.0023 U	0.0015 U	0.0015 U
Ethylbenzene	41	1	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0023 U	0.0015 U	0.0015 U
Methyl Ethyl Ketone (2-Butanone)	100	0.12	MG/KG	0.0058 U	0.0065 U	0.0058 U	0.011 U	0.0073 U	0.0076 U
Methylene Chloride	100	0.05	MG/KG	0.0023 U	0.0026 U	0.0023 U	0.0045 U	0.0029 U	0.003 U
N-Butylbenzene	100	12	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0023 U	0.0015 U	0.0015 U
N-Propylbenzene	100	3.9	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0023 U	0.0015 U	0.0015 U
Sec-Butylbenzene	100	11	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0023 U	0.0015 U	0.0015 U
T-Butylbenzene	100	5.9	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0023 U	0.0015 U	0.0015 U
Tert-Butyl Methyl Ether	100	0.93	MG/KG	0.0012 U	0.0013 U	0.0012 U	0.0023 U	0.0015 U	0.0015 U
Tetrachloroethylene (PCE)	19	1.3	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0014 J	0.0015 U	0.00058 J
Toluene	100	0.7	MG/KG	0.0012 U	0.0013 U	0.0012 U	0.0023 U	0.0015 U	0.0015 U
Trans-1,2-Dichloroethene	100	0.19	MG/KG	0.0012 U	0.0013 U	0.0012 U	0.0023 U	0.0015 U	0.0015 U
Trichloroethylene (TCE)	21	0.47	MG/KG	0.0012 U	0.0013 U	0.0012 UJ	0.0023 U	0.0015 U	0.0015 U
Vinyl Chloride	0.9	0.02	MG/KG	0.0012 U	0.0013 U	0.0012 U	0.0023 U	0.0015 U	0.0015 U
Xylenes	100	1.6	MG/KG	0.0023 U	0.0026 U	0.0023 UJ	0.0045 U	0.0029 U	0.003 U

**Table 2. Summary of Volatile Organic Compounds in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

Sample Designation:				SS1	SW1
Sample Date:				08/30/2022	08/30/2022
Sample Depth (ft bls):				7 - 8	7 - 8
Normal Sample or Field Duplicate:				N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units		
1,1,1-Trichloroethane (TCA)	100	0.68	MG/KG	0.0016 U	0.0013 U
1,1-Dichloroethane	26	0.27	MG/KG	0.0016 U	0.0013 U
1,1-Dichloroethene	100	0.33	MG/KG	0.0016 U	0.0013 U
1,2,4-Trimethylbenzene	52	3.6	MG/KG	0.0016 U	0.0013 U
1,2-Dichlorobenzene	100	1.1	MG/KG	0.0016 U	0.0013 U
1,2-Dichloroethane	3.1	0.02	MG/KG	0.0016 U	0.0013 U
1,3,5-Trimethylbenzene (Mesitylene)	52	8.4	MG/KG	0.0016 U	0.0013 U
1,3-Dichlorobenzene	49	2.4	MG/KG	0.0016 U	0.0013 U
1,4-Dichlorobenzene	13	1.8	MG/KG	0.0016 U	0.0013 U
Acetone	100	0.05	MG/KG	0.0097 U	0.0075 U
Benzene	4.8	0.06	MG/KG	0.0016 U	0.0013 U
Carbon Tetrachloride	2.4	0.76	MG/KG	0.0016 U	0.0013 U
Chlorobenzene	100	1.1	MG/KG	0.0016 U	0.0013 U
Chloroform	49	0.37	MG/KG	0.0016 U	0.0013 U
Cis-1,2-Dichloroethylene	100	0.25	MG/KG	0.0016 U	0.0013 U
Ethylbenzene	41	1	MG/KG	0.0016 U	0.0013 U
Methyl Ethyl Ketone (2-Butanone)	100	0.12	MG/KG	0.0081 U	0.0063 U
Methylene Chloride	100	0.05	MG/KG	0.0032 U	0.0025 U
N-Butylbenzene	100	12	MG/KG	0.0016 U	0.0013 U
N-Propylbenzene	100	3.9	MG/KG	0.0016 U	0.0013 U
Sec-Butylbenzene	100	11	MG/KG	0.0016 U	0.0013 U
T-Butylbenzene	100	5.9	MG/KG	0.0016 U	0.0013 U
Tert-Butyl Methyl Ether	100	0.93	MG/KG	0.0016 U	0.0013 U
Tetrachloroethylene (PCE)	19	1.3	MG/KG	0.0011 J	0.0013 U
Toluene	100	0.7	MG/KG	0.0016 U	0.0013 U
Trans-1,2-Dichloroethene	100	0.19	MG/KG	0.0016 U	0.0013 U
Trichloroethylene (TCE)	21	0.47	MG/KG	0.0016 U	0.0013 U
Vinyl Chloride	0.9	0.02	MG/KG	0.0016 U	0.0013 U
Xylenes	100	1.6	MG/KG	0.0032 U	0.0025 U

**Table 3. Summary of Semivolatile Organic Compounds in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

Sample Designation:				BDS-1	BDS-2	BDS-3	BDS-4	BDS-5	BDS-6	BDS-7
Sample Date:				11/22/2022	12/08/2022	11/22/2022	12/08/2022	11/18/2022	11/08/2022	11/17/2022
Sample Depth (ft bls):				15 - 17	15 - 17	15 - 17	15 - 17	15 - 17	19 - 20	15 - 17
Normal Sample or Field Duplicate:				N	N	N	N	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units							
1,4-Dioxane (P-Dioxane)	13	0.1	MG/KG	0.052 UJ	0.043 R	0.051 R	0.04 U	0.035 U	0.056 U	0.044 U
2-Methylphenol (O-Cresol)	100	0.33	MG/KG	0.048 J	0.02 J-	0.51 R	0.4 UJ	0.35 UJ	0.56 UJ	0.44 UJ
Acenaphthene	100	98	MG/KG	0.062 J	0.73 J-	0.28 J	0.49	0.2 J	0.1 J	0.11 J
Acenaphthylene	100	107	MG/KG	0.046 J	0.23 J-	0.074 J	0.24 J	0.16 J	0.56 UJ	0.077 J
Anthracene	100	1000	MG/KG	0.2 J	1.7 J-	0.74 J	1.7 J	0.57 J	0.18 J	0.26 J
Benzo(A)Anthracene	1	1	MG/KG	0.77 J	3.6 J-	2.6 J	6 J	1.8	0.65	0.57
Benzo(A)Pyrene	1	22	MG/KG	0.79 J	3.4 J-	2.3 J	5.9 J	1.5 J	0.58 J	0.46 J
Benzo(B)Fluoranthene	1	1.7	MG/KG	1.1 J	4.2 J-	3.4 J	6.4 J	2.1 J	0.81	0.64 J
Benzo(G,H,I)Perylene	100	1000	MG/KG	0.36 J	2.1 J-	0.96 J	3.6 J	0.94	0.34 J	0.32 J
Benzo(K)Fluoranthene	3.9	1.7	MG/KG	0.35 J	1.6 J-	1.3 J	2.5	0.84 J	0.27	0.28 J
Chrysene	3.9	1	MG/KG	0.81 J	3.7 J-	2.5 J	5.7 J	1.8	0.61 J	0.55
Cresols, M & P	100	0.33	MG/KG	0.18 J	0.13 J-	0.057 J	0.039 J	0.035 J	0.56 UJ	0.044 J
Dibenz(A,H)Anthracene	0.33	1000	MG/KG	0.12 T	0.56 J-	0.31 J	0.86 J	0.28	0.15 J	0.083
Dibenzofuran	59	210	MG/KG	0.068 J	0.72 J-	0.29 J	0.39 J	0.16 J	0.097 J	0.1 J
Fluoranthene	100	1000	MG/KG	1.3 J	6.9 J-	4.7 J	8.7 J	3.1 J	1.1	1.1 J
Fluorene	100	386	MG/KG	0.1 J	1 J-	0.4 J	0.56	0.24 J	0.085 J	0.13 J
Hexachlorobenzene	1.2	3.2	MG/KG	0.052 UJ	0.043 R	0.051 R	0.04 UJ	0.035 UJ	0.056 UJ	0.044 UJ
Indeno(1,2,3-C,D)Pyrene	0.5	8.2	MG/KG	0.44 J	2.6 J-	1.2 J	4 J	1.1	0.42 J+	0.36
Naphthalene	100	12	MG/KG	0.13 J	0.76 J-	0.46 J	0.66 J	0.24 J	0.1 J	0.26 J
Pentachlorophenol	6.7	0.8	MG/KG	0.42 UJ	0.34 R	0.41 R	0.32 U	0.28 U	0.45 U	0.35 U
Phenanthrene	100	1000	MG/KG	0.83 J	6.9 J-	3.8 J	5.8 J	2.2 J	0.72 J	0.98 J
Phenol	100	0.33	MG/KG	0.12 J	0.13 J-	0.038 J	0.037 J	0.039 J	0.56 UJ	0.047 J
Pyrene	100	1000	MG/KG	1.3 J	7.4 J-	4.3 J	10 J-	3.3	0.99	1.1

**Table 3. Summary of Semivolatile Organic Compounds in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

Sample Designation:				BDS-8	BDS-9	BDS-10	BDS-11	BDS-11	BDS-12	BDS-13
Sample Date:				11/17/2022	11/17/2022	11/10/2022	03/01/2023	03/01/2023	03/01/2023	03/01/2023
Sample Depth (ft bls):				15 - 17	15 - 17	15 - 16	2 - 4	2 - 4	2 - 4	2 - 4
Normal Sample or Field Duplicate:				N	N	N	N	FD	N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units							
1,4-Dioxane (P-Dioxane)	13	0.1	MG/KG	0.048 U	0.044 R	0.047 U	0.19 U	0.038 U	0.037 U	0.038 U
2-Methylphenol (O-Cresol)	100	0.33	MG/KG	0.019 J	0.44 R	0.025 J	1.9 U	0.38 U	0.37 U	0.38 U
Acenaphthene	100	98	MG/KG	0.41 J	0.16 J	1.4 J	0.66 J	0.82	1.2	0.043 J
Acenaphthylene	100	107	MG/KG	0.11 J	0.08 J	0.28 J	0.17 J	0.11 J	0.22 J	0.038 J
Anthracene	100	1000	MG/KG	0.57 J	0.46 J	2.5 J	1.5 J	1.6	2.4	0.093 J
Benzo(A)Anthracene	1	1	MG/KG	1.5	0.88 J	7.1 J	4.2 J	4 J	4.3 J	0.42 J
Benzo(A)Pyrene	1	22	MG/KG	1.3 J	0.81 J	7.1 J	3.7 J	3.5 J	3.7 J	0.54 J
Benzo(B)Fluoranthene	1	1.7	MG/KG	1.8 J	1 J	10 J	4.6 J	4.5 J	5 J	0.8 J
Benzo(G,H,I)Perylene	100	1000	MG/KG	0.86	0.54 J	2.8 J	2 J	2.2 J	1.8 J	0.61 J
Benzo(K)Fluoranthene	3.9	1.7	MG/KG	0.62 J	0.32 J	3.4 J	1.6 J	1.6 J	1.8 J	0.27 J
Chrysene	3.9	1	MG/KG	1.7	0.89 J	7.1 J	4	3.6 T	4.2	0.46
Cresols, M & P	100	0.33	MG/KG	0.1 J	0.037 J	0.18 J	1.9 U	0.38 U	0.37 U	0.38 U
Dibenz(A,H)Anthracene	0.33	1000	MG/KG	0.26	0.15 J	0.92 J	0.57	0.59	0.56	0.14
Dibenzofuran	59	210	MG/KG	0.36 J	0.18 J	1.3 J	0.32 J	0.46	0.87	0.036 J
Fluoranthene	100	1000	MG/KG	3.1 J	2 J	14 J	7.6 J	6.9 J	8.7 J	0.59 J
Fluorene	100	386	MG/KG	0.33 J	0.26 J	1.4 J	0.58 J	0.77	1.5	0.039 J
Hexachlorobenzene	1.2	3.2	MG/KG	0.048 UJ	0.044 R	0.047 UJ	0.19 U	0.038 U	0.037 U	0.038 U
Indeno(1,2,3-C,D)Pyrene	0.5	8.2	MG/KG	1	0.64 J	3.6 J	2.6 J	2.8 J	2.5 J	0.63 J
Naphthalene	100	12	MG/KG	0.28 J	0.22 J	0.92 J	0.19 J	0.35 J	1	0.12 J
Pentachlorophenol	6.7	0.8	MG/KG	0.38 U	0.35 R	0.38 U	1.5 U	0.31 U	0.3 U	0.31 U
Phenanthrene	100	1000	MG/KG	2.7 J	2.1 J	9 J	5.9 J	6.6 J	8.4 J	0.46 J
Phenol	100	0.33	MG/KG	0.094 J	0.048 J	0.11 J	1.9 U	0.38 U	0.37 U	0.38 U
Pyrene	100	1000	MG/KG	3.1	1.9 J	12 J	6.9 J	7.2 J	7.4 J	0.67 J

**Table 3. Summary of Semivolatile Organic Compounds in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

Sample Designation:				BDS-14	B1	SE1	SN1	SS1	SW1
Sample Date:				09/29/2022	08/31/2022	08/30/2022	08/30/2022	08/30/2022	08/30/2022
Sample Depth (ft bls):				2 - 4	13 - 14	5 - 7	7 - 8	7 - 8	7 - 8
Normal Sample or Field Duplicate:				N	N	N	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units						
1,4-Dioxane (P-Dioxane)	13	0.1	MG/KG	0.036 U	0.039 UJ	0.036 UJ	0.037 UJ	0.037 UJ	0.04 UJ
2-Methylphenol (O-Cresol)	100	0.33	MG/KG	0.36 UJ	0.39 U	0.36 U	0.37 U	0.37 U	0.4 U
Acenaphthene	100	98	MG/KG	0.1 J	0.11 J	0.058 J	0.13 J	0.33 J	0.4
Acenaphthylene	100	107	MG/KG	0.06 J	0.17 J	0.24 J	0.085 J	0.65	0.099 J
Anthracene	100	1000	MG/KG	0.28 J	0.32 J	0.32 J	0.37	1.7	0.83
Benzo(A)Anthracene	1	1	MG/KG	0.98	0.97	1.4	1.4	18	2.6
Benzo(A)Pyrene	1	22	MG/KG	0.87 J	0.9 J	1.2 J	1.3 J	16 J	2.3 J
Benzo(B)Fluoranthene	1	1.7	MG/KG	1.1	1.3	1.7	1.8	16	3
Benzo(G,H,I)Perylene	100	1000	MG/KG	0.5 J	0.52 J	0.82 J	0.85 J	8 J	1.2 J
Benzo(K)Fluoranthene	3.9	1.7	MG/KG	0.5 J	0.48	0.57	0.52	6.6	1.2
Chrysene	3.9	1	MG/KG	0.94	0.93	1.2	1.4	21	2.4
Cresols, M & P	100	0.33	MG/KG	0.36 UJ	0.39 U	0.36 U	0.37 U	0.37 U	0.4 U
Dibenz(A,H)Anthracene	0.33	1000	MG/KG	0.11 J	0.15	0.22	0.25	2.7	0.38
Dibenzofuran	59	210	MG/KG	0.044 J	0.076 J	0.061 J	0.083 J	0.12 J	0.22 J
Fluoranthene	100	1000	MG/KG	1.7 J	1.8 J	2.7 J	2.4 J	16 J	4.6 J
Fluorene	100	386	MG/KG	0.081 J	0.11 J	0.082 J	0.13 J	0.34 J	0.39 J
Hexachlorobenzene	1.2	3.2	MG/KG	0.036 UJ	0.039 U	0.036 U	0.037 U	0.037 U	0.04 U
Indeno(1,2,3-C,D)Pyrene	0.5	8.2	MG/KG	0.65 J	0.61	1	1.1	8.6	1.5
Naphthalene	100	12	MG/KG	0.039 J	0.77	0.065 J	0.16 J	0.41	0.2 J
Pentachlorophenol	6.7	0.8	MG/KG	0.29 U	0.32 U	0.29 U	0.3 U	0.29 U	0.32 U
Phenanthrene	100	1000	MG/KG	1 J	1 J	1.3 J	1.5 J	6.5 J	3.2 J
Phenol	100	0.33	MG/KG	0.36 U	0.39 U	0.36 U	0.37 U	0.034 J	0.4 U
Pyrene	100	1000	MG/KG	1.6 J	1.5 J	2.4 J	2.5 J	25	3.9 J

**Table 4. Summary of Metals in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

Sample Designation:				BDS-1	BDS-2	BDS-3	BDS-4	BDS-5	BDS-6	BDS-7
Sample Date:				11/22/2022	12/08/2022	11/22/2022	12/08/2022	11/18/2022	11/08/2022	11/17/2022
Sample Depth (ft bls):				15 - 17	15 - 17	15 - 17	15 - 17	15 - 17	19 - 20	15 - 17
Normal Sample or Field Duplicate:				N	N	N	N	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units							
Arsenic	16	16	MG/KG	9.5	14	10.7	9.9	10.5	19.6	10.5
Barium	400	820	MG/KG	719	945	751	3020	1090	1310	1310
Beryllium	72	47	MG/KG	0.48 J	0.33 J	0.47 J	0.3 J	0.36 J	0.66	0.42 J
Cadmium	4.3	7.5	MG/KG	1.2 J	3.6	1.9	8.9	3.5	8.6	2.2
Chromium III	180	--	MG/KG	63	69.5	75.7	52.9	27.9	102	47.7
Chromium, Hexavalent	110	19	MG/KG	3.1 U	2.5 U	3 U	2.4 U	2.1 U	3.4 U	2.6 U
Chromium, Total	180	--	MG/KG	63	69.5	75.7	52.9	27.9	102	47.7
Copper	270	1720	MG/KG	164	314	2030	563	247	358	257
Cyanide	27	40	MG/KG	1.6	1.3	0.2 J	1.3 T	1.5	0.4 U	2.3
Lead	400	450	MG/KG	700	1040	743	3940	983	1240	1040
Manganese	2000	2000	MG/KG	277	325	616	355	140	729	229
Mercury	0.81	0.73	MG/KG	1	8.2	2.3	0.45	4.5	1.1	3.3
Nickel	310	130	MG/KG	33.2	38.1	47.2	33.4	26.6	116	32.2
Selenium	180	4	MG/KG	1.4 J	1 J	1.4 J	1.1 J	1.1 J	0.97 J	2
Silver	180	8.3	MG/KG	1.4	1.1	1	1.7	1.1	2.4	1.7
Zinc	10000	2480	MG/KG	721	1350	1170	4240	1340	2680	949

**Table 4. Summary of Metals in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

Sample Designation:				BDS-8	BDS-9	BDS-10	BDS-11	BDS-11	BDS-12	BDS-13
Sample Date:				11/17/2022	11/17/2022	11/10/2022	03/01/2023	03/01/2023	03/01/2023	03/01/2023
Sample Depth (ft bls):				15 - 17	15 - 17	15 - 16	2 - 4	2 - 4	2 - 4	2 - 4
Normal Sample or Field Duplicate:				N	N	N	N	FD	N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units							
Arsenic	16	16	MG/KG	7.8	12.2	28.4	3.1	2.6	11.5	8.4
Barium	400	820	MG/KG	619	3380	1600	218	168	193	1200
Beryllium	72	47	MG/KG	0.47 J	0.48 J	0.39 J	0.34 J	0.29 J	0.32 J	0.42
Cadmium	4.3	7.5	MG/KG	3.4	3.4	21	0.97 J	0.39 J	1.5	1.4
Chromium III	180	--	MG/KG	54.2	51.9	82.7	16	18	24.2	22.7
Chromium, Hexavalent	110	19	MG/KG	2.9 U	2.6 U	2.8 U	2.2 U	2.3 U	2.2 U	2.3 U
Chromium, Total	180	--	MG/KG	54.2	51.9	82.7	16 T	18	24.2	22.7
Copper	270	1720	MG/KG	126	296	635	31.8 T	31.2	57.8	133
Cyanide	27	40	MG/KG	2.3	2.3	3.2	0.27 U	0.23 J	0.77	1.2
Lead	400	450	MG/KG	605	2690	7110	133	173	188	1090
Manganese	2000	2000	MG/KG	264	268	497	221 T	182	279	209
Mercury	0.81	0.73	MG/KG	2.1	1.5	9.5	0.12	0.14	0.31	28.1
Nickel	310	130	MG/KG	28.3	35	94.8	12.7	11.4	27.4	21.6
Selenium	180	4	MG/KG	0.8 J	1.8	1.6	0.22 J	0.17 J	0.26 J	0.47 J
Silver	180	8.3	MG/KG	0.69	1.3	1.3	0.11 J	0.093 J	0.089 J	0.32 J
Zinc	10000	2480	MG/KG	691	1440	2940	432	404	1130	732

**Table 4. Summary of Metals in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

				Sample Designation:	BDS-14	B1	SE1	SN1	SS1	SW1
				Sample Date:	09/29/2022	08/31/2022	08/30/2022	08/30/2022	08/30/2022	08/30/2022
				Sample Depth (ft bls):	2 - 4	13 - 14	5 - 7	7 - 8	7 - 8	7 - 8
				Normal Sample or Field Duplicate:	N	N	N	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units							
Arsenic	16	16	MG/KG	8.7	11.4	4.4	10.6	11.1	14.5	
Barium	400	820	MG/KG	191	1200	435	1070	355	1030	
Beryllium	72	47	MG/KG	0.33 J	0.6	0.36	0.65	0.66	0.5	
Cadmium	4.3	7.5	MG/KG	0.34 J	3.2	0.43 J	1.3	1	1.5	
Chromium III	180	--	MG/KG	22.7	47	19.3	38.3	38.3	28	
Chromium, Hexavalent	110	19	MG/KG	2.2 U	2.4 U	2.2 U	2.2 U	2.2 U	2.3 U	
Chromium, Total	180	--	MG/KG	22.7 T	47	19.3	38.3	38.3	28	
Copper	270	1720	MG/KG	27.8	191	30.6	116	77.8	91.9	
Cyanide	27	40	MG/KG	0.23 U	0.73	0.22	0.41	0.19 J	0.65	
Lead	400	450	MG/KG	175	1440	446	782	500	859	
Manganese	2000	2000	MG/KG	240 T	241	205	255	206	372	
Mercury	0.81	0.73	MG/KG	0.36	4.4	0.39	0.94	0.37	1.5	
Nickel	310	130	MG/KG	15.5 T	37.2	11.8	28.7	29	29.5	
Selenium	180	4	MG/KG	0.36 J	1.2	0.32 J	0.61 J	0.79 J	0.52 J	
Silver	180	8.3	MG/KG	0.081 J	11.7	0.18 J	0.55	0.37	0.46	
Zinc	10000	2480	MG/KG	153 T	889	365	832	542	923	

**Table 5. Summary of Polychlorinated Biphenyls in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

				Sample Designation:	BDS-1	BDS-2	BDS-3	BDS-4	BDS-5	BDS-6
				Sample Date:	11/22/2022	12/08/2022	11/22/2022	12/08/2022	11/18/2022	11/08/2022
				Sample Depth (ft bls):	15 - 17	15 - 17	15 - 17	15 - 17	15 - 17	19 - 20
				Normal Sample or Field Duplicate:	N	N	N	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units							
PCB-1016 (Aroclor 1016)	--	--	MG/KG	0.11 U	0.086 U	0.1 U	0.081 U	0.072 U	0.11 U	
PCB-1221 (Aroclor 1221)	--	--	MG/KG	0.11 U	0.086 U	0.1 U	0.081 U	0.072 U	0.11 U	
PCB-1232 (Aroclor 1232)	--	--	MG/KG	0.11 U	0.086 U	0.1 U	0.081 U	0.072 U	0.11 U	
PCB-1242 (Aroclor 1242)	--	--	MG/KG	0.11 U	0.086 U	0.1 U	0.081 U	0.072 U	0.11 U	
PCB-1248 (Aroclor 1248)	--	--	MG/KG	0.11 U	0.086 U	0.1 U	0.081 U	0.072 U	0.11 U	
PCB-1254 (Aroclor 1254)	--	--	MG/KG	0.11 U	0.086 U	0.1 U	0.081 U	0.072 U	0.11 U	
PCB-1260 (Aroclor 1260)	--	--	MG/KG	0.11 U	0.086 U	0.1 U	0.081 U	0.072 U	0.11 U	
PCB-1262 (Aroclor 1262)	--	--	MG/KG	0.11 U	0.091	0.1 U	0.081 U	0.14	0.11 U	
PCB-1268 (Aroclor 1268)	--	--	MG/KG	0.11 U	0.086 U	0.1 U	0.081 U	0.072 U	0.11 U	
Polychlorinated Biphenyl (PCBs)	1	3.2	MG/KG	0.11 U	0.091	0.1 U	0.081 U	0.14	0.11 U	

**Table 5. Summary of Polychlorinated Biphenyls in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

				Sample Designation:	BDS-7	BDS-8	BDS-9	BDS-10	BDS-11	BDS-11
				Sample Date:	11/17/2022	11/17/2022	11/17/2022	11/10/2022	03/01/2023	03/01/2023
				Sample Depth (ft bls):	15 - 17	15 - 17	15 - 17	15 - 16	2 - 4	2 - 4
				Normal Sample or Field Duplicate:	N	N	N	N	N	FD
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units							
PCB-1016 (Aroclor 1016)	--	--	MG/KG	0.089 U	0.097 U	0.089 U	0.096 U	0.077 U	0.078 U	
PCB-1221 (Aroclor 1221)	--	--	MG/KG	0.089 U	0.097 U	0.089 U	0.096 U	0.077 U	0.078 U	
PCB-1232 (Aroclor 1232)	--	--	MG/KG	0.089 U	0.097 U	0.089 U	0.096 U	0.077 U	0.078 U	
PCB-1242 (Aroclor 1242)	--	--	MG/KG	0.089 U	0.097 U	0.089 U	0.096 U	0.077 U	0.078 U	
PCB-1248 (Aroclor 1248)	--	--	MG/KG	0.089 U	0.097 U	0.089 U	0.096 U	0.077 U	0.078 U	
PCB-1254 (Aroclor 1254)	--	--	MG/KG	0.089 U	0.097 U	0.089 U	0.096 U	0.077 U	0.078 U	
PCB-1260 (Aroclor 1260)	--	--	MG/KG	0.089 U	0.097 U	0.2	0.096 U	0.077 U	0.078 U	
PCB-1262 (Aroclor 1262)	--	--	MG/KG	0.089 U	0.097 U	0.089 U	0.096 U	0.077 U	0.078 U	
PCB-1268 (Aroclor 1268)	--	--	MG/KG	0.089 U	0.097 U	0.089 U	0.096 U	0.077 U	0.078 U	
Polychlorinated Biphenyl (PCBs)	1	3.2	MG/KG	0.089 U	0.097 U	0.2	0.096 U	0.077 U	0.078 U	

**Table 5. Summary of Polychlorinated Biphenyls in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

				Sample Designation:	BDS-12	BDS-13	BDS-14	B1	SE1	SN1
				Sample Date:	03/01/2023	03/01/2023	09/29/2022	08/31/2022	08/30/2022	08/30/2022
				Sample Depth (ft bls):	2 - 4	2 - 4	2 - 4	13 - 14	5 - 7	7 - 8
				Normal Sample or Field Duplicate:	N	N	N	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units							
PCB-1016 (Aroclor 1016)	--	--	MG/KG	0.074 U	0.077 U	0.073 U	0.08 U	0.073 U	0.075 U	
PCB-1221 (Aroclor 1221)	--	--	MG/KG	0.074 U	0.077 U	0.073 U	0.08 U	0.073 U	0.075 U	
PCB-1232 (Aroclor 1232)	--	--	MG/KG	0.074 U	0.077 U	0.073 U	0.08 U	0.073 U	0.075 U	
PCB-1242 (Aroclor 1242)	--	--	MG/KG	0.074 U	0.077 U	0.073 U	0.08 U	0.073 U	0.075 U	
PCB-1248 (Aroclor 1248)	--	--	MG/KG	0.074 U	0.077 U	0.073 U	0.08 U	0.073 U	0.075 U	
PCB-1254 (Aroclor 1254)	--	--	MG/KG	0.074 U	0.077 U	0.073 U	0.08 U	0.073 U	0.075 U	
PCB-1260 (Aroclor 1260)	--	--	MG/KG	0.21	0.077 U	0.073 U	0.08 U	0.073 U	0.075 U	
PCB-1262 (Aroclor 1262)	--	--	MG/KG	0.074 U	0.077 U	0.073 U	0.08 U	0.073 U	0.075 U	
PCB-1268 (Aroclor 1268)	--	--	MG/KG	0.074 U	0.077 U	0.073 U	0.08 U	0.073 U	0.075 U	
Polychlorinated Biphenyl (PCBs)	1	3.2	MG/KG	0.21	0.077 U	0.073 U	0.08 U	0.073 U	0.075 U	

**Table 5. Summary of Polychlorinated Biphenyls in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

Sample Designation: Sample Date: Sample Depth (ft bls): Normal Sample or Field Duplicate:				SS1	SW1
				08/30/2022	08/30/2022
				7 - 8	7 - 8
				N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units		
PCB-1016 (Aroclor 1016)	--	--	MG/KG	0.074 U	0.081 U
PCB-1221 (Aroclor 1221)	--	--	MG/KG	0.074 U	0.081 U
PCB-1232 (Aroclor 1232)	--	--	MG/KG	0.074 U	0.081 U
PCB-1242 (Aroclor 1242)	--	--	MG/KG	0.074 U	0.081 U
PCB-1248 (Aroclor 1248)	--	--	MG/KG	0.074 U	0.081 U
PCB-1254 (Aroclor 1254)	--	--	MG/KG	0.074 U	0.081 U
PCB-1260 (Aroclor 1260)	--	--	MG/KG	0.074 U	0.081 U
PCB-1262 (Aroclor 1262)	--	--	MG/KG	0.074 U	0.081 U
PCB-1268 (Aroclor 1268)	--	--	MG/KG	0.074 U	0.081 U
Polychlorinated Biphenyl (PCBs)	1	3.2	MG/KG	0.074 U	0.081 U

**Table 6. Summary of Pesticides and Herbicides in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

Sample Designation:				BDS-1	BDS-2	BDS-3	BDS-4	BDS-5
Sample Date:				11/22/2022	12/08/2022	11/22/2022	12/08/2022	11/18/2022
Sample Depth (ft bls):				15 - 17	15 - 17	15 - 17	15 - 17	15 - 17
Normal Sample or Field Duplicate:				N	N	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units					
Aldrin	0.097	0.19	MG/KG	0.011 U	0.0086 U	0.01 U	0.0081 U	0.0072 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.48	0.02	MG/KG	0.0032 U	0.0026 U	0.0031 U	0.0024 U	0.0021 U
Alpha Endosulfan	24	102	MG/KG	0.011 U	0.0086 U	0.01 U	0.0081 U	0.0072 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.36	0.09	MG/KG	0.0032 U	0.0026 U	0.0031 U	0.0024 U	0.0021 U
Beta Endosulfan	24	102	MG/KG	0.011 U	0.0086 U	0.01 U	0.0081 U	0.0072 U
Chlordane (Technical)	--	--	MG/KG	0.11 U	0.086 U	0.1 U	0.081 U	0.072 U
cis-Chlordane	4.2	2.9	MG/KG	0.011 U	0.0086 U	0.01 U	0.0081 U	0.0072 U
Delta BHC (Delta Hexachlorocyclohexane)	100	0.25	MG/KG	0.0032 U	0.0026 U	0.0031 U	0.0024 U	0.0021 U
Dieldrin	0.2	0.1	MG/KG	0.0032 U	0.0026 U	0.0031 U	0.0024 U	0.0021 U
Endosulfan Sulfate	24	1000	MG/KG	0.011 U	0.0086 U	0.01 U	0.0081 U	0.0072 U
Endrin	11	0.06	MG/KG	0.011 U	0.0086 U	0.01 U	0.0081 U	0.0072 U
Endrin Aldehyde	--	--	MG/KG	0.011 U	0.0086 U	0.01 U	0.0081 U	0.0072 U
Endrin Ketone	--	--	MG/KG	0.011 U	0.0086 U	0.01 U	0.0081 U	0.0072 U
Gamma Bhc (Lindane)	1.3	0.1	MG/KG	0.0032 U	0.0026 U	0.0031 U	0.0024 U	0.0021 U
Heptachlor	2.1	0.38	MG/KG	0.011 U	0.0086 U	0.01 U	0.0081 U	0.0072 U
Heptachlor Epoxide	--	--	MG/KG	0.011 U	0.0086 U	0.01 U	0.0081 U	0.0072 U
Methoxychlor	--	--	MG/KG	0.011 U	0.0086 U	0.01 U	0.0081 U	0.0072 U
P,P'-DDD	13	14	MG/KG	0.011 U	0.0086 U	0.01 U	0.0081 U	0.0072 U
P,P'-DDE	8.9	17	MG/KG	0.0039 J	0.0086 U	0.0056 J	0.0081 U	0.009 J+
P,P'-DDT	7.9	136	MG/KG	0.011 U	0.0086 U	0.01 U	0.0081 U	0.0072 U
Silvex (2,4,5-TP)	100	3.8	MG/KG	0.052 U	0.043 U	0.051 U	0.041 U	0.036 U
Toxaphene	--	--	MG/KG	0.11 U	0.086 U	0.1 U	0.081 U	0.072 U

**Table 6. Summary of Pesticides and Herbicides in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

Sample Designation:				BDS-6	BDS-7	BDS-8	BDS-9	BDS-10
Sample Date:				11/08/2022	11/17/2022	11/17/2022	11/17/2022	11/10/2022
Sample Depth (ft bls):				19 - 20	15 - 17	15 - 17	15 - 17	15 - 16
Normal Sample or Field Duplicate:				N	N	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units					
Aldrin	0.097	0.19	MG/KG	0.011 U	0.0089 U	0.0097 U	0.0089 U	0.0096 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.48	0.02	MG/KG	0.0034 U	0.0026 U	0.0029 U	0.0027 U	0.0029 U
Alpha Endosulfan	24	102	MG/KG	0.011 U	0.0089 U	0.0097 U	0.0089 U	0.0096 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.36	0.09	MG/KG	0.0034 U	0.0026 U	0.0029 U	0.0027 U	0.0029 U
Beta Endosulfan	24	102	MG/KG	0.011 U	0.0089 U	0.0097 U	0.0089 U	0.0096 U
Chlordane (Technical)	--	--	MG/KG	0.11 U	0.089 U	0.097 U	0.089 U	0.096 U
cis-Chlordane	4.2	2.9	MG/KG	0.011 U	0.0089 U	0.0097 U	0.0089 U	0.0096 U
Delta BHC (Delta Hexachlorocyclohexane)	100	0.25	MG/KG	0.0034 U	0.0026 U	0.0029 U	0.0027 U	0.0029 U
Dieldrin	0.2	0.1	MG/KG	0.0034 U	0.0026 U	0.0029 U	0.0065	0.0029 U
Endosulfan Sulfate	24	1000	MG/KG	0.011 U	0.0089 U	0.0097 U	0.0089 U	0.0096 U
Endrin	11	0.06	MG/KG	0.011 U	0.0089 U	0.0097 U	0.0089 U	0.0096 U
Endrin Aldehyde	--	--	MG/KG	0.011 U	0.0089 U	0.0097 U	0.0089 U	0.0096 U
Endrin Ketone	--	--	MG/KG	0.011 U	0.0089 U	0.0097 U	0.0089 U	0.0096 U
Gamma Bhc (Lindane)	1.3	0.1	MG/KG	0.0034 U	0.0026 U	0.0029 U	0.0027 U	0.0029 U
Heptachlor	2.1	0.38	MG/KG	0.011 U	0.0089 U	0.0097 U	0.0089 U	0.0096 U
Heptachlor Epoxide	--	--	MG/KG	0.011 U	0.0089 U	0.0097 U	0.0089 U	0.0096 U
Methoxychlor	--	--	MG/KG	0.011 U	0.0089 U	0.0097 U	0.0089 U	0.0096 U
P,P'-DDD	13	14	MG/KG	0.011 U	0.0089 U	0.0097 U	0.0089 U	0.0096 U
P,P'-DDE	8.9	17	MG/KG	0.011 U	0.0044 J	0.0089 J	0.012	0.011
P,P'-DDT	7.9	136	MG/KG	0.011 U	0.0089 U	0.0097 U	0.0089 U	0.024
Silvex (2,4,5-TP)	100	3.8	MG/KG	0.057 U	0.044 U	0.048 U	0.044 U	0.048 U
Toxaphene	--	--	MG/KG	0.11 U	0.089 U	0.097 U	0.089 U	0.096 U

**Table 6. Summary of Pesticides and Herbicides in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

Sample Designation:				BDS-11	BDS-11	BDS-12	BDS-13	BDS-14
Sample Date:				03/01/2023	03/01/2023	03/01/2023	03/01/2023	09/29/2022
Sample Depth (ft bls):				2 - 4	2 - 4	2 - 4	2 - 4	2 - 4
Normal Sample or Field Duplicate:				N	FD	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units					
Aldrin	0.097	0.19	MG/KG	0.0077 U	0.0078 U	0.0074 U	0.039 U	0.0073 U
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.48	0.02	MG/KG	0.0023 U	0.0023 U	0.0022 U	0.012 U	0.0022 U
Alpha Endosulfan	24	102	MG/KG	0.0077 U	0.0078 U	0.0074 U	0.039 U	0.0073 U
Beta Bhc (Beta Hexachlorocyclohexane)	0.36	0.09	MG/KG	0.0023 U	0.0023 U	0.0022 U	0.012 U	0.0022 U
Beta Endosulfan	24	102	MG/KG	0.0077 U	0.0078 U	0.0074 U	0.039 U	0.0073 U
Chlordane (Technical)	--	--	MG/KG	0.077 U	0.064 J	0.074 U	0.39 U	0.073 U
cis-Chlordane	4.2	2.9	MG/KG	0.0077 U	0.0085 J	0.0081	0.039 U	0.0073 U
Delta BHC (Delta Hexachlorocyclohexane)	100	0.25	MG/KG	0.0023 U	0.0023 U	0.0022 U	0.012 U	0.0022 U
Dieldrin	0.2	0.1	MG/KG	0.0023 U	0.0023 U	0.0057 J	0.012 U	0.0022 U
Endosulfan Sulfate	24	1000	MG/KG	0.0077 U	0.0078 U	0.0074 U	0.039 U	0.0073 U
Endrin	11	0.06	MG/KG	0.0077 U	0.0078 U	0.0074 U	0.039 U	0.0073 U
Endrin Aldehyde	--	--	MG/KG	0.0077 U	0.0078 U	0.0074 U	0.039 U	0.0073 U
Endrin Ketone	--	--	MG/KG	0.0077 U	0.0078 U	0.0074 U	0.039 U	0.0073 U
Gamma Bhc (Lindane)	1.3	0.1	MG/KG	0.0023 U	0.0023 U	0.0022 U	0.012 U	0.0022 U
Heptachlor	2.1	0.38	MG/KG	0.0077 U	0.0078 U	0.0074 U	0.039 U	0.0073 U
Heptachlor Epoxide	--	--	MG/KG	0.0077 U	0.0078 U	0.0074 U	0.039 U	0.0073 U
Methoxychlor	--	--	MG/KG	0.0077 U	0.0078 U	0.0074 U	0.039 U	0.0073 U
P,P'-DDD	13	14	MG/KG	0.0033 J	0.0059 J	0.0059 J	0.039 U	0.0073 U
P,P'-DDE	8.9	17	MG/KG	0.023	0.049	0.032	0.41	0.036 J
P,P'-DDT	7.9	136	MG/KG	0.036	0.062	0.083	0.5	0.048
Silvex (2,4,5-TP)	100	3.8	MG/KG	0.039 U	0.039 U	0.037 U	0.038 U	0.036 U
Toxaphene	--	--	MG/KG	0.077 U	0.078 U	0.074 U	0.39 U	0.073 U

**Table 6. Summary of Pesticides and Herbicides in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

				Sample Designation:	B1	SE1	SN1	SS1	SW1
				Sample Date:	08/31/2022	08/30/2022	08/30/2022	08/30/2022	08/30/2022
				Sample Depth (ft bls):	13 - 14	5 - 7	7 - 8	7 - 8	7 - 8
				Normal Sample or Field Duplicate:	N	N	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO	Units						
Aldrin	0.097	0.19	MG/KG	1.6 U	0.0073 U	0.37 U	0.0074 U	0.0081 U	
Alpha Bhc (Alpha Hexachlorocyclohexane)	0.48	0.02	MG/KG	0.48 U	0.0022 U	0.11 U	0.0022 U	0.0024 U	
Alpha Endosulfan	24	102	MG/KG	1.6 U	0.0073 U	0.37 U	0.0074 U	0.0081 U	
Beta Bhc (Beta Hexachlorocyclohexane)	0.36	0.09	MG/KG	0.48 U	0.0022 U	0.11 U	0.0022 U	0.0024 U	
Beta Endosulfan	24	102	MG/KG	1.6 U	0.0073 U	0.37 U	0.0074 U	0.0081 U	
Chlordane (Technical)	--	--	MG/KG	16 U	0.07 J	3.7 U	0.074 U	0.18 J	
cis-Chlordane	4.2	2.9	MG/KG	1.6 U	0.019	0.37 U	0.0074 U	0.035 J	
Delta BHC (Delta Hexachlorocyclohexane)	100	0.25	MG/KG	0.48 U	0.0022 U	0.11 U	0.0022 U	0.0024 U	
Dieldrin	0.2	0.1	MG/KG	0.48 U	0.0022 U	0.11 U	0.0022 U	0.0024 U	
Endosulfan Sulfate	24	1000	MG/KG	1.6 U	0.0073 U	0.37 U	0.0074 U	0.0081 U	
Endrin	11	0.06	MG/KG	1.6 U	0.0073 U	0.37 U	0.0074 U	0.0081 U	
Endrin Aldehyde	--	--	MG/KG	1.6 U	0.0073 U	0.37 U	0.0074 U	0.0081 U	
Endrin Ketone	--	--	MG/KG	1.6 U	0.0073 U	0.37 U	0.0074 U	0.0081 U	
Gamma Bhc (Lindane)	1.3	0.1	MG/KG	0.48 U	0.0022 U	0.11 U	0.0022 U	0.0024 U	
Heptachlor	2.1	0.38	MG/KG	1.6 U	0.0073 U	0.37 U	0.0074 U	0.0081 U	
Heptachlor Epoxide	--	--	MG/KG	1.6 U	0.0073 U	0.37 U	0.0074 U	0.0081 U	
Methoxychlor	--	--	MG/KG	1.6 U	0.0073 U	0.37 U	0.0074 U	0.0081 U	
P,P'-DDD	13	14	MG/KG	2.5	0.0083	0.18 J	0.0074 U	0.021	
P,P'-DDE	8.9	17	MG/KG	46	0.064	3.7	0.0031 J	0.24	
P,P'-DDT	7.9	136	MG/KG	54	0.12	4.7	0.0055 J	0.34	
Silvex (2,4,5-TP)	100	3.8	MG/KG	0.04 U	0.036 U	0.037 U	0.037 U	0.04 U	
Toxaphene	--	--	MG/KG	16 U	0.073 U	3.7 U	0.074 U	0.081 U	

**Table 7. Summary of Per- and Polyfluoroalkyl Substances in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

				Sample Designation:	BDS-1	BDS-2	BDS-3	BDS-4	BDS-5
				Sample Date:	11/22/2022	12/08/2022	11/22/2022	12/08/2022	11/18/2022
				Sample Depth (ft bls):	15 - 17	15 - 17	15 - 17	15 - 17	15 - 17
				Normal Sample or Field Duplicate:	N	N	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units						
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	UG/KG	2.83 U	3.21 U	2.82 U	2.49 U	2.64 U	
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	UG/KG	2.83 U	3.21 U	2.82 U	2.49 U	2.64 U	
Perfluorobutanesulfonic acid (PFBS)	--	--	UG/KG	0.28 U	0.32 U	0.28 U	0.25 U	0.26 U	
Perfluorobutanoic Acid	--	--	UG/KG	0.71 U	0.8 U	0.7 U	0.62 U	0.66 U	
Perfluorodecane Sulfonic Acid	--	--	UG/KG	0.28 U	0.32 U	0.28 U	0.25 U	0.26 U	
Perfluorodecanoic acid (PFDA)	--	--	UG/KG	0.28 U	0.32 U	0.28 U	0.25 U	0.26 U	
Perfluorododecanoic acid (PFDoA)	--	--	UG/KG	0.28 U	0.32 U	0.28 U	0.25 U	0.26 U	
Perfluoroheptane Sulfonate (PFHPS)	--	--	UG/KG	0.28 U	0.32 U	0.28 U	0.25 U	0.26 U	
Perfluoroheptanoic acid (PFHpA)	--	--	UG/KG	0.28 U	0.32 U	0.28 U	0.25 U	0.26 U	
Perfluorohexanesulfonic acid (PFHxS)	--	--	UG/KG	0.28 U	0.32 U	0.28 U	0.25 U	0.26 U	
Perfluorohexanoic acid (PFHxA)	--	--	UG/KG	0.28 U	0.32 U	0.28 U	0.25 U	0.26 U	
Perfluorononanoic acid (PFNA)	--	--	UG/KG	0.28 U	0.32 U	0.28 U	0.25 U	0.26 U	
Perfluorooctane Sulfonamide (FOSA)	--	--	UG/KG	0.28 U	0.32 U	0.28 U	0.25 U	0.26 U	
Perfluorooctanesulfonic acid (PFOS)	44	3.7	UG/KG	0.18 J	0.32 U	0.28 U	0.25 U	0.36	
Perfluorooctanoic acid (PFOA)	33	1.1	UG/KG	0.28 U	0.1 J	0.28 U	0.25 U	0.26 U	
Perfluoropentanoic Acid (PFPeA)	--	--	UG/KG	0.28 U	0.32 U	0.28 U	0.25 U	0.26 U	
Perfluorotetradecanoic acid (PFTA)	--	--	UG/KG	0.28 U	0.32 U	0.28 U	0.25 U	0.26 U	
Perfluorotridecanoic Acid (PFTriA)	--	--	UG/KG	0.28 U	0.32 U	0.28 U	0.25 U	0.26 U	
Perfluoroundecanoic Acid (PFUnA)	--	--	UG/KG	0.28 U	0.32 U	0.28 U	0.25 U	0.26 U	
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	UG/KG	2.83 U	3.21 U	2.82 U	2.49 U	2.64 U	
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	UG/KG	2.83 U	3.21 U	2.82 U	2.49 U	2.64 U	

**Table 7. Summary of Per- and Polyfluoroalkyl Substances in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

				Sample Designation:	BDS-6	BDS-7	BDS-8	BDS-9	BDS-10
				Sample Date:	11/08/2022	11/17/2022	11/17/2022	11/17/2022	11/10/2022
				Sample Depth (ft bls):	19 - 20	15 - 17	15 - 17	15 - 17	15 - 16
				Normal Sample or Field Duplicate:	N	N	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units						
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	UG/KG	4.65 U	2.87 U	3.2 U	2.84 U	3.46 U	
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	UG/KG	4.65 U	2.87 U	3.2 U	2.84 U	3.46 U	
Perfluorobutanesulfonic acid (PFBS)	--	--	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.35 U	
Perfluorobutanoic Acid	--	--	UG/KG	1.16 U	0.72 U	0.8 U	0.71 U	0.86 U	
Perfluorodecane Sulfonic Acid	--	--	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.35 U	
Perfluorodecanoic acid (PFDA)	--	--	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.35 U	
Perfluorododecanoic acid (PFDoA)	--	--	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.35 U	
Perfluoroheptane Sulfonate (PFHPS)	--	--	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.35 U	
Perfluoroheptanoic acid (PFHpA)	--	--	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.35 U	
Perfluorohexanesulfonic acid (PFHxS)	--	--	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.35 U	
Perfluorohexanoic acid (PFHxA)	--	--	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.082 J	
Perfluorononanoic acid (PFNA)	--	--	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.35 U	
Perfluorooctane Sulfonamide (FOSA)	--	--	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.35 U	
Perfluorooctanesulfonic acid (PFOS)	44	3.7	UG/KG	0.47 U	0.27 J	0.18 J	0.28 U	0.76	
Perfluorooctanoic acid (PFOA)	33	1.1	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.35 U	
Perfluoropentanoic Acid (PFPeA)	--	--	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.35 U	
Perfluorotetradecanoic acid (PFTA)	--	--	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.35 U	
Perfluorotridecanoic Acid (PFTriA)	--	--	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.35 U	
Perfluoroundecanoic Acid (PFUnA)	--	--	UG/KG	0.47 U	0.29 U	0.32 U	0.28 U	0.35 U	
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	UG/KG	4.65 U	2.87 U	3.2 U	2.84 U	3.46 U	
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	UG/KG	4.65 U	2.87 U	3.2 U	2.84 U	3.46 U	

**Table 7. Summary of Per- and Polyfluoroalkyl Substances in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

				Sample Designation:	BDS-11	BDS-11	BDS-12	BDS-13	BDS-14
				Sample Date:	03/01/2023	03/01/2023	03/01/2023	03/01/2023	09/29/2022
				Sample Depth (ft bls):	2 - 4	2 - 4	2 - 4	2 - 4	2 - 4
				Normal Sample or Field Duplicate:	N	FD	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units						
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	UG/KG	2.24 U	2.23 U	2.24 U	2.21 U	2.45 U	
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	UG/KG	0.34 J	0.37 J	2.24 U	2.21 U	2.45 U	
Perfluorobutanesulfonic acid (PFBS)	--	--	UG/KG	0.22 U	0.22 U	0.22 U	0.22 U	0.24 U	
Perfluorobutanoic Acid	--	--	UG/KG	0.56 U	0.56 U	0.56 U	0.55 U	0.61 U	
Perfluorodecane Sulfonic Acid	--	--	UG/KG	0.22 U	0.22 U	0.16 J	0.22 U	0.11 J	
Perfluorodecanoic acid (PFDA)	--	--	UG/KG	0.031 J	0.22 U	0.069 J	0.22 U	0.049 J	
Perfluorododecanoic acid (PFDoA)	--	--	UG/KG	0.22 U	0.22 U	0.11 J	0.22 U	0.063 J	
Perfluoroheptane Sulfonate (PFHPS)	--	--	UG/KG	0.22 U	0.22 U	0.22 U	0.22 U	0.24 U	
Perfluoroheptanoic acid (PFHpA)	--	--	UG/KG	0.22 U	0.22 U	0.22 U	0.043 J	0.24 U	
Perfluorohexanesulfonic acid (PFHxS)	--	--	UG/KG	0.22 U	0.22 U	0.22 U	0.22 U	0.24 U	
Perfluorohexanoic acid (PFHxA)	--	--	UG/KG	0.22 U	0.22 U	0.051 J	0.22 U	0.24 U	
Perfluorononanoic acid (PFNA)	--	--	UG/KG	0.12 J	0.13 J	0.22 U	0.22 U	0.24 U	
Perfluorooctane Sulfonamide (FOSA)	--	--	UG/KG	0.25	0.25	0.22 U	0.22 U	0.24 U	
Perfluorooctanesulfonic acid (PFOS)	44	3.7	UG/KG	1.44	1.43	0.58	0.13 J	0.31	
Perfluorooctanoic acid (PFOA)	33	1.1	UG/KG	0.19 J	0.18 J	0.088 J	0.44	0.24 U	
Perfluoropentanoic Acid (PFPeA)	--	--	UG/KG	0.22 U	0.22 U	0.22 U	0.22 U	0.24 U	
Perfluorotetradecanoic acid (PFTA)	--	--	UG/KG	0.22 U	0.22 U	0.068 J	0.22 U	0.032 J	
Perfluorotridecanoic Acid (PFTriA)	--	--	UG/KG	0.22 U	0.22 U	0.075 J	0.22 U	0.035 J	
Perfluoroundecanoic Acid (PFUnA)	--	--	UG/KG	0.22 U	0.22 U	0.13 J	0.22 U	0.058 J	
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	UG/KG	2.24 U	2.23 U	2.24 U	2.21 U	2.45 U	
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	UG/KG	2.24 U	2.23 U	2.24 U	2.21 U	2.45 U	

**Table 7. Summary of Per- and Polyfluoroalkyl Substances in Documentation Soil Samples in Track 2 and 4 Areas
1940 Turnbull Avenue, Bronx, New York**

				Sample Designation:	B1	SE1	SN1	SS1	SW1
				Sample Date:	09/01/2022	08/30/2022	08/30/2022	08/30/2022	08/30/2022
				Sample Depth (ft bls):	13 - 14	5 - 7	7 - 8	7 - 8	7 - 8
				Normal Sample or Field Duplicate:	N	N	N	N	N
Parameter	NYSDEC Part 375 Restricted Residential GV	NYSDEC Part 375 Protection of Groundwater GV	Units						
2-(N-methyl perfluorooctanesulfonamido) acetic acid	--	--	UG/KG	2.77 U	2.09 U	2.19 U	2.15 U	2.32 U	
N-ethyl perfluorooctanesulfonamidoacetic acid	--	--	UG/KG	2.77 U	2.09 U	2.19 U	2.15 U	2.32 U	
Perfluorobutanesulfonic acid (PFBS)	--	--	UG/KG	0.28 U	0.21 U	0.22 U	0.22 U	0.23 U	
Perfluorobutanoic Acid	--	--	UG/KG	0.69 U	0.52 U	0.55 U	0.54 U	0.58 U	
Perfluorodecane Sulfonic Acid	--	--	UG/KG	0.28 U	0.21 U	0.22 U	0.22 U	0.1 J	
Perfluorodecanoic acid (PFDA)	--	--	UG/KG	0.28 U	0.21 U	0.22 U	0.22 U	0.061 J	
Perfluorododecanoic acid (PFDoA)	--	--	UG/KG	0.28 U	0.21 U	0.22 U	0.22 U	0.063 J	
Perfluoroheptane Sulfonate (PFHPS)	--	--	UG/KG	0.28 U	0.21 U	0.22 U	0.22 U	0.23 U	
Perfluoroheptanoic acid (PFHpA)	--	--	UG/KG	0.1 J	0.21 U	0.075 J	0.045 J	0.062 J	
Perfluorohexanesulfonic acid (PFHxS)	--	--	UG/KG	0.078 J	0.21 U	0.22 U	0.22 U	0.23 U	
Perfluorohexanoic acid (PFHxA)	--	--	UG/KG	0.22 J	0.05 J	0.13 J	0.06 J	0.11 J	
Perfluorononanoic acid (PFNA)	--	--	UG/KG	0.28 U	0.04 J	0.13 J	0.22 U	0.11 J	
Perfluorooctane Sulfonamide (FOSA)	--	--	UG/KG	0.28 U	0.21 U	0.22 U	0.22 U	0.23 U	
Perfluorooctanesulfonic acid (PFOS)	44	3.7	UG/KG	0.85	0.35	0.5	0.3	0.78	
Perfluorooctanoic acid (PFOA)	33	1.1	UG/KG	0.92	0.49 J	0.59	0.36	0.37	
Perfluoropentanoic Acid (PFPeA)	--	--	UG/KG	0.27 J	0.21 U	0.11 J	0.08 J	0.088 J	
Perfluorotetradecanoic acid (PFTA)	--	--	UG/KG	0.28 U	0.21 U	0.22 U	0.22 U	0.23 U	
Perfluorotridecanoic Acid (PFTriA)	--	--	UG/KG	0.28 U	0.21 U	0.22 U	0.22 U	0.23 U	
Perfluoroundecanoic Acid (PFUnA)	--	--	UG/KG	0.28 U	0.21 U	0.22 U	0.22 U	0.052 J	
Sodium 1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	--	--	UG/KG	2.77 UJ	2.09 U	2.19 U	2.15 U	2.32 UJ	
Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	--	--	UG/KG	2.77 UJ	2.09 U	2.19 U	2.15 U	2.32 U	

Table 8. Summary of TCLP Metals in Soil, 1940 Turnbull Avenue, Bronx, New York

Sample Designation:			BDS-10	B1	SE1	SN1	SS1	SW1
Sample Date:			11/10/2022	08/31/2022	08/30/2022	08/30/2022	08/30/2022	08/30/2022
Sample Depth (ft bls):			15 - 16	13 - 14	5 - 7	7 - 8	7 - 8	7 - 8
Normal Sample or Field Duplicate:			N	N	N	N	N	N
Parameter	USEPA Regulatory Levels (mg/L)	Units						
Lead	5	MG/L	0.464 J	3.9	0.674	1.35 J+	0.434	2.08

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Table 9. List of Soil Cleanup Objectives, 1940 Turnbull Avenue, Bronx, New York

Parameter	NYSDEC	NYSDEC
	Part 375 Restricted Residential SCO	Part 375 Protection of Groundwater SCO
Volatile Organic Compounds (Concentrations in mg/kg)		
1,1,1-Trichloroethane	100	680
1,1-Dichloroethane	26	270
1,1-Dichloroethene	100	330
1,2,4-Trimethylbenzene	52	3600
1,3,5-Trimethylbenzene	52	8400
1,2-Dichlorobenzene	100	1100
1,2-Dichloroethane	3.1	20
1,3-Dichlorobenzene	49	2400
1,4-Dichlorobenzene	13	1800
2-Butanone (MEK)	100	120
Acetone	100	50
Benzene	4.8	60
n-Butylbenzene	100	12000
Carbon tetrachloride	2.4	760
Chlorobenzene	100	1100
Chloroform	49	370
cis-1,2-Dichloroethene	100	250
Ethylbenzene	41	1000
Methylene chloride	100	50
MTBE	100	930
n-Propylbenzene	100	3900
sec-Butylbenzene	100	11000
tert-Butylbenzene	100	5900
Tetrachloroethene	19	1300
Toluene	100	700
trans-1,2-Dichloroethene	100	190
Trichloroethene	21	470
Vinyl chloride	0.9	20
Xylenes (total)	100	1600
Semivolatile Organic Compounds (Concentrations in mg/kg)		
1,4-Dioxane	13	0.1
2-Methylphenol	100	0.33
Acenaphthene	100	98
Acenaphthylene	100	107
Anthracene	100	1000
Benzo[a]anthracene	1	1
Benzo[a]pyrene	1	22
Benzo[b]fluoranthene	1	1.7
Benzo[g,h,i]perylene	100	1000
Benzo[k]fluoranthene	3.9	1.7
Chrysene	3.9	1
Dibenzo[a,h]anthracene	0.33	1000
Dibenzofuran	59	210
Fluoranthene	100	1000
Fluorene	100	386
Hexachlorobenzene	1.2	3.2
Indeno[1,2,3-cd]pyrene	0.5	8.2
Naphthalene	100	12
Pentachlorophenol	6.7	0.8
Phenanthrene	100	1000
Phenol	100	0.33
Pyrene	100	1000

Table 9. List of Soil Cleanup Objectives, 1940 Turnbull Avenue, Bronx, New York

Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO
Metals (Concentrations in mg/kg)		
Arsenic	16	16
Barium	400	820
Beryllium	72	47
Cadmium	4.3	7.5
Chromium, Hexavalent	110	19
Chromium, Trivalent	180	NA
Copper	270	1720
Cyanide, Total	27	40
Lead	400	450
Manganese	2000	2000
Mercury	0.81	0.73
Nickel	310	130
Selenium	180	4
Silver	180	8.3
Zinc	10000	2480
Pesticides (Concentrations in mg/kg)		
2,4,5-TP	100	3.8
4,4'-DDD	13	14
4,4'-DDE	8.9	17
4,4'-DDT	7.9	136
Aldrin	0.097	0.19
alpha-BHC	0.48	0.02
alpha-Chlordane	4.2	2.9
beta-BHC	0.36	0.09
delta-BHC	100	0.25
Dieldrin	0.2	0.1
Endosulfan I	24	102
Endosulfan II	24	102
Endosulfan sulfate	24	1000
Endrin	11	0.06
gamma-BHC (Lindane)	1.3	0.1
Heptachlor	2.1	0.38
Total Polychlorinated Biphenyls (Concentrations in mg/kg)		
Total Polychlorinated Biphenyls	1	3.2
Perfluorinated Alkyl Acids (Concentrations in µg/kg)		
1H,1H,2H,2H-PERFLUORODECANESULFONIC ACID (8:2FTS)	--	--
1H,1H,2H,2H-PERFLUOROOCTANESULFONIC ACID (6:2FTS)	--	--
N-ETHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NETFOSAA)	--	--
N-METHYL PERFLUOROOCTANESULFONAMIDOACETIC ACID (NMEFOSA)	--	--
PERFLUOROBUTANESULFONIC ACID (PFBS)	--	--
PERFLUOROBUTANOIC ACID (PFBA)	--	--
PERFLUORODECANESULFONIC ACID (PFDS)	--	--
PERFLUORODECANOIC ACID (PFDA)	--	--
PERFLUORODODECANOIC ACID (PFDOA)	--	--
PERFLUOROHEPTANESULFONIC ACID (PFHPS)	--	--
PERFLUOROHEPTANOIC ACID (PFHPA)	--	--
PERFLUOROHEXANESULFONIC ACID (PFHXS)	--	--
PERFLUOROHEXANOIC ACID (PFHXA)	--	--
PERFLUORONONANOIC ACID (PFNA)	--	--
PERFLUOROOCTANESULFONAMIDE (FOSA)	--	--
PERFLUOROOCTANESULFONIC ACID (PFOS)	--	--
PERFLUOROOCTANOIC ACID (PFOA)	--	--
PERFLUOROPENTANOIC ACID (PFPEA)	--	--
PERFLUOROTETRADECANOIC ACID (PFTA)	--	--
PERFLUOROTRIDECANOIC ACID (PFTRDA)	--	--
PERFLUOROUNDECANOIC ACID (PFUNA)	--	--
PFOA/PFOS, TOTAL	--	--

Table 9. List of Soil Cleanup Objectives, 1940 Turnbull Avenue, Bronx, New York

Parameter	NYSDEC Part 375 Restricted Residential SCO	NYSDEC Part 375 Protection of Groundwater SCO
<p>* Backfill soil cleanup objectives for the Track 1 remedy are the NYSDEC Part 375 Unrestricted Residential Use</p> <p>** Backfill soil cleanup objectives for the Tracks 2 and 4 remedy are the lower of the NYSDEC Part 375 Protection of Groundwater or Restricted Residential Use SCOs.</p> <p>mg/kg - Milligrams per kilogram</p> <p>NYSDEC - New York State Department of Environmental Conservation</p> <p>SCOs - Soil Cleanup Objectives</p> <p>NA - Not Applicable</p> <p>--Standards not yet determined. The following guidance values are to be used until SCOs are in effect:</p>		
PFOA (Concentrations in µg/kg)	1.1	1.1
PFOS (Concentrations in µg/kg)	3.7	3.7

DRAFT

Notes Utilized Throughout Tables	
Soil Vapor	
J -	Estimated value
J- -	Estimated value, low bias
D -	A secondary analysis after dilution due to exceedance of the calibration range in the original sample.
U -	Indicates that the compound was analyzed for but not detected
FD -	Duplicate sample
ug/m3 -	Micrograms per cubic meter
Bold data indicates that parameter was detected	

DRAFT

Table 10. Summary of Volatile Organic Compounds in Soil Vapor, 1940 Turnbull Avenue, Bronx, New York

Sample Designation:		SV-1	SV-2	SV-3	SV-4	SV-5	SV-5	SV-6	SV-7
Sample Date:		06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021
Normal Sample or Field Duplicate:		N	N	N	N	N	FD	N	N
Parameter	Units								
1,1,1-Trichloroethane (TCA)	UG/M3	4.44 U	8.9 U	4.24 U	0.885 U	1.62 U	1.73 U	3.61 U	4.33 U
1,1,2,2-Tetrachloroethane	UG/M3	5.59 U	11.2 U	5.34 U	1.11 U	2.04 U	2.17 U	4.55 U	5.44 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	6.24 U	12.5 U	5.96 U	1.24 U	2.27 U	2.42 U	5.08 U	6.08 U
1,1,2-Trichloroethane	UG/M3	4.44 U	8.9 U	4.24 U	0.885 U	1.62 U	1.73 U	3.61 U	4.33 U
1,1-Dichloroethane	UG/M3	3.3 U	6.61 U	3.15 U	0.656 U	1.2 U	1.28 U	2.68 U	3.21 U
1,1-Dichloroethene	UG/M3	1.61 U	3.24 U	1.54 U	0.322 U	0.588 U	0.627 U	1.31 U	1.57 U
1,2,4-Trichlorobenzene	UG/M3	6.04 U	12.1 U	5.77 U	1.2 U	2.2 U	2.35 U	4.92 U	5.89 U
1,2,4-Trimethylbenzene	UG/M3	16.8 D	15.2 D	8.02 D	18.1 D	14.6 D	19.6 D	16.3 D	6.24 D
1,2-Dibromoethane (Ethylene Dibromide)	UG/M3	6.26 U	12.5 U	5.97 U	1.25 U	2.28 U	2.43 U	5.09 U	6.09 U
1,2-Dichlorobenzene	UG/M3	4.9 U	9.81 U	4.67 U	0.975 U	1.78 U	1.9 U	3.98 U	4.77 U
1,2-Dichloroethane	UG/M3	3.3 U	6.6 U	3.15 U	0.656 U	1.2 U	1.28 U	2.68 U	3.21 U
1,2-Dichloropropane	UG/M3	3.76 U	7.54 U	3.59 U	0.75 U	1.37 U	1.46 U	3.06 U	3.66 U
1,2-Dichlorotetrafluoroethane	UG/M3	5.69 U	11.4 U	5.43 U	1.13 U	2.07 U	2.21 U	4.63 U	5.54 U
1,3,5-Trimethylbenzene (Mesitylene)	UG/M3	4.4 D	8.02 U	3.82 U	4.86 D	3.21 D	6.69 D	3.58 D	3.9 U
1,3-Butadiene	UG/M3	5.41 U	10.8 U	5.16 U	1.08 U	1.97 U	2.1 U	4.4 U	5.26 U
1,3-Dichlorobenzene	UG/M3	4.9 U	9.81 U	4.67 U	0.975 U	1.78 U	1.9 U	3.98 U	4.77 U
1,4-Dichlorobenzene	UG/M3	4.9 U	9.81 U	4.67 U	0.975 U	1.78 U	1.9 U	3.98 U	4.77 U
1,4-Dioxane (P-Dioxane)	UG/M3	5.87 U	11.8 U	5.6 U	1.17 U	2.14 U	2.28 U	4.77 U	5.71 U
2-Hexanone	UG/M3	106 J-D	139 J-D	98.7 J-D	24.8 J-D	36.9 J-D	35.6 J-D	87.1 J-D	90 J-D
4-Ethyltoluene	UG/M3	16 D	15.2 D	5.35 D	16.2 D	13.4 D	19.3 D	15 D	3.9 D
Acetone	UG/M3	81.8 D	126 D	65.2 D	12.5 D	21.5 D	21.7 D	60.7 D	37.7 D
Allyl Chloride (3-Chloropropene)	UG/M3	12.7 U	25.5 U	12.2 U	2.54 U	4.64 U	4.95 U	10.4 U	12.4 U
Benzene	UG/M3	3.9 D	5.21 U	12.4 D	1.4 D	1.8 D	2.02 D	3.39 D	2.53 U
Benzyl Chloride	UG/M3	4.22 U	8.45 U	4.02 U	0.84 U	1.54 U	1.64 U	3.43 U	4.11 U
Bromodichloromethane	UG/M3	5.46 U	10.9 U	5.21 U	1.09 U	1.99 U	2.12 U	4.44 U	5.31 U
Bromoform	UG/M3	8.42 U	16.9 U	8.03 U	1.68 U	3.07 U	3.27 U	6.85 U	8.2 U
Bromomethane	UG/M3	3.16 U	6.34 U	3.02 U	0.63 U	1.15 U	1.23 U	2.57 U	3.08 U
Carbon Disulfide	UG/M3	10.7 D	5.08 D	21.3 D	27.7 D	0.924 U	0.985 U	2.06 U	2.47 U
Carbon Tetrachloride	UG/M3	1.28 U	2.57 U	1.22 U	0.255 U	0.466 U	0.498 U	1.04 U	1.25 U
Chlorobenzene	UG/M3	3.75 U	7.51 U	3.58 U	0.747 U	1.37 U	1.46 U	3.05 U	3.65 U
Chloroethane	UG/M3	2.15 U	4.31 U	2.05 U	0.428 U	0.783 U	0.835 U	1.75 U	2.09 U
Chloroform	UG/M3	3.98 U	7.97 U	153 D	26.4 D	3.77 D	4.02 D	3.23 U	31.7 D
Chloromethane	UG/M3	1.68 U	3.37 U	1.6 U	0.335 U	0.612 U	0.653 U	1.37 U	1.64 U
Cis-1,2-Dichloroethylene	UG/M3	1.61 U	3.24 U	1.54 U	0.322 U	0.588 U	0.627 U	1.31 U	1.57 U
Cis-1,3-Dichloropropene	UG/M3	3.7 U	7.41 U	3.53 U	0.736 U	1.35 U	1.44 U	3.01 U	3.6 U

Table 10. Summary of Volatile Organic Compounds in Soil Vapor, 1940 Turnbull Avenue, Bronx, New York

Sample Designation:		SV-1	SV-2	SV-3	SV-4	SV-5	SV-5	SV-6	SV-7
Sample Date:		06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021	06/02/2021
Normal Sample or Field Duplicate:		N	N	N	N	N	FD	N	N
Parameter	Units								
Cyclohexane	UG/M3	2.8 U	5.62 U	5.35 D	0.893 D	1.02 U	2.29 D	2.28 U	2.73 U
Dibromochloromethane	UG/M3	6.94 U	13.9 U	6.62 U	1.38 U	2.53 U	2.7 U	5.64 U	6.76 U
Dichlorodifluoromethane	UG/M3	4.03 U	8.07 U	3.84 U	2.17 D	2.2 D	2.19 D	3.28 U	3.92 U
Ethyl Acetate	UG/M3	5.87 U	11.8 U	5.6 U	1.17 U	2.14 U	2.28 U	4.77 U	5.71 U
Ethylbenzene	UG/M3	7.78 D	7.09 D	7.42 D	7.61 D	4.12 D	4.95 D	6.33 D	3.44 U
Hexachlorobutadiene	UG/M3	8.69 U	17.4 U	8.29 U	1.73 U	3.16 U	3.37 U	7.06 U	8.46 U
Isopropanol	UG/M3	4 U	35.7 D	7.45 D	0.797 U	1.46 U	1.56 U	3.26 U	3.9 U
Methyl Ethyl Ketone (2-Butanone)	UG/M3	775 D	1140 D	709 D	145 D	191 D	195 D	619 D	710 D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	UG/M3	3.34 U	6.69 U	3.18 U	0.664 U	1.22 U	1.3 U	2.71 U	3.25 U
Methyl Methacrylate	UG/M3	3.33 U	6.68 U	3.18 U	0.664 U	1.21 U	1.3 U	2.71 U	3.25 U
Methylene Chloride	UG/M3	5.66 U	11.3 U	5.4 U	1.13 U	2.06 U	2.2 U	4.6 U	5.51 U
M-P-Xylene	UG/M3	30.1 D	29.1 D	11.1 D	35.4 D	18.8 D	29.1 D	26.5 D	6.89 U
N-Heptane	UG/M3	8.68 D	8.03 D	11.5 D	3.79 D	5.35 D	7.26 D	372 D	3.25 U
N-Hexane	UG/M3	10.3 D	7.48 D	38.4 D	2.46 D	3.97 D	8.92 D	625 D	6.15 D
O-Xylene (1,2-Dimethylbenzene)	UG/M3	10.6 D	9.92 D	4.05 D	11.5 D	6.05 D	11.8 D	8.92 D	3.44 U
Propylene	UG/M3	27.8 D	41 D	1.34 U	9.44 D	9.14 D	9.75 D	1.14 U	14.3 D
Styrene	UG/M3	3.47 U	6.95 U	3.31 U	0.691 D	1.26 U	1.35 U	2.82 U	3.38 U
Tert-Butyl Methyl Ether	UG/M3	2.94 U	5.88 U	2.8 U	0.585 U	1.07 U	1.14 U	2.39 U	2.86 U
Tetrachloroethylene (PCE)	UG/M3	59.1 D	16.6 D	41.1 D	35.8 D	31 D	32.2 D	75.5 D	19.4 D
Tetrahydrofuran	UG/M3	4.8 U	9.63 U	4.58 U	1.72 D	1.75 U	1.87 U	3.91 U	4.68 U
Toluene	UG/M3	59.2 D	41.2 D	22.8 D	77.4 D	40.2 D	47.2 D	43.2 D	19.4 D
Trans-1,2-Dichloroethene	UG/M3	3.23 U	6.47 U	3.08 U	0.643 U	1.18 U	1.25 U	2.63 U	3.14 U
Trans-1,3-Dichloropropene	UG/M3	3.7 U	7.41 U	3.53 U	0.736 U	1.35 U	1.44 U	3.01 U	3.6 U
Trichloroethylene (TCE)	UG/M3	1.09 U	2.19 U	1.04 U	0.261 D	0.398 U	0.425 U	0.89 U	1.07 U
Trichlorofluoromethane	UG/M3	4.58 U	9.17 U	4.37 U	1.46 D	1.67 U	1.78 U	3.72 U	4.46 U
Vinyl Acetate	UG/M3	2.87 U	5.75 U	2.74 U	0.571 U	1.04 U	1.11 U	2.33 U	2.79 U
Vinyl Bromide	UG/M3	3.56 U	7.14 U	3.4 U	0.71 U	1.3 U	1.38 U	2.9 U	3.47 U
Vinyl Chloride	UG/M3	1.04 U	2.09 U	0.993 U	0.207 U	0.379 U	0.404 U	0.847 U	1.01 U

FIGURES

1. Site Location Map
2. Tax Map
3. Site Layout Map
4. Geologic Cross Section
5. Groundwater Contour Map
6. Remaining Soil Sample Exceedances
7. Institutional Control Boundaries / Engineering Controls Location – Cover System



QUADRANGLE LOCATION



Title:

SITE LOCATION MAP

SITE MANAGEMENT PLAN - PARK LANE SENIOR
1940 TURNBULL AVENUE, BRONX, NEW YORK, 10473

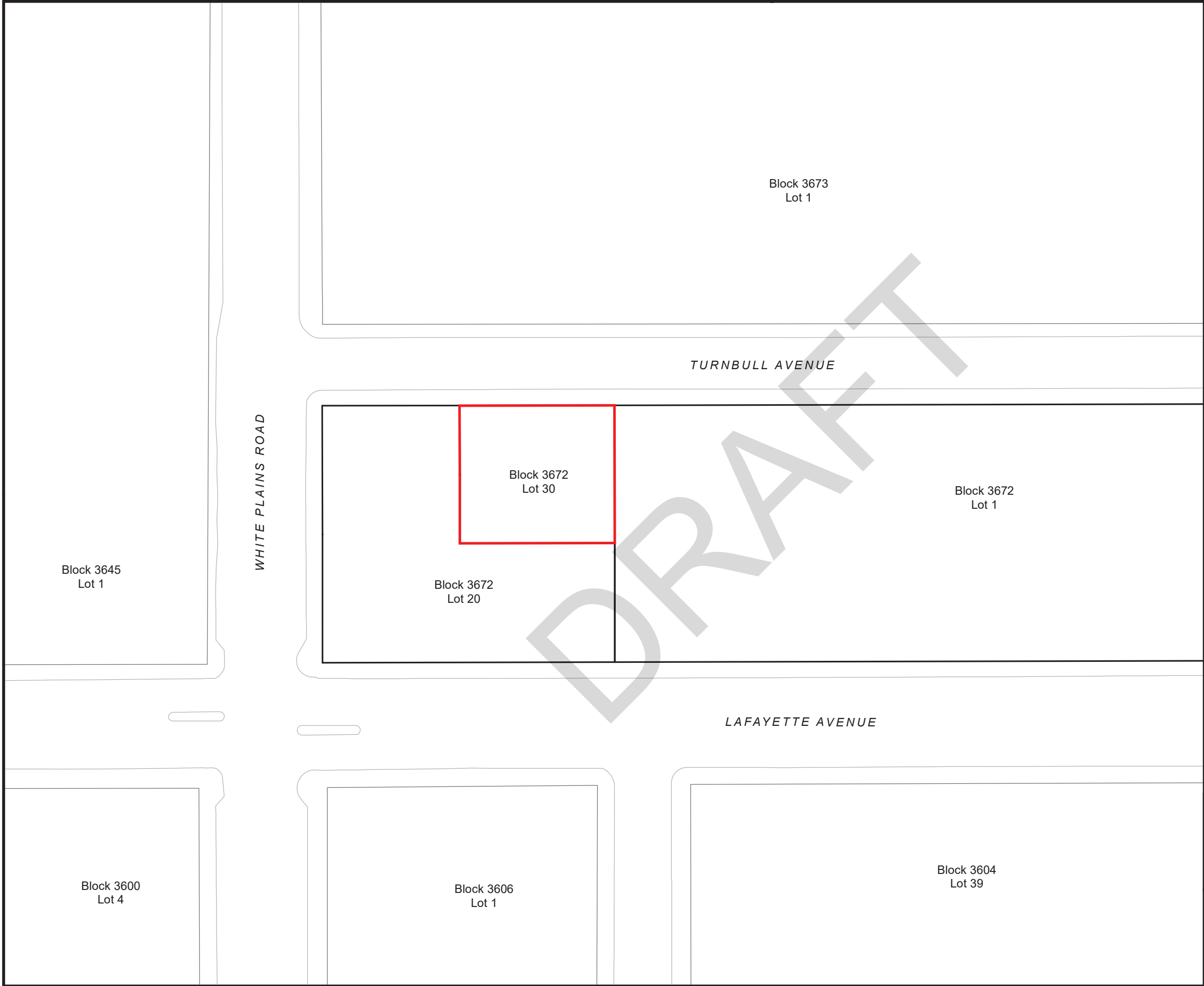
Prepared for:

PL SARA LLC



Compiled by: C.H.	Date: 07/28/21	FIGURE 1
Prepared by: M.S.R.	Scale: AS SHOWN	
Project Mgr: K.S.	Project: 3475.0001Y000	
File: 3475.0001Y117.1.mxd		

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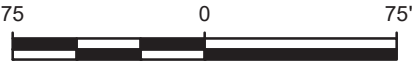


LEGEND

	LOT BOUNDARY
	SITE BOUNDARY

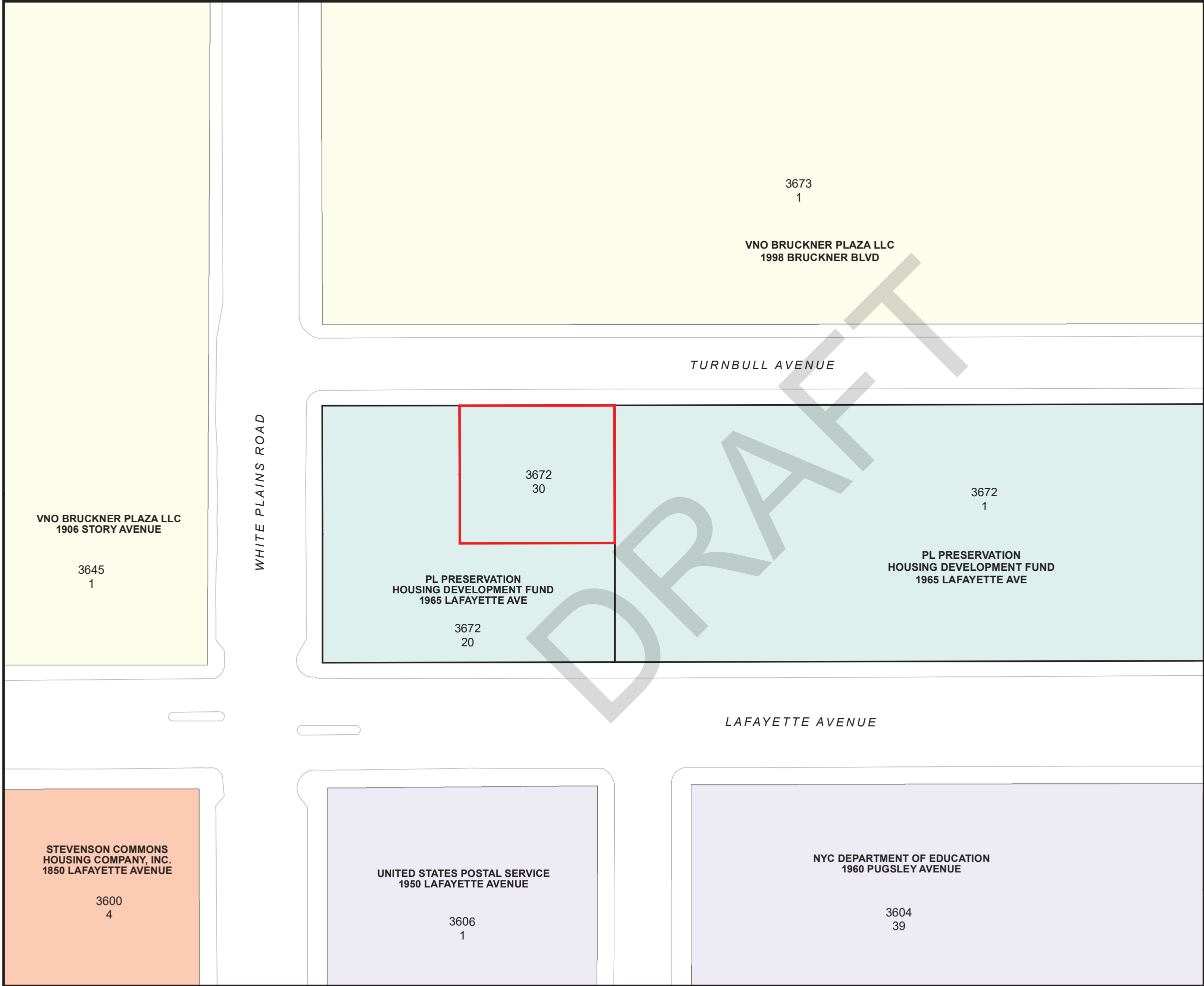
DATA SOURCE

1. NEW YORK CITY DEPARTMENT OF INFORMATION AND TECHNOLOGY



Title:			
TAX MAP			
SITE MANAGEMENT PLAN - PARK LANE SENIOR 1940 TURNBULL AVENUE, BRONX, NEW YORK, 10473			
Prepared for:			
PL SARA LLC			
	Compiled by: C.H.	Date: 07/28/21	FIGURE
	Prepared by: M.S.R.	Scale: AS SHOWN	
	Project Mgr: K.S.	Project: 3475.0001Y000	
	File: 3475.0001Y117.3.mxd		
			2

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LEGEND

- MULTI-FAMILY ELEVATOR BUILDING
- MIXED RESIDENTIAL & COMMERICAL BUILDING
- COMMERCIAL & OFFICE BUILDING
- PUBLIC FACILITIES & INSTITUTIONS
- LOT BOUNDARY
- SITE BOUNDARY

DATA SOURCE
1. NEW YORK CITY DEPARTMENT OF INFORMATION AND TECHNOLOGY



Title:

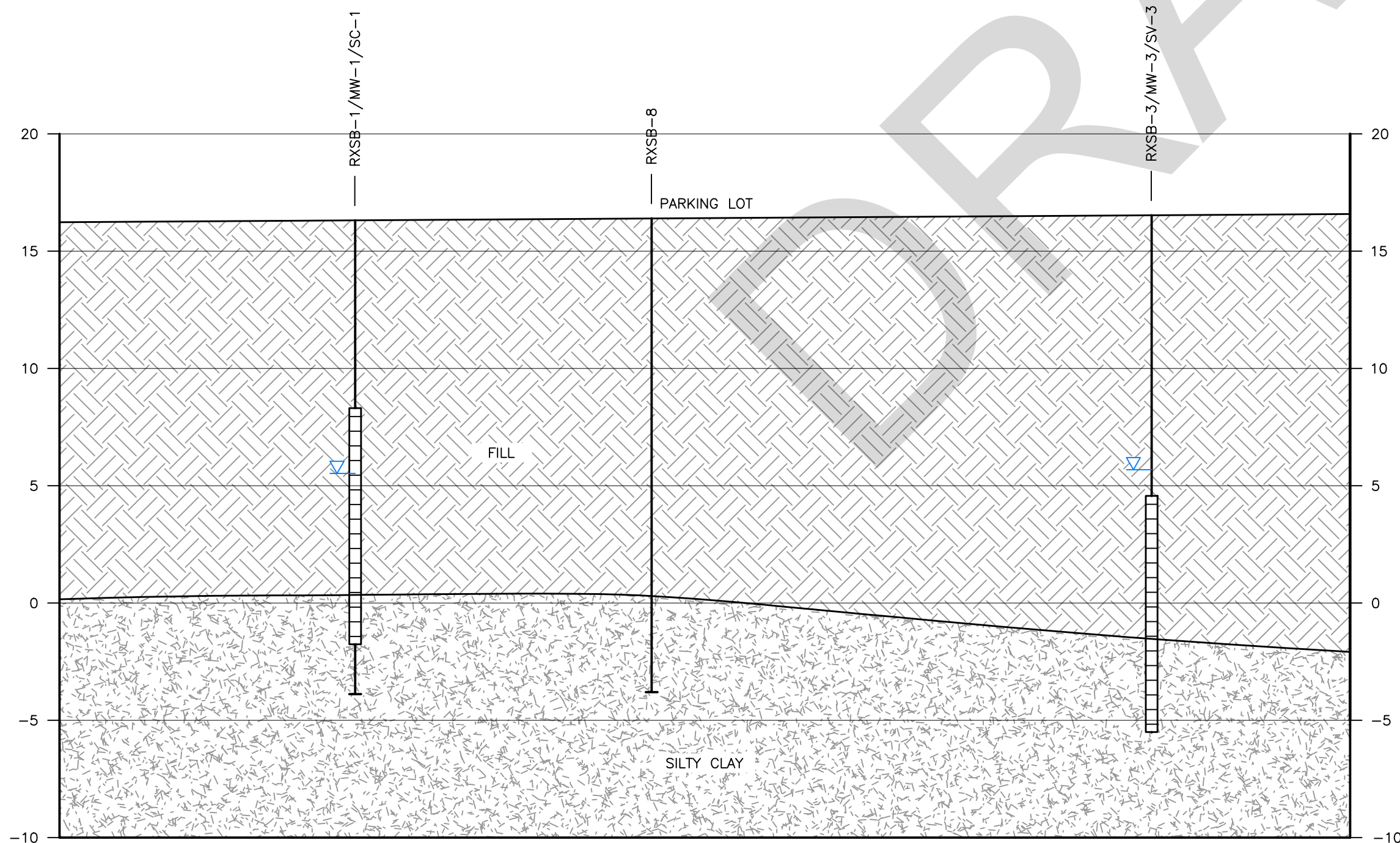
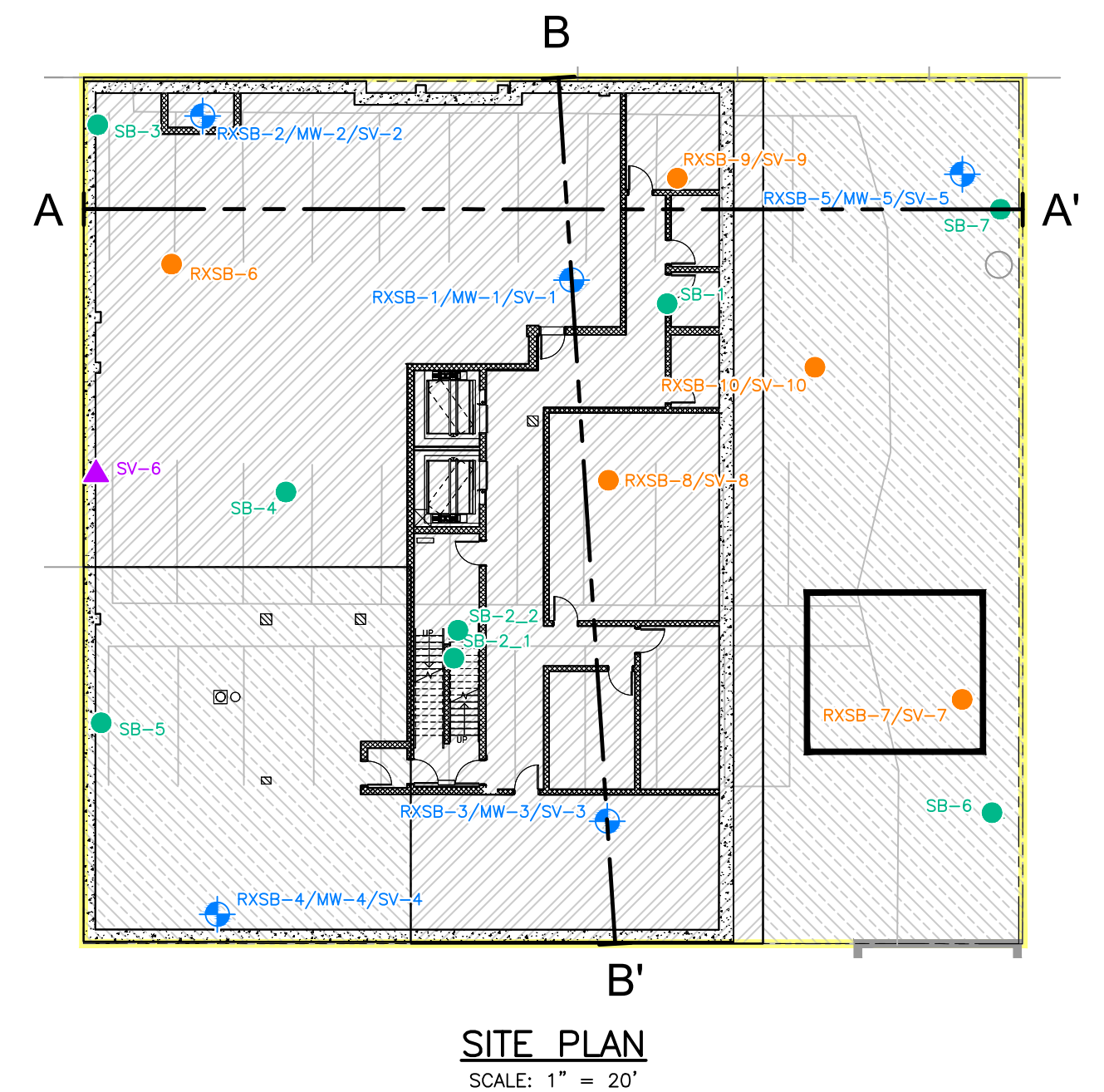
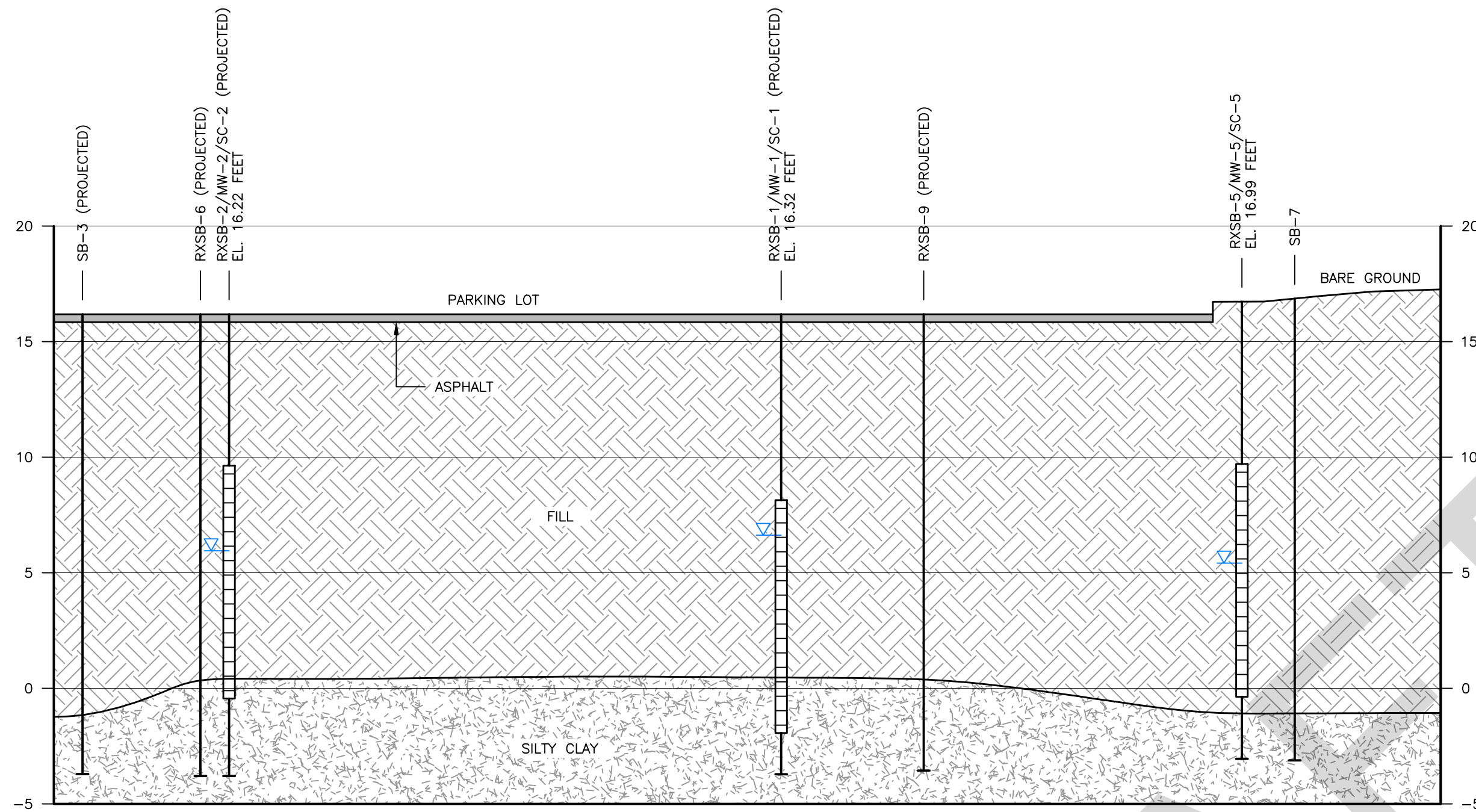
SITE LAYOUT MAP

SITE MANAGEMENT PLAN - PARK LANE SENIOR
1940 TURNBULL AVENUE, BRONX, NEW YORK, 10473

Prepared for:

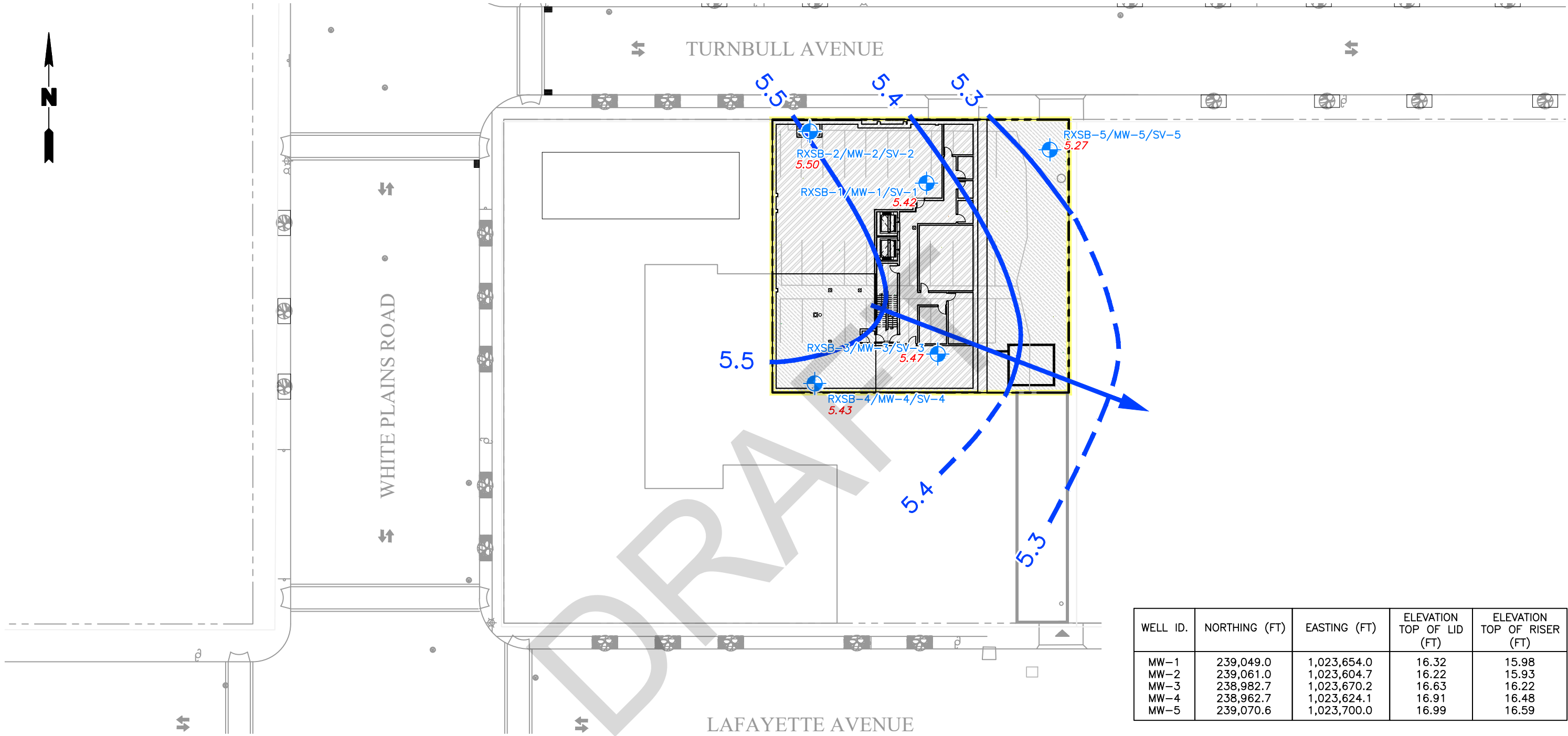
PL SARA LLC

ROUX	Compiled by: C.H.	Date: 07/28/21	FIGURE 3
	Prepared by: M.S.R.	Scale: AS SHOWN	
	Project Mgr: K.S.	Project: 3475.0001Y000	
	File: 3475.0001Y117.4.mxd		



Title:

V:\CAD\PROJECTS\3475\Y0001Y135\3475.0001Y135.02.DWG



WELL ID.	NORTHING (FT)	EASTING (FT)	ELEVATION TOP OF LID (FT)	ELEVATION TOP OF RISER (FT)
MW-1	239,049.0	1,023,654.0	16.32	15.98
MW-2	239,061.0	1,023,604.7	16.22	15.93
MW-3	238,982.7	1,023,670.2	16.63	16.22
MW-4	238,962.7	1,023,624.1	16.91	16.48
MW-5	239,070.6	1,023,700.0	16.99	16.59

LEGEND

- RXSB-1/
MW-1/
SV-1

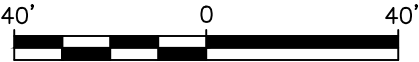
LOCATION AND DESIGNATION OF REMEDIAL INVESTIGATION
SOIL BORING, SOIL VAPOR POINT AND MONITORING WELL
- 5.42
- GROUNDWATER ELEVATION
- 5.4
- CONTOUR ELEVATION IN FEET
-
- DIRECTION OF GROUNDWATER FLOW

NOTES

1. HORIZONTAL LOCATIONS ARE BASED ON THE NEW
YORK STATE PLANE COORDINATE SYSTEM, LONG
ISLAND ZONE, NORTH AMERICAN DATUM OF 1983
(NAD83).
2. ELEVATIONS ARE BASED ON THE NORTH AMERICAN
VERTICAL DATUM OF 1988 (NAVD88).
3. GROUNDWATER ELEVATIONS WERE CALCULATED BASED
ON DEPTH TO WATER MEASUREMENTS TAKEN DURING
A GROUNDWATER GAUGING EVENT, PRIOR TO
IMPLEMENTATION OF THE REMEDIAL ACTION, ON JUNE
21, 2021.

SOURCE

MEGA ENGINEERING & LAND SURVEYING P.C.
WELL LOCATION GRADE SHEET FOR 1940
TURNBULL AVENUE, BRONX, NEW YORK,
JUNE 14, 2021.



Title:

GROUNDWATER CONTOUR MAP

SITE MANAGEMENT PLAN
PARK LANE SENIOR
1940 TURNBULL AVENUE
BRONX, NEW YORK 10473

Prepared for:

PL SARA LLC

Compiled by: C.H.

Date: 26JUL23

Prepared by: G.M.

Scale: AS SHOWN

Project Mgr: C.H.

Project: 3475.0001Y002

File: 3475.0001Y135.02.DWG

FIGURE

5

BDS-2	12/8/2022
Depth (ft bls)	15 - 17
VOCs (mg/kg)	
Acetone	0.23 J
SVOCs (ma/kg)	
Benz(a)Anthracene	3.6 J
Benz(a)Pyrene	3.4 J
Benz(b)Fluoranthene	4.2 J
Chrysene	3.7 J
Dibenz(a,h)Anthracene	0.96 J
Indeno(1,2,3-c,d)Pyrene	2.6 J
Metals (mg/kg)	
Barium	945
Copper	314
Lead	1040
Mercury	8.2

BDS-1	11/22/2022
Depth (ft bls)	15 - 17
VOCs (mg/kg)	
Acetone	0.42 J
SVOCs (ma/kg)	
Benz(a)Anthracene	1.1 J
Benz(a)Pyrene	1.1 J
Benz(b)Fluoranthene	1.1 J
Chrysene	1.1 J
Dibenz(a,h)Anthracene	1.1 J
Indeno(1,2,3-c,d)Pyrene	1.1 J
Metals (mg/kg)	
Barium	719
Copper	700
Lead	700
Mercury	1

BDS-4	11/22/2022
Depth (ft bls)	15 - 17
VOCs (mg/kg)	
Acetone	0.42 J
SVOCs (ma/kg)	
Benz(a)Anthracene	6 J
Benz(a)Pyrene	5.9 J
Benz(b)Fluoranthene	6.4 J
Chrysene	2.5
Dibenz(a,h)Anthracene	5.7 J
Indeno(1,2,3-c,d)Pyrene	4 J
Metals (mg/kg)	
Barium	3020
Cadmium	8.9
Copper	563
Lead	5940
Zinc	4240

BDS-3	11/22/2022
Depth (ft bls)	15 - 17
VOCs (mg/kg)	
Acetone	0.44 J
SVOCs (ma/kg)	
Benz(a)Anthracene	2.8 J
Benz(a)Pyrene	2.3 J
Benz(b)Fluoranthene	3.4 J
Chrysene	2.5 J
Dibenz(a,h)Anthracene	1.2 J
Indeno(1,2,3-c,d)Pyrene	1.2 J
Metals (mg/kg)	
Barium	751
Copper	2030
Lead	743
Mercury	2.3

BDS-6	11/8/2022
Depth (ft bls)	19 - 20
VOCs (mg/kg)	
Acetone	0.41
SVOCs (ma/kg)	
Benz(a)Anthracene	19.6
Benz(a)Pyrene	1310
Benz(b)Fluoranthene	8.5
Chrysene	358
Dibenz(a,h)Anthracene	1240
Indeno(1,2,3-c,d)Pyrene	1.1
Metals (mg/kg)	
Barium	751
Copper	2030
Lead	743
Mercury	2.3

BDS-5	11/18/2022
Depth (ft bls)	15 - 17
VOCs (mg/kg)	
Acetone	0.24
SVOCs (ma/kg)	
Benz(a)Anthracene	1.8
Benz(a)Pyrene	1.5 J
Benz(b)Fluoranthene	2.1 J
Chrysene	1.8
Dibenz(a,h)Anthracene	1.1
Indeno(1,2,3-c,d)Pyrene	1.1
Metals (mg/kg)	
Barium	1090
Copper	983
Lead	4.5
Mercury	4.5

BDS-7	11/17/2022
Depth (ft bls)	15 - 17
VOCs (mg/kg)	
Acetone	0.15
SVOCs (ma/kg)	
Benz(a)Anthracene	1310
Benz(a)Pyrene	1040
Benz(b)Fluoranthene	3.3
Chrysene	3.3
Dibenz(a,h)Anthracene	3.3
Indeno(1,2,3-c,d)Pyrene	3.3
Metals (mg/kg)	
Barium	1310
Copper	1040
Lead	1040
Mercury	3.3

BDS-9	11/17/2022
Depth (ft bls)	15 - 17
VOCs (mg/kg)	
Acetone	0.092
SVOCs (ma/kg)	
Benz(a)Anthracene	0.84 J
Benz(a)Pyrene	0.84 J
Benz(b)Fluoranthene	0.84 J
Chrysene	0.84 J
Dibenz(a,h)Anthracene	0.84 J
Indeno(1,2,3-c,d)Pyrene	0.84 J
Metals (mg/kg)	
Barium	3380
Copper	296
Lead	2680
Mercury	1.5

BDS-10	11/10/2022
Depth (ft bls)	15 - 16
VOCs (mg/kg)	
Acetone	0.17
SVOCs (ma/kg)	
Benz(a)Anthracene	7.1 J
Benz(a)Pyrene	7.1 J
Benz(b)Fluoranthene	10 J
Chrysene	3.4 J
Dibenz(a,h)Anthracene	7.1 J
Indeno(1,2,3-c,d)Pyrene	0.92 J
Metals (mg/kg)	
Barium	28.4
Cadmium	1600
Copper	21
Lead	635
Mercury	7110
Zinc	9.5

BDS-14	9/29/2022
Depth (ft bls)	2 - 4
VOCs (mg/kg)	
Acetone	0.091 J
SVOCs (ma/kg)	
Benz(a)Anthracene	1.1
Benz(a)Pyrene	1.1
Benz(b)Fluoranthene	0.55 J
Chrysene	0.55 J
Dibenz(a,h)Anthracene	0.55 J
Indeno(1,2,3-c,d)Pyrene	0.55 J
Metals (mg/kg)	
Barium	1200
Copper	1090
Lead	1090
Mercury	28.1

BDS-11	9/29/2022	9/29/2022
Depth (ft bls)	2 - 4	2 - 4
VOCs (mg/kg)		
Acetone	2.4	2.4
SVOCs (ma/kg)		
Benz(a)Anthracene	4.2 J	4.3 J
Benz(a)Pyrene	3.7 J	3.6 J
Benz(b)Fluoranthene	4.6 J	4.5 J
Chrysene	4	3.6 J
Dibenz(a,h)Anthracene	0.57	0.59
Indeno(1,2,3-c,d)Pyrene	2.6 J	2.8 J

BDS-12	3/1/2023
Depth (ft bls)	2 - 4
VOCs (mg/kg)	
Acetone	2.4
SVOCs (ma/kg)	
Benz(a)Anthracene	4.3 J
Benz(a)Pyrene	3.7 J
Benz(b)Fluoranthene	5 J
Chrysene	1.8 J
Dibenz(a,h)Anthracene	4.2
Indeno(1,2,3-c,d)Pyrene	2.5 J

BDS-8	11/17/2022
Depth (ft bls)	15 - 17
VOCs (mg/kg)	
Acetone	0.2
SVOCs (ma/kg)	
Benz(a)Anthracene	1.5
Benz(a)Pyrene	1.8 J
Benz(b)Fluoranthene	1.3 J
Chrysene	1.7
Dibenz(a,h)Anthracene	1
Indeno(1,2,3-c,d)Pyrene	1
Metals (mg/kg)	
Barium	619
Copper	605
Lead	605
Mercury	2.1

BDS-13	3/1/2023
Depth (ft bls)	2 - 4
VOCs (mg/kg)	
Acetone	2.4
SVOCs (ma/kg)	
Benz(a)Anthracene	0.63 J
Benz(a)Pyrene	0.63 J
Benz(b)Fluoranthene	0.63 J
Chrysene	0.63 J
Dibenz(a,h)Anthracene	0.63 J
Indeno(1,2,3-c,d)Pyrene	0.63 J
Metals (mg/kg)	
Barium	1200
Copper	1090
Lead	1090
Mercury	28.1

SN1	8/30/2022
Depth (ft bls)	7 - 8
VOCs (mg/kg)	
Acetone	0.058
SVOCs (ma/kg)	
Benz(a)Anthracene	1.4
Benz(a)Pyrene	1.3 J
Benz(b)Fluoranthene	1.8
Chrysene	1.4
Dibenz(a,h)Anthracene	1.1
Indeno(1,2,3-c,d)Pyrene	1.1
Metals (mg/kg)	
Barium	1070
Copper	782
Lead	782
Mercury	0.84

SW1	8/30/2022
Depth (ft bls)	7 - 8
VOCs (mg/kg)	
Acetone	0.058
SVOCs (ma/kg)	
Benz(a)Anthracene	1.4
Benz(a)Pyrene	1.3 J
Benz(b)Fluoranthene	1.8
Chrysene	1.4
Dibenz(a,h)Anthracene	1.1
Indeno(1,2,3-c,d)Pyrene	1.1
Metals (mg/kg)	
Barium	1030
Copper	659
Lead	659
Mercury	1.5

SE1	8/30/2022
Depth (ft bls)	5 - 7
VOCs (mg/kg)	
Acetone	0.058
SVOCs (ma/kg)	
Benz(a)Anthracene	1.4
Benz(a)Pyrene	1.2 J
Benz(b)Fluoranthene	1.7
Chrysene	1.2
Dibenz(a,h)Anthracene	1
Indeno(1,2,3-c,d)Pyrene	1
Metals (mg/kg)	
Barium	435
Copper	446
Lead	446
Mercury	1.5

B1	8/31/2022
Depth (ft bls)	13 - 14
VOCs (mg/kg)	
Acetone	0.058
SVOCs (ma/kg)	
Benz(a)Anthracene	1.3
Benz(a)Pyrene	0.61
Benz(b)Fluoranthene	0.61
Chrysene	0.61
Dibenz(a,h)Anthracene	0.61
Indeno(1,2,3-c,d)Pyrene	0.61
Metals (mg/kg)	
Barium	1200
Copper	1440
Lead	1440
Mercury	4.4
Silver	11.7
Pesticides (mg/kg)	
P,P'-DDE	46
P,P'-DDT	54

SS1	8/30/2022
Depth (ft bls)	7 - 8
VOCs (mg/kg)	
Acetone	0.058
SVOCs (ma/kg)	
Benz(a)Anthracene	18
Benz(a)Pyrene	16 J
Benz(b)Fluoranthene	16
Chrysene	6.6
Dibenz(a,h)Anthracene	21
Indeno(1,2,3-c,d)Pyrene	2.7
Metals (mg/kg)	
Barium	8.6
Copper	8.6
Lead	8.6
Mercury	8.6

LEGEND

BDS-1 • LOCATION AND DESIGNATION OF REMEDIAL ENDPOINT SAMPLE

TRACK 2 EXCAVATION FOOTPRINT (15 FT BLS) – BUILDING EXTENT

TRACK 4 EXCAVATION AND SITE COVER SYSTEM FOOTPRINT (2 FT BLS) – PAVED

HOTSPOT EXCAVATION FOOTPRINT (VARIES BETWEEN 5 FT BLS AND 13 FT BLS)

SITE BOUNDARY

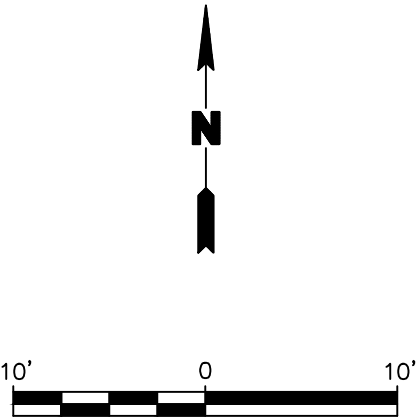
DETENTION TANK

Parameter	NYSDEC Part 375 Residential Soil Cleanup Objectives	NYSDEC Part 375 Protection of Groundwater Soil Cleanup Objectives
VOCs		
Acetone	100	0.05
SVOCs		
Benz(a)Anthracene	1	1
Benz(a)Pyrene	1	1
Benz(b)Fluoranthene	1	1.7
Chrysene	3.9	1.7
Dibenz(a,h)Anthracene	1.9	1
Indeno(1,2,3-c,d)Pyrene	0.33	1000
Metals		
Arsenic	0.5	8.2
Barium	16	16
Cadmium	400	820
Copper	43	75
Lead	270	1720
Mercury	400	450
Silver	0.81	0.73
Zinc	160	83
Pesticides		
P,P'-DDE	10000	2480
P,P'-DDT	8.9	17
P,P'-DDE	7.9	136

- NOTES
1. HORIZONTAL LOCATIONS ARE BASED ON THE NEW YORK STATE PLANE COORDINATE SYSTEM, LONG ISLAND ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
2. ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. GROUNDWATER ELEVATIONS WERE CALCULATED BASED ON DEPTH TO WATER MEASUREMENTS TAKEN DURING A GROUNDWATER GAUGING EVENT, PRIOR TO IMPLEMENTATION OF THE REMEDIAL ACTION, ON JUNE 21, 2021.

SOURCE

MEGA ENGINEERING AND LAND SURVEYING P.C. WELL LOCATION GRADE SHEET FOR 1940 TURNBULL AVENUE, BRONX, NEW YORK, JUNE 14, 2021.



Title: REMAINING SOIL SAMPLE EXCEEDANCES

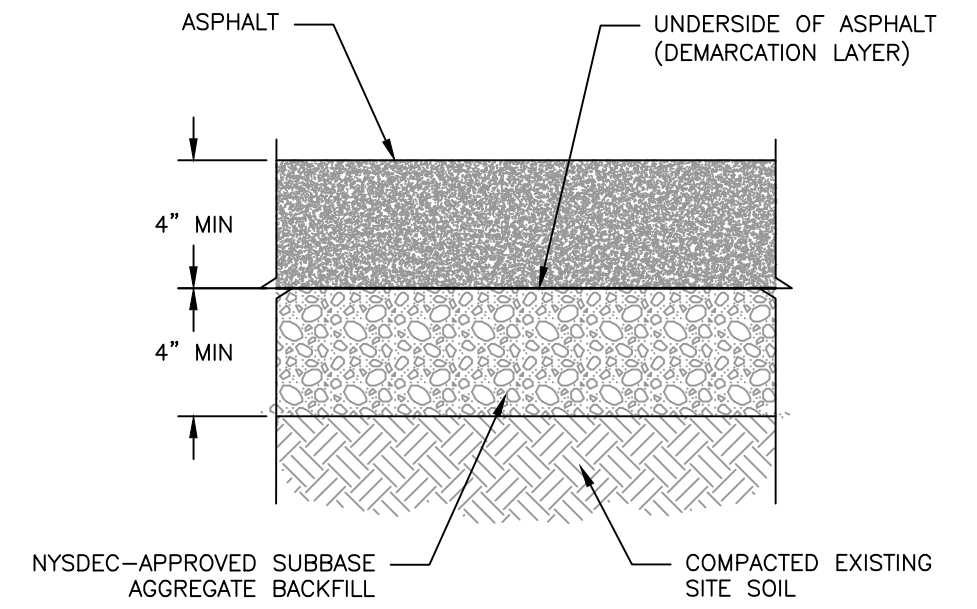
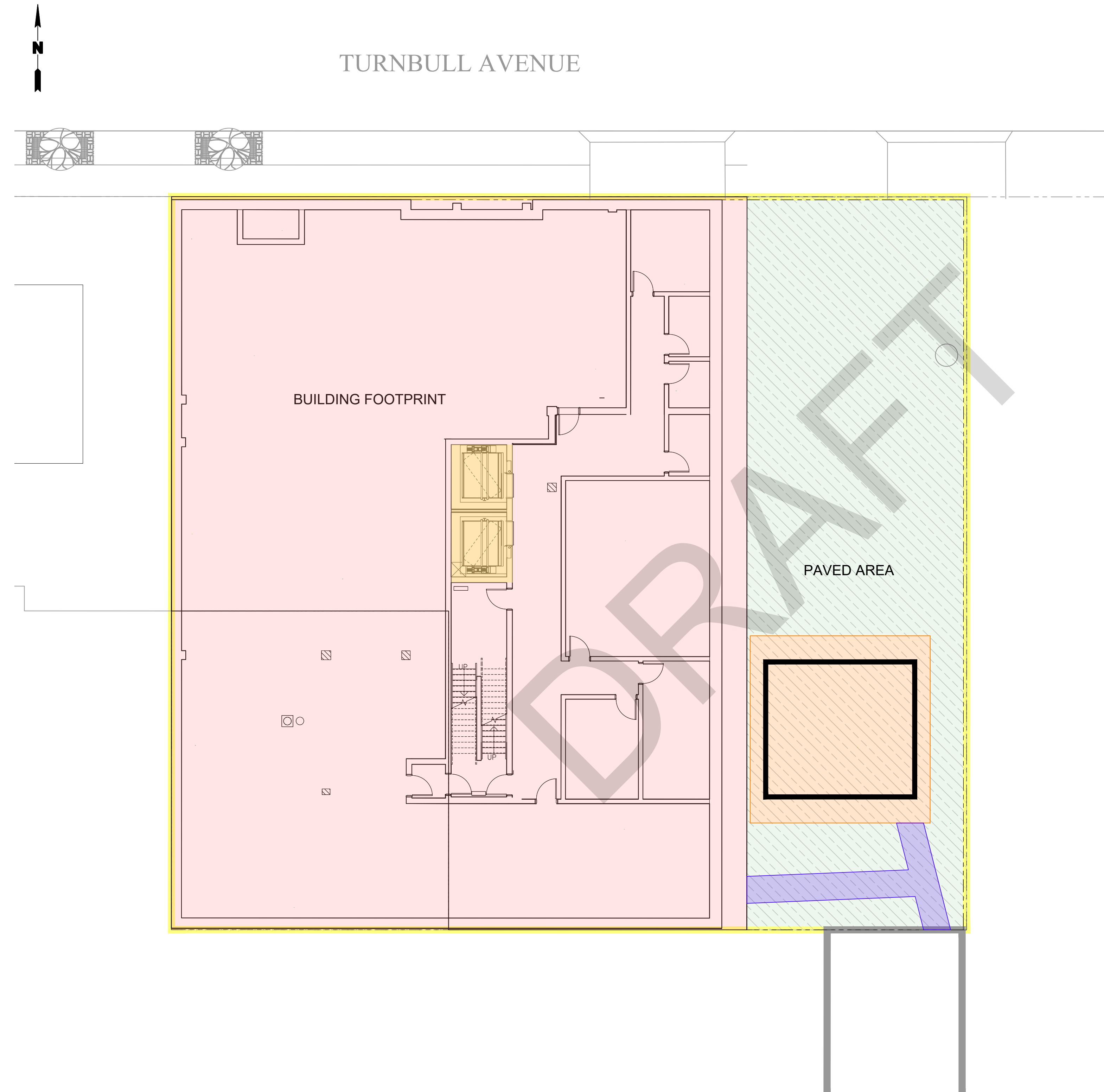
SITE MANAGEMENT PLAN
PARK LANE SENIOR
1940 TURNBULL AVENUE
BRONX, NEW YORK 10473

Prepared for: PL SARA LLC

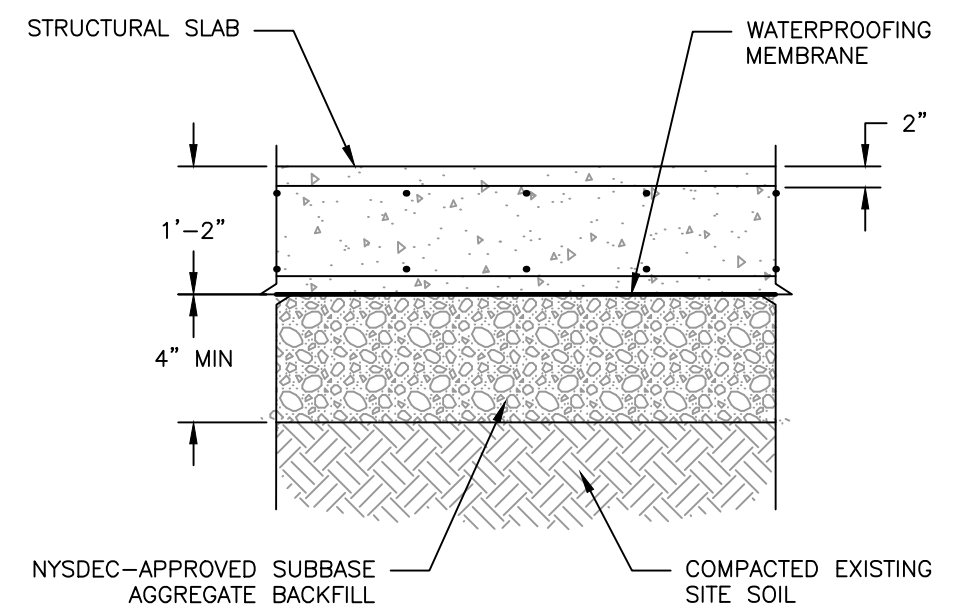
Compiled by: C.H. Date: AS SHOWN
Prepared by: G.M. Scale: AS SHOWN
Project Mgr: C.H. Project: 3475.0001Y002
File: 3475.0001Y135.03.DWG

FIGURE 6

V:\CAD\PROJECTS\3475\0001Y135\3475.0001Y135.03.DWG



**SITE COVER SYSTEM:
PAVED AREA-PARKING LOT**
SCALE: NOT TO SCALE



CONCRETE BUILDING FOUNDATION
SCALE: NOT TO SCALE

LEGEND

- TRACK 2 EXCAVATION FOOTPRINT (15 FT BLS) - BUILDING FOUNDATION
- TRACK 4 EXCAVATION FOOTPRINT (2 FT BLS) - PAVED
- HOTSPOT EXCAVATION FOOTPRINT (VARIES BETWEEN 5 FT BLS AND 13 FT BLS)
- ELEVATOR PIT FOOTPRINT (19 FT BLS)
- NYCDEP UTILITY TRENCH FOOTPRINT (8 FT BLS)
- SITE COVER SYSTEM: PAVED AREA FOOTPRINT - TRACK 4 RESTRICTED RESIDENTIAL
- SITE BOUNDARY
- DETENTION TANK



Title: **INSTITUTIONAL CONTROLS BOUNDARIES/
ENGINEERING CONTROLS LOCATION
COVER SYSTEM**
SITE MANAGEMENT PLAN
PARK LANE SENIOR
1940 TURNBULL AVENUE
BRONX, NEW YORK 10473

Prepared for: **PL SARA LLC**

Compiled by: C.H.	Date: 17APR23	FIGURE 7
Prepared by: G.M.	Scale: AS SHOWN	
Project Mgr: C.H.	Project: 3475.0001Y002	
File: 3475.0001Y135.03.DWG		

ROUX

APPENDICES

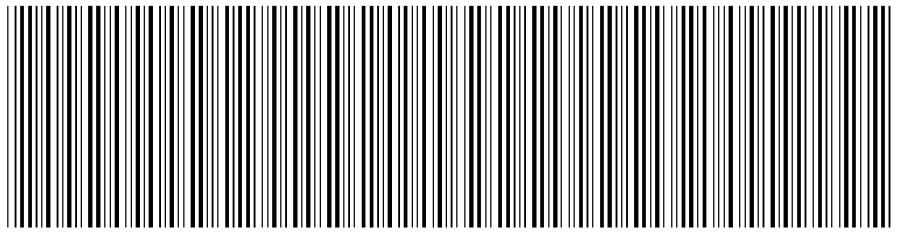
- A. Environmental Easement
- B. List of Site Contacts
- C. Excavation Work Plan
- D. Responsibilities of Owner and Remedial Party
- E. Health and Safety Plan
- F. Site Management Forms
- G. Request to Import/Reuse Fill Material Form
- H. Field Sampling Plan
- I. Quality Assurance Project Plan

Environmental Easement

DRAFT

**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.



2022041400997001001E24B7

RECORDING AND ENDORSEMENT COVER PAGE

PAGE 1 OF 8

Document ID: 2022041400997001

Document Date: 03-31-2022

Preparation Date: 04-14-2022

Document Type: DEED

Document Page Count: 6

PRESENTER:

ROYAL ABSTRACT OF NEW YORK LLC
(TITLE#915140)
125 PARK AVENUE, SUITE 1610
NEW YORK, NY 10017
212-376-0900
MBASALATAN@ROYALABSTRACT.COM

RETURN TO:

ROYAL ABSTRACT OF NEW YORK LLC
(TITLE#915140)
125 PARK AVENUE, SUITE 1610
NEW YORK, NY 10017
212-376-0900
MBASALATAN@ROYALABSTRACT.COM

PROPERTY DATA			
Borough	Block	Lot	Unit Address
BRONX	3672	30	Entire Lot 1940 TURNBULL AVENUE
Property Type: NON-RESIDENTIAL VACANT LAND			

CROSS REFERENCE DATA

CRFN _____ or DocumentID _____ or Year _____ Reel _____ Page _____ or File Number _____

PARTIES

GRANTOR/SELLER:

HP PARK LANE PRESERVATION HOUSING
DEVELOPMENT FUND
COMPANY INC., 253 WEST 35TH STREET, 3RD
FLOOR

☒ Additional Parties Listed on Continuation Page

GRANTEE/BUYER:

HP PARK LANE SENIOR HOUSING DEVELOPMENT
FUND
COMPANY, INC., HOUSING PARTNERSHIP
DEVELOPMENT, CORPORATION, 253 WEST 35TH
STREET, THIRD FLOOR

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: \$ 67.00

Affidavit Fee: \$ 0.00

Filing Fee:

\$ 250.00

NYC Real Property Transfer Tax:

\$ 0.00

NYS Real Estate Transfer Tax:

\$ 24,534.25

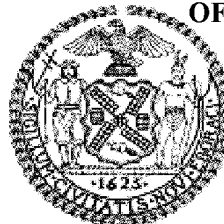
**RECORDED OR FILED IN THE OFFICE
OF THE CITY REGISTER OF THE**

CITY OF NEW YORK

Recorded/Filed 04-21-2022 11:21

City Register File No.(CRFN):

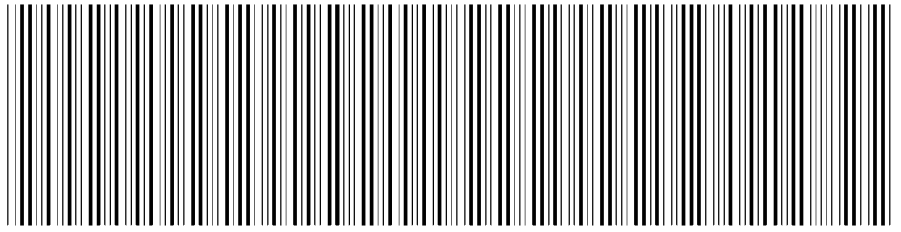
2022000166771



Annette McMill

City Register Official Signature

NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER



2022041400997001001C2637

RECORDING AND ENDORSEMENT COVER PAGE (CONTINUATION)

PAGE 2 OF 8

Document ID: 2022041400997001

Document Date: 03-31-2022

Preparation Date: 04-14-2022

Document Type: DEED

PARTIES

GRANTOR/SELLER:

PL PRESERVATION LLC
C/O ATREIDES HOLDINGS LLC, 601 LEXINGTON AVE
NEW YORK, NY 10022

PARTIES

GRANTEE/BUYER:

PL SARA LLC
C/O ASHLAND CAPITAL PARTNERS LLC, 601
LEXINGTON AVE., 52ND FLOOR
NEW YORK, NY 10022

DRAFT

BARGAIN AND SALE DEED WITH COVENANTS

as of
THIS INDENTURE, made ^{as of} the 31st day of March, 2022

BETWEEN

HP Park Lane Preservation Housing Development Fund Company, Inc., a New York not-for profit corporation, an entity organized pursuant to Article XI of the Private Housing Finance Law (the "**Grantor HDFC**"), with an address at 253 West 35th Street, 3rd Floor, New York, New York 10001, and **PL Preservation LLC**, a New York limited liability company (the "**Grantor LLC**"), having an address at c/o Asland Capital Partners LLC, 601 Lexington Ave., 52nd Floor, New York, New York 10022, collectively, the party of the first part, and

HP Park Lane Senior Housing Development Fund Company, Inc., a New York not-for profit corporation, an entity organized pursuant to Article XI of the Private Housing Finance Law (the "**Grantee HDFC**"), with an address at 253 West 35th Street, 3rd Floor, New York, New York 10001, and **PL SARA LLC**, a New York limited liability company (the "**Grantee LLC**"), having an address at c/o Asland Capital Partners LLC, 601 Lexington Ave., 52nd Floor, New York, New York 10022, collectively, the party of the second part,

WITNESSETH, that the party of the first part, in consideration of ten dollars (\$10) and other valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the County of the Bronx, City and State of New York and being more particularly described on Schedule A annexed hereto and made a part hereof;

TOGETHER with all right, title and interest, if any, of the party of the first part, in and to any streets and roads abutting the above-described premises to the center lines thereof;

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises;

TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever.

AND the party of the first part covenants that the party of the first part has not done or suffered anything whereby the said premises have been encumbered in any way whatever, except as aforesaid.

AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

The word “party” shall be construed as if it read “parties” whenever the sense of this indenture so requires.

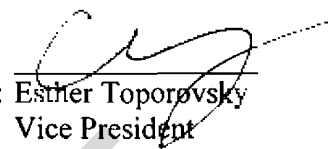
[The remainder of this page was intentionally left blank.]

DRAFT

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written.

GRANTOR HDFC

**HP PARK LANE PRESERVATION
HOUSING DEVELOPMENT FUND
COMPANY, INC.,** a New York not-for-profit corporation

By: 
Name: Esther Toporovsky
Title: Vice President

STATE OF NEW YORK)

)

COUNTY OF NEW YORK)

On the 29th day of March, in the year 2022 before me, the undersigned, personally appeared Esther Toporovsky, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her capacity, and that by her signature on the instrument, the individual, or the person, or entity upon behalf of which the individual acted, executed the instrument.

Notary Public



My Commission Expires 4/19/2022

MILEIKA BETHANCOURT
Notary Public, State of New York
No. 01BE6220876
Qualified in Kings County
Commission Expires April 19, 2022

[The remainder of this page was intentionally left blank.]

GRANTOR LLC

PL PRESERVATION LLC, a New York
limited liability company

By:

Name: James H. Simmons III

Title: Authorized Signatory

STATE OF NEW YORK)

)

COUNTY OF New York)

On the 21st day of March, in the year 2022 before me, the undersigned, personally appeared James H. Simmons III, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person, or entity upon behalf of which the individual acted, executed the instrument.

Notary Public

My Commission Expires

[Signature]

Schedule A

Legal Description

ALL THAT CERTAIN plot, piece or parcel of land, situate, lying and being in the Borough and County of the Bronx, City and State of New York, bounded and described as follows:

BEGINNING at a point on the southerly side of Turnbull Avenue distant 106.75 feet easterly from the intersection of the southerly side of Turnbull Avenue and the Easterly side of White Plains Road;

RUNNING THENCE southerly along a line forming an angle on the East with the southerly side of Turnbull Avenue of 90 Degrees 0 Minutes 9 Seconds and parallel with White Plains Road a distance of 108.50 feet to a point;

THENCE easterly along a line forming an angle on the North with the last described course of 89 Degrees 59 Minutes 51 Seconds and parallel with Turnbull Avenue a distance of 117.75 feet to a point;

THENCE northerly along a line forming an angle on the West with the last described course of 90 Degrees 0 Minutes 9 Seconds and parallel with White Plains Road a distance of 108.50 feet to the southerly side of Turnbull Avenue;

THENCE westerly along the southerly side of Turnbull Avenue a distance of 117.75 feet to the point or place of BEGINNING.

For Information Only: Said premises are known as 1940 Turnbull Avenue, Bronx, NY and designated as Block 3672 Lot 30 as shown on the Tax Map of the City of New York, County of the Bronx.

DEED

HP Park Lane Preservation Housing Development Fund Company, Inc., and PL Preservation LLC

To

HP Park Lane Senior Housing Development Fund Company, Inc. and PL SARA LLC

Premises: 1940 Turnbull Avenue

Block: 3672

Lot: 30

County: Bronx

Record and Return to:

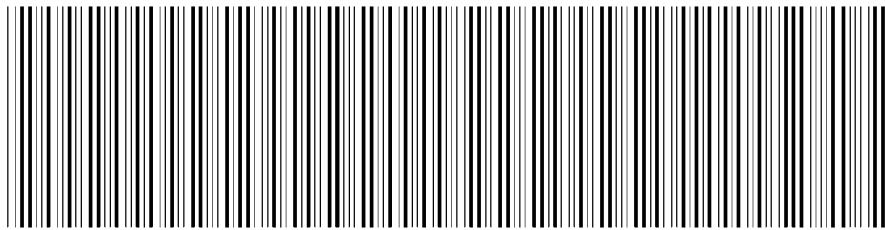
David Goldban

Starrett Companies

70 East 55th Street, 7th Floor

New York, NY 10022

NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER



2022041400997001001SEA36

SUPPORTING DOCUMENT COVER PAGE

PAGE 1 OF 1

Document ID: 2022041400997001

Document Date: 03-31-2022

Preparation Date: 04-14-2022

Document Type: DEED

ASSOCIATED TAX FORM ID: 2022032100053

SUPPORTING DOCUMENTS SUBMITTED:

RP - 5217 REAL PROPERTY TRANSFER REPORT

Page Count

6

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FOR CITY USE ONLY

C1. County Code C2. Date Deed Recorded / /
 Month Day Year

C3. Book OR C4. Page
 C5. CRFN



REAL PROPERTY TRANSFER REPORT

STATE OF NEW YORK
 STATE BOARD OF REAL PROPERTY SERVICES

RP - 5217NYC

PROPERTY INFORMATION

1. Property Location 1940 TURNBULL AVENUE BRONX 10473
 STREET NUMBER STREET NAME BOROUGH ZIP CODE

2. Buyer Name HP PARK LANE SENIOR HOUSING DEVELOPMENT FUND
 LAST NAME / COMPANY FIRST NAME

PL SARA LLC
 LAST NAME / COMPANY FIRST NAME

3. Tax Billing Address Indicate where future Tax Bills are to be sent
 if other than buyer address (at bottom of form)
 LAST NAME / COMPANY FIRST NAME

STREET NUMBER AND STREET NAME CITY OR TOWN STATE ZIP CODE

4. Indicate the number of Assessment Roll parcels transferred on the deed 1 # of Parcels OR ☐ Part of a Parcel!

4A. Planning Board Approval - N/A for NYC
 4B. Agricultural District Notice - N/A for NYC

5. Deed Property Size FRONT FEET X DEPTH OR ACRES
 Check the boxes below as they apply:

6. Ownership Type is Condominium ☐
 7. New Construction on Vacant Land ☐

8. Seller Name HP PARK LANE PRESERVATION HOUSING DEVELOPMENT FUND
 LAST NAME / COMPANY FIRST NAME

PL PRESERVATION LLC
 LAST NAME / COMPANY FIRST NAME

9. Check the box below which most accurately describes the use of the property at the time of sale:

A ☐ One Family Residential C ☐ Residential Vacant Land E ☐ Commercial G ☐ Entertainment / Amusement I ☐ Industrial
 B ☐ 2 or 3 Family Residential D ☒ Non-Residential Vacant Land F ☐ Apartment H ☐ Community Service J ☐ Public Service

SALE INFORMATION

10. Sale Contract Date 3 / 1 / 2022
 Month Day Year

11. Date of Sale / Transfer 3 / 31 / 2022
 Month Day Year

12. Full Sale Price \$ 3 7 5 0 0 0 0
 (Full Sale Price is the total amount paid for the property including personal property.
 This payment may be in the form of cash, other property or goods, or the assumption of
 mortgages or other obligations.) Please round to the nearest whole dollar amount.

13. Indicate the value of personal property included in the sale

14. Check one or more of these conditions as applicable to transfer:

- A ☐ Sale Between Relatives or Former Relatives
 B ☐ Sale Between Related Companies or Partners in Business
 C ☐ One of the Buyers is also a Seller
 D ☐ Buyer or Seller is Government Agency or Lending Institution
 E ☐ Deed Type not Warranty or Bargain and Sale (Specify Below)
 F ☐ Sale of Fractional or Less than Fee Interest (Specify Below)
 G ☐ Significant Change in Property Between Taxable Status and Sale Dates
 H ☐ Sale of Business is Included in Sale Price
 I ☐ Other Unusual Factors Affecting Sale Price (Specify Below)
 J ☒ None

ASSESSMENT INFORMATION - Data should reflect the latest Final Assessment Roll and Tax Bill

15. Building Class G 7 16. Total Assessed Value (of all parcels in transfer) 9 9 4 5 0

17. Borough, Block and Lot / Roll Identifier(s) (If more than three, attach sheet with additional Identifier(s))

BRONX 3672 30

CERTIFICATION

I certify that all of the items of information entered on this form are true and correct (to the best of my knowledge and belief) and understand that the making of any willful false statement of material fact herein will subject me to the provisions of the penal law relative to the making and filing of false instruments.

BUYER**BUYER'S ATTORNEY**

BUYER SIGNATURE
COMPANY, INC., HOUSING PARTNERSHIP DEVELOPMENT
CORPORATION, 253 WEST 35TH STREET, THIRD FLOOR

LAST NAME FIRST NAME

STREET NUMBER STREET NAME (AFTER SALE)

AREA CODE TELEPHONE NUMBER

NEW YORK

NY

10001

SELLER

CITY OR TOWN

STATE

ZIP CODE

SELLER SIGNATURE

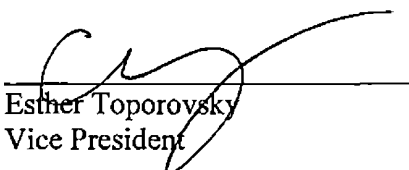
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DRAFT

2022032100053201

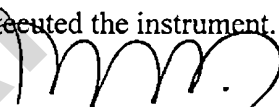
SELLER

**HP PARK LANE PRESERVATION DEVELOPMENT FUND
COMPANY, INC., a New York not-for-profit corporation**

By: 
Name: Esther Toporovsky
Title: Vice President

STATE OF NEW YORK }
 }
COUNTY OF NEW YORK } ss:

On this 29th day of March, 2022, before me, the undersigned, personally appeared **Esther Toporovsky**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her capacity and that by her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.



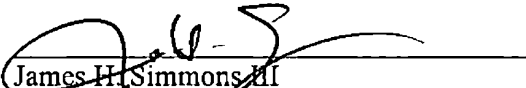
Notary Public
Commission expires: 4/19/2022

MILEIKA BETHANCOURT
Notary Public, State of New York
No. 01BE6220876
Qualified in Kings County
Commission Expires April 19, 2022

SELLER

PL PRESERVATION LLC,
a New York limited liability company

By:


James H. Simmons III
Authorized Signatory

STATE OF New York }
COUNTY OF New York }

ss:

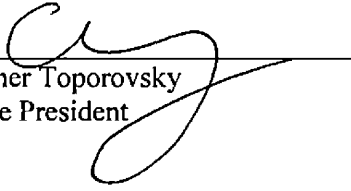
On this 21st day of March, 2022, before me, the undersigned, personally appeared **James H. Simmons III**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she/he/they executed the same in her/his/their capacity and that by her/his/their signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.


Notary Public
Commission expires: 

JAMES A. ALLEN
Notary Public, State of New York
No. 02AL6410856
Qualified in New York County
Commission Expires Nov. 02, 2024

BUYER

**HP PARK LANE SENIOR HOUSING DEVELOPMENT FUND
COMPANY, INC., a New York not-for-profit corporation**

By: 
Name: Esther Toporovsky
Title: Vice President

STATE OF NEW YORK)
)SS.:
COUNTY OF New York)

On this 22nd day of March, 2022, before me, the undersigned, personally appeared **Esther Toporovsky**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she/he/they executed the same in her/his/their capacity and that by her/his/their signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.



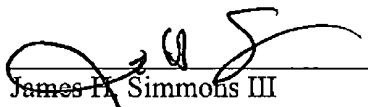
Notary Public
Commission expires:

MILEIKA BETHANCOURT
Notary Public, State of New York
No. 01BE6220876
Qualified in Kings County
Commission Expires April 19, 2022

BUYER

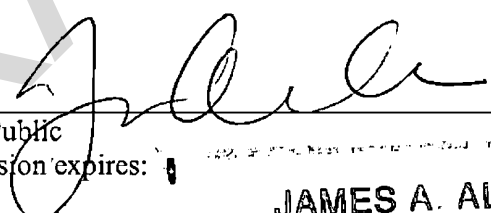
PL SARA LLC, a New York limited liability company


By: **PL SARA MANAGER LLC**,
a New York limited liability company,
its Managing Member

By: 
Name: ~~James H. Simmons III~~
Title: Authorized Signatory

STATE OF NEW YORK)
)SS.:
COUNTY OF *New York*)

On this 2nd day of March, 2022, before me, the undersigned, personally appeared **James H. Simmons III**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she/he/they executed the same in her/his/their capacity and that by her/his/their signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.



Notary Public
Commission expires: 

JAMES A. ALLEN
Notary Public, State of New York
No. 02AL6410856
Qualified in New York County
Commission Expires Nov. 02, 2024

**HP PARK LANE SENIOR HOUSING DEVELOPMENT FUND COMPANY, INC.
CERTIFICATE OF OFFICER**

Theresa Omansky, being the Secretary of HP Park Lane Senior Housing Development Fund Company, Inc. ("HDFC") hereby certifies as follows:

1. Attached as Exhibit A is a true copy of the Certificate of Incorporation of HDFC filed with the Secretary of State of the State of New York ("DOS") on November 15, 2021. The Certificate of Incorporation has not been further amended.
2. Attached as Exhibit B is a true, accurate and complete set of HDFC's By-Laws in effect on the date hereof.
3. Attached as Exhibit C is a true copy of the resolution adopted by HDFC's Board of Directors relating to the Brownfield Cleanup Program environmental easement addressed therein, which resolution remains in full force and effect on the date hereof.
4. The following person has been duly appointed to the office set forth opposite his/her name and holds said office.

NAME

OFFICE

Jamie Smarr

President

Shelia Martin

Vice President

Esther Toporovsky

Vice President

Adam Gold

Treasurer


Theresa Omansky

Secretary

[Signature Page Follows]

IN WITNESS WHEREOF, the undersigned has caused this certificate to be executed on behalf of the HDFC as of this 18th day of July, 2022.

**HP PARK LANE SENIOR HOUSING
DEVELOPMENT FUND COMPANY, INC.**

By: 
Name: Theresa Omansky
Title: Secretary

DRAFT

Exhibit A

(See attached)

DRAFT

NEW YORK STATE DEPARTMENT OF STATE
DIVISION OF CORPORATIONS, STATE RECORDS AND UNIFORM COMMERCIAL CODE
FILING RECEIPT

ENTITY NAME : HP PARK LANE SENIOR HOUSING DEVELOPMENT FUND
COMPANY, INC.
DOCUMENT TYPE : CERTIFICATE OF INCORPORATION
ENTITY TYPE : DOMESTIC NOT-FOR-PROFIT CORPORATION (HOUSING
DEVELOPMENT FUND COMPANY) (ARTICLE XI)

DOS ID : 6328213
FILE DATE : 11/15/2021
FILE NUMBER : 211115003078
TRANSACTION NUMBER : 202111150002397-366332
EXISTENCE DATE : 11/15/2021
DURATION/DISSOLUTION : PERPETUAL
COUNTY : NEW YORK



SERVICE OF PROCESS ADDRESS : THE CORPORATION
253 WEST 35TH STREET 3RD FLOOR,
NEW YORK, NY, 10001, USA
FILER : HOUSING PARTNERSHIP DEVELOPMENT CORPORATION
ATTN CRYSTAL KAY GENERAL COUNSEL, 253 WEST 35TH
STREET 3RD FLOOR
NEW YORK, NY, 10001, USA
SERVICE COMPANY : UNITED CORPORATE SERVICES, INC.
SERVICE COMPANY ACCOUNT : 37
CUSTOMER REFERENCE : HPPAR62053

You may verify this document online at : <http://ecorp.dos.ny.gov>

AUTHENTICATION NUMBER : 100000639043

TOTAL FEES:	\$110.00	TOTAL PAYMENTS RECEIVED:	\$110.00
FILING FEE:	\$75.00	CASH:	\$0.00
CERTIFICATE OF STATUS:	\$0.00	CHECK/MONEY ORDER:	\$0.00
CERTIFIED COPY:	\$10.00	CREDIT CARD:	\$0.00
COPY REQUEST:	\$0.00	DRAWDOWN ACCOUNT:	\$110.00
EXPEDITED HANDLING:	\$25.00	REFUND DUE:	\$0.00

**STATE OF NEW YORK
DEPARTMENT OF STATE**

I hereby certify that the annexed copy for HP PARK LANE SENIOR HOUSING DEVELOPMENT FUND COMPANY, INC., File Number 211115003078 has been compared with the original document in the custody of the Secretary of State and that the same is true copy of said original.



WITNESS my hand and official seal of the
Department of State, at the City of Albany,
on November 15, 2021.

Brendan C. Hughes

Brendan C. Hughes
Executive Deputy Secretary of State

CERTIFICATE OF INCORPORATION

OF

HP PARK LANE SENIOR

HOUSING DEVELOPMENT FUND COMPANY, INC.

PURSUANT TO ARTICLE XI OF THE PRIVATE HOUSING FINANCE LAW AND

SECTION 402 OF THE NOT-FOR-PROFIT CORPORATION LAW

OF THE STATE OF NEW YORK

THE UNDERSIGNED, for the purpose of forming a housing development fund corporation pursuant to Article XI of the Private Housing Finance Law and Article 4 of the Not-For-Profit Corporation Law, hereby certifies:

1. Name. The name of the corporation is HP Park Lane Senior Housing Development Fund Company, Inc. ("Corporation").
2. Definitions. As used herein, the following terms shall have the meanings set forth below:
 - a. "AMI" shall mean, at the option of the Supervising Agency, either (i) the area median income for the primary metropolitan statistical area as determined by HUD from time to time for a family of four, as adjusted for family size, or (ii) two hundred percent of the income limit established from time to time by HUD pursuant to Section 3(b)(2) of the United States Housing Act of 1937, as amended, for very low income families (those at or below fifty percent of area median income) receiving housing assistance payments in New York City, as adjusted for household size. If HUD ceases to establish either such figure, the Supervising Agency shall establish an alternative method of determining AMI.
 - b. "Annual Income" shall mean the anticipated total income from all sources to be received by the household head and spouse and by each additional member of the household, including all net income derived from assets, for the twelve month period following the date of initial determination of income. The definitions and descriptions of income set forth in HUD regulations contained in 24 CFR 5.609 or any successor regulations shall apply for the purpose of determining Annual Income.
 - c. "Certificate" shall mean this Certificate of Incorporation.
 - d. "Corporation" shall mean HP Park Lane Senior Housing Development Fund Company, Inc.
 - e. "HUD" shall mean the United States Department of Housing and Urban Development or its successors.
 - f. "NPCL" shall mean the Not-For-Profit Corporation Law.

- g. "Person Of Low Income" shall mean a household which, on the date of its initial occupancy, has an Annual Income that does not exceed the lesser of 165% of AMI or such lower income as may be required at any time pursuant to an agreement with the Supervising Agency or with any other governmental agency or instrumentality.
 - h. "PHFL" shall mean the Private Housing Finance Law.
 - i. "Supervising Agency" shall mean the Department of Housing Preservation and Development of the City of New York or its successor.
- 3. Duration. The duration of the Corporation shall be perpetual.
- 4. Type And Purpose. The Corporation is a corporation as defined in NPCL §102(a)(5). The Corporation is a charitable not-for-profit corporation organized pursuant to NPCL §201 and PHFL §573 exclusively for the purpose of developing and operating a housing project for Persons Of Low Income. The Corporation is organized exclusively for such charitable purpose in accordance with §501(c)(3) of the Internal Revenue Code of 1986, as amended ("IRC"), in order to: provide relief for the poor, the distressed, and the underprivileged; lessen the burdens of government; lessen neighborhood tensions; eliminate prejudice and discrimination; and combat community deterioration. The Corporation shall not carry on any activities not permitted to be carried on by a corporation exempt from federal income tax under IRC §501(c)(3) or corresponding provisions of any subsequent federal tax laws.
- 5. Powers.
 - a. Powers. The Corporation is empowered to do and perform all lawful acts necessary to accomplish the corporate purpose in accordance with this Certificate, the PHFL, and the NPCL, including, but not limited to, (i) purchasing or leasing the real property identified in this Certificate and rehabilitating any multiple dwelling thereon or, with the consent of the Supervising Agency, constructing one or more new multiple dwellings thereon, (ii) the execution of such instruments and undertakings as may be required by any governmental body providing financial assistance to the Corporation.
 - b. Rentals. Except as may be specifically authorized in writing by the Supervising Agency:
 - 1. The Corporation shall not cause or permit any vacant dwelling unit to be rented to, or occupied by, anyone other than a Person Of Low Income.
 - 2. Except as may be otherwise required by law, the Corporation shall not consent to or cause or permit the sublease of any dwelling unit or the assignment of any lease to anyone other than a Person Of Low Income.
 - 3. Notwithstanding any provision of this Section 5.b to the contrary, up to one superintendent's unit in any building may be rented to and occupied by a superintendent for such building who is not a Person Of Low Income.
 - c. Consent. The Corporation shall not engage in any act or activity requiring the

consent or approval of any governmental entity or official without such consent or approval first being obtained.

6. Office. The office of the Corporation is to be located in the County of New York in the City and State of New York.
7. Books And Records. Pursuant to NPCL §621, the books and records of the Corporation shall be kept at an office located at 253 West 35th Street, 3rd Floor, New York, New York 10001.
8. Project. The housing project will be located on Block 3672, Lot 30 in the borough of the Bronx, City and State of New York.
9. Non-Profit. The Corporation is not organized for pecuniary profit or financial gain. All income and earnings of the Corporation shall be used exclusively for corporate purposes, and no part of the net income or net earnings of the Corporation shall inure to the benefit or profit of any private individual, firm, corporation, or association, including, but not limited to, any member, director, trustee, officer, or employee of the Corporation, or any other individual, firm, association, or entity. Nothing herein shall prohibit the Corporation from paying reasonable compensation to salaried employees.
10. Seed Loans. If the Corporation receives a temporary loan or advance from the housing development fund or a municipal housing development fund, as established by or pursuant to Article XI of the PHFL:
 - a. The Corporation shall be authorized to enter into an agreement with the Supervising Agency providing for regulation with respect to rents, profits, dividends, and disposition of the property or franchises; and
 - b. The Supervising Agency shall have the power, if, in its discretion, it determines either that any such temporary loan or advance is in jeopardy of not being repaid, or that the proposed housing project for which such temporary loan or advance was made is in jeopardy of not being constructed, to appoint to the board of directors of the Corporation a number of new directors, which number shall be sufficient to constitute a majority of such board, notwithstanding any other provision of this Certificate or of any other provision of law.
11. Sale of Assets. The Corporation shall not sell, transfer, or assign or contract to sell, transfer, or assign all or substantially all of its assets, or any of its real property, without the prior written approval of the Supervising Agency.
 - a. Proceeds. The Corporation shall either deposit the proceeds of any such sale with the Supervising Agency or shall devote such proceeds to a housing project for Persons Of Low Income in a manner approved in writing by the Supervising Agency.
 - b. Leasing. The Corporation shall not lease or contract to lease any of its real property, other than a lease for a term not exceeding two (2) years of an individual dwelling unit or an individual commercial unit, without the prior written approval of the Supervising Agency.

12. Enforcement. If the Supervising Agency determines, in its discretion, that the Corporation has violated any of the provisions of this Certificate or has defaulted on any agreement between the Corporation and the Supervising Agency or another governmental entity, the Supervising Agency may appoint to the board of directors of the Corporation a number of new directors, which number shall be sufficient to constitute a majority of such board, notwithstanding any other provision of this Certificate, the by-laws of the Corporation or any agreement entered into by the Corporation.
13. Certain Prohibited Actions. The Corporation shall not carry on propaganda or otherwise attempt to influence legislation, or participate in, or intervene in (including publishing or distributing statements) any political campaign on behalf of or in opposition to any candidate for public office, or undertake or carry on any of the activities specified in NPCL §404.
14. Amendment
- a. This Certificate shall not be altered or amended without (i) the prior written approval of the Supervising Agency, and (ii) the prior written approval of any governmental entity which holds a mortgage or other lien on any assets of the Corporation or to which any indebtedness of the Corporation is then outstanding or a certification by the board of directors of the Corporation that there is no such mortgage, lien, or indebtedness.
 - b. Such consents or certifications shall be attached to the certificate of amendment, or any other document seeking to effectuate the amendment or alteration of this Certificate which the Corporation files with the Department of State.
15. Dissolution
- a. The Corporation shall not be dissolved or reconstituted without (i) the prior written approval of the Supervising Agency, and (ii) the prior written approval of any governmental entity which holds a mortgage or other lien on any assets of the Corporation or to which any indebtedness of the Corporation is then outstanding or a certification by the board of directors of the Corporation that there is no such mortgage, lien, or indebtedness.
 - b. Such consents or certifications shall be attached to the certificate of dissolution, or any other document seeking to effectuate the dissolution or reconstitution of the Corporation which the Corporation files with the Department of State.
 - c. Upon the dissolution of the Corporation, all property and assets of the Corporation shall be distributed in accordance with a plan of dissolution adopted and authorized as provided in this Section 15 pursuant to an order of the Supreme Court in a proceeding pursuant to NPCL §1008. Any such plan of dissolution shall:
 - 1. require compliance with the provisions set forth in Section 15.a and Section 15.b;
 - 2. prohibit receipt of any of the property or assets of the Corporation, other than in payment of a debt or obligation, by (i) any member, director, trustee, officer, or employee of the Corporation, (ii) any organization created or

operated for profit, or (iii) any individual;

3. apply all property and assets to payment of the debts and obligations of the Corporation; and
 4. distribute the balance of the property or assets, if any, to the Supervising Agency or to one or more housing development fund companies organized pursuant to NPCL §201 and PHFL §573 qualifying under IRC §501(c)(3) and engaged in activities substantially similar to those of the Corporation.
16. Notice. A copy of this Certificate and a copy of the filing receipt issued by the Department of State, Division of Corporations, and a statement of the blocks and lots of real property owned and/or controlled by the Corporation, shall be delivered to the General Counsel of the Supervising Agency when such filing receipt is received, or, if no such real property is owned by the Corporation at the time of filing, upon the acquisition of any such real property by the Corporation.
17. Service of Process. The Secretary of State is hereby designated by the Corporation as agent upon whom process against it may be served. The post office address of the Corporation to which the Secretary of State shall mail a copy of any process against the Corporation served upon him or her is 253 West 35th Street, 3rd Floor, New York, New York 10001.
18. Directors.
- a. Number. The number of directors of the Corporation shall be set in the by-laws of the Corporation but shall be not less than three. Each director shall be at least eighteen years of age. The names and residences of the directors of the Corporation until the first annual meeting are:

<u>Name</u>	<u>Address</u>
Daniel E. Martin	560 McKinley Terrace Centerport, New York 11721
Shelia S. Martin	257 Prospect Place Brooklyn, New York 11238
Esther Toporovsky	130 Saint Edwards Street, #8D Brooklyn, New York 11201
 - b. Capacity. Each of the Incorporators whose signatures appear below is at least eighteen (18) years of age.
 - c. Qualifications. The directors of the Corporation shall serve without compensation and shall, except as provided in Section 12, at all times, be limited to individuals who are either members of the board of directors NYC Partnership Housing Development Fund Company, Inc. ("NYCP"), or who have been approved pursuant to a resolution of the board of directors of NYCP. In the event that (i) a director of

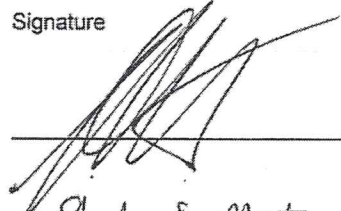
the Corporation ceases to be a member of the board of directors of NYCP, or does not receive the approval of the board of directors of NYCP to continue to serve as a director of the Corporation, (ii) a director of the Corporation ceases to have the approval of the board of the directors of NYCP to serve as a director of the Corporation or (iii) the aforesaid approval is withdrawn, such shall constitute automatic resignation as a director of the Corporation. In the event that NYCP dissolves or ceases to have written recognition of exemption from income tax pursuant to Section 501(c)(3) of the IRC, or any successor statute from the United States Internal Revenue Service or any successor agency, the directors of the Corporation shall, at all times, be limited to individuals who have been appointed or elected by a comparable entity which has such exemption and which was formed for purposes that include providing housing accommodations for Persons of Low Income.

19. By-Laws. The board of directors of the Corporation may adopt by-laws of the Corporation at any regular meeting or any special meeting called for that purpose, provided that such by-laws are consistent with the provisions of this Certificate and any agreement between the Corporation and the Supervising Agency or any other governmental entity.
20. Approvals and Consents. Annexed hereto or endorsed hereon are copies of all approvals and consents required by PHFL §573(5) for filing of this Certificate by the Secretary of State.

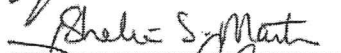
Print Name and Address

Signature

Daniel E. Martin
560 McKinley Terrace
Centerport, New York 11721



Shelia S. Martin
257 Prospect Place
Brooklyn, New York 11238



Daniel Marks Cohen
1 Morningside Drive, #315
New York, NY 10025



DRAFT

Uniform Acknowledgment

State of New York)
) ss.:
County of New York)

On the 17th day of December in the year 2019 before me, the undersigned, a Notary Public in and for said State, personally appeared Daniel E. Martin, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that s(he) executed the same in her(his) capacity, and that by her(his) signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.



Notary Public

MILEIKA BETHANCOURT
Notary Public, State of New York
No. 01BE6220876
Qualified in Kings County
Commission Expires April 19, 2022

State of New York)
) ss.:
County of New York)

On the 17th day of December in the year 2019 before me, the undersigned, a Notary Public in and for said State, personally appeared Shelia S. Martin, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that s(he) executed the same in her(his) capacity, and that by her(his) signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

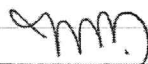


Notary Public

MILEIKA BETHANCOURT
Notary Public, State of New York
No. 01BE6220876
Qualified in Kings County
Commission Expires April 19, 2022

State of New York)
) ss.:
County of New York)

On the 17th day of December in the year 2019 before me, the undersigned, a Notary Public in and for said State, personally appeared Daniel Marks Cohen, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that s(he) executed the same in her(his) capacity, and that by her(his) signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.



Notary Public

MILEIKA BETHANCOURT
Notary Public, State of New York
No. 01BE6220876
Qualified in Kings County
Commission Expires April 19, 2022





LOUISE CARROLL
Commissioner
ELIZABETH OAKLEY
Deputy Commissioner
BRENDAN McBRIDE
Associate Commissioner
EMILY LEHMAN
Assistant Commissioner

Office of Development
Division of Special Needs Housing
100 Gold Street
New York, N.Y. 10038

CONSENT OF THE DEPARTMENT OF HOUSING
PRESERVATION AND DEVELOPMENT

I, Emily Lehman, an Assistant Commissioner of the Department of Housing Preservation and Development of the City of New York, in reliance on the representations of the Incorporators, do this **15th day of November, 2021** hereby approve the foregoing ***Certificate of Incorporation of HP Park Lane Senior Housing Development Fund Company, Inc.*** for the purposes of, and as provided by, Article XI of the Private Housing Finance Law of the State of New York, and pursuant to said Article XI, do hereby certify that I consent to the filing of said ***Certificate of Incorporation*** with the Secretary of State of the State of New York.


Emily Lehman

 Printed on paper containing 30% post-consumer material.

Filed with the NYS Department of State on 11/15/2021
Filing Number: 211115003078 DOS ID: 6328213

CERTIFICATE OF INCORPORATION
OF
HP PARK LANE SENIOR
HOUSING DEVELOPMENT FUND COMPANY, INC.

PURSUANT TO
ARTICLE XI OF THE NEW YORK STATE PRIVATE HOUSING FINANCE LAW
AND
SECTION 402 OF THE NEW YORK STATE NOT-FOR-PROFIT
CORPORATION LAW

DRAFT

Housing Partnership Development Corporation
253 West 35th Street, 3rd Floor
New York, New York 10001
Attn: Crystal Kay, General Counsel

UNI-37

DRAWDOWN

Exhibit B

(See attached)

DRAFT

HP PARK LANE SENIOR HOUSING DEVELOPMENT FUND COMPANY, INC.

BY-LAWS

(NOT-FOR-PROFIT CORPORATION)

ARTICLE I

OFFICES

Section 1. The principal office of HP Park Lane Senior Housing Development Fund Company, Inc. (the "Corporation") shall be located at c/o NYC Partnership Housing Development Fund Company, Inc., 253 West 35th Street, 3rd Floor, New York, New York 10001.

Section 2. The Corporation may also have such offices at such other places within or without the State of New York as the board of directors may from time to time determine or the business of the Corporation may require.

ARTICLE II

MEMBERS

Section 1. The sole member of the Corporation shall be NYC Partnership Housing Development Fund Company, Inc. (the "Member").

Section 2. (A) The Annual Meeting of the Member of the Corporation shall be held on such date or dates as shall be fixed from time to time by the Board of Directors of the Corporation. The first Annual Meeting shall be held on a date within twelve (12) months after the formation of the Corporation. Each successive Annual Meeting shall be held on a date not more than twelve (12) months following the preceding Annual Meeting. Special Meetings of the Member may be held on such date or dates as may be fixed by the Board of Directors of the Corporation from time to time and by the Member on such date or dates as shall be permitted by law.

(B) Any Annual or Special Meeting of the Member may be held at such place within or without the State as the Board of Directors of the Corporation may from time to time fix. In the event the Board of Directors shall fail to fix such place or time, or in the event the Member is entitled to call or convene a Special Meeting in accordance with law, then, in such event, such meeting shall be held at the principal office of the Corporation.

(C) Annual or Special Meetings of the Member may be called by the Board of Directors or by any officer of the Corporation instructed to do so by the Board of Directors, except to the extent that directors may be required by law to call a meeting, and shall be called by the Secretary on behalf of the Member, when required to do so by law.

(D) Written notice stating the place, day and hour of the meeting shall be given for all meetings. Such notice shall state the person or persons calling the meeting. Notice for an Annual Meeting shall state that the meeting is being called for the election of directors and for the transaction of such other business as may properly come before the meeting. Notices of Special Meeting shall state the purpose or purposes for which the meeting is called. At any Special Meeting, only the business stated in the Notice of Meeting may be transacted thereat. Notice of Meeting shall be given either personally or by first class mail not less than ten (10) days nor more than fifty (50) days before the date of the meeting, to the Member at its address recorded on the records of the Corporation, or at such other address which the member may have furnished in writing to the Secretary of the Corporation. Notice shall be deemed to have been given when deposited with postage prepaid in a post office or other official depository under the exclusive jurisdiction of the United States Post Office. Any meeting of the Member may be adjourned from time to time. In such event, it shall not be necessary to provide further notice of the time and place of the adjourned meeting if announcement of the time and place of the adjourned meeting is given at the meeting so adjourned. In the event the Board of Directors fixes a new record date for an adjourned meeting, a new notice shall be given, in the same manner as herein provided. No notice need be given to any member who executes and delivers a Waiver of Notice before or after the meeting. The attendance of the Member in person or by proxy at the meeting without protesting the lack of notice of a meeting shall constitute a waiver of notice by such Member. Any notice of meeting to members relating to the election of directors shall set forth any amendments to the By-Laws of the Corporation approved by the Board of Directors, together with a concise statement of the changes made.

Section 3. At each Annual Meeting of the Member, the Board of Directors shall present an Annual Report. Such report shall be filed with the records of the Corporation and entered in the minutes of the proceedings of such Annual Meeting of the Member.

Section 4. (A) Meetings of the Member shall be presided over by the following officers, in order of seniority - the Chairman of the Board, Vice Chairman of the Board, President, Executive Vice-President, Vice-President or, if none of the foregoing is in office or present at the meeting, by a Chairman to be chosen by a majority of the members in attendance. The Secretary or an Assistant Secretary of the Corporation shall act as Secretary of every meeting. When neither the Secretary nor an Assistant Secretary is available, the Chairman may appoint a Secretary of the meeting.

- (B) The order of business at all meetings of the Member shall be as follows:
- Roll call
 - Reading of the minutes of the preceding meeting
 - Report of standing committees
 - Officers' reports
 - Old business
 - New business
 - Adjournment

Section 5. The Member may authorize another person to act for it by proxy in all matters in which the Member may participate, including waiving notice of any meeting, voting or participating in a meeting, or expressing consent or dissent without a meeting. Every proxy shall be signed by the Member or its attorney in fact, and shall be revocable at the pleasure of the Member executing it, except as otherwise provided by law. Except as otherwise provided by law, no proxy shall be valid after the expiration of eleven months from its date.

Section 6. The directors may, but need not, appoint one or more inspectors to act at any meeting or any adjournment thereof. If inspectors are not appointed, the presiding officer of the meeting may, but need not, appoint inspectors. Each appointed inspector shall take and sign an oath faithfully to execute the duties of inspector with strict impartiality and according to the best of his ability. The inspectors shall determine the number of memberships outstanding, the voting power of each, the number of memberships represented at the meeting, the existence of a quorum, and the validity and effect of proxies. The inspectors shall receive votes, ballots or consents, hear and determine all challenges and questions arising in connection with the right to vote, count and tabulate all votes, ballots or consents, determine the result and do such acts as are proper to conduct the election or vote of all members. The inspectors shall make a report in writing of all matters determined by them with respect to such meeting.

Section 7. Except to the extent provided by law, all action shall be by a vote of the Member. Whenever the vote of the Member is required or permitted, such action may be taken without a meeting on the written consent setting forth the action taken signed by all the members entitled to vote.

Section 8. The Board of Directors of the Corporation shall fix a record date for the purpose of determining the Member entitled to notice of, to vote, to express consent or dissent from any proposal without a meeting, to determine the members entitled to receive distributions or allotment of rights, or for any other proper purpose. Such record date shall not be more than fifty (50) days nor less than ten (10) days prior to the date of such meeting or consent or the date on which any distribution or allotment of rights, as the case may be, is to be made. In the event no record date is fixed, the record date for the determination of the Member entitled to vote at a meeting of the Member shall be the close of business on the day next preceding the day on which notice is given, or, if no notice is given, the day on which the meeting is held. The record date for determining the Member for any purpose other than that specified in the preceding sentence shall be the close of business on the day on which the resolution of directors relating thereto is adopted. Establishment of a record date is fixed by the Board of Directors for such adjourned meeting.

Section 9. The Board of Directors may cause to be issued certificates, cards or other instruments permitted by law evidencing membership in the Corporation. Such membership certificate, card or other instrument shall be nontransferable, and a statement to that effect shall be noted on the certificate, card or other instrument. Membership certificates, cards or other instruments, if issued, shall bear the signatures or facsimile signatures of an officer or officers designated by the Board of Directors and may bear the seal of the Corporation or a facsimile thereof.

ARTICLE III

BOARD OF DIRECTORS

Section 1. The Corporation shall be managed by a Board of Directors. Each director shall be at least eighteen (18) years of age. The Board of Directors shall consist of not less than three (3) and no more than eleven (11) directors. Subject to the foregoing, the number of the Board of Directors may be fixed from time to time by action of the members or of the Directors. The number of Directors may be increased or decreased by action of the Member or the Board of Directors, provided that any action by the Board of Directors to affect such increase or decrease shall require the vote of a majority of the entire Board of Directors. No decrease shall shorten the term of any director then in office.

Section 2. The first Board of Directors shall consist of those persons elected by the Incorporators or named as the initial Board of Directors in the Certificate of Incorporation of the Corporation, and they shall hold office until the first Annual Meeting of the Member, and until their successors have been duly elected and qualify. Thereafter, at each Annual Meeting of the Member, the Member shall elect directors to hold office until the next Annual Meeting. Each director shall hold office until the expiration of the term for which he was elected, and until his successor has been duly elected and qualified, or until his prior resignation or removal as hereinafter provided.

Section 3. (A) Any or all of the members of the Board of Directors may be removed with or without cause by vote of the Member of the Corporation. The Board of Directors may remove any director thereof for cause only.

(B) A director may resign at any time by giving written notice to the Board of Directors or to an officer of the Corporation. Unless otherwise specified in the notice, the resignation shall take effect upon receipt thereof by the Board of Directors or such officer. Acceptance of such resignation shall not be necessary to make it effective.

Section 4. Newly-created directorships or vacancies in the Board of Directors may be filled by a vote of majority of the Board of Directors then in office, although less than a quorum, unless otherwise provided in the Certificate of Incorporation of the Corporation. Vacancies occurring by reason of the removal of directors without cause shall be filled by a vote of the members. A director elected to fill a vacancy caused by resignation, death, or removal shall be elected to hold office for the unexpired term of his predecessor.

Section 5. (A) A regular Annual Meeting of the Board of Directors shall be held immediately following the Annual Meeting of the Member. All other meetings shall be held at such time and place as shall be fixed by the Board of Directors from time to time.

(B) No notice shall be required for regular meetings of the Board of Directors for which the time and place have been fixed. Special meetings may be called by or at the direction of the Chairman of the Board, the President or by a majority of the directors then in office.

(C) Written, oral, or any other method of notice of the time and place shall be given for special meetings of the Board of Directors in sufficient time for the convenient assembly of the Board of Directors. The notice of any meeting need not specify the purpose of such meeting. The requirement for furnishing notice of such meeting may be waived by any director who signs a Waiver of Notice before or after the meeting or who attends the meeting without protesting the lack of notice to him.

Section 6. Except to the extent herein or in the Certificate of Incorporation of the Corporation provided, a majority of the entire members of the Board of Directors shall constitute a quorum. At any meeting held to remove one or more directors a quorum shall consist of a majority of the directors present at such meeting. Whenever a vacancy on the Board of Directors shall prevent a quorum, such quorum shall consist of a majority of the members of the Board of Directors excluding the vacancy. A majority of the directors present, whether or not a quorum is present, may adjourn a meeting to another time and place. Except to the extent provided by law, and these By-Laws, the act of the Board of Directors shall be by a majority of the directors present at the time of vote, a quorum being present at such time. Any action authorized by resolution, in writing, by all of the directors entitled to vote thereon and filed with the minutes of the corporation shall be the act of the Board of Directors with the same force and effect as if the same had been passed by unanimous vote at a duly called meeting of the Board.

Section 7. The Chairman of the Board, if any, shall preside at all meetings of the Board of Directors. If there be no Chairman or in his absence, the President shall preside and, if there be no President or in his absence, any other director chosen by the Board, shall preside.

Section 8. Whenever the Board of Directors shall consist of more than three persons, the Board of Directors may designate from their number, an executive committee and other standing committees. Such committees shall have such authority as the Board of Directors may delegate, except to the extent prohibited by law. In addition, the Board of Directors may establish special committees for any lawful purpose, which may have such powers as the Board of Directors may lawfully delegate.

Section 9. The Board, by resolution adopted by a majority of the entire Board, may establish and appoint an executive and other standing committees. The Chairperson of the Board of Directors shall appoint the chairperson of each committee. Each committee so appointed shall consist of three or more directors and, to the extent provided in the resolution establishing it, shall have all the authority of the Board except as to the following matters:

- (a) the filling of vacancies on the Board or on any committee;

- (b) the amendment or repeal of the By-Laws or the adoption of new By-Laws;
- (c) the amendment or repeal of any resolution of the Board which by its terms shall not be so amenable or repealable; and
- (d) the fixing of compensation of the directors for serving on the Board or any committee.

Special Committees may be appointed by the Chairperson of the Board of Directors with the consent of the Board and shall have only the powers specifically delegated to them by the Board.

ARTICLE IV

OFFICERS

Section 1. Board of Directors may elect or appoint a Chairman of the Board of Directors, a President, one or more Vice-Presidents, a Secretary, one or more Assistant Secretaries, a Treasurer, one or more Assistant Treasurers, and such other officers as they may determine. The President may but need not be a director. Any two or more offices may be held by the same person except the office of President and Secretary.

Section 2. Each officer shall hold office until the Annual Meeting of the Board of Directors, and until his successor has been duly elected and qualifies. The Board of Directors may remove any officer with or without cause at any time.

Section 3. (A) The President shall be the chief executive officer of the Corporation, shall have the responsibility for the general management of the affairs of the Corporation, and shall carry out the resolutions of the Board of Directors.

(B) During the absence or disability of the President of the Corporation, the Vice-President, or, if there be more than one, the Executive Vice-President shall have all the powers and functions of the President. The Vice-Presidents shall perform such duties as may be prescribed by the Board of Directors from time to time.

(C) The Treasurer shall have the care and custody of all of the funds and securities of the Corporation, and shall deposit said funds in the name of the Corporation in such bank accounts as the Board of Directors may from time to time determine. The Treasurer shall, when duly authorized by the Board of Directors, sign and execute all contracts in the name of the Corporation; he may also sign checks, drafts, notes and orders for the payment of money, which shall have been duly authorized by the Board of Directors and counter-signed by the President.

(D) The Secretary shall keep the minutes of the Board of Directors and the minutes of the members. He shall have custody of the seal of the Corporation, and shall affix and attest the same to documents duly authorized by the Board of Directors. He shall serve all notices for the Corporation which shall have been authorized by the Board of Directors, and shall have charge of all books and records of the Corporation. The Secretary or any Assistant Secretary shall, when duly authorized by the Board of Directors, sign and execute all contracts in the name of the Corporation.

ARTICLE V

INDEMNIFICATION

Section 1. Directors and officers of the Corporation shall be indemnified to the fullest extent now or hereafter permitted by law in connection with any actual or threatened action or proceeding (including civil, criminal, administrative or investigative proceedings) arising out of their service to the Corporation and/or to any other organization at the request of the Corporation.

ARTICLE VI

MISCELLANEOUS

Section 1. The Corporation shall keep at the principal office of the Corporation, complete and correct records and books of account, and shall keep minutes of the proceedings of the members, the Board of Directors, or any committee appointed by the Board of Directors, as well as a list or record containing the names and address of all members.

Section 2. The corporate seal shall be in such form as the Board of Directors shall from time to time prescribe.

Section 3. The fiscal year of the Corporation shall be fixed by the Board of Directors from time to time, subject to applicable law.

Section 4. (A) All By-Laws of the Corporation shall be subject to alteration or repeal, and new by-laws may be made, upon the approval of NYC Partnership Housing Development Fund Company, Inc., as sole Member of the Corporation.

(B) The Board of Directors shall have the power to make, alter or repeal, from time to time, By-Laws of the Corporation, subject to the approval of NYC Partnership Housing Development Fund Company, Inc., as sole Member of the Corporation.

Exhibit C

(See attached)

DRAFT

**HP PARK LANE SENIOR HOUSING DEVELOPMENT FUND COMPANY, INC.
RESOLUTION OF THE BOARD OF DIRECTORS**

WHEREAS, HP PARK LANE SENIOR HOUSING DEVELOPMENT FUND COMPANY, INC., (the “HDFC”) acquired nominal title to the property located at 1940 Turnbull Avenue, Bronx, New York (Block 3672 Lot 30) (the “Property”), pursuant to a Deed recorded in the City Register of the City of New York on April 21, 2022 as CRFN 2022000166771, as nominee for PL Sara LLC, a New York limited liability company, the beneficial owner of the Property (“Beneficial Owner”), pursuant to a Declaration of Interest and Nominee Agreement by and between the HDFC and the Beneficial Owner dated as of March 31, 2022 and recorded on May 24, 2022 at CRFN 2022000212254 in the Office of the City Register of the City of New York; and

WHEREAS, the Property has been entered into the New York State Department of Environmental Conservation Brownfield Cleanup Program (“BCP”) pursuant to a Brownfield Cleanup Agreement Index No. C203138-09-20 dated as of November 16, 2020, as amended (collectively, the “BCA”), designating the Property as Site No. C203138 (the “Site”); and

WHEREAS, the HDFC, as fee owner of the Site, desires to sign an environmental easement (“Easement”) with the New York State Department of Environmental Conservation (the “Department”) as a document deemed necessary to complete the cleanup process pursuant to the BCA, and certain ancillary agreements relating thereto (“Ancillary Documents”) in connection to the Easement; and

WHEREAS, the board of directors of the HDFC (the “Directors”) believe it is in the best interests of the HDFC to authorize the HDFC’s execution of the Easement and Ancillary Documents; and

NOW, THEREFORE, BE IT RESOLVED, that any director or officer of the HDFC shall (i) enter into the Environmental Easement and Ancillary Documents; and hereby accepts, approves and ratifies all acts taken by any director or officer of the HDFC and their appointed and retained representatives, agents, consultants, advisors, and counsels in, *inter alia*, conceiving, planning, analyzing, modeling, drafting, documenting, directing and implementing the BCP, Easement and Ancillary Documents; and be it further

RESOLVED that, any director or officer of the HDFC shall execute any and all forms and documents in favor of, associated with, required or requested by the Department, or otherwise deemed necessary or beneficial for the BCP, Easement, Ancillary Documents and anything else requested by the Department, each substantially in the form, and containing substantially the terms, previously reviewed, with such changes and additions as may be deemed necessary, appropriate or advisable by the director or officer executing the same on behalf of the HDFC; and be it further

RESOLVED, that any and all lawful action taken in good faith by any officer or director of the HDFC prior to the date hereof on behalf of the HDFC and in furtherance of the transactions contemplated by the foregoing Resolution are in all respects ratified, confirmed, and approved by the HDFC as its own acts and deeds, and shall conclusively be deemed to be the acts and deeds of the HDFC for all purposes;

AND BE IT FURTHER RESOLVED, that such resolutions remain in full force and effect.

Adopted as of July 18, 2022.

DRAFT

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

HP Park Lane Senior Housing Development Fund Company, Inc.:

By:

Print Name:

Title:

Date:

Grantor Fee Owner's Acknowledgment

STATE OF NEW YORK)
COUNTY OF New York) ss:

On the 21st day of July, in the year 2022, before me, the undersigned, personally appeared ESTHER BPOBOSKY, 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

MILEIKA BETHANCOURT
Notary Public, State of New York
No. 01BE6220876
Qualified in Kings County
Commission Expires April 19, 2022

**CERTIFICATE OF INCUMBENCY OF
PL SARA LLC AND PL SARA MANAGER LLC**

The undersigned, Atreides Holdings LLC, a New York limited liability company, hereby certifies as of March 31, 2022 to the New York State Housing Finance Agency, the State of New York Mortgage Agency, Goldman Sachs Bank USA, a New York state-chartered bank, GSB LIHTC Investor LLC, a Delaware limited liability company, and each of the foregoing's successors and/or assigns, that it is the managing member of PL Sara Manager LLC, a New York limited liability company (the "**Managing Member**"), which is the managing member of PL SARA LLC, a New York limited liability company (the "**Borrower**"), and that it has the authority to execute this Certificate on behalf of the Borrower and the Managing Member. In such capacity, the undersigned certifies that:

1. Attached hereto as Exhibit A is a true, correct and complete copy of the written consent of the members of the Managing Member, which written consent: (i) has not been amended or supplemented in any respect and is in full force and effect on the date hereof; (ii) requires no further limited liability company action or resolution or consent of members to be effective; and (iii) is not inconsistent with (x) the Amended and Restated Operating Agreement of the Borrower, dated as of March 31, 2022 (the "**Borrower Operating Agreement**"), and (y) the Amended and Restated Operating Agreement of the Managing Member, dated as of March 31, 2022 (the "**Managing Member Operating Agreement**").
2. Attached hereto as Exhibit B is a correct and complete copy of the Articles of Organization of the Borrower, filed with the Division of Corporations of the Secretary of State of the State of New York on November 9, 2017, which have not been amended or supplemented in any respect, and the same is in full force and effect on and as of the date of this Certificate.
3. Attached hereto as Exhibit C is a true, correct, and complete copy of the Borrower Operating Agreement, which agreement has not been further amended or supplemented in any respect, and which agreement is in full force and effect on and as of the date of this Certificate.
4. Attached hereto as Exhibit D is a true, correct, and complete copy of the Certificate of Subsistence of the Borrower, as issued by the Corporations Unit of the Department of State of the State of New York on March 8, 2022.
5. The following is a complete list of all members of the Borrower:

MEMBERS

MEMBERSHIP INTEREST

PL Sara Manager LLC

0.01% Managing Member

GSB LIHTC Investor LLC

99.99% Investor Member

6. Attached hereto as Exhibit F is a correct and complete copy of the Articles of Organization of the Managing Member, filed with the Division of Corporations of the Secretary of State of

the State of New York on January 19, 2022, which have not been amended or supplemented in any respect, and the same is in full force and effect on and as of the date of this Certificate.

7. Attached hereto as Exhibit G is a true, correct, and complete copy of the Managing Member Operating Agreement, dated as of March 31, 2022, which agreement has not been further amended or supplemented in any respect, and which agreement is in full force and effect on and as of the date of this Certificate.
8. Attached hereto as Exhibit H is a true, correct, and complete copy of the Certificate of Subsistence of the Managing Member, as issued by the Corporations Unit of the Department of State of the State of New York on March 4, 2022.
9. The following is a complete list of all members of the Managing Member:

MEMBERS

MEMBERSHIP INTEREST

Atreides Holdings LLC

50% Managing Member


HP Park Lane Senior Housing
Development Fund Company, Inc.

50% Member

No further text. Signature page to follow.

IN WITNESS WHEREOF, I have hereunto set my hand as of the date first written above.

ATREIDES HOLDINGS LLC, a New York
limited liability company

By: 
Name: James H. Simmons III
Title: Authorized Signatory

DRAFT

Exhibit A

Written Consent

DRAFT

**WRITTEN CONSENT OF THE MANAGING MEMBER OF
PL SARA MANAGER LLC**

(Park Lane Senior)

The undersigned, being the members of PL Sara Manager LLC, a New York limited liability company (the “**Managing Member**”), the managing member of PL SARA LLC, a New York limited liability company (the “**Borrower**”), hereby adopt the following resolutions by written consent, without a meeting, effective as of March 31, 2022.

Basis of Resolutions

The Managing Member is the sole managing member of the Borrower.

The undersigned deem it to be in the best interests of the Managing Member to cause the Borrower to consummate the following transactions (collectively, the “**Transactions**”):

1. Admit GSB LIHTC Investor LLC as investor member (the “**Investor Member**”) of the Borrower in consideration of the Investor Member’s equity contribution to the Borrower.
2. Enter into a Declaration of Interest and Nominee Agreement with HP Park Lane Senior Housing Development Fund Company, Inc. (“**HDFC**”), as Fee Owner, of that certain property located at 1940 Turnbull Avenue (Block 3672, Lot 30), Bronx County, New York (the “**Property**”), and construct on the Property an affordable rental building containing one hundred fifty-three (153) residential rental units and one (1) superintendent’s unit to be known as Park Lane Senior Apartments (the “**Project**”).
3. Finance the acquisition and development of the Project using the following sources:
 - a. a senior loan in the approximate amount of \$66,730,000.00 (the “**Senior Loan**”) from the New York State Housing Finance Agency (“**HFA**”), credit enhanced by an irrevocable direct pay letter of credit for the benefit of HFA from Goldman Sachs Bank USA (the “**Bank**”);
 - b. a subordinate loan in the approximate amount of \$10,536,506.00 from the City of New York, acting by and through its Department of Housing Preservation & Development (“**HPD**”) (the “**HPD Second Loan**”);
 - c. Low Income Housing Tax Credits (“**LIHTCs**”) in the amount of \$46,471,899.00 (the “**LIHTCs Tax Credits**”);
 - d. Brownsfield Tax Credits in the amount of \$6,515,756.00; and
 - e. Certain equity capital contributions from the Investor Member.
4. Cause the Borrower to enter into a Development Agreement with PL Sara Developer LLC, a New York limited liability company (the “**Developer**”) for the provision of development services to the Borrower; and

5. Carry out any other actions necessary to effectuate the foregoing.

It is hereby resolved:

Resolutions

In order to consummate the Transactions, James H. Simmons III and David Goldban (each an “**Authorized Signatory**” and collectively, the “**Authorized Signatories**”), are hereby authorized, directed and empowered to execute and deliver, in the name of the Managing Member and the Borrower, such documents as each approves, including, without limitation: contracts, notes, loan agreements, reimbursement agreements, mortgages, pledges, security agreements, regulatory agreements, subordination agreements, partnership agreements, construction agreements, design and engineering agreements, development agreements, purchase agreements, assumption agreements, assignments, indemnities, guaranties, interest rate swap or hedge agreements, disclosure statements, receipts, instructions, certificates, authorizations, acknowledgements, and other documents relating to the Transactions (collectively, the “**Documents**”), such approval to be conclusively (but not exclusively) evidenced by its execution thereof.

The Authorized Signatories are, and each acting alone is, hereby authorized to make such changes to the Documents, on behalf of the Managing Member and the Borrower, as each may approve, such approval to be conclusively (but not exclusively) evidenced by the Authorized Signatory’s execution thereof.

The Authorized Signatories are, and each acting alone is, hereby authorized to cause each of the Managing Member and the Borrower to perform its obligations under the Documents.

If titles and/or dates of and parties to the Documents change, no change to such titles, dates or parties shall affect the authority conferred hereunder.

The authority given hereunder shall be deemed retroactive. Any actions authorized herein and performed prior to the date of this written consent are hereby ratified, confirmed and approved.

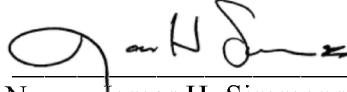
The Authorized Signatories are, and each acting alone is, hereby authorized to execute and deliver any and all other Documents and to take such further actions (including, without limitation, the payment of costs, fees, expenses and other amounts), in each case on behalf of the Managing Member and the Borrower, as they deem appropriate to cause each of the Managing Member and the Borrower to consummate the Transactions or perform its obligations under any of the Documents.

No further text. Signature page to follow.

This written consent shall be filed in the minute books of the Managing Member and the Borrower and become a part of the records of the Managing Member and the Borrower, effective as of the date first set forth above.

MANAGING MEMBER:

ATREIDES HOLDINGS LLC, a New York
limited liability company

By: 
Name: James H. Simmons III
Title: Authorized Signatory

DRAFT

Exhibit B

Articles of Organization of the Borrower

DRAFT

FILING RECEIPT

ENTITY NAME: PL SARA LLC

DOCUMENT TYPE: ARTICLES OF ORGANIZATION (DOM LLC)

COUNTY: ALBA

FILED:11/09/2017 DURATION:***** CASH#:171109000033 FILM #:171109000033
DOS ID:5232020

FILER:

EXIST DATE

11/09/2017

DAVID GOLDBAN
STARRETT COMPANIES LLC
70 EAST 55TH STREET 7TH FLOOR
NEW YORK, NY 10022

ADDRESS FOR PROCESS:

DAVID GOLDBAN
STARRETT COMPANIES LLC
NEW YORK, NY 10022

70 EAST 55TH STREET 7TH FLOOR

REGISTERED AGENT:

The limited liability company is required to file a Biennial Statement with the Department of State every two years pursuant to Limited Liability Company Law Section 301. Notification that the biennial statement is due will only be made via email. Please go to www.email.ebiennial.dos.ny.gov to provide an email address to receive an email notification when the Biennial Statement is due.

SERVICE COMPANY: GERALD WEINBERG, P.C. - 13

SERVICE CODE: 13 *

FEES	225.00	PAYMENTS	225.00
	-----		-----
FILING	200.00	CASH	0.00
TAX	0.00	CHECK	0.00
CERT	0.00	CHARGE	0.00
COPIES	0.00	DRAWDOWN	225.00
HANDLING	25.00	OPAL	0.00
		REFUND	0.00

DOS-1025 (04/2007)

ARTICLES OF ORGANIZATION

OF

PL SARA LLC

Under Section 203 of the Limited Liability Company Law

DRAFT

Filed by:

David Goldban
Starrett Companies LLC
70 East 55th Street
7th Floor
New York, New York 10022

ARTICLES OF ORGANIZATION
OF
PL SARA LLC

Under Section 203 of the Limited Liability Company Law.

FIRST: The name of the limited liability company is **PL SARA LLC**.

SECOND: The county within the state in which the office of the limited liability company is to be located is Albany.

THIRD: The Company does not have a specific date of dissolution in addition to the events of dissolution set forth by law.

FOURTH: The Secretary of State is designated as agent of the limited liability company upon whom process against it may be served. The post office address within or without this state to which the Secretary of State shall mail a copy of any process against the limited liability company served upon him or her is:

David Goldban
Starrett Companies LLC
70 East 55th Street
7th Floor
New York, New York 10022

FIFTH: The effective date of the Articles of Organization shall be the date of filing with the Secretary of State.

SIXTH: The limited liability company is to be managed by 1 or more members.

IN WITNESS WHEREOF, this certificate has been subscribed to this 8th day of November, 2017 by the undersigned who affirms that the statements made herein are true under the penalties of perjury.

Lawrence A. Kirsch

Lawrence A. Kirsch, Organizer

Exhibit C

Operating Agreement of the Borrower

DRAFT

PL SARA LLC
AMENDED AND RESTATED OPERATING AGREEMENT

As of March 31, 2022

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AMENDED AND RESTATED OPERATING AGREEMENT

This Amended and Restated Operating Agreement is made and entered into as of March 31, 2022, by and between PL Sara Manager LLC, a New York limited liability company, as managing member (the “**Managing Member**”), GSB LIHTC Investor LLC, a Delaware limited liability company (the “**Investor Member**”), as investor member, and Atreides Holdings LLC, a New York limited liability company (the “**Withdrawing Member**”).

WHEREAS, PL SARA LLC (the “**Company**”) was formed under the New York Limited Liability Company Law (the “**Act**”) by the filing of its Articles of Organization (the “**Certificate**”) with the Secretary of State of the State of New York (the “**State**”) on November 9, 2017;

WHEREAS, the Withdrawing Member executed a Limited Liability Company Agreement, dated as of March 12, 2020 (the “**Original Agreement**”), as the sole member of the Company;

WHEREAS, the Company has been formed to develop, construct, lease, maintain and operate a 154-unit low-income housing project (the “**Project**”) which shall qualify for federal low-income housing tax credits under Section 42 of the Internal Revenue Code and which shall be commonly be referred to as Park Lane Senior, located at 1940 Turnbull Avenue, Bronx, New York;

WHEREAS, prior to the date hereof, Withdrawing Member has contributed its interest in the Company to Managing Member;

WHEREAS, each of the Managing Member and the Investor Member wishes to be admitted as a Member of the Company, the Withdrawing Member wishes to withdraw as a Member of the Company, and Investor Member and the Managing Member wish to continue the Company pursuant to the Act; and

WHEREAS, the parties hereto now desire to enter into this Amended and Restated Operating Agreement to (i) continue the Company under the Act; (ii) admit the Managing Member to the Company as a Member, (iii) admit the Investor Member to the Company as a Member; (iv) memorialize the withdrawal of the Withdrawing Member, (v) amend and restate the terms of the Original Agreement in its entirety on the terms set forth herein; and (vi) set forth all of the provisions governing the Company from and after the date hereof;

NOW, THEREFORE, in consideration of the foregoing provisions and recitals which are incorporated by reference, of mutual promises of the parties hereto and of other good and valuable consideration, the receipt and sufficiency of which hereby are acknowledged, the parties hereby agree to continue the Company pursuant to the Act, as set forth in this Agreement, and to amend and restate the Original Agreement in its entirety as follows:

ARTICLE I

CONTINUATION OF COMPANY

1.1 Continuation. The undersigned hereby continue the Company as a limited liability company under the Act.

1.2 Name. The name of the Company is PL SARA LLC.

1.3 Principal Executive Offices; Agent for Service of Process.

(a) The principal executive office of the Company shall be and its mailing address is located at PL SARA LLC, c/o Asland Capital Partners LLC, 601 Lexington Avenue, 52nd Floor, New York, New York 10022, Attention: James H. Simmons III. The Company may change the location of its principal executive office to such other place or places as may hereafter be determined by the Managing Member. The Managing Member shall promptly notify the Investor Member of any change in the principal executive office. The Company may maintain such other offices at such other place or places as the Managing Member may from time to time deem advisable.

(b) The name and address of the agent for service of process is the Secretary of State for the State of New York with a copy to PL SARA LLC, c/o Asland Capital Partners LLC, 601 Lexington Avenue, 52nd Floor, New York, New York 10022. The Company may change the agent for service of process to such other agent as may hereafter be determined by the Managing Member. The Managing Member shall promptly notify the Investor Member of any change in the agent for service of process.

1.4 Term. The term of the Company commenced as of the date of the filing of the Certificate with the Secretary of State of the State, and shall continue in perpetuity, unless the Company is sooner dissolved by law or in accordance with the provisions of this Agreement.

1.5 Recording of Certificate. Upon the execution of this Amended and Restated Operating Agreement by the parties hereto, the Managing Member shall take all actions necessary (if any) to assure the prompt recording of an amendment to the Certificate if required by the Act, including filing with the Secretary of State of the State. All fees for filing shall be paid out of the Company's assets. The Managing Member shall take all other necessary action required by law to perfect and maintain the Company as a limited liability company under the laws of the State and qualify the Company to do business in the State (if necessary), and shall register the Company under any assumed or fictitious name statute or similar law in force and effect in the State.

1.6 Admission of Members. Each of the Managing Member and the Investor Member is hereby admitted as a member of the Company as of the date first above written. The Withdrawing Member hereby withdraws as a Member of the Company. Withdrawing Member represents and warrants that it has no interest in the Company and is not entitled to any fees, distributions, compensation or payments from the Company as a Member of the Company and that it has no interest in any property or assets of the Company. Withdrawing Member shall be responsible for paying, on a timely basis, any and all transfer taxes that may be due and payable

in connection with its withdrawal from the Company and shall indemnify, defend and hold harmless the Company from and against any and all claims, suits, actions, damages, costs, charges, losses, obligations, judgments and expenses of any nature whatsoever (including, without limitation, attorneys' fees) which may be imposed upon, incurred by or asserted against the Company with respect to the failure to timely pay any such transfer taxes. Withdrawing Member is joining in the execution of this Agreement solely to evidence its respective agreement to the provisions of this *Section 1.6* , *Section 4.1(ppp)–(yyy)*, and *Section 5.1(a)*.

ARTICLE II

DEFINED TERMS

2.1 **Defined Terms.** In addition to the abbreviations of the parties set forth in the preamble to this Agreement, the following defined terms used in this Agreement shall have the meanings specified below:

“25-60 Set-Aside Test” means the Minimum Set-Aside Test provided in Code Sections 42(g)(1)(B) and (g)(4), whereby at least 25% of the units in the Project must be occupied by individuals with incomes of 60% or less of area median gross income, as adjusted for family size.

“AAI” has the meaning set forth in *Section 4.1(ddd)*.

“Accountant’s Certificate” means the certificate of the Company Accountants in the form attached hereto as Exhibit G.

“Accountants” means (i) the Company Accountants and (ii) the Projection Accountants. If requested by the Investor Member, the Managing Member shall engage accountants that are registered with the Public Company Accounting Oversight Board (**“PCAOB”**) which shall perform in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits promulgated by the PCAOB and Government Auditing Standards, issued by the Controller General of the United States, and the Accountant’s Certificate shall be performed and certified as having been performed in accordance with the standards of the PCAOB.

“Act” has the meaning set forth in the *Recitals*.

“Actual Applicable Fraction” means the percentage of the residential units in the Project that are Eligible Units and that otherwise satisfy the requirements to generate Federal Tax Credits, as determined by the Managing Member with the Consent of the Investor Member (which Consent shall not be unreasonably withheld). The Members intend for there to be 154 Eligible Units and for the applicable fraction to be 100%.

“Actual Brownfield Tax Credit” means, with respect to any tax year of the Company, the total amount of Brownfield Tax Credits actually reported by the Company on its tax return for that year and allocated to the Company, and not disallowed by any taxing authority, as subsequently adjusted, if applicable.

“Actual Federal Credit” means, with respect to any tax year of the Company, the total amount of the Federal Tax Credit actually reported by the Company on its federal tax return for that tax year and allocated to the Company, and not disallowed by any taxing authority, as subsequently adjusted, if applicable, by any Federal Tax Credit recapture amounts, as defined in Section 42(j)(2) of the Code.

“Additional Capital Contributions” means, as of any date, the sum of that portion of the Initial Capital Contribution, the Stabilization Capital Contribution and the Final Capital Contribution of the Investor Member that has not been contributed to the Company pursuant to *Section 5.1(c)*.

“Additional Contingency” has the meaning set forth in *Section 8.11(a)(ii)*.

“Adjusted Aggregate Brownfield Credit Amount” means the product of (i) 99.99% and (ii) the aggregate amount of Brownfield Tax Credits that are determined by the Projection Accountants to be available to the Project during the Projected Credit Period.

“Adjusted Aggregate Federal Credit Amount” means the product of (i) 99.99% and (ii) the aggregate amount of Federal Tax Credits that are determined by the Projection Accountants to be available to the Project during the Projected Credit Period.

“Adjusted Capital Account Deficit” means, with respect to any Member, the deficit balance, if any, in the Member’s Capital Account as of the end of the relevant Taxable Year, after:

(i) crediting to such Capital Account the amounts, if any, which the Member is obligated to restore pursuant to the provisions of Treasury Regulation Section 1.704-1(b)(2)(ii)(c) or is deemed to be obligated to restore pursuant to the penultimate sentence of Treasury Regulation Section 1.704-2(g)(1) and Treasury Regulation Section 1.704-2(i)(5); and

(ii) debiting from such Capital Account the items described in Treasury Regulation Section 1.704-1(b)(2)(ii)(d)(4), (5), and (6).

The foregoing definition of Adjusted Capital Account Deficit is intended to comply with the provisions of Treasury Regulation Section 1.704-1(b)(2)(ii)(d) and will be interpreted consistently therewith.

“Adjusted Gross Effective Income” means an amount, with respect to any period, equal to Gross Effective Income for such period reduced to reflect what the amount of Gross Effective Income would have been at a 95% level of economic occupancy if the average economic occupancy of the Project for the period in question was greater than 95%, but shall not be increased if the average economic occupancy of the Project for the period in question was less than 95%, and shall include rental subsidies receivable from an Authority, other governmental agencies which have accrued in such period regardless of whether payment has been made in such period, and shall not include other income from residential tenants and commercial tenants of the Project (if any) in excess of Investor Member’s Underwritten Income without the Consent of the Investor Member.

“Advance Documents” means any and all documents that will be submitted to a Lender in connection with such Lender’s advance of the Loan proceeds, including, but not limited to, a standard form AIA application for payment requests and related supporting documentation.

“Advance Request” has the meaning set forth in *Section 4.1(qq)*.

“Affiliate” means any Person that directly or indirectly, through one or more intermediaries, Controls or is Controlled by or is under common Control with the Managing Member, or with another designated person, as the context may require.

“After-Tax Basis” means, with respect to a payment to be received by the Investor Member, the original amount of such payment supplemented by a further payment or payments so that, after deducting from such total payment an amount calculated by multiplying the then highest marginal tax rate charged to corporations for federal, state and local income tax purposes (assuming for state and local purposes that the Investor Member is taxable such that 100% of its income and capital are apportioned to New York City, New York) by all taxable income or gain recognized by the Investor Member for federal, state and local income tax purposes attributable to such payment, the net remaining payment shall be equal to the original payment to be received.

“Agency” means HFA in its capacity as a designated agency to allocate Federal Tax Credits, acting through any authorized representative.

“Agent” means the Investor Member or an agent of the Investor Member appointed by the Investor Member by notice to the Managing Member for the purposes of *Section 4.1(qq)*.

“Agreement” means this Amended and Restated Operating Agreement, as amended from time to time.

“AHAP” means that certain Agreement to Enter into Housing Assistance Payments Contract made between HPD and the Company dated as of March 31, 2022, contemplating the HAP Contract.

“Architect” means Aufgang Architects, LLC, a licensed architect or engineer mutually agreed upon by the Managing Member and the Investor Member, which architect will inspect the progress of construction of the Project and will deliver the Architect’s Certificate as a condition to Substantial Completion.

“Architect’s Certificate” means the certificate substantially in the form attached hereto as Exhibit H.

“Asland” means Asland Heritage Manager LLC, a Delaware limited liability company.

“Asset Management Fee” means the fee payable to the Investor Member (or its designee) pursuant to *Section 8.22* for the services of such Person in monitoring the operations of the Company on behalf of the Investor Member initially equal to \$12,000 per year and increasing 3% per year, which fee will accrue if not paid.

“Authority” or **“Authorities”** means any nation or government, any state, commonwealth or other political subdivision thereof, and any agent, representative, or other entity exercising its executive, legislative, judicial, regulatory or administrative functions of or pertaining to government, including but not limited to, any federal, state or municipal department, commission, board, bureau, agency, court, tribunal or instrumentality.

“Bad Act” has the meaning set forth in *Section 4.1(bb)*.

“Bankruptcy” or **“Bankrupt”** as to any Person means the filing of a petition for relief as to any such Person as debtor or bankrupt under federal bankruptcy laws, as now constituted or hereafter amended, or any other federal or state bankruptcy, insolvency or like provision of law (except if such petition is contested by such Person and has been dismissed within 90 days); insolvency of such Person as finally determined by a court proceeding; filing by such Person of a petition or application to accomplish the same or for the appointment of a receiver or a trustee for such Person or a substantial part of his assets; or, commencement of any proceedings relating to such Person under any other reorganization, arrangement, insolvency, adjustment of debt or liquidation law of any jurisdiction, whether now in existence or hereafter in effect, either by such Person or by another, provided that if such proceeding is commenced by another, such Person indicates his approval of such proceeding, consents thereto or acquiesces therein, or such proceeding is contested by such Person and has not been finally dismissed within 90 days.

“Bond Loan” means the loan made to the Company by HFA on or about the date hereof in the aggregate amount of \$48,885,000 from the proceeds of the Tax-Exempt Bonds and \$17,845,000 from the proceeds of the Taxable Bonds issued by HFA as follows: (a) a portion of the Bond Loan in the amount of \$19,645,000, bearing interest at a rate equal to 1.75% per annum (the **“Short Term Tax Exempt Loan”**), (b) a portion of the Bond Loan in the amount of \$17,845,000, bearing interest at a rate equal to 3.25% per annum (the **“Short Term Taxable Loan”**) and, together with the Short Term Tax Exempt Loan, collectively, the **“Short Term Loan”**) and (c) a portion of the Bond Loan in the amount of \$29,240,000, bearing interest at a rate of 3.85% per annum (the **“Long Term Loan”**). Upon Conversion, the portion of the Bond Loan equal to the Short Term Loan shall be repaid and the Long Term Loan portion of the Bond Loan will remain outstanding as a permanent loan in the amount of \$29,240,000 with interest at a rate of 3.85% (inclusive of servicing fees and MIP).

“Bond Loan Documents” means the loan documents evidencing the Bond Loan, including the Note and Mortgage.

“Breaching Affiliate” has the meaning set forth in *Section 8.14(a)(N)*.

“Breakeven Operations” means with respect to any calendar month of the Project, the Gross Effective Income of the Project for such month equals or exceeds the greater of (x) Operating Expenses or (y) Investor Member’s Underwritten Expenses for the Project as set forth on Schedule 4 for such month. For purposes of determining Breakeven Operations, Operating Expenses and Investor Member’s Underwritten Expenses shall include but shall not be limited to, assessments, Reserve Fund for Replacements deposits and stabilized annualized mandatory debt service payments (assuming mandatory debt service payments on the Loans, if any, and Permanent Loans, if applicable, payment of the Management Fee to the Management Agent, and

a ratable portion of the annual amount (based upon the Investor Member's Underwritten Expenses as set forth on Schedule 4) of those seasonal and/or periodic expenses (such as water and sewer charges, utilities and maintenance expenses) which might reasonably be expected to be incurred on an unequal basis during a full annual period of operation. Notwithstanding the foregoing, lower actual expenses may be used in lieu of the Investor Member's Underwritten Expenses for real estate taxes and insurance. Such calculation shall be evidenced by a certification of the Managing Member with an accompanying unaudited balance sheet and operating statement of the Company examined by the Company Accountants and shall be subject to the Consent of the Investor Member. The Investor Member and the Company Accountants shall be provided with all documents and records which they may reasonably require in order to verify the achievement of Breakeven Operations and shall have the right to examine and copy all books and records of the Company, the Managing Member (relating to the Company and the Project) and Management Agent (relating to the Company and the Project) in connection therewith.

"Brownfield Certificate of Completion" has the meaning set forth in *Section 8.24*.

"Brownfield Cleanup Agreement" means the agreement executed by and between the Company and the DEC with respect to the Project Property pursuant to the provisions of, and in accordance with, the Environmental Conservation Law Section 27-1409 and 6 NYCRR Section 375-3.5 and relating to the Project, which has been assigned Index Number C203138-09-20, as amended, or any additional, substitute, successor, or supplemental agreement entered into by DEC with respect to the Brownfield Cleanup Program and relating to the Project Property.

"Brownfield Cleanup Program" means the New York State Brownfield Cleanup Program as currently in effect under Title 14 of Article 27 of the New York Environmental Conservation Law and regulations promulgated thereunder at 6 NYCRR Part 375-3, and administered by DEC.

"Brownfield Cleanup Program Easement" means an Environmental Easement granted pursuant to Article 71, Title 36 of the New York State Environmental Conservation Law, the form of which has been approved by Investor Member as of the date here.

"Brownfield Documents" means work plans or reports approved, or decisions issued, by the New York State Department of Environmental Conservation under the Brownfield Cleanup Program regarding the Property, including, the Brownfield Certificate of Completion and site management plan, as may be amended.

"Brownfield Property" has the meaning set forth in *Section 8.24*.

"Brownfield Tax Credits" means the aggregate amount of the credit components described in Section 21 of the New York Tax Law, as amended from time to time, or any substitute or successor law, to the extent allowable to the Company or its Members with respect to: (A) the Project and (B) costs paid or incurred by the Company with respect to the Brownfield Property.

“Brownfield Tax Credits Cost Basis” means the following: (i) with respect to the site preparation credit component of the Brownfield Tax Credits, the full amount of site preparation costs; (ii) with respect to the groundwater remediation credit component of the Brownfield Tax Credits, the full amount of groundwater remediation costs; and (iii) with respect to the tangible property credit component of the Brownfield Tax Credits, the full amount of the costs of qualified tangible property under Section 21(b)(3) of the New York Tax Law for the taxable period in which such qualified tangible property is placed in service. In each instance the terms or phrases used in this definition shall have the meanings ascribed to them under Section 21 of the New York Tax Law, as amended from time to time.

“Brownfield Tax Credits Cost Certification” means a cost certification prepared by the Company Accountants setting forth the Brownfield Tax Credit Cost Basis for each claimed amount of Brownfield Tax Credits (for example, site preparation/remediation costs or costs giving rise to tangible property credits).

“Brownfield Tax Credit Timing Adjustment Amount” has the meaning set forth in *Section 5.2(a)(vi)*.

“Brownfield Tax Credit Timing Adjustment Target Amounts” has the meaning set forth in *Section 5.2(a)(vi)*.

“Building” means any structure that is part of the Project and that has its own building identification number for Federal Tax Credit purposes.

“Business Day” means any day on which commercial banks are not authorized or required to close in New York, New York.

“Capital Account” means the capital account of a Member as described in *Section 6.1*.

“Capital Contribution” means the total amount of cash and the fair market value of property (as determined by the Managing Member with the Consent of the Investor Member) contributed or deemed contributed under Treasury Regulations to the Company by a Member.

“Capital Transaction” means any transaction, including, without limitation the disposition, whether by partial sale (except to the extent such sale proceeds are to be used pursuant to a plan or budget approved by all of the Members), casualty (to the extent the proceeds are not to be used for reconstruction), condemnation, refinancing or similar event with respect to any part of the Project.

“Carrying Value” means, with respect to any asset, the asset’s adjusted basis for federal income tax purposes, except as follows:

- (i) the initial Carrying Value of any asset contributed (or deemed contributed) to the Company will be such asset’s fair market value (as determined by the Managing Member with the Consent of the Investor Member, without reduction for associated liabilities) at the time of such contribution;

(ii) if the Company elects to adjust the Capital Account balances of the Members to reflect the fair market value of the Company's assets at a given time in accordance with Treasury Regulation Section 1.704-1(b)(2)(iv)(f), the Carrying Values of all assets of the Company will be adjusted to equal their respective fair market values (as determined by the Managing Member with the Consent of the Investor Member, without taking into account associated liabilities) at such time; and

(iii) the Carrying Value of the Company's assets shall be increased or decreased to the extent necessary to reflect adjustments under the Partnership Audit Rules; and

(iv) the Carrying Value of an asset that has been determined pursuant to paragraph (i), (ii) or (iii) will thereafter be adjusted as would the asset's adjusted basis for Federal income tax purposes, except that depreciation and similar deductions will be computed as provided under the definition of Depreciation.

"Certificate" has the meaning set forth in the *preamble*.

"Certificate of Occupancy" means any temporary or permanent certificates of occupancy (or certificates of occupancy which contain conditions or qualifications which are Consented to by the Investor Member), required, from the applicable Authority necessary to authorize residential occupancy by tenants for 100% of the apartment units in the Building following completion of the construction of such Building contemplated by the Plans and Specifications.

"Change in Law" means an amendment to the Code, the regulations promulgated by the IRS thereunder, or any other law, rule or regulation that governs the Project that is effective for any period after the date hereof.

"Change Order" has the meaning set forth in *Section 4.1(rr)*.

"Change Order Documents" has the meaning set forth in *Section 4.1(rr)(A)*.

"Claimant" has the meaning set forth in *Section 15.16(b)*.

"Closing" means the occurrence of each of the following: (i) the closing of the Bond Loan and the HPD Loan; and (ii) the admission of the Investor Member as a member of the Company.

"Code" means the Internal Revenue Code of 1986, as amended from time to time, or any corresponding provision or provisions of succeeding law.

"Collateral" has the meaning set forth in *Section 5.8*.

"Company" means PL SARA LLC, a New York limited liability company.

"Company Accountants" means such firm of independent certified public accountants as may be engaged by the Managing Member, with the Consent of the Investor Member (which

Consent shall not be unreasonably withheld, conditioned or delayed) to prepare the cost certificates for the Project, the Accountant's Certificate, Company income tax returns, and audited financial statements.

"Company Auditor" has the meaning set forth in *Section 12.12*.

"Completion Date" means September 30, 2024; provided, however, that if Substantial Completion is delayed due to an Unavoidable Delay, then the Completion Date shall be extended on a day-for-day basis for each day of Unavoidable Delay (not to exceed sixty (60) days in the aggregate). Notwithstanding the foregoing, in no event shall the Completion Date be extended beyond the date required under the Loan Documents (as Lender may have extended from time to time).

"Completion Guaranty" has the meaning set forth in *Section 8.11(a)(iii)*.

"Compliance Consultant" means a third party consulting firm as may be engaged by the Managing Member from time to time with the Consent of the Investor Member such Consent not to be unreasonably withheld, conditioned or delayed.

"Compliance Period" means, with respect to the Project, the period specified in Section 42(i)(1) of the Code.

"Confidential Information" has the meaning set forth in *Section 15.18(a)*.

"Consent" means the prior written consent or approval of the Investor Member and/or any other Member, as the context may require, to do the act or thing for which such consent or approval is solicited. With respect to the Investor Member, such prior written consent may be given or withheld in the sole discretion of the Investor Member, except as specifically provided in this Agreement.

"Construction Contract" means the lump sum construction contract (including all exhibits and attachments thereto) pursuant to which the Company engaged the Contractor to construct the Project, which contract has received the Consent of the Investor Member in accordance with *Section 5.1(c)(i)*.

"Consumer Price Index" means the revised Consumer Price Index for Urban Wage Earners and Clerical Workers for the geographic area that includes the Project (all items, 1982-84 = 100) promulgated by the Bureau of Labor Statistics of the United States Department of Labor.

"Contractor" means Consigli Construction Co., Inc., the construction contractor for the Project, which has been approved by the Investor Member. Any change in the identity of the contractor shall be subject to the Consent of the Investor Member.

"Contribution Cap" has the meaning set forth in *Section 5.2(e)*.

"Contribution Dispute Notification" has the meaning set forth in *Section 5.2(d)*.

“Control” means, for any Person, the power to direct the management and policies of that Person, directly or indirectly, whether through the ownership of voting securities, by contract or otherwise, in all instances subject to the rights of other Persons with respect to usual and customary major decisions. The terms “Controlling” and “Controlled” have meanings correlative to the foregoing.

“Conversion” means the time at which all of the following have occurred: (i) a portion of the Bond Loan in the amount of the Short Term Loan shall have been repaid, (ii) the Credit Enhancement for the construction phase shall have been released and replaced with the Credit Enhancement for the permanent phase and the Bond Loan shall have converted to its permanent phase, and (iii) the HPD Loan shall have converted to a permanent loan.

“Cost Certification and 8609 Date” means October 31, 2025.

“Cost Savings” means, on the date the Stabilization Capital Contribution occurs, the amount by, if any, that the actual proceeds of the Bond Loan, the HPD Loan, deferred Development Fee, Net Cash Flow prior to Stabilization, and the Capital Contributions (as adjusted pursuant to this Agreement), in each case that are actually funded or available to be funded as of such date exceed the costs required to complete any and all of the following: (i) construction of the Project (including, without limitation, the work under the Brownfield Cleanup Agreement) to the extent contemplated by the Plans and Specifications as of such date, including paying all amounts due under and pursuant to the Construction Contract as of such date, and any construction cost overruns and the cost of any Change Orders as Consented to by Investor Member if required hereunder, (ii) achieve Substantial Completion; (iii) correct any latent defects in the construction of the Project, within the warranty period associated with the construction work performed and/or materials installed in connection with achieving Substantial Completion of the Project; (iv) cause Conversion to occur prior to the outside date required under the Loan Documents; and (v) fund all required reserves (including, without limitation, the initial funding of the Operating Reserve).

“Counsel” or **“Counsel for the Company”** means Nixon Peabody LLP or such other attorney or law firm upon which the Investor Member and the Managing Member shall agree; provided, however, that if any section of this Agreement either (i) designates particular counsel for the purpose described therein, or (ii) provides that counsel for the purpose described therein shall be chosen by another method or by another Person, then such designation or provision shall prevail over this general definition.

“CPI Percentage” means the percentage equal to the increase in the Consumer Price Index most recently published as of the first day of the year in question over the Consumer Price Index for the immediately preceding year.

“Credit Enhancement” means (i) prior to Conversion, a direct pay letter of credit in the amount of the Bond Loan plus servicing and interest thereon for 60 days (assuming a rate of 1.75% per annum on the Short Term Tax Exempt Loan, 3.25% per annum on the Short Term Taxable Loan and 3.85% per annum on the Long Term Loan) issued by Goldman Sachs Bank USA, and (ii) after Conversion, an agreement between HFA and SONYMA to insure the Bond Loan.

“Credit Period” means for each Building comprising the Project, the period of 10 Taxable Years beginning with the Taxable Year in which such a Building is first Placed in Service (or, at the election of the Managing Member with the Consent of the Investor Member (which shall not be unreasonably withheld, conditioned or delayed), and to the extent permitted under Section 42(f)(1) of the Code, the succeeding Taxable Year) together with the eleventh such Taxable Year immediately following to the extent Federal Tax Credits are allowed for such period.

“Credit Period Put Option” means the provisions of *Section 8.5* affording the Investor Member the option under certain circumstances to cause the Managing Member to purchase 100% of the Company Interest of the Investor Member.

“Debt Service Coverage Ratio” means for any given consecutive monthly period the ratio that (i) the excess, if any, of (a) Adjusted Gross Effective Income for such period divided by the number of months or days in such period, as applicable, over (b) an amount equal to the greater of (A) total Operating Expenses (taken as a whole) for such period divided by the number of months or days in such period, as applicable, and (B) the projected Investor Member’s Underwritten Expenses for the Project as set forth on Schedule 4 (inclusive of required deposits into the Reserve Fund for Replacements for such period) (taken as a whole) divided by the number of months or days in such period, as applicable (provided, however, (i) that actual Operating Expenses will be used for real estate taxes and insurance and (ii) actual Operating Expenses may be used for personnel costs in instances where there is a true cost savings (i.e., a cost savings that does not result from a change in services provided to the Project) that can be substantiated with firm contracts, subject to the reasonable Consent of the Investor Member), in each case, exclusive of payments of mandatory debt service for such period and nonrecurring legal and professional fees and expenses not included in the Company’s Operating Budget, as applicable (which projected Investor Member’s Underwritten Expenses (other than the Management Fee contemplated by *Section 8.15* and the required deposits to the Reserve Fund for Replacements contemplated by *Section 8.20*) shall be increased by 3.0% per annum for each year beyond the first year in which the Debt Service Coverage Ratio is being determined), bears to (ii) mandatory debt service for such period with respect to the Permanent Loans divided by the number of months or days in such period, as applicable. For purposes of determining actual Operating Expenses under this definition, (i) Operating Expenses shall include a ratable portion of all of the annual amount of those seasonal and/or periodic expenses related to utilities and insurance which might reasonably be expected to be incurred on an unequal basis during a full annual period of operation, for each month in such consecutive monthly period and (ii) upon receipt and continuation of the Tax Abatement, real estate taxes for the residential portion of the Project shall be assumed to be \$0 per annum.

“Deferred Management Fee” has the meaning set forth in the definition of Management Fee.

“Depreciation” means an amount equal to the depreciation, amortization or other cost recovery deduction allowable for Federal income tax purposes with respect to an asset for each Taxable Year, except that if the Carrying Value of an asset differs from its adjusted basis for Federal income tax purposes at the beginning of such Taxable Year, Depreciation shall be an amount that bears the same ratio to such beginning Carrying Value as the federal income tax

depreciation, amortization or other cost recovery deduction for such Taxable Year bears to such beginning adjusted tax basis; provided, however, that if the Federal income tax depreciation, amortization or other cost recovery deduction for such year is zero, Depreciation shall be determined with reference to such beginning Carrying Value using any reasonable method selected by the Managing Member.

“Developer” means, PL Sara Developer LLC, a New York limited liability company, in its capacity as the developer of the Project.

“Developer Fee Note” has the meaning set forth in *Section 8.12(b)*.

“Development Agreement” means the agreement between the Company and the Developer as of even date herewith relating to the development of the Project and providing for the payment of the Development Fee, in the form set forth in Exhibit B and all exhibits, amendments and supplements thereto which have received the Consent of the Investor Member.

“Development Budget” means the development budget prepared by the Managing Member and Consented to by the Investor Member with respect to the costs and sources of financing for the construction and development of the Project, attached hereto as Exhibit C, as may be modified in accordance with the terms of this Agreement. The Development Budget shall include, among other things, a line-item sufficient to provide for lease-up expenses and a breakout of costs and sources for the construction and development of the Project.

“Development Fee” means the fee payable by the Company to the Developer pursuant to the Development Agreement and *Section 8.12*.

“Diverse-Owned and Local Vendors” has the meaning set forth in *Section 8.23*.

“Effective Date” has the meaning set forth in *Section 15.21*.

“Effective Tax Rate” means, with respect to a given year, the combined effective federal, state and local income tax rate that the Company Accountants determine is applicable to a business corporation doing business such that 100% of its income and capital are apportioned to New York City that is taxable at the highest respective applicable marginal rates for such year.

“Eligible Basis” means the eligible basis of the Project allowable under Section 42(d)(1) of the Code and that the Company will use in calculating the eligible basis of the Company in the Project for purposes of Section 42 of the Code.

“Eligible Units” means the one hundred fifty-three (153) revenue producing residential units in the Project. The Company has agreed to hold such Eligible Units for occupancy in such manner as to qualify such units as low-income units under Code Section 42(i)(3) and in such manner as to comply with the other requirements for the Federal Tax Credits and the HAP Contract.

“Engineering Consultant” means an engineering consultant selected and retained by the Investor Member, at its sole expense, to review the Plans and Specifications and determine if the Project has been constructed in accordance herewith and therewith. If any Lender requires the

same reports as required by the Investor Member, it is understood that the Investor Member shall utilize reports provided by the same engineering consultant engaged by the Lender, provided that (i) such Lender and engineering consultant consent to reliance by the Investor Member, and (ii) such reports are reasonably acceptable to the Investor Member.

“Environmental Law(s)” has the meaning set forth in *Section 4.1(aa)*.

“Environmental Report” means, collectively, the environmental reports listed on Schedule 3.

“ERISA” has the meaning set forth in *Section 4.1(v)*.

“ESA” has the meaning set forth in *Section 4.1(ddd)*.

“ESG” has the meaning set forth in *Section 8.23*.

“ESG Benchmark Guidebook” has the meaning set forth in *Section 8.23*.

“ESG Guidebook” has the meaning set forth in *Section 8.23*.

“ESG Initiatives” has the meaning set forth in *Section 8.23*.

“Excess Development Costs” means, at any date, all costs in excess of the actual proceeds of the Bond Loan, the HPD Loan, deferred Development Fee, and the Capital Contributions (as adjusted pursuant to this Agreement), in each case that are actually funded or available to be funded as of such date and which are required to complete any and all of the following: (i) construction of the Project (including, without limitation, the work under the Brownfield Cleanup Agreement) to the extent contemplated by the Plans and Specifications as of such date, including paying all amounts due under and pursuant to the Construction Contract as of such date, and any construction cost overruns and the cost of any Change Orders as Consented to by Investor Member if required hereunder, (ii) achieve Substantial Completion; (iii) correct any latent defects in the construction of the Project, within the warranty period associated with the construction work performed and/or materials installed in connection with achieving Substantial Completion of the Project; (iv) cause Conversion to occur prior to the outside date required under the Loan Documents; and (v) fund all required reserves (including, without limitation, the initial funding of the Operating Reserve).

“Extended Use Agreement” means the HFA Regulatory Agreement, required pursuant to Section 42(h)(6) of the Code, setting forth certain terms and conditions under which the Project is to be operated and all exhibits, amendments and supplements thereto which have received the Consent of the Investor Member.

“Federal Tax Credit” means the federal low-income housing tax credit allowed for low-income housing projects pursuant to Section 42 of the Code.

“Fifty Percent Test” means the requirement imposed pursuant to Section 42(h)(4)(B) of the Code that 50% or more of the aggregate basis of each Building and land of the Project be financed with the proceeds of Tax-Exempt Bonds.

“Final Capital Contribution” has the meaning set forth in *Section 5.1(c)(iii)*.

“Final Capital Contribution Conditions” are the conditions set forth in *Section 5.1(c)(iii)*.

“Gross Effective Income” means the gross income from all sources from the normal operation of the Project received on a cash basis (provided, however, that with respect to income from rents, gross income shall only include rents from written leases of 12 months or longer with terms that are commercially reasonable and customary under residential apartment leasing practices observed in the area in which the Project is located and a vacancy rate equal to the greater of (a) actual vacancy and (b) 5% shall be applied), but excluding (i) tenant security or other deposits (unless forfeited by the tenants), (ii) Capital Contributions and interest thereon, (iii) interest on reserves not available for distribution, (iv) the proceeds of any Company borrowings, (v) the proceeds of insurance payments, except rental interruption insurance, and (vi) any other non-recurring income. Notwithstanding the foregoing, provided that the Company has received cash payments under the HAP Contract prior to the applicable date, Gross Effective Income shall include subsidy payments pursuant to the HAP Contract that are due and payable and not more than forty-five (45) days in arrears.

“GS Yardi” has the meaning set forth in *Section 12.4(t)*.

“Guarantor” means, collectively, Asland and Pembroke.

“Guaranty” means the Unconditional Guaranty executed by the Guarantor, attached hereto as Exhibit D.

“HAP Contract” means that certain Housing Assistance Payments Contract, between the Company and New York City Housing Authority, with respect to one hundred fifty-three (153) apartment units in the Project, which HAP Contract provides for an initial term of at least 15 years, as approved by the Investor Member.

“Hazardous Material(s)” has the meaning set forth in *Section 4.1(aa)*.

“HDFC” means HP Park Lane Senior Housing Development Fund Company, Inc., a New York not-for-profit corporation.

“HFA” means the New York State Housing Finance Agency.

“HPD” means the City of New York, acting through its Department of Housing Preservation and Development.

“HPD Loan” means the loan made to the Company by HPD on or about the date hereof in the aggregate amount of \$10,536,506.

“HPD Loan Documents” means the loan documents evidencing the HPD Loan.

“HUD” means the U.S. Department of Housing and Urban Development.

“Incident” has the meaning set forth in *Section 4.1(jjj)*.

“Initial Capital Contribution” has the meaning set forth in *Section 5.1(c)(i)*.

“Initial Capital Contribution Conditions” are the conditions set forth in *Section 5.1(c)(i)*.

“Interest” or **“Company Interest”** means the ownership interest of a Member in the Company at any particular time, including the right of such Member to any and all benefits to which such Member may be entitled as provided in this Agreement and in the Act, together with the obligations of such Member to comply with all the terms and provisions of this Agreement and of said Act. Such Interest of each Member shall, except as otherwise specifically provided herein, be that percentage of the aggregate of such benefit or obligation specified by *Section 5.1* as such Member’s Percentage Interest.

“Investor Member” has the meaning set forth in the *preamble*.

“Investor Member’s Underwritten Expenses” means the underwritten expenses contemplated at Closing by the Investor Member as set forth on *Schedule 4*.

“Investor Member’s Underwritten Income” means the underwritten income contemplated at Closing by the Investor Member as set forth on *Schedule 4*.

“IRS” means the U.S. Internal Revenue Service.

“Joint Venture Agreement” means that certain Amended and Restated Operating Agreement of MM Member, dated as of April 27, 2018, between Atreides Affordable LLC, a Delaware limited liability company (as assignee of Asland PL LLC, A New York limited liability company) and Pembroke.

“Joint Venture Bad Boy Act” means a removal pursuant Section 5.6 of the Joint Venture Agreement arising out a Bad Boy Act (as defined in the Joint Venture Agreement).

“Key Principal” has the meaning set forth in *Section 4.1(III)*.

“Land” means the parcel constituting the real property upon which the Project is located, as more fully set forth in *Exhibit A*.

“Laws and Regulations” has the meaning set forth in *Section 4.1(hhh)*.

“Lender” means any one or more of the lenders (as the context may require) under any of the Loan Documents.

“Liquidator” means the Investor Member or, if the Investor Member shall so direct, the Managing Member or, if there is none at the time in question, such other Person who may be appointed in accordance with applicable law with the Consent of the Investor Member and who shall be responsible for taking all action necessary or appropriate to wind up the affairs of, and distribute the assets of, the Company upon its dissolution.

“Liquid Assets” means cash and cash equivalents, bonds and marketable securities, all in accordance with generally accepted accounting principles applied on a consistent basis.

“Loans” means, collectively, the Bond Loan, the HPD Loan, and any other loans made to the Company.

“Loan Documents” means, collectively, the Bond Loan Documents and the HPD Loan Documents.

“Long-Term Applicable Federal Rate” means the long-term applicable federal rate for an obligation or debt instrument as determined under Section 1274(d) of the Code.

“Management Agent” means Grenadier Realty Management LLC, or such other management and rental agent for the Project designated pursuant to *Section 8.15*.

“Management Agreement” means the agreement between the Company and the Management Agent providing for the leasing and management of the Project by the Management Agent and all exhibits, amendments and supplements thereto which have received the Consent of the Investor Member.

“Management Fee” means the fee payable to the Management Agent, which fee shall not exceed 6.0% of the collected gross income from the Project (inclusive of any fees for leasing, accounting and/or other services), and no other fees for leasing, accounting or other services with respect to the Project shall be paid to the Management Agent without the Consent of the Investor Member. The Managing Member will cause any management agreement between the Company and a Management Agent that is Affiliated with the Managing Member, Developer, or Guarantor to contain a provision that allows for the deferral of up to 40% of the Management Fee in order to avoid Operating Deficits (the **“Deferred Management Fee”**). Any portion of the Deferred Management Fee that is unpaid will accrue without interest and will be repaid from Net Cash Flow.

“Managing Member” means PL Sara Manager LLC, a New York limited liability company.

“Managing Member Advance” shall be a loan from the Managing Member to the Company required or permitted by the terms hereof. Managing Member Advances shall be unsecured, shall bear no interest, shall be non-recourse to the Members and shall only be repayable pursuant to *Section 7.3(a)*.

“Material Adverse Change” or **“Material Adverse Effect”** means any set of circumstances or events which (a) has or could reasonably be expected to have any material adverse effect whatsoever upon the validity or enforceability of this Agreement; (b) is or could reasonably be expected to be material and adverse to the business, properties, assets, financial condition, results of operations or prospects of the Company or the Project, or (c) impairs materially or could reasonably be expected to impair materially any rights of or benefits available to the Investor Member under this Agreement. For the avoidance of doubt, securing a loan with the Project shall not constitute a “Material Adverse Change” or a “Material Adverse Effect.” Notwithstanding anything herein to the contrary, a default by Investor Member

hereunder and any consequences as a result thereof shall in no event be deemed a Material Adverse Change.

“Member” means any Managing Member or Investor Member, as the context may require, and any successor thereto in accordance with the terms of this Agreement.

“Member Loan” means any loan made by a Member to the Company pursuant to *Section 8.18*; if a Member has more than one Member Loan outstanding at a particular time then all such loans may be referred to collectively as “Member Loans.”

“Minimum Balance” has the meaning set forth in *Section 8.21(a)*.

“Minimum Set-Aside Test” means the 25-60 Set-Aside Test.

“Money Laundering Laws” has the meaning given in *Section 4.1(mmm)*.

“Mortgage” means any mortgage or deed of trust to be given by the Company in favor of a Lender, constituting a lien on the Project and securing the Loans and all exhibits, amendments and supplements thereto which have received the Consent of the Investor Member.

“Mortgagee” has the meaning set forth in *Section 10.4*.

“MM Member” means Atreides Holdings LLC, a New York limited liability company.

“Net Cash Flow” for any period means the sum of (i) all cash received by the Company from rents, rental subsidies, lease payments and all other sources of the Project, but excluding (A) tenant security or other deposits (unless forfeited), (B) Capital Contributions and interest thereon (other than if used to pay for an item deducted below in determining Net Cash Flow), (C) proceeds from Capital Transactions, (D) proceeds of any Company borrowings, and (E) interest on reserves not available for distribution, (ii) the net proceeds of any insurance (including rental interruption insurance), other than fire and extended coverage and title insurance, to the extent not reinvested or applied to repair and restoration of the improvements, (iii) withdrawals from the Operating Reserve at or after the end of the Compliance Period as contemplated by *Section 8.21*, and (iv) any other funds deemed available for distribution by the Managing Member with the Consent of the Investor Member and the Lender (in the case of the Lender, if required pursuant to the Loan Documents), in each case for such period (including, without limitation, any funds remaining in the “Contingency” line item in the Development Budget following the payment of the Stabilization Capital Contribution to the extent permitted by the Lender), less the sum of (i) all cash expenditures of the Project (unless paid from a capital source identified in (A) through (E) above to the extent that such expenditures are reflected on the sources and uses of funds or the Consent of the Investor Member has been obtained), and all expenses unpaid but properly accrued, which have been incurred in the operation of the Company’s business, excluding expenditures paid from any Company reserve account (whether or not such expenditure is deducted, amortized or capitalized for tax purposes), including the Management Fee to the Management Agent (to the extent actually paid), (ii) all payments on account of any loans (including unpaid principal and accrued interest which is then due and payable and tax or insurance escrow payments, if applicable) made to the Company (whether such loan is made by a Member pursuant to *Section 8.18* or otherwise), but not including any amounts to be paid

pursuant to the Development Agreement or on account of Managing Member Advances or to be paid solely from Net Cash Flow or the proceeds of a Capital Transaction, and (iii) any deposits of cash to reserves for working capital, the Reserve Fund for Replacements, the Operating Reserve or other reserves for capital expenditures, repairs, replacements or anticipated expenditures, in such amounts as may be required hereby or by the Lender or may be determined from time to time by the Managing Member with the Consent of the Investor Member, and the Lender (in the case of the Lender, if required pursuant to the Loan Documents), to be advisable for the operation of the Company, in each case for such period. Net Cash Flow shall be determined separately for each Taxable Year or portion thereof and shall not be cumulative.

“Net Worth” means total assets minus total liabilities, in accordance with generally accepted accounting principles applied on a consistent basis.

“Net Worth and Liquidity Requirements” has the meaning set forth in *Section 4.1(III)* of this Agreement.

“Nominee Agreement” means the Nominee Agreement dated as of the date hereof by and between HDFC and the Company regarding the beneficial ownership of the Project by the Company.

“Nonrecourse Deductions” has the meaning set forth in Treasury Regulation Section 1.704-2(b)(1).

“Note” means a mortgage or deed of trust promissory note given by the Company in favor of a Lender, evidencing Loans and all exhibits, amendments and supplements thereto which have received the Consent of the Investor Member.

“Notice” means a writing containing the information required by this Agreement to be communicated to a Member and sent by (i) express courier, (ii) e-mail transmission (provided that such e-mail transmission shall be immediately followed by a “hard” original of such writing delivered by another method set forth in this definition) or (iii) by registered or certified mail, with postage prepaid and return receipt requested at such Member’s address as specified pursuant to Section 15.9. The date of receipt of Notice (or the next Business Day if the date of receipt is not a Business Day) (or, in the case of registered or certified mail, the date of registry thereof or the date of the certification receipt, as applicable) being deemed the date of such Notice; provided, however, that any written communication containing such information sent to such Member actually received by such Member shall constitute Notice for all purposes of this Agreement.

“ODG Cap” has the meaning set forth in *Section 8.11(b)*.

“ODG Period” has the meaning set forth in *Section 8.11(b)*.

“OFAC” has the meaning set forth in *Section 4.6(c)*.

“Operating Budget” has the meaning set forth in *Section 8.19*.

“Operating Deficit” means, with respect to any period, the amount by which the revenues of the Company during such period from rental payments made by tenants of the Project (excluding security deposits until forfeited), rental subsidies and all other revenues of the Company (other than proceeds of any loans to the Company and investment earnings on funds on deposit in the Reserve Fund for Replacements and any other reserve required by this Agreement) plus any amounts withdrawn from the Operating Reserve (as permitted by Section 8.21) and insurance and tax escrows that are collected on a cash basis for a particular period of time, is exceeded by the sum of all the Operating Expenses, excluding payments for construction of the Project and fees and other expenses and obligations of the Company to be paid solely from Net Cash Flow or surplus cash or from the Capital Contributions of the Investor Member to the Company and disbursements from the Loans pursuant to this Agreement, that are incurred on an cash basis during the same period.

“Operating Deficit Payment Obligation” has the meaning set forth in *Section 8.11(b)*.

“Operating Expenses” mean all costs and expenses incident to the leasing, ownership and operation of the Project, including, without limitation, fees for Accountants and Management Fees, taxes, tax and insurance escrow payments, ordinary capital repairs (net of any releases from the Reserve Fund for Replacements), mortgage and bond insurance premiums, if any, the cost of operations, mandatory debt service payments, maintenance and repairs, and any other reserves required hereunder and/or to be maintained by any Lender, but shall not include (i) payments of the Development Fee, (ii) repayments of Managing Member Advances, (iii) Member Loans, (iv) distributions to Members pursuant to *Section 7.3*, (v) the Asset Management Fee, (vi) the Deferred Management Fee, or (vii) costs and expenses of the Project paid solely from net cash flow or surplus cash of the Project. Operating Expenses shall be determined on an accrual basis.

“Operating Reserve” shall have the meaning set forth in *Section 8.21*.

“Original Agreement” shall have the meaning set forth in the *preamble*.

“Partner Nonrecourse Debt” has the meaning set forth in Treasury Regulation Section 1.704-2(b)(4).

“Partner Nonrecourse Debt Minimum Gain” has the meaning set forth in Treasury Regulation Section 1.704-2(i)(3).

“Partner Nonrecourse Deductions” has the meaning set forth in Treasury Regulation Section 1.704-2(i)(1) for “partner nonrecourse deductions.”

“Partnership Audit Rules” means Subchapter 63C of the Code (as amended by the Bipartisan Budget Act of 2015, P.L. 114-74, the Protecting Americans from Tax Hikes Act of 2015, P.L. 114-113, and Sections 201 through 207 of the Tax Technical Corrections Act of 2018, contained in Title II of Division U of the Consolidated Appropriations Act of 2018, P.L. 115-141), and the Treasury Regulations promulgated thereunder, as amended from time to time.

“Partnership Minimum Gain” means “partnership minimum gain” as determined pursuant to Treasury Regulation Sections 1.704-2(d) and 1.704-2(b)(2).

“Payment and Performance Bonds” has the meaning set forth in *Section 4.1(q)*.

“Payment Date” means the later of (i) the date which is ninety (90) days after the end of the Company’s Taxable Year with respect to the preceding Taxable Year, and (ii) ten (10) days after the date on which the Managing Member has delivered to all Members the financial statements and information required to be delivered under *Section 12.4(a)(A)*.

“Pembroke” means Pembroke Residential Holdings LLC, a Delaware limited liability company.

“Percentage Interest” means the percentage Interest of each Member as set forth in *Section 5.1*.

“Permanent Lender” means, collectively, HFA, HPD and any other lender approved by the Managing Member and the Investor Member.

“Permanent Loan” or **“Permanent Loans”** means, collectively, the permanent portion of the Bond Loan and the HPD Loan.

“Person” means any individual, partnership, corporation, trust, limited liability company or other entity.

“Personal Information” has the meaning set forth in *Section 4.1(jjj)*.

“Placed in Service” or **“Placement in Service”** means placed in service for purposes of Section 42 of the Code.

“Plans and Specifications” means the plans and specifications and/or scope of work for the Project stamped with the seal of the Architect, which are described in Exhibit J, as modified from time to time.

“Prime Rate” means the prime commercial lending rate as published and adjusted from time to time by the Wall Street Journal.

“Profit” and **“Loss”** means, for each Taxable Year of the Company (or other period for which Profit or Loss must be computed), the Company’s taxable income or loss determined in accordance with Code Section 703(a), with the following adjustments:

(i) all items of income, gain, loss, deduction, or credit required to be stated separately pursuant to Code Section 703(a)(1) will be included in computing taxable income or loss;

(ii) any tax-exempt income of the Company, not otherwise taken into account in computing Profit or Loss, will be included in computing taxable income or loss;

(iii) any expenditures of the Company described in Code Section 705(a)(2)(B) (or treated as such pursuant to Treasury Regulation Section 1.704-

1(b)(2)(iv)(i)) and not otherwise taken into account in computing Profit or Loss, will be subtracted from taxable income or loss;

(iv) if the Carrying Value of any asset of the Company is adjusted pursuant to the definition of Carrying Value, the amount of such adjustment, as well as Depreciation claimed with respect to such asset, will be taken into account as gain or loss from the disposition of such asset for purposes of computing Profit or Loss;

(v) in lieu of the depreciation, amortization or cost recovery deductions allowable in computing taxable income or loss, there will be taken into account depreciation computed based upon the Carrying Value of the asset as set forth under the definition of Depreciation;

(vi) gain or loss resulting from any disposition of an asset with respect to which gain or loss is recognized for Federal income tax purposes will be computed by reference to the Carrying Value of the asset disposed of, notwithstanding that the adjusted tax basis of such asset differs from its Carrying Value;

(vii) to the extent that a Code Section 734(b) or 743(b) adjustment is required to be taken into account in determining Capital Accounts, pursuant to Treasury Regulation Section 1.704-1(b)(2)(iv)(m), the amount of such adjustment shall be treated as an item of gain (if the adjustment increases the basis of the asset) or loss (if the adjustment decreases the basis of the asset) from the disposition of the asset; and

(viii) notwithstanding any other provision of this definition, any items which are specially allocated pursuant to *Section 7.2* or *Section 7.7* will not be taken into account in computing Profit or Loss.

“Prohibited Business” means a private or commercial golf course, country club, massage parlor, hot tub facility, suntan facility, racetrack or other facility used for gambling, or any store the principal business of which is the sale of alcoholic beverages for consumption off-premises, the production, distribution or sale of marijuana, cannabis or their byproducts or any other use related to the cannabis industry, or leasing property to such businesses.

“Prohibited Person” means (i) any Person identified on the OFAC List, (ii) any other Person or foreign country or agency thereof with whom a U.S. Person may not conduct business or transactions by prohibition of Federal law or Executive Order of the President of the United States of America or (iii) any Person whom is prohibited from doing business with the City of New York.

“Project” shall have the meaning set forth in the *preamble*.

“Projection Accountants” means Novogradac & Company LLP, or such other firm of independent certified public accountants as may be engaged by the Investor Member, solely to prepare Projections (including all updates thereto).

“Project Documents” means and includes this Agreement, the Bond Loan Documents, the Extended Use Agreement, the Regulatory Agreement, the Management Agreement, the

AHAP, the HAP Contract, the Guaranty, the Development Agreement, the Construction Contract, the Loan Documents, the HPD Loan Documents, the Nominee Agreement, the Brownfield Cleanup Agreement, and all other instruments delivered to (or required by) the Lender or the Agency and all other documents relating to the Project or the Loans or Loan Documents and by which the Company and/or the Project (as applicable) is/are bound, as amended or supplemented from time to time.

“Projected Aggregate Brownfield Credit Amount” means the product of (i) 99.99% and (ii) the aggregate amount of Brownfield Tax Credits anticipated to be allowable to the Project. If, following any determination or re-determination of the Adjusted Aggregate Brownfield Credit Amount pursuant to *Section 5.2*, such amount is different than the Projected Aggregate Brownfield Credit Amount, then, for purposes of any subsequent application of *Section 5.2*, the term “Projected Aggregate Brownfield Credit Amount” shall mean the Adjusted Aggregate Brownfield Credit Amount, provided that any required adjustment(s), payment(s) or Tax Credit Adjustment Payments have been made pursuant to the provisions of *Section 5.2* on account of such difference.

“Projected Aggregate Federal Credit Amount” means the product of (i) 99.99% and (ii) the aggregate amount of Projected Federal Credits anticipated to be available to the Project during the Projected Credit Period. If, following any determination or re-determination of the Adjusted Aggregate Federal Credit Amount pursuant to *Section 5.2*, such amount is different than the Projected Aggregate Federal Credit Amount, then, for purposes of any subsequent application of *Section 5.2*, the term “Projected Aggregate Federal Credit Amount” shall mean the Adjusted Aggregate Federal Credit Amount, provided that any required adjustment(s), payment(s) or Tax Credit Adjustment Payments have been made pursuant to the provisions of *Section 5.2* on account of such difference.

“Projected Brownfield Credits” means and refers to the projected Brownfield Tax Credits applicable to the Project, as set forth on Schedule 1.

“Projected Credit Period” means that period of time during which the Projected Federal Credits and the Projected Brownfield Tax Credits are projected to be claimed by the Company as set forth on Schedule 1.

“Projected Federal Credits” means and refers to the projected Federal Tax Credits applicable to the Project, as set forth on Schedule 1.

“Projections” means the operating projections with respect to the Company attached hereto as Exhibit E provided by the Managing Member to the Investor Member at Closing (which Closing version of the Projections has been approved by the Managing Member and the Investor Member) describing the economic and tax consequences to the Investor Member anticipated in good faith to be generated by its investment in the Company, based on the Company’s construction, ownership, maintenance and operation of the Project.

“Project Property” means the real property bounded and described as set forth in Exhibit A, known as Block 3672 Lot 30 on the Tax Map of the City of New York, Bronx County.

“Public Official” means any Person holding an elected or appointed office and any other officer or employee of a government or a department, agency, instrumentality or part thereof (including a state owned or Controlled enterprise or joint venture/partnership) or of a public international organization or a political party, in each case in a Relevant Jurisdiction, or any person exercising a public function or acting in an official capacity for or on behalf of any of the foregoing.

“Purchase Option” has the meaning set forth in *Section 8.4(a)*.

“Regulatory Agreement” means, collectively, (i) the Regulatory Agreement, dated on or about the date hereof (the **“HFA Regulatory Agreement”**), among the Company, the HDFC and HFA and (ii) the Affordable Housing Regulatory Agreement, dated on or about the date hereof (the **“HPD Regulatory Agreement”**), among the Company, the HDFC and HPD, to the extent applicable, and collectively with such regulatory agreement, any other regulatory agreements, as amended, and/or any declaration of covenants and restrictions that apply to the Project and subject to which the Company acquires the Project or that are entered into between the Company and the Lender or any applicable Authority, including the Agency, at or after the Closing setting forth certain terms and conditions under which the Project is to be operated.

“Recapture Amount” has the meaning set forth in *Section 7.4(c)*.

“Related Person” has the meaning set forth in Treasury Regulation Section 1.752-4(b) or successor regulations thereto.

“Relevant Jurisdiction” means the United States of America and any jurisdiction in which the Company or any subsidiary thereof is required to be authorized to do business, including, without limitation, the State of New York.

“Rental Achievement” means the earliest date on which, based on evidence satisfactory to the Investor Member: (i) not less than 95% of the apartment units in the Project are then occupied by and have been occupied by residential tenants for each month in a three consecutive calendar month period, subject to written leases of 12 months or longer with terms that are commercially reasonable and customary under residential apartment leasing practices observed in the area in which the Project is located; (ii) not less than 100% of the Eligible Units (or not less than 95% so long as all payments owed under *Section 5.2(a)(i)*, *(ii)* and *(iii)* have been timely made) are occupied at least once by tenants whose incomes do not exceed the Minimum Set-Aside Test and whose rental payments do not exceed the Rent Restriction Test; and (iii) the Debt Service Coverage Ratio for the Project equals or exceeds 1.15 to 1 for the ninety (90) day period ending on such date.

“Rent Restriction Test” means the tests pursuant to Section 42 of the Code which require that the gross rents paid by tenants of the Project cannot exceed 30% of the imputed income limitation of the applicable units.

“Repurchase Price” has the meaning set forth in *Section 5.6(a)*.

“Reserve Fund for Replacements” means cash funded reserve for replacements established by the Company pursuant to *Section 8.20*.

“Sanctions” has the meaning set forth in *Section 4.6(c)*.

“Single Purpose Entity” means a corporation, limited partnership or limited liability company which, at all times since its formation and thereafter:

(i) does not engage in any business or activity other than the acquisition, development, ownership, operation, marketing, leasing, rehabilitating, repairing, managing, disposition and maintenance of the Project, and entering into the Loan Documents and activities incidental thereto;

(ii) does not acquire or own any material assets other than (1) the Project, and (2) such incidental personal property as may be necessary for the ownership, operation and management of the Project, as the case may be;

(iii) does not merge into or consolidate with any person or entity or dissolve, terminate or liquidate in whole or in part, transfer or otherwise dispose of all or substantially all of its assets or change its legal structure;

(iv) (1) observes its organizational formalities and preserves its existence as an entity duly organized, validly existing and in good standing under the laws of the State or (2) without the prior Consent of the Investor Member, does not amend, modify, terminate or fail to comply with the provisions of its organizational documents or qualify to do business in the State (if necessary);

(v) does not own any subsidiary or make any investment in, any person or entity without the Consent of the Investor Member;

(vi) except as otherwise expressly permitted hereunder, does not commingle its assets with the assets of any of its members, general partners, Affiliates, principals or of any other person or entity, does not participate in a cash management system with any other entity or person or fail to use its own separate stationery, invoices and checks; provided that each of the property manager and the marketing agent for the Project when sending out correspondence in its capacity as agent for the Company may use stationary bearing such agent's name and/or logo;

(vii) does not incur any debt, secured or unsecured, direct or contingent (including guaranteeing any obligation), other than the Loans, Member Loans and Managing Member Advances provided for in this Agreement and trade payables in the ordinary course of its business of owning and operating the Project, provided that such trade payables (1) are not evidenced by a note, (2) are paid within 120 days of the date incurred unless subject to a good faith dispute, and (3) are payable to trade creditors and in amounts as are normal and reasonable under the circumstances;

(viii) does not become insolvent and pays its debts and liabilities (including, as applicable, shared personnel and overhead expenses) from its assets as the same shall become due;

(ix) (1) maintains its records (including financial statements), books of account and bank accounts separate and apart from those of the members, general partners, principals and Affiliates of the Company or of the Managing Member, as the case may be, the Affiliates of a member, general partner or principal of the Company or the Managing Member, as the case may be, and any other person or entity, (2) does not permit its assets or liabilities to be listed as assets or liabilities on the financial statement of any other entity or person except as otherwise required or permitted by applicable law or accounting guidelines, and (3) does not include the assets or liabilities of any other person or entity on its financial statements;

(x) except for the Development Agreement and the Management Agreement, does not enter into any contract or agreement with any member, general partner, principal or Affiliate of the Company or the Managing Member, as the case may be, or any member, general partner, principal or Affiliate thereof, except upon terms and conditions that are commercially reasonable, intrinsically fair and substantially similar to those that would be available on an arms-length basis with third parties other than any member, general partner, principal or Affiliate of the Company or the Managing Member, as the case may be, or any member, general partner, principal or Affiliate thereof;

(xi) does not seek the dissolution or winding up in whole, or in part, of the Company or the Managing Member, as the case may be;

(xii) corrects any known misunderstandings regarding the separate identity of the Company or the Managing Member, as the case may be, or any member, general partner, principal or Affiliate thereof or any other person;

(xiii) does not guarantee or become obligated for the debts of any other entity or person or hold itself out to be responsible for the debts of another entity or person, except as provided in the Loan Documents;

(xiv) does not make any loans or advances to any third party, including any member, general partner, principal or Affiliate of the Company or the Managing Member, as the case may be, or any member, general partner, principal or Affiliate thereof, or acquire obligations or securities of any member, general partner, principal or Affiliate of the Company or the Managing Member, as the case may be, or any member, general partner, or Affiliate thereof;

(xv) files its own tax returns except as required or permitted by applicable law;

(xvi) is not included on the tax returns of any other person or entity except as required or permitted by applicable law;

(xvii) holds itself out to the public as a legal entity separate and distinct from any other entity or person and conducts its business solely in its own name or a name franchised or licensed to it by an entity other than an Affiliate of the Company and the Managing Member, as the case may be, and not as a division or part of any other

entity in order not (A) to mislead others as to the identity with which such other party is transacting business, or (B) to suggest that the Company or the Managing Member, as the case may be, is responsible for the debts of any third party (including any member, general partner, principal or Affiliate of the Company or the Managing Member, as the case may be, or any member, general partner, principal or Affiliate thereof), except as provided in the Loan Documents;

(xviii) maintains adequate capital for the normal obligations reasonably foreseeable in a business of its size and character and in light of its contemplated business operations, provided that this clause (xviii) shall not require any Member to contribute capital to the Company;

(xix) allocates fairly and reasonably any overhead expenses that are shared with an Affiliate, including paying for office space and services performed by any employee of an Affiliate;

(xx) does not pledge its assets for the benefit of any other person or entity, and with respect to the Company, other than with respect to the Loans;

(xxi) maintains access to sufficient services in light of its contemplated business operations;

(xxii) does not, with respect to itself, file or consent to the filing of any petition of, either voluntary or involuntary, or otherwise does not take advantage of any applicable insolvency, bankruptcy, liquidation or reorganization statute, or does not make an assignment for the benefit of creditors without the Consent of the Investor Member;

(xxiii) holds its assets in its own name; and

(xxiv) does not have any of its obligations guaranteed by an Affiliate, except in the case of the Company for any guarantees in favor of the Investor Member or the Lender or any lender to the Company, as applicable.

“SONYMA” means the State of New York Mortgage Agency.

“Stabilization” means the occurrence of all of the following: (i) Substantial Completion, (ii) approval by the Lender, if required, of and the Consent of the Investor Member to, the Company’s preliminary certification of actual costs as to the construction of the Project, (iii) Conversion, (iv) Rental Achievement, and (v) the Projection Accountants have issued the Accountant’s Certificate and calculations of preliminary adjustments pursuant to *Section 5.2* have been calculated and any required payments have been made to the reasonable satisfaction of the Investor Member.

“Stabilization Capital Contribution” has the meaning set forth in *Section 5.1(c)(ii)*.

“Stabilization Capital Contribution Conditions” are the conditions set forth in *Section 5.1(c)(ii)*.

“Stabilization Date” means July 31, 2025.

“State” means the State of New York.

“Substantial Completion” means the date on which all the following events have occurred: (i) the construction of the Project is substantially complete substantially in accordance with the Plans and Specifications (including, without limitation, the work under the Brownfield Cleanup Agreement), (ii) Certificate(s) of Occupancy remain in effect for 100% of the apartment units in the Project, (iii) the Architect has issued an Architect’s Certificate and delivered an executed AIA Form G704, (iv) the Investor Member has received a certification or other evidence reasonably satisfactory to the Investor Member from the Engineering Consultant certifying that the construction of the Project has been substantially completed in accordance with the Plans and Specifications, (v) all amounts owing to the Contractor for the construction of the Project have been paid in full (subject to amounts held by the Company under any contract as a retainage or other holdbacks for “punch-list” items, *provided, however*, that any punch list costs that collectively exceed \$50,000 must be fully reserved for at an amount equal to 200% of such costs) and all liens covering the Project other than that of the Lenders and other than those Consented to by the Investor Member have been released or bonded according to the construction mechanic’s lien laws of the State and in a manner reasonably satisfactory to the Investor Member and sufficient to obtain a title continuation evidencing the removal of all exceptions for the existence of mechanics’ liens, (vi) a certificate from the Company Accountants has been received confirming compliance with the Fifty Percent Test for each Building comprising the Project, and (vii) no event of default under the Loans or any third-party construction financing for the Company has occurred and is continuing, and the Company has not received notice from any lender of a default which, upon the expiration of any applicable cure period, would become an event of default. For purposes of Substantial Completion, Certificate(s) of Occupancy shall include temporary Certificate(s) of Occupancy.

“Substitute Investor Member” means any Person admitted to the Company as an Investor Member pursuant to *Section 9.5*.

“Tax” (and, with correlative meaning, **“Taxes”**) means, solely for the purposes of *Section 4.1(ppp)–(uuu)*, (a) any United States federal, state, local or foreign tax, custom, duty, governmental fee or other like assessment or charge of any kind whatsoever, including net income, gross income, gross receipts, windfall profit, severance, property, production, sales, use, license, excise, franchise, employment, payroll, withholding on amounts paid to or by any person, alternative or add-on minimum, ad valorem, value-added, transfer, stamp, or environmental tax, escheat and unclaimed property obligations, together with any interest or penalty, addition to tax or additional amount imposed by any governmental authority and (b) any liability for the payment of amounts determined by reference to amounts described in clause (a) as a result of being or having been a member of any group of corporations that files, will file, or has filed Tax Returns on a combined, consolidated, unitary or similar basis, as a result of any obligation under any agreement or arrangement, as a result of being a transferee or successor, or by contract or otherwise.

“Tax Abatement” means a real property tax abatement for the residential portion of the Project available under Section 420-c of the New York Real Property Tax Law establishing a real property tax obligation with respect to the residential portion of the Project.

“Tax Abatement Certificate of Eligibility” means a certificate issued by HPD signifying the final terms of the Tax Abatement.

“Taxable Bonds” mean those certain taxable bonds issued by HFA in the approximate amount of \$17,845,000, which shall be repaid at or prior to Conversion.

“Taxable Year” means the taxable year of the Company, which is the calendar year.

“Tax Attributes” means the sum of (i) 99.99% of the amount of the Projected Federal Credits, Projected Brownfield Tax Credits, the Actual Federal Credits, or Actual Brownfield Tax Credits, as applicable, to be realized by the Company for the entire Credit Period and (ii) the highest marginal federal corporate income tax rate multiplied by the taxable losses that are available or projected to be available, as applicable, to the Investor Member for federal income tax purposes.

“Tax Credit Adjustment Payment” has the meaning set forth in *Section 5.2(b)(iii)*.

“Tax Credit Conditions” means, for the duration of the Compliance Period for the Project, any and all restrictions, including, but not limited to, applicable federal, state and local laws, rules and regulations, which must be complied with in order for the Project to qualify for Federal Tax Credits equal to the full Projected Federal Credits or to avoid an event of recapture in respect of Federal Tax Credits.

“Tax Credit Determination” means, with respect to the Project, the determinations required to be issued pursuant to Code Sections 42(m)(1)(D) and 42(m)(2)(D) by reason of the Project being financed by the Tax-Exempt Bonds, (i) stating that the Project satisfies the requirements of the “qualified allocation plan” for the State and (ii) stating that the Federal Tax Credits in an amount at least equal to the Projected Federal Tax Credits as are necessary for the financial feasibility of the Project.

“Tax Credit Recapture/Reduction Event” means in any Taxable Year, the occurrence of any of the following events which results in (i) a recapture of Federal Tax Credits or Brownfield Tax Credits previously allocated to the Investor Member, (ii) a claim for any tax year of Actual Federal Credits less than the Projected Federal Credits, as adjusted pursuant to *Section 5.2(a)* and *5.2(b)*, (iii) a claim for any tax year of Actual Brownfield Tax Credits less than Projected Brownfield Tax Credits, as adjusted pursuant to *Section 5.2(a)* and *5.2(b)*, or (iv) an allocation to the Investor Member of less than 99.99% of the Projected Federal Credits or Projected Brownfield Tax Credits, as adjusted pursuant to *Sections 5.2(a)* and *5.2(b)*:

(a) the filing of a tax return or any amendment of a tax return by the Company;

(b) receipt by the Company of Forms 8609 which provide for Federal Tax Credits in an annual amount less than the Projected Federal Credits, as adjusted pursuant to *Section 5.2*;

(c) an audit by the IRS or the New York State Department of Taxation and Finance which results in the assessment of a deficiency by the IRS or the New York State Department of Taxation and Finance with respect to any Federal Tax Credits or Brownfield Tax Credits previously claimed in connection with the Project, unless the Company shall timely file a protest or petition with respect to such deficiency with the United States Tax Court, New York State Division of Tax Appeals, the Bureau of Conciliation and Mediation Services in the New York State Department of Taxation and Finance, or any other federal or state court of competent jurisdiction or administrative body and the collection of such assessment shall be stayed pending the disposition of such petition;

(d) a decision by the United States Tax Court, New York State Division of Tax Appeals, or any other federal or state court of competent jurisdiction or administrative body upholding the assessment of such deficiency against the Company with respect to any Federal Tax Credits or Brownfield Tax Credits previously claimed in connection with the Project, unless the Company shall timely appeal such decision and the collection of such assessment shall be stayed pending the disposition of such appeal;

(e) the decision of a federal court or New York State Tax Appeals Tribunal or state court of competent jurisdiction affirming such decision, unless the Company shall timely appeal such decision and the collection of such assessment shall be stayed pending the disposition of such appeal; or

(f) settlement by the Company of any claim of a deficiency.

“Tax Credit Recapture/Reduction Event Payments” has the meaning set forth in *Section 8.11(d)(i)*.

“Tax Return” means, solely for the purposes of *Section 4.1(ppp)–(uuu)*, any return, report or similar statement required to be filed or sent with respect to any Tax (including any attached schedules), including any information return, claim for refund, amended return or declaration of estimated Tax.

“Tax-Exempt Bonds” mean those certain tax-exempt bonds issued by HFA in the approximate amount of \$48,885,000 a portion of which are prepayable at or prior to Conversion so that approximately \$29,240,000 of the Tax-Exempt Bonds will remain outstanding during the permanent phase of the Bond Loan.

“Timing Adjustment Amount” has the meaning set forth in *Section 5.2(a)(iii)*.

“Title Policy” means the owner’s title insurance policy referred to in *Section 4.1(i)*.

“Transaction Documents” has the meaning set forth in *Section 15.17*.

“Treasury Regulations” means the regulations promulgated by the United States Department of the Treasury under the Code, as such regulations may be amended from time to time (and including any successors to such regulations).

“True Up Calculation” has the meaning set forth in *Section 7.3(b)*.

“Unavoidable Delay” means any delays due to strikes or similar labor disputes, acts of God, governmental restrictions or unanticipated material changes of laws or regulations, unavailability of labor and/or materials, acts of terrorism, enemy action, civil commotion, fire, unavoidable casualty, unusually adverse weather conditions, any mandatory evacuation or state of emergency declared by any governmental authorities, or other causes beyond the reasonable control of the Managing Member; provided, however, that (i) the lack of Managing Member’s own funds shall not be deemed a cause beyond the reasonable control of Managing Member and (ii) Managing Member shall use commercially reasonable efforts to mitigate the effects of any Unavoidable Delay event.

“USA PATRIOT Act” has the meaning set forth in *Section 4.6(b)*.

“Waiver” has the meaning set forth in *Section 4.1(ss)*.

ARTICLE III

PURPOSE AND BUSINESS OF THE COMPANY

3.1 Purpose of the Company.

(a) The Company will (a) lease, develop, finance, construct, own, maintain, operate and sell or otherwise dispose of the Project and to undertake the work required pursuant to the Brownfield Cleanup Agreement, (b) obtain for the Members long-term appreciation, cash income, Tax Attributes over the term hereof, and (c) do those things necessary, advisable or expedient in connection with or incident to such purposes. The Company may conduct any business that is lawful to be conducted by a limited liability company under the Act. Notwithstanding anything else contained to the contrary herein, the Company shall at all times be and remain a Single Purpose Entity and will otherwise comply with the terms of this Agreement.

(b) The Company shall not participate in any Prohibited Business and the Company will prohibit any tenant of the Project from operating a Prohibited Business or from subleasing to an operator of a Prohibited Business.

3.2 Authority of the Company. In order to carry out its purpose, the Company is empowered and authorized to do any and all acts and things necessary, appropriate, proper, advisable, incidental to or convenient for the furtherance and accomplishment of its purpose, and for the protection and benefit of the Company, including but not limited to the following:

(a) construct (or cause to be constructed) the Project substantially in accordance with the Plans and Specifications and maintain, improve, buy, own, sell, convey,

assign, mortgage, rent or lease any real estate and any personal property necessary to the operation of the Project;

(b) provide housing, subject to the Minimum Set-Aside Test and the Rent Restriction Test and consistent with the requirements of the Extended Use Agreement and the Regulatory Agreement so long as the Extended Use Agreement and the Regulatory Agreement, as applicable, remain(s) in force;

(c) enter into the agreements and instruments evidencing the Loans;

(d) enter into any kind of activity, and perform and carry out contracts of any kind necessary to, or in connection with, or incidental to, the accomplishment of the purposes of the Company;

(e) borrow money and issue evidences of indebtedness in furtherance of the Company business and secure any such indebtedness by mortgage, pledge, or other lien, provided, however, that any documents amending, modifying or replacing the Loan Documents will be subject to the Consent of the Investor Member and will have the legal effect that, at and after Conversion, the Company and the Members and their Affiliates will have no personal liability for the repayment of the principal of or payment of interest on the Loans (other than customary non-recourse carve outs provisions which have been Consented to by the Investor Member), and that the sole recourse of the Lender, with respect to the principal thereof and interest thereon shall be to the property securing the Loans or the other assets of the Company;

(f) maintain and operate the Project, including hiring the Management Agent, subject to the Consent of the Investor Member (which Management Agent may be any of the Members or an Affiliate thereof, subject to compliance with the terms of this Agreement) and enter into any agreement for the management of the Project during its rent-up and after its rent-up period;

(g) subject to the approval of the Agency and/or the Lender, if required, and the Consent of the Investor Member (as may be required under this Agreement), and to other limitations expressly set forth elsewhere in this Agreement, negotiate for and conclude agreements for the sale, exchange, lease or other disposition of all or substantially all of the property of the Company, or for the refinancing of any mortgage loan on the property of the Company;

(h) enter into and comply with the Extended Use Agreement and the Regulatory Agreement, providing for regulations with respect to rents, profits, dividends and the disposition of property, and the Extended Use Agreement shall remain in full force and effect throughout the entire extended use period as defined in Section 42(h)(6)(D) of the Code;

(i) rent dwelling units in the Project from time to time, in accordance with the provisions of the Code applicable to Federal Tax Credits and in accordance with applicable federal, state and local regulations, collect the rents therefrom, pay the expenses incurred in connection with the Project, and distribute the net proceeds to the Members, subject to any requirements which may be imposed by the Extended Use Agreement, the Regulatory Agreement and/or the other Project Documents;

(j) undertake the work required pursuant to the Brownfield Cleanup Agreement; and

(k) do any and all other acts and things necessary or proper in furtherance of the Company's business.

ARTICLE IV

REPRESENTATIONS, WARRANTIES AND COVENANTS AND DUTIES AND OBLIGATIONS OF MANAGING MEMBER

4.1 Representations, Warranties and Covenants. The Managing Member hereby represents, warrants, agrees and covenants to the Company and to the Investor Member that:

(a) the execution and delivery of this Agreement by the Managing Member and the performance by the Managing Member of the transactions contemplated hereby have been duly authorized by all requisite actions or proceedings; the Managing Member is duly organized, validly existing and in good standing under the laws of the state of its formation and has full corporate power and authority to enter into this Agreement and to consummate the transactions contemplated hereby and thereby;

(b) the Company is a New York limited liability company and is and will remain a Single Purpose Entity;

(c) the sole member of the Managing Member is MM Member. The Managing Member is and shall remain a Single Purpose Entity and is and shall remain Controlled by Asland (except in connection with a removal in accordance with *Sections 8.14(a)(M)* and *9.1(a)* of this Agreement). The members of the MM Member are Asland and Pembroke;

(d) the construction of the Project shall be undertaken and shall be completed in a timely, good and workmanlike manner materially in accordance with (i) all applicable requirements of the Loans and the Project Documents, (ii) all applicable requirements of all appropriate Authorities the violation of which would have, or would be likely to have, a Material Adverse Effect on the Project or the Company, and (iii) the Plans and Specifications of the Project that have been or are hereafter approved by the Lender, the Investor Member (as the same may be modified by Change Orders for which the Consent of the Investor Member has been obtained or is not required pursuant to *Section 4.1(rr)*), and, if required, any applicable Authorities (whether in their capacity as regulatory agency or in their capacity, if applicable, as lender), as such Plans and Specifications may be changed from time to time with the approval of the Lender (if required), with the Consent of the Investor Member to the extent such changes have a Material Adverse Effect on the Project, and, if required, any applicable Authorities, and it shall provide copies of all Change Orders to the Investor Member in accordance with *Section 4.1(rr)*;

(e) the Plans and Specifications have been delivered to the Contractor, the Architect and the Engineering Consultant, the Land is and will be properly zoned for the Project; all consents, permissions and licenses required by all applicable Authorities for the construction

and use of the Project as set forth in the Plans and Specifications have been obtained or, when required, will be obtained, and the use and construction of the Project pursuant to the Plans and Specifications will conform to all applicable federal, state and local land use, zoning, environmental and other governmental laws and regulations;

(f) the Project will comply with all applicable local, state and federal laws, statutes, regulations, rules and ordinances, including, but not limited to, requirements of the federal Fair Housing Act and the Americans with Disabilities Act, and the Managing Member will promptly notify the Investor Member if and when the Managing Member becomes aware of any non-compliance with either;

(g) all legally required or appropriate public utilities, including, without limitation, sanitary and storm sewers, telephone, water, gas and electricity, are or will be made available and, to the extent controlled (directly or indirectly by the Company) will be operated and maintained (or caused to be operated and maintained) properly in compliance with all applicable legal requirements for all units in the Project;

(h) all roads necessary for the full utilization of the Project are available for use or, upon Substantial Completion, will be available for use;

(i) an owner's title insurance policy (the "**Title Policy**") of a financially responsible institution insuring an amount no less than the aggregate of (x) the Investor Member's aggregate Capital Contributions, and (y) the amounts borrowed under the permanent loans with respect to the Project, and acceptable to the Investor Member, under ALTA form (revised 2006) or other form affording comparable protection and reasonably acceptable to the Investor Member, an endorsement affording construction and mechanics lien coverage and such other endorsements available in the State as the Investor Member shall reasonably request, will be issued at or prior to and effective as of the Closing, and shall remain in full force and effect;

(j) at and after Conversion, there shall be no direct or indirect personal liability of any of the Members for the repayment of the principal of or payment of interest on the Loans, and the sole recourse of the Lender under the Loans with respect to the principal thereof and interest thereon shall be to the property securing the indebtedness (except for customary non-recourse carve-out provisions imposing personal liability on the Managing Member which have been Consented to by the Investor Member). In no event shall there be recourse to the Investor Member under any of the Loans. The Loans constitute indebtedness for federal income tax purposes;

(k) there is no default under any agreement, contract, lease, or other commitment, or of any claim, demand, litigation, proceedings or governmental investigation pending or, to the best knowledge of Managing Member, threatened in writing against the Managing Member, the Developer, the Guarantor, the Project, or the Company, or related to the business or assets of the Company or of the Project, which claim, demand, litigation, proceeding or governmental investigation could result in any judgment, order, decree, or settlement which would materially and adversely affect the business or assets of the Managing Member, the Developer, the Guarantor, the Company, or the Project or impose any material cost on the Company that has not been disclosed to the Investor Member prior to the Closing;

(l) none of the Managing Member or the Company has received any notice of taking, condemnation, betterment or assessment, actual or proposed, with respect to the Project; no such taking, condemnation, betterment or assessment has occurred; and the Managing Member has no reason to believe that any such taking, condemnation, betterment or assessment has been proposed or is under consideration;

(m) neither the Managing Member nor any of its Affiliates nor the Company has entered, or shall enter, into any agreement or contract for the payment of any Loan discounts, additional interest, yield maintenance or other interest charges or financing fees or any agreement providing for the guarantee of payment of any such interest charges or financing fees relating to the Loans; in no event will the Managing Member or any of its Affiliates or the Company enter into any such agreement or guaranty of any kind whatsoever (such as an escrow arrangement or letter of credit arrangement) which would subject the Managing Member or any of its Affiliates to personal liability as to the principal of or interest on the Loans following Conversion (except for customary non-recourse carve-out provisions which have been Consented to by the Investor Member);

(n) the execution of this Agreement, any Loan Documents, the incurrence of the obligations set forth herein or therein, and the consummation of the transactions contemplated hereby and thereby do not violate the provision of any law, statute, code, ordinance, rule, or regulation, or any order, judgment or decree of any court binding on the Company or the Managing Member or any Affiliate(s) thereof, or any provision of any indenture, agreement, or other instrument to which the Company or any of the Managing Member is a party or by which the Company, the Project is affected, and is not in conflict with, and will not result in a breach of or constitute a default under, any such indenture, agreement, or other instrument or result in creating or imposing any lien, charge, or encumbrance of any nature whatsoever upon the Project;

(o) the Managing Member has provided to the Investor Member true, correct and complete copies of all material correspondence and documentation evidencing or related to the indications and/or commitments of the Lender with respect to the Loans and all correspondence and documentation evidencing or relating to timing or delays in funding or closing, willingness to fund or close and approval conditions of the Lender with respect to the Loans, and the Managing Member has no reason to believe that Lender will not enter into the Loans on and as of the Closing in each case in accordance with the correspondence and documentation heretofore provided to the Investor Member;

(p) the execution of this Agreement by the Managing Member, the incurrence of the obligations set forth herein and the consummation of the transactions contemplated hereby do not violate any laws, statutes, codes, ordinances, rules or regulations;

(q) 100% payment and performance bonds issued by a nationally recognized bonding company with a minimum A.M. Best rating of "A" and otherwise approved by the Investor Member, in forms acceptable to Lender and the Investor Member, and in amounts satisfactory to Lender and the Investor Member (the "**Payment and Performance Bonds**"), will be obtained by the Contractor;

(r) the Managing Member shall cause the insurance coverages insuring the Company and covering the Land and the Project, to be established and maintained in full force and effect during the term of the Company in accordance with the requirements of Schedule 2 hereto;

(s) other than any benefit plan for personnel of the Management Agent assigned to the Project for which the Company will reimburse the Management Agent on a cost basis pursuant to the Management Agreement, neither the Management Agent nor the Company has entered into any labor union contract or any benefit plan which will affect persons involved in operation of the Project;

(t) the Managing Member has not, either individually, or on behalf of the Company, and the Company has not, incurred any financial responsibility with respect to the Project prior to the date of execution of this Agreement, other than (i) those previously disclosed in writing to the Investor Member, which include the Project Documents or (ii) obligations which will be fully satisfied at or prior to the Closing;

(u) the Company is and will continue to be a valid limited liability company, duly organized and in good standing under the laws of the State, qualified to do business in the State (if necessary), and has and shall continue to have full power and authority to lease and own the Project and to develop, construct, operate and maintain the Project in accordance with the terms of this Agreement, and shall have taken and shall continue to take all action under the laws of the State and any other applicable jurisdiction that is necessary to protect the limited liability of the Investor Member and to enable the Company to engage in its business;

(v) the Company (i) has no employees, and will not have any employees, (ii) is not a party to any collective bargaining agreement and (iii) has never maintained, contributed to or had any liability with respect to any contractual employment, bonus, profit-sharing, welfare benefit (as that term is defined in the Employee Retirement Income Security Act, as amended (“ERISA”)), percentage compensation, pension or retirement plans, contracts or agreements with employees or subject to ERISA or that must be “qualified” under Code Section 401(a);

(w) Guarantor has a direct or indirect economic interest in the Developer and the Managing Member;

(x) the Managing Member shall not cause the Company to purchase, including but not limited to by using the cash portion of the Capital Contributions, any securities or hold any funds, including but not limited to escrow accounts, reserve accounts, security deposit accounts, or operating accounts, in any form of investment other than conventional bank accounts, such as checking accounts, savings accounts or certificates of deposit;

(y) the Managing Member shall cause the Company to use its available resources to comply with all applicable provisions and requirements of any and all purchase agreements, loan agreements, and other agreements with respect to the purchase of the Project and the construction, development, financing and operation of the Project; and take, and/or cause the Company to take, all actions as shall be necessary to achieve and maintain continued compliance with the provisions, and fulfill all applicable requirements, of such agreements;

(z) the facts and underlying assumptions with respect to the development and operation of the Project that the Managing Member, Guarantor and their Affiliates provided to the Investor Member in conjunction with the preparation of financial forecasts and the Development Budget are accurate and reasonable in all material respects, and nothing has come to the attention of the Managing Member that would cause the Managing Member to believe that such facts and assumptions are incorrect in any material respect;

(aa) except as disclosed in the Environmental Report, the Land does not contain and is not affected by any Hazardous Material (as hereinafter defined); none of the Managing Member, the Company, the Project, or any portion thereof is in violation of any applicable Environmental Laws (as hereinafter defined); neither the Managing Member nor the Company has received written notice of any violations of any Environmental Laws relating to or affecting the Project; and the Managing Member has not been served with legal process in connection with any actions, suits or proceedings, none are pending, and to the best knowledge of the Managing Member, none are threatened in writing with respect to any Environmental Laws and which relate to the Project, or any of the Company's other properties or assets. Except as disclosed in the Environmental Report, the Managing Member has no actual knowledge of any deposit, storage, disposal, burial, discharge, spillage, uncontrolled loss, seepage or filtration of any Hazardous Materials at, upon, under or within the Land or any contiguous real estate. The Managing Member or, to the best of its knowledge, any other party, is not and will not be involved in operations at or, pursuant to the Managing Member's best knowledge, near the Project, which operations would lead to (A) liability under the Environmental Laws as to the Company, or (B) the creation of a lien on the Project under the Environmental Laws other than the Brownfield Cleanup Program Easement. The Managing Member covenants and agrees that it shall not take any action or fail to take any action, or permit any other person or entity within the Managing Member's Control to take any action or fail to take any action, and it will use commercially reasonable efforts not to permit any tenant or occupant of the Project to engage in any activity, which would result in the Project or any portion thereof containing or being affected by any Hazardous Materials in violation of Environmental Laws, or would result in any Hazardous Materials being released from the Project, or any portion thereof in violation of any Environmental Laws; provided, however, the foregoing shall not prohibit the ordinary and customary use of Hazardous Materials normally used on construction, occupancy, maintenance, repair or reconstruction of properties similar to the Project, provided the amount of such Hazardous Materials does not exceed the quantity necessary for the normal construction, operation, occupancy, maintenance, repair or reconstruction of the Project, and the use, storage and disposal of such Hazardous Materials strictly comply with all applicable Environmental Laws. The Managing Member shall take the steps and satisfy the conditions set forth on Schedule 3 within the time periods specified on such Schedule (to the extent conditions exist on such Schedule). The Managing Member shall comply strictly and in all respects with all requirements of the Environmental Laws. The Managing Member further covenants and agrees that it will promptly notify the Investor Member if it gains knowledge of any of the following (to the extent not previously disclosed in the Environmental Report): (i) the presence or possible presence of any Hazardous Material on, in, affecting, or released from the Project, in violation of Environmental Laws; (ii) the violation of any Environmental Laws with respect to the Company, the Project; and (iii) any notice of violation or alleged violation of or requesting action pursuant to any Environmental Laws or the commencement of any actions, suits, or proceedings relating to Environmental Laws and relating to or affecting the Project. The Managing Member shall

promptly deliver to the Investor Member a copy of any notice of violation of any Environmental Laws and any court documents or correspondence relating to any action, suit or proceeding in connection with Environmental Laws. The Managing Member further covenants and agrees that upon the Investor Member's reasonable request, at the Company's cost and expense, they will undertake a "Phase I" environmental review and assessment of the Project, and/or the Land, pursuant to the then-current industry standards and at a minimum compliant with ASTM E1527-05 (or any successor thereto published by ASTM) for such review and by a licensed hydrologist or environmental engineer approved by the Investor Member. If the Phase I shall indicate a reasonable basis to suspect the existence of Hazardous Materials on or generated from or to the Project (other than as disclosed in the Environmental Report), or the violation of any Environmental Laws, the Managing Member shall proceed promptly, but in no event more than 45 days after the receipt of the Phase I, at the Company's cost and expense, (i) to have a Phase II environmental review and assessment completed pursuant to the then-current industry standards for such review and by a licensed hydrologist or environmental engineer approved by the Investor Member, to determine the existence of any suspected Hazardous Materials on, in, or generated from or to the Project, or violation of Environmental Laws, and (ii) to have completed the actions necessary to address any other recommendation in the Phase I. The Managing Member shall use commercially reasonable efforts to ensure that all Hazardous Materials identified in the Phase I or Phase II are remediated fully and completely in accordance with all applicable laws, in a manner and by contractors approved by the Investor Member and as promptly as possible. The Managing Member shall provide to the Investor Member, promptly upon receipt thereof, a copy of all Phase I, Phase II, and remediation reports, and any other report prepared by any environmental consultants with respect to the Land, or the Project. At the completion of any remediation or other action recommended by the environmental consultants (whether in a Phase I, Phase II or otherwise), the Managing Member shall have a consultant prepare, at the Company's expense, a follow-up report in a form satisfactory to the Investor Member indicating the completion of the work and the condition and confirming the compliance of the Project, and/or the Land with the applicable Environmental Laws. For purposes of this Agreement, "**Hazardous Material**" or "**Hazardous Materials**" shall mean, collectively, (A) any substance defined as "waste," "hazardous waste," "hazardous substance," "hazardous material," "toxic substance," "pollutant," "contaminant" in, or which are otherwise specifically subject to regulation under, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986, 42 U.S.C. § 9601 et seq.; the Toxic Substance Control Act, 15 U.S.C. § 2601 et seq.; the Hazardous Materials Transportation Act, 49 U.S.C. § 1802; or the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq., or any friable asbestos-containing materials (but excluding non-friable asbestos-containing materials), PCBs, formaldehyde foam insulation, or toxic mold; (B) such toxic or hazardous substances, mold, radon, or other materials or wastes that are or may become regulated under any other applicable municipal, county, state or federal law, rule, ordinance, direction, or regulation; and (C) any other substance or material regulated under any applicable municipal, county, state or federal law, rule, ordinance, direction, or regulation because of its dangerous or deleterious effects on human health or the environment. For purposes of this Agreement, "**Environmental Law**" or "**Environmental Laws**" means, collectively, the Resource Conservation and Recovery Act of 1976, 42 U.S.C. § 6901 et seq., the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Liability Act, 42 U.S.C. § 9601 et seq., the Toxic Substance

Control Act, 15 U.S.C. § 2601 et seq., the Clean Air Act, 42 U.S.C. § 7401 et seq., the Clean Water Act, 33 U.S.C. § 1251 et seq., all municipal, county, and state analogues to any of the foregoing, all amendments to any of the foregoing, any other municipal, county, state or federal law, rule, regulation, ordinance or directive regulating Hazardous Materials, and all enforceable orders, regulations and requirements under any of the foregoing;

(bb) the Managing Member and Guarantor will indemnify and hold the Company, the Investor Member and the members thereof, and their respective Affiliates and agents, free and harmless from any injury, loss or damage (including, but not by way of limitation, reasonable attorneys' fees, court costs, and amounts paid in settlement of any claims, which settlement has been mutually agreed to by them and the party against whom such claim has been made) resulting from the claims of any Person with respect to any liability arising under the Securities Act of 1933 or the Securities Exchange Act of 1934 or the laws or regulations of any state or other jurisdiction, which claims are based upon alleged fraud, deceit, or untrue statement or alleged untrue statement of a material fact, or the omission or alleged omission to state a material fact required to be stated or necessary to make the statements not misleading (each, a "**Bad Act**"), with respect to or based upon information furnished or statements made by the Managing Member to the Investor Member, its Affiliates or agent(s), in connection with the acquisition by the Investor Member of its Interests in the Company or the offer or sale of limited liability company interests in the Company or in the Investor Member; provided, however, that such indemnification shall not be required in any instance in which the Bad Act is caused solely by a Bad Act of the Investor Member or its Affiliates (other than Managing Member and its Affiliates);

(cc) except as disclosed to the Investor Member in writing prior to the date hereof, with respect to the Managing Member and each Affiliate thereof (other than Investor Member), no event of Bankruptcy has at any time occurred; no mortgage loan secured by any real property owned directly or through any membership or limited liability company in which such Person was or is a general partner or managing member or through a corporation in which such Person holds more than a 10 percent interest in any class of stock has been foreclosed upon (or as to which a deed-in-lieu of foreclosure has been given) within the last 10 years, except as has been disclosed in writing to the Investor Member; and none of them has been debarred or otherwise denied, in whole or in part, the ability or opportunity to participate in any government sponsored or financed program (including, but not limited to HUD programs) or has been convicted of a felony criminal offense;

(dd) the financial statements and other written information provided to the Investor Member with respect to the financial condition of the Managing Member and Guarantor are true and accurate in all material respects as of their respective dates and do not omit any material fact;

(ee) the Development Budget attached hereto as Exhibit C is true and complete as of the date hereof;

(ff) the Managing Member shall keep all sources of funding "in balance" and have adequate sources of funds to timely cause Stabilization and satisfaction of all other obligations of the Company and Managing Member under this Agreement;

(gg) the Managing Member shall at no time, and will ensure that the Developer will at no time, develop the Project or manage the Company in a manner which is not consistent with (i) the Company's Federal Tax Credit application, the Tax Credit Determination, the Regulatory Agreement and the Extended Use Agreement, except with the prior approval of the Agency and the Consent of the Investor Member, or (ii) any application, questionnaire or survey submitted to the Lender in conjunction with the Loans;

(hh) the Managing Member has complied and will comply in all material respects with and the Managing Member has caused and will cause the Company to comply with all applicable local, state and federal laws, statutes, regulations, rules and ordinances (including, without limitation, all applicable filing and disclosure requirements);

(ii) the Managing Member has obtained all consents and approvals of any Person that are necessary on its part and has caused the Company to give all notices to the Agency that may be required in connection with the admission of the Investor Member to the Company, including without limitation, if applicable, all consents to the admission of the Investor Member required from (A) the Lender, (B) Authorities, and (C) the Agency;

(jj) the Managing Member shall provide Notice to the Investor Member and cause a representative for the Investor Member to be invited to attend any groundbreaking, ribbon-cutting or other public relations ceremony or public event with respect to the Project and to cause the attendance of any such representative at each ceremony or public event to be recognized;

(kk) the Managing Member shall not elect pursuant to the Code to capitalize any items which are otherwise expressly deductible under the Code without the Consent of the Investor Member;

(ll) the Company has used the accrual method of accounting since its formation and will continue to do so;

(mm) all federal, state and local tax returns (including tax returns concerning "gross receipts") required to be filed, if any, by the Company and the Managing Member with respect to the Company, the Project, and/or the Managing Member, respectively, have been timely, duly and accurately completed and filed (unless the time for such filing has been properly extended), and all federal, state and local taxes arising in connection with the Company and the ownership and operation of the Project have been paid in full. To the best knowledge of the Managing Member, no tax certiorari or audit proceedings are currently pending with respect to the Project or the Company. The Managing Member has delivered to the Investor Member true, correct and complete copies of each such tax return, if any, filed prior to the date hereof. The Company has received no notice of and the Managing Member is not aware of any increase in either the tax rate or property assessment with respect to the Project at the federal, state or local level; provided that the Project may be reassessed for property tax purposes by reason of the admission of the Investor Member and the construction of the Project. The acquisition of the Investor Member's Interest will not be treated by the Company as a termination of the Company for federal income tax purposes;

(nn) no mortgage loan is or will be guaranteed (except for the construction phase of the Loans and certain exceptions to the nonrecourse status of Loans that do not make any such loan a recourse liability of the Company and those certain guarantees to the Lender prior to Conversion) or held by any Member or any person who is a Related Person to such Member within the meaning of Section 752 of the Code and the regulations issued thereunder;

(oo) upon the Investor Member's request, the Company will prepare any required disclosures for filing with the IRS regarding the Company's status as, or participation with respect to, a reportable transaction, in accordance with Sections 6011 and 6111 of the Code, Treasury Regulations promulgated thereunder and other applicable IRS guidance. The Company will not engage in or participate in any "listed transaction" or other "reportable transactions" (as such terms are defined for purposes of Sections 6011 and 6111 of the Code, Treasury Regulations promulgated thereunder and other applicable IRS guidance) without the Consent of the Investor Member;

(pp) simultaneously with submission to Lender, the Managing Member shall deliver to the Investor Member, or Engineering Consultant as directed by the Investor Member, the Advance Documents and the Investor Member and Engineering Consultant shall be given sufficient Notice of any meetings held between the Lender and the Company regarding an Advance Request under the Loans, including any periodic construction meeting, and shall have the right to be present at any and all of these meetings and to make inspections of the Project during normal business hours;

(qq) Managing Member will give due consideration to any Notice of an objection given by Investor Member or the Engineering Consultant to Managing Member regarding a request for an advance under the Loans (an "**Advance Request**"); for any Advance Request which does not require the Consent of the Investor member, if the Investor Member or the Engineering Consultant has not given Notice of its objection to an Advance Request to the Managing Member within ten (10) Business Days after its receipt of the Advance Documents, then the Member or the Engineering Consultant shall be deemed not to object to such Advance Request. If the Member or the Engineering Consultant has given Notice of its objection to an Advance Request, as soon as practical thereafter, the Managing Member shall, if necessary, complete the Advance Documents, correct all inaccuracies and resubmit the Advance Documents to the Member or the Engineering Consultant;

(rr) each change order under the Construction Contract (a "**Change Order**") shall be subject to the Consent of the Investor Member or the Engineering Consultant, as directed by the Investor Member if such Change Order (i) with respect to individual Change Orders, is in excess of \$150,000 or (ii) with respect to aggregate Change Orders, is greater than \$1,000,000. In order to obtain the Consent of the Investor Member or the Engineering Consultant for a Change Order, the Managing Member shall comply with the following procedures:

(A) Not less than 10 days before the date on which the Company desires a Change Order to be made, the Managing Member shall deliver to the Agent any and all documents that will be submitted to the Contractor and/or the Lender (as applicable) or that have been prepared or are being executed in connection with the Change Order ("**Change Order Documents**"); and

(B) If the Change Order requires the Investor Member's Consent, the Investor Member shall be given sufficient notice of any meetings held between the Contractor, the Lender and/or the Company regarding a Change Order and the Investor Member or the Engineering Consultant shall have the right to be present at any and all of these meetings. If the Change Order requires the Investor Member's Consent, prior to such a meeting or as otherwise requested by the Managing Member, the Investor Member or the Engineering Consultant shall either (a) approve the Change Order Documents or (b) determine that the Change Order Documents are incomplete or inaccurate, in whole or in part, in which event, notwithstanding the approval of the Contractor and/or the Lender (as applicable), the Company (as applicable) shall not implement (or cause the Company (as applicable) to implement) such Change Order or portion thereof which has not been approved by the Investor Member or the Engineering Consultant until the Investor Member or the Engineering Consultant approves such Change Order or portion thereof. As soon as practical after such a negative determination by the Investor Member or the Engineering Consultant, the Managing Member shall, if necessary, complete the Change Order Documents, correct all inaccuracies and resubmit the Change Order Documents to the Investor Member or the Engineering Consultant for approval;

(ss) any request for a waiver, consent or forbearance made by Managing Member to a Lender on a matter which is reasonably likely to have a Material Adverse Effect on the Company or the Project (collectively, a "**Waiver**") shall be subject to the Consent of the Investor Member. Not less than 10 days before submission of any request for a Waiver, the Managing Member shall deliver to the Investor Member Notice thereof including a statement of the terms of and reasons for requesting the Waiver. The Investor Member shall within 15 Business Days either approve the Waiver or describe the terms and conditions on which the Investor Member would approve the Waiver (and in the latter case the Managing Member shall not request the Waiver unless the Managing Member have complied with such terms and conditions);

(tt) each Project Document to which the Managing Member or the Guarantor are a party has been duly authorized, executed and delivered by such party and constitutes the legal, valid and binding obligation of such party enforceable in accordance with their terms, subject to laws respecting bankruptcy, moratorium and creditors' rights. The execution and delivery of, and the performance of the Managing Member's and/or the Guarantor's obligations under, each of the Project Documents to which it is a party, does not constitute a violation or contravention on the part of such party under any provision of applicable federal, state and local laws and regulations;

(uu) no registration with, or consent or approval of, or notice to, or other action by, the Managing Member or the Guarantor, is required to make the Project Documents to which the Managing Member or the Guarantor are a party or by which any of such parties is bound enforceable against such parties;

(vv) neither the Managing Member or the Guarantor is in default under any agreement or law that would materially adversely impact their ability to perform their obligations

under the Project Documents to which it is a party or by which it is bound. Neither the Managing Member or the Guarantor is subject to any pending litigation, judgment, order or other proceeding which do at present or could in the future materially adversely affect the ability of the Managing Member or the Guarantor to perform its obligations under the Project Documents;

(ww) there is no indictment or, to the best knowledge of Managing Member, threatened indictment of the Managing Member or any Guarantor or any of their Affiliates under any criminal statute or commencement or, to the best knowledge of Managing Member, threatened commencement of criminal or civil proceedings against the Managing Member or any Guarantor or any of their Affiliates;

(xx) all material documents relating to the Company and the Project have been made available to the Investor Member, including, without limitation, the timely delivery of any and all reports required under *Article XII* to be delivered at the time of execution of this Agreement;

(yy) no event has occurred which has caused, and the Managing Member has not acted in a manner which will cause (i) the Company to be treated for federal income tax purposes as an association taxable as a corporation, (ii) the Company to fail to qualify as a limited liability company under the Act, or (iii) any Investor Member to be liable for Company obligations in excess of its agreed-to Capital Contributions.

(zz) the Managing Member covenants that it shall keep its books and records separate and distinct from those of the Company and its respective Affiliates;

(aaa) the portion of the Project that constitutes depreciable real property for federal income tax purposes will be depreciable over a 30 year period, the portion of the Project that constitutes depreciable land improvements for federal income tax purposes will be depreciable over a 20 year period, and the portion of the Project that constitutes depreciable personal property for federal income tax purposes will be depreciable over a 10 year period, using the straight-line method. The Managing Member covenants that it shall cause the Company to make a timely election under Code Section 168(g)(7) to depreciate all of its applicable property under the Alternative Depreciation System (ADS). In addition, the Managing Member shall cause the Company to elect out of claiming "bonus depreciation" under Code Section 168(k)(7);

(bbb) the Managing Member represents and warrants that it has been adequately capitalized for the purposes of conducting its business and it will not make distributions of its assets at a time when it would have unreasonably small capital for the continued conduct of its business;

(ccc) except for the Purchase Option or as otherwise provided in this Agreement, none of the Company, the Managing Member, or the Project is subject to any outstanding agreement with any third party pursuant to which any such party has or may acquire any interest in the Project (other than the Loan Documents and the Construction Contract but only to the extent that the Company's failure to meet its obligations under the Construction

Contract results in a mechanics' or similar lien being filed by the Contractor, its subcontractors, materialmen or suppliers against the Project), in the Managing Member, or in the Company;

(ddd) the Company is an "innocent purchaser" of the Project pursuant to CERCLA §§ 101(35) and 107(b) and has conducted all appropriate inquiries ("AAI") pursuant to 40 C.F.R. § 312, including without limitation, obtaining an AAI-compliant environmental site assessment ("ESA") within six months prior to its acquisition of an interest in the Land and qualifying as a "user" of such ESA;

(eee) neither the Company nor the Managing Member nor any of its Affiliates is under any commitment to any real estate broker, rental agent, finder or other intermediary with respect to the Company, the Project, or any portion thereof, except for arrangements previously disclosed to and approved by the Investor Member in writing;

(fff) the Managing Member shall take all actions to assure that the Company is not deemed an "investment company" as such term is defined in the Investment Company Act of 1940 and applied in Section 13 of the Bank Holding Company Act and its implementing rules, as may be amended from time to time, and shall refrain from taking an action that would cause the Company to be deemed an "investment company" as so described;

(ggg) the Managing Member shall not, except as permitted under *Section 15.18* or as otherwise required by applicable law, governmental agencies or regulations, disclose any of the terms of the Investor Member's investment in the Company to anyone other than any Lender and the Company's accountants, attorneys and similar professionals without the prior Consent of the Investor Member;

(hhh) the Managing Member hereby agrees to comply with all applicable local, state and federal laws, including but not limited to consumer protection and fair lending laws such as the Fair Housing Act (FHA), the Service Members Civil Relief Act (SCRA), the Americans with Disabilities Act of 1990 (ADA), the Fair Credit Reporting Act (FCRA), the Fair Debt Collection Practices Act (FDCPA), and the Unfair, Deceptive, or Abusive Acts or Practices (UDAAP) principles established by the Dodd Frank Wall Street Reform and Consumer Protection Act, and applicable State consumer privacy laws, including all regulations promulgated to implement such laws (collectively, "Laws and Regulations"). Managing Member shall notify the Investor Member in writing (i) at the address provided in *Section 15.9* and (ii) by e-mail to gs-uig-compliance@gs.com in writing within three (3) Business Days of identification of (1) any actual or potential material breach, infraction, or violation of Laws and Regulations and, (2) to the extent they relate to Laws and Regulations, any formal or informal consumer complaint, notice of violation, regulatory inquiry or investigation, or notice of fine, fee, or penalty with respect to the Management Agent, the Project, the Managing Member or any Affiliate thereof;

(iii) the Managing Member will annually certify in writing to the Investor Member along with the financial statements delivered pursuant to *Section 12.4(a)(A)* its continued compliance with *Sections 4.1(hhh)* and *4.1(jjj)* and indicate if there have been any material breaches of, or changes to, its compliance-related policies, procedures, or processes, or management personnel having responsibility for any aspect of compliance with the laws and

regulations referenced in *Section 4.1(hhh)* above and *Section 4.1(jjj)* below. The Managing Member will also provide to the Investor Member annually, along with the financial statements delivered pursuant to *Section 12.4(a)(C)*, the written certification of the Management Agent of its continued compliance with *Sections 4.1(hhh)* and *4.1(jjj)* and indication if there have been any material breaches of, or changes to, its compliance-related policies, procedures, or processes, or management personnel having responsibility for any aspect of compliance with the laws and regulations referenced in *Section 4.1(hhh)* above and *Section 4.1(jjj)* below;

(jjj) the Managing Member shall not disclose any Personal Information (hereinafter defined) to any third party other than as required by, or as permitted in accordance with law, rule, or regulation. The Managing Member shall (i) comply with all applicable federal, state and local laws and regulations requiring notification to impacted individuals as a result of an incident involving the loss, theft unauthorized access to, or unauthorized disclosure of their Personal Information (an “**Incident**”); and (ii) take appropriate actions to contain and mitigate the Incident. Unless otherwise prohibited by applicable law, and subject to any delay requested by the relevant enforcement agency, Managing Member shall notify the Investor Member as soon as possible, but at most within 24 hours of learning of any Incident. “**Personal Information**” means any information that can be used to distinguish or trace an individual’s identity, either alone or in combination with other personal or identifying information that is linked or linkable to a specific individual, and includes but is not limited to an individual’s name (only material if in combination with any other personal information listed), home address, credit card or bank account numbers or other information, social security number, driver’s license number, date and place of birth, mother’s maiden name, gender or race, criminal record, medical data, educational data, financial data, or employment data;

(kkk) the Managing Member will cause the Management Agent to deliver a certification on an annual basis that the Managing Member shall deliver to the Investor Member with its annual financial statement, prepared in accordance with *Section 12.4(a)(A)* and *Section 4.1(iii)*, in which certification the Management Agent shall (i) confirm that it is in compliance with all laws and regulations that will be described in the Management Agreement and (ii) indicate if there have been any material breaches or changes in its related processes or procedures or personnel;

(lll) the Managing Member acknowledges that the Guarantor shall be obligated to maintain, (a) at all times prior to Stabilization, a minimum combined Net Worth of \$10,000,000 of which a minimum amount of \$2,500,000 shall be in Liquid Assets and (b) at all times from and after Stabilization, a minimum combined Net Worth of \$10,000,000 of which a minimum amount of \$2,000,000 shall be in Liquid Assets (as applicable, the “**Net Worth and Liquidity Requirements**”) and the Managing Member further acknowledges and agrees that any failure by the Guarantor to meet the Net Worth and Liquidity Requirements shall be an event of default under the Guaranty and this Agreement; provided, however, the Guarantor may elect to either augment either entity with assets and/or capital to meet said test, or (subject to final Investor Member’s review of financials) a key principal of Asland or Pembroke (a “**Key Principal**”) may backstop Asland’s or Pembroke’s respective obligation to meet Net Worth and Liquidity Requirements; provided that there shall be no obligation to provide such backstop from a Key Principal.

(mmm) the operations of the Company, the Managing Member, and each Guarantor, and their parent entities and subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency having jurisdiction over the Company, the Managing Member, any Guarantor, or any of their parent entities or subsidiaries (collectively, the “**Money Laundering Laws**”) and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company, the Managing Member, any Guarantor, or any of their parent entities or subsidiaries with respect to the Money Laundering Laws is pending or, to the knowledge of the Managing Member, or any Guarantor, threatened;

(nnn) the Managing Member is familiar with the definition of “accredited investor” in Rule 501(a) of Regulation D of the Securities Act and it represents that it is an “accredited investor” within the meaning of Regulation D of the Securities Act;

(ooo) the Company and the Project will qualify for the Tax Abatement; and

(ppp) (i) All Taxes (whether or not shown on any Tax Return) for which the Company or any subsidiary may be liable have been timely paid by the Withdrawing Member, (ii) no Tax Returns have been filed by or with respect to the Company, which prior to the date hereof was a wholly owned subsidiary of the Withdrawing Member, (iii) all Tax Returns of the Withdrawing Member are complete and accurate and disclose all Taxes required to be paid by or with respect to the Withdrawing Member, the Company and any subsidiary, if any, for the periods covered thereby, (iv) no extension of time within which to file any such Tax Return is in effect.

(qqq) No waiver of any statute of limitations relating to Taxes for which the Company or any subsidiary may be liable is in effect, and no written request for such a waiver is outstanding.

(rrr) There is no action, suit, investigation, audit, claim or assessment pending or proposed or threatened with respect to Taxes for which the Company or any subsidiary may be liable.

(sss) Neither the Company nor any of its subsidiaries, if any, has granted any person any power of attorney that is currently in force with respect to any Tax matter.

(ttt) All Taxes which the Company or any subsidiary is required by law to withhold or to collect for payment have been duly withheld and collected and have been paid to the appropriate governmental authority.

(uuu) Neither the Company nor any subsidiary, if any, has any liability for Taxes of another person under Treasury Regulation Section 1.1502-6 (or any similar provision of state, local or foreign law), under any agreement or arrangement, as a transferee or successor, or by contract or otherwise.

(vvv) The Company has been, prior to the date hereof, and at all times since its formation, disregarded as an entity separate from its owner for federal income tax purposes, and no election under Treasury Regulation Section 1.7701-3 with respect to the federal income tax classification of the Company has ever been made.

(www) The Company is not a party to any loans other than the Loans and the Managing Member is not party to any loan.

(xxx) The Company is not now, nor has it ever been, party to any lawsuit, arbitration, summons, or legal proceeding that is still pending or that resulted in a judgment against it that has not been paid in full, and there are no liens of any nature against the Company.

(yyy) The Company has no contingent or actual obligations other than the Project Documents or as set forth in this Agreement.

All of the representations, warranties and covenants contained herein shall survive the date of Closing and the funding date of each Capital Contribution made by the Investor Member until dissolution of the Company. The Managing Member shall indemnify and hold harmless the Investor Member against a breach of any of the foregoing representations, warranties and covenants and any damage, loss or claim caused thereby, including reasonable attorneys' fees and costs and expenses of litigation and collection. The Guarantor shall indemnify and hold harmless the Investor Member against any (i) material misrepresentations and/or (ii) breach of any warranties or covenants which causes a loss of any Federal Tax Credits and/or Brownfield Tax Credits, and shall pay any damage, loss or claim caused thereby, including reasonable attorneys' fees and costs and expenses of litigation and collection.

4.2 Duties and Obligations. The Managing Member shall have the following duties and obligations with respect to the Project and the Company:

(a) the Managing Member shall ensure that all requirements shall be met in a timely fashion which are necessary to obtain or achieve (i) compliance with the Fifty Percent Test, the Minimum Set-Aside Test, the Rent Restriction Test, and any other requirements necessary for the Project to initially qualify, and to continue to qualify, for Federal Tax Credits, including all applicable requirements set forth in the Extended Use Agreement, the Tax Credit Determination, and the Regulatory Agreement, (ii) issuance of all necessary permanent, unconditional Certificates of Occupancy, including all governmental approvals required to permit occupancy of all of the apartment units in the Project, (iii) the Closing; (iv) Stabilization, and (v) compliance with all material provisions of the Project Documents;

(b) the Managing Member shall take all actions, or refrain from taking any action, to assure that the Company at all times during its existence is treated as a partnership for federal income tax purposes and while conducting the business of the Company, the Managing Member shall not act in any manner without the Consent of the Investor Member, which it knows or should have known after due inquiry will cause the termination of the Company for federal income tax purposes;

(c) the Managing Member shall exercise good faith in all activities relating to the conduct of the business of the Company, including the construction, operation and

maintenance of the Project, and the Managing Member shall take no action with respect to the business and property of the Company which is not reasonably related to the achievement of the purposes of the Company;

(d) all of (i) the fixtures, maintenance supplies, tools, equipment and the like now and to be owned by the Company or to be appurtenant to, or to be used in the operation of the Project (other than leases of office equipment and similar items in the ordinary course of business), as well as (ii) the rents, revenues and profits earned from the operation of the Project, will be free and clear of all security interests or collateral assignments and encumbrances except for the Mortgages, any additional security agreements executed in connection with the Loans and the Brownfield Cleanup Program Easement;

(e) the Managing Member will execute on behalf of the Company all documents necessary to make voluntary elections, pursuant to Sections 734, 743 and 754 of the Code, to adjust the basis of the Company's property upon the request of the Investor Member, if, in the sole opinion of the Investor Member, such election would be advantageous to the Investor Member or its members;

(f) the Managing Member shall guaranty timely payment by the Company of the Development Fee pursuant to *Section 5.1(a)*;

(g) the Managing Member shall, during and after the period in which it is a Member, (i) provide the Company with such information and sign such documents as are necessary for the Company to make timely, accurate and complete submissions of federal and state income tax returns, (ii) permit the representatives of the Investor Member to visit and inspect the Project at any reasonable time on reasonable notice and (iii) provide the Investor Member with such information in its possession as Investor Member may reasonably require and sign such documents as are reasonably necessary for the Investor Member to prepare its financial statements;

(h) the Managing Member shall document and assure that the proceeds of the Capital Contributions and of the Bond Loan allocable to the Project are expended and applied solely and strictly for expenditures that constitute components of the Eligible Basis of the Project or that are otherwise expressly contemplated by the Projections, and that all such expenditures are specifically allocable so as to enable the Company to demonstrate the compliance of such expenditures with this *Section 4.2(h)*;

(i) the Company shall be responsible for the payment of any fines or penalties imposed by the Agency or Lender pursuant to the Project Documents and any documents executed in connection with obtaining Federal Tax Credits attributable to any action or inaction of the Managing Member or its Affiliates. The Managing Member shall have the right to exhaust all available administrative, judicial and quasi-judicial proceedings available to it to contest such fines and penalties in accordance with proper procedure in all respects, including requirements for payment of fines, taxes, penalties and interest during or prior to resolution of the contest and provided such proceedings do not cause a default under the Project Documents or a loss of Tax Credits;

(j) the Managing Member shall promptly give Notice to the Investor Member of any written notice of (i) any default or material failure of compliance with respect to the Loan Documents or any other financial, contractual or governmental obligation of the Company or the Managing Member, or (ii) any federal, state or local proceeding (including, but not limited to, with respect to taxes) regarding the Project, or the Company;

(k) except for items as may be contested in good faith by the Managing Member and by appropriate proceedings and for which adequate reserves in accordance with generally accepted accounting principles consistently applied are maintained, the Managing Member will cause the Company to use all available Company revenue to pay on or before the date when the same would become delinquent, any and all real estate and ad valorem taxes (to the extent the Project is not exempt therefrom), personal property taxes, assessments, water rates, sewer rents, fines, impositions and any other charges now or hereafter levied against the Project, whether foreseen or unforeseen, ordinary or extraordinary; and also any and all license fees or similar charges which may be imposed by any Authority with respect to the Project for the use and occupancy of the Project, use of walks, chutes, areas and other space beyond the lot line of the Project and on or abutting the public sidewalks and/or highways in front or adjoining the Project or pursuant to any applicable law for the use of any furnaces, compactors, incinerators, parking areas or for other matters covered by any such laws; and also any and all corporate, franchise, unincorporated business, withholding, income, profits and gross receipts, and other taxes due by the Company; in each case together with any penalties and interest on any of the foregoing, and in default thereof;

(l) the Managing Member will cause the Company to pay promptly, when and as due, all charges for utilities, whether public or private, and will not suffer or permit any construction or mechanics, laborers, material statutory or other liens to be created or to remain outstanding upon any part of the Project, and if any such lien is created, will cause the Company to discharge the same of record by payment or bonding, or shall provide title insurance over, within 45 days after the filing thereof;

(m) the Managing Member shall not cause the Company to commit or permit physical waste with respect to the Project, nor cause or permit any building or improvement upon the Land to be removed, demolished or altered in whole or in material part (including structural alterations), except as contemplated by the Plans and Specifications or as Consented to by the Investor Member;

(n) if at any time during the construction of the Project, (i) construction is, or may be, stopped or suspended for a period of 30 consecutive days, or (ii) construction has or may be delayed so that in the reasonable determination of the Managing Member, (A) Substantial Completion is unlikely to be achieved by the date set forth in the Construction Contract or (B) the Projected Federal Credits or Projected Brownfield Tax Credits for any year during the Projected Credit Period is unlikely to be achieved, the Managing Member shall promptly send Notice of such occurrence, together with an explanation of the circumstances surrounding such occurrence, to the Investor Member;

(o) the Managing Member shall maintain or cause to be maintained books, files and records including tenant leasing files in compliance with the Code and the Treasury

Regulations and which will adequately document the timing, amount and availability of the Federal Tax Credits. The Managing Member shall cause the development and construction related files and files which document the initial qualification of the Eligible Units to be copied and stored off-site at Managing Member's principal place of business or at another location or electronically over which a Managing Member has control for a period of not less than 21 years. The Managing Member shall afford the Investor Member and its agents, upon reasonable notice, access to all such files, including files stored off-site, during ordinary business hours. All such files shall be the property of the Company and not of the Managing Member;

(p) the Managing Member shall provide all related services in connection with (i) the due organization and formation of the Company, (ii) obtaining permanent financing for the Project and (iii) the leasing of the Project;

(q) the Managing Member shall use all commercially reasonable efforts to maintain the Project so that there is no discharge, release, threatened release, spillage, uncontrolled loss or seepage of any oil, petroleum or chemical liquids or solids, liquid or gaseous products or any hazardous wastes or hazardous substances (as such terms are used in the Comprehensive Environmental Response, Compensation and Liability Act of 1980) which causes a genuine risk to the health or safety of the residents or employees of the Project. The Managing Member shall use all commercially reasonable efforts to maintain the Project so as not to violate the Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, Toxic Substance Control Act, Safe Drinking Water Control Act, Comprehensive Environmental Response, Compensation and Liability Act and Occupational Safety and Health Act and other federal, state and local laws governing hazardous substances. If the Investor Member becomes personally liable with respect to the Project under any federal, state or local hazardous substance law, the Managing Member and the Guarantor shall indemnify and hold harmless the Investor Member (except to the extent attributable to direct actions of or the gross negligence or intentional misconduct of the Investor Member as finally determined by a court of competent jurisdiction) for any and all costs, expenses (including reasonable attorneys' fees necessarily incurred), damages, or liabilities to the extent that the Investor Member is required personally to discharge such costs, expenses, damages, or liabilities in whole or in part from any source other than Company resources. The foregoing indemnification shall be a recourse obligation of the Managing Member and the Guarantor, and shall survive the dissolution of the Company with respect to violations which occurred prior to the death, retirement, incompetency, insolvency, bankruptcy, or withdrawal of the Managing Member against whom the indemnification provided in this paragraph is sought to be enforced, and shall apply to any such costs, expenses, damages or liabilities incurred for violations which occurred prior to the date the Managing Member is no longer in possession or control of the Project regardless of when such claim is made, but shall not apply to any such costs, expenses, damages or liabilities incurred for violations which occurred following the date the Managing Member is no longer in possession or control of the Project. The preceding shall not prohibit the ordinary use of Hazardous Materials normally used in the construction, operation, occupancy, or maintenance of properties similar to the Project, provided the amount of such Hazardous Materials does not exceed the quantity necessary for the normal construction, operation, occupancy, and maintenance of the Project in the ordinary course of business and the use, storage, and disposal of such Hazardous Materials complies with any applicable environmental law or regulation; and

(r) the Managing Member shall, timely and properly, cause the Company to make an election to be treated as an “electing real property trade or business” under Section 163(j)(7)(B) of the Code, with such election being made no later than with respect to the first Taxable Year in which the first Building in the Project is placed in service for federal income tax purposes.

(s) The Managing Member shall provide to the Investor Member copies of all building permits required for the construction of the Project no later than the date thirty (30) days after the date hereof.

(t) The Managing Member shall provide to the Investor Member evidence that a certificate of publication for the Company has been properly filed with the New York State Department of State no later than June 6, 2022, provided that in the event that Managing Member is diligently pursuing the foregoing, Managing Member shall have an additional thirty (30) days.

4.3 Housing Tax Credit Representations, Warranties, and Covenants. The Managing Member hereby represents, warrants, agrees and covenants (as specified, and where the following subsections do not specify, the Managing Member shall be deemed to have represented, warranted, agreed and covenanted as indicated) to the Company and to the Investor Member as that:

(a) The Managing Member is not a tax-exempt entity for purposes of Section 168(h) of the Code. No portion of the Project is or will be treated as “tax-exempt use property” as defined in Section 168(h) of the Code. If the Managing Member, or any member, partner, or owner of the Managing Member is controlled by or becomes controlled by a tax-exempt entity, such entity will make the election permitted under Section 168(h)(6)(F) of the Code (as well as any required election for such entity to be treated as a corporation for federal income tax purposes). HDFC will make the election permitted under Section 168(h)(6)(F). No portion of the Project is or will be leased to tax-exempt entities.

(b) The Company has received valid Tax Credit Determination covering each Building in the Project and will satisfy the Fifty Percent Test in accordance with applicable laws, rules and regulations and in a timely manner. Compliance with the Fifty Percent Test shall be calculated on a direct tracing basis and not on the basis of a per unit or other allocated basis. The Managing Member shall, within 10 days of its receipt, provide to the Investor Member a copy of any Forms 8609 issued to the Company. The Company Accountants shall prepare the certification with respect to satisfaction of the Fifty Percent Test set forth in the preceding sentence and shall provide such certification (and documentation supporting the costs stated to have been incurred), and such certification shall be provided to the Investor Member for its review at least ten (10) calendar days before such certification is provided to the Agency.

(c) The Managing Member has provided to the Investor Member true, correct and complete copies of all material correspondence and documentation evidencing or related to the Tax Credit Determination and any amendments thereto.

(d) No restrictions on the sale or refinancing of the Project, other than the restrictions to be set forth in the Project Documents, the Joint Venture Agreement and/or Section 42 of the Code exist as of the date of the Closing, and no such restrictions shall, at any time while the Investor Member is a Member, be placed upon the sale or refinancing of the Project.

(e) The Project will be developed and will be operated in a manner which satisfies, and shall continue to satisfy, all restrictions, including tenant income and rent restrictions, applicable to projects qualifying for Federal Tax Credits under Section 42 of the Code; and the Managing Member shall take all action under the laws of the State and any other applicable jurisdiction as of the date hereof that is necessary to satisfy such restrictions. For the avoidance of doubt (i) not later than the close of the first year of the Compliance Period and continuing throughout the Compliance Period, the Project will maintain compliance with the Minimum Set-Aside Test and (ii) gross rents (as defined in Section 42(g)(2)(B) of the Code) with respect to the Project paid by low-income occupants (and to occupants who initially qualify as low-income occupants but whose income increases above the applicable limitation) will not exceed the applicable rent limits under the Rent Restriction Test.

(f) Any loan obligation of the Company has been extended to the Company for use in constructing, holding, operating and maintaining the apartment units in the Project and the loan obligation is secured by the Project.

(g) Except as specifically set forth in this Agreement or contemplated by the Project Documents, the Managing Member will not permit any Member or Affiliate of a Member to become personally liable on, or to guaranty, any Loan or other indebtedness of the Company or otherwise to assume the economic risk of loss for payment of any permanent loan or other indebtedness of the Company (other than prior to Conversion and other than customary nonrecourse carveouts).

(h) The Loans have a fixed maturity date that is less than the expected economic life of the apartment units in the Project, as applicable.

(i) The Lender did not and will not receive a fee from the Managing Member or the Company other than as compensation for making the loans, and the Loan will not require personal liability or the guaranty of any member or person related to a member (other than customary non-recourse carve outs provisions which have been Consented to by the Investor Member and those certain guarantees to Lender prior to Conversion).

(j) On an "as built" basis and taking into account the value of the Federal Tax Credits, it is expected that the fair market value of the apartment units in the Project will at all times exceed the amount of the Loans and to which the apartment units will be subject, including any accrued but unpaid interest.

(k) The fees paid to the Managing Member, if any, are fair and reasonable compensation for services rendered by the Managing Member to the Company. Such fees are comparable to the compensation that would be paid to unrelated parties for similar services.

(l) The Project complies and during the Compliance Period will continue to comply with the Tax Credit Conditions.

(m) The Company will incur, on or prior to the end of first calendar year during which it is projected that the Company will claim Federal Tax Credits, eligible basis of approximately \$112,807,331 after giving effect to the adjustment to Eligible Basis set forth in Section 42(d)(5)(B) of the Code. Such amount is the reasonably anticipated tax basis of the Project excluding the cost of any commercial space, including but not limited to the cost of acquiring the Land and any other costs not properly includable in Eligible Basis pursuant to the Code and IRS rulings. The methodology utilized by the Company with respect to the capitalization of any construction period interest in Eligible Basis (including with respect to the application of Section 266 of the Code) is appropriate and permitted by applicable law. The Eligible Basis of the Project will not include any costs incurred in connection with nonresidential rental property and shall not include any costs incurred in connection with any residential unit in the Project that is not a low-income unit (as defined in Section 42 of the Code) and which is above the average quality standard of the low-income unit. None of the amounts that will be includable in the Eligible Basis will be funded with a federal grant within the meaning of Code Section 42(d)(5)(A).

(n) The Projected Federal Credits and Projected Brownfield Tax Credits applicable to the Project are as set forth on Schedule 1. The Company shall make all elections necessary and appropriate to qualify for the full amount of Federal Tax Credits available throughout the Credit Period.

(o) The Projections are reasonably based, have been prepared in good faith and reflect in all material respects the terms of the financing and development of the Project and reasonably project the results of their operations for the periods covered by the Projections that the Managing Member believes it will obtain.

(p) The Managing Member shall at no time develop the Project or manage the Company in a manner which is not consistent with (i) the Extended Use Agreement, the Regulatory Agreement and the Company's Federal Tax Credit applications, except with the prior approval of the Agency and the Consent of the Investor Member, or (ii) the material terms of any application, questionnaire or survey submitted to any lender in conjunction with any loans.

(q) The residential unit mix in the Project conforms to the set-asides required by the Agency.

(r) If any multi-family unit has been or will be occupied solely by students, such occupancy will comply with the provisions of Code Section 42(i)(3)(D).

(s) The initial lease term of the multi-family apartment units in the Project will equal or exceed six months.

(t) The Company will claim Federal Tax Credits based on the lesser of the floor space fraction or the unit fraction of each Building.

(u) All units in the Project will be rented in accordance with the general public use requirements of Treasury Regulation Section 1.42-9.

(v) Tenants will be screened and selected from a pool of eligible tenants based on uniformly applied tenant selection criteria that are commonly employed by other property owners in determining tenant eligibility in projects that are similar to the Project and in accordance with the Regulatory Agreement.

(w) Any common facilities will be made available on a comparable basis to all tenants residing in the apartment units in the Project and there will be no separate fee for their use.

(x) All services provided to tenants of the Project will be optional (i.e., payment for the service will not be required as a condition of occupancy) and no services that are not optional (i.e., mandatory services) will be provided.

(y) None of the units has been or will be part of a hospital, nursing home, sanitarium, lifecare facility, or intermediate care facility for the mentally and physically handicapped.

(z) No nursing, medical or psychiatric care has been or will be provided by the Company or the Managing Member to tenants of the Project.

(aa) The Company shall not elect a period based on which the Placed in Service date of a Building will be deemed to have occurred if such Placed in Service date would occur before completion of the construction of such Building in accordance with the Plans and Specifications, subject only to customary punch-list items.

(bb) An Extended Use Agreement will be in effect with respect to the Project as of the end of each Taxable Year in which a Federal Tax Credit is allowed.

(cc) As to the Project, 80% or more of the gross rental income (as defined in Section 168(e)(2)(A)(i) of the Code) from the Project for each Taxable Year of the Company shall be rental income from dwelling units.

(dd) For the Project, the amount of the Development Fee and other compensation paid by the Company to the Developer, the Contractor, the Managing Member and their Affiliates does not exceed the amount permitted by the Agency. The Development Fee projected to be included in Eligible Basis relates solely to the construction of the Project. The Development Fee shall be apportioned among the units of the Project and, as so apportioned, shall be fully earned and unconditionally payable with respect to each Eligible Unit no later than the end of the first year of the Credit Period for such Eligible Unit.

(ee) The units in the Project will be rented on other than a transient basis in a manner consistent with housing policy governing nondiscrimination, as evidenced by rules and regulations established by HUD, including HUD Handbook 4350.3 (or its successor), if applicable. The tenant facilities of the Project will be available to all tenants on a comparable basis without separate fees. For the avoidance of doubt, Selfhelp Community Services will provide formerly homeless tenants at the Project certain social services with such services fully funded by an award from the New York City Human Resources Administration.

(ff) The Project shall be managed so that (i) the Project may be depreciated as residential rental property under Section 168(c) of the Code, (ii) the rental of all Eligible Units in the Project comply with the tenant income limitations and other restrictions under the Rent Restriction Test and as set forth in the Extended Use Agreement and the Regulatory Agreement and (iii) the Project satisfies all conditions for the allocation of Federal Tax Credits.

(gg) The Managing Member has made (if applicable) and shall make such elections, or refrain from making such elections, with respect to the Federal Tax Credits, as necessary to achieve and maintain the Federal Tax Credits allocated to the Company at least at the level of the Projected Federal Credits, unless otherwise directed by the Investor Member; any such elections (including elections made at the direction or with the consent of the Investor Member) shall not reduce the obligations of the Managing Member pursuant to *Section 5.2* or *Section 8.11(d)*.

(hh) The Managing Member shall cause the Company to take in a timely fashion all such steps as are necessary or appropriate on the Company's part in order for the Tax-Exempt Bonds to be issued and sold as of the date of Closing and the proceeds thereof to be available to the Company, and to be available to be drawn by the Company subject to the terms and conditions of the Loan Documents, and the Managing Member shall comply and shall cause the Company to comply with the provisions of all applicable governmental and contractual obligations.

(ii) The Managing Member shall provide the Investor Member with prompt Notice (and with copies of appropriate correspondence) within five (5) Business Days in the event that the Company receives any writing from the IRS, the New York Department of Finance and Taxation or the Agency that the Project or any portion thereof is not in compliance with the requirements of Section 42 of the Code or is subject to a Tax Credit Recapture/Reduction Event or any other event that could result in an adjustment to the Federal Tax Credits, Brownfield Tax Credits, or losses allocable to the Investor Member and the Managing Member shall obtain prior Consent of the Investor Member with respect to each and every material communication, proposal, settlement offer and other operative statement made on behalf of the Company with respect to any such writing. In addition, the Managing Member shall promptly provide to the Investor Member a copy of the annual certification required to be submitted by the Company to the Agency pursuant to Treasury Regulation Section 1.42-5, including a copy of all required reports with respect to building code violations and the certification with respect to compliance with the Fair Housing Act.

(jj) The Managing Member shall maintain or cause to be maintained, for the period required by law, books, files and records including tenant leasing files in compliance with the Code and the Treasury Regulations, and which will adequately document the timing, amount and availability of the Federal Tax Credits for the period required by relevant Treasury Regulations.

(kk) If any of the Eligible Units in the Project fail at any time during the Compliance Period to constitute eligible low income units or if the Project is not in compliance with the requirements contained in Section 42 of the Code, the Managing Member agrees to give Notice to the Investor Member within 15 calendar days of its knowledge of such event or

occurrence and the Managing Member shall take all actions reasonably necessary to bring such Eligible Units or the Project, as the case may be, into compliance with the requirements of Section 42 of the Code, such that the Project will qualify and continue to qualify for Federal Tax Credits during the Compliance Period as projected. In addition, if at any time after Stabilization, less than 85% of the Eligible Units in the Project are physically occupied by qualified tenants for purposes of the Federal Tax Credit who are then current in the payment of rent under their leases, then the Managing Member shall within 30 calendar days of such event provide written notice of the same to the Investor Member.

(ll) The Managing Member shall operate the Project in a manner that satisfies, and shall continue to satisfy, the Extended Use Agreement, the Regulatory Agreement and any other restrictions applicable to the Project.

(mm) The Project will qualify for the 130% adjustment to Eligible Basis set forth in Section 42(d)(5)(B) of the Code by reason of the Project being located in Census Tract 1032.2, which is a "qualified census tract" as defined in Section 42(d)(5)(C) of the Code.

(nn) The Project will not contain any commercial (non-residential) space.

4.4 Housing Tax Credit Conditions. For the Project, the Managing Member acknowledges the importance to the Investor Member of achieving and maintaining compliance with the appropriate Tax Credit Conditions, and the Managing Member agrees that it shall avoid any failure to achieve and maintain such compliance, including but not limited to the following:

(a) The Managing Member shall cause to be kept all records (including the tenant qualification documents for each tenant throughout the Compliance Period), and cause to be made all elections and certifications pertaining to the number and size of the units in the Project, occupancy thereof by tenants, income levels of tenants, the units in the Project rent levels, set asides for low-income tenants and any other matters now or hereafter required to satisfy the Tax Credit Conditions and to qualify for and maintain the full Actual Federal Credit and any other available Tax Attributes in connection with low-income occupancy of the Project.

(b) The Managing Member shall cause the Company to comply with the Fifty Percent Test and the provisions of the Tax Credit Determination.

(c) The Managing Member shall elect the Minimum Set-Aside Test.

(d) The Managing Member shall certify to the Investor Member compliance with the Minimum Set-Aside Test and report the dollar amount of qualified basis, applicable percentage and Eligible Basis, date of Placement in Service and any other information required for the Federal Tax Credits in a timely manner but in no event later than December 31 of the first year in which any Building in the Project is Placed in Service and for each Taxable Year thereafter during the Compliance Period for such Federal Tax Credits, or at such other times and for such other periods as may hereafter be required by the Tax Credit Conditions.

(e) The Managing Member shall within 10 Business Days notify the Investor Member, with a detailed explanation of the circumstances, if at any time it becomes

apparent to the Managing Member that the Tax Attributes projected in the Projections are not likely to be substantially realized.

(f) The Managing Member shall cause to be provided to any applicable state or federal agency all required or requested documentation and certifications as may be required to maintain and ensure the Project's eligibility for Federal Tax Credits.

(g) The Managing Member shall cause the Company and the Project to comply with all the requirements of the Tax Credit Determination.

4.5 Housing Tax Credit Limitations on Authority. The Managing Member shall not perform any act in material violation of any applicable law or regulation, Project Document or any agreement between the Company and any authority or lender; enter into, nor approve, any transaction on behalf of the Company which is not consistent with the purposes of the Company; or take, or permit the Company to take, any of the following actions, in each case, without prior Consent of the Investor Member:

(a) Perform any act in violation of the provisions of this Agreement, the Extended Use Agreement, the Regulatory Agreement or any other Project Documents.

(b) Knowingly rent apartments in the Project such that the Project would not meet the requirements of the Rent Restriction Test or Minimum Set-Aside Test.

(c) Lease any unit in the Project or otherwise operate the Project in such a manner, or cause or permit the Company to take or omit to take any action, which would cause a recapture, reduction (other than as a result of a construction cost savings) or disallowance of any Federal Tax Credits anticipated to be recognized by the Company.

(d) Make income tax elections or choices of method, except for those elections or choices which are purely ministerial in nature. Further, the Investor Member may require the Company to make an election to defer commencement of the Credit Period pursuant to Section 42(f)(1) of the Code; provided, however, that (i) if such election to defer the commencement of the Credit Period is required by the Investor Member and (ii) such election causes the Managing Member to be required to make a higher Tax Credit Adjustment Payment under *Section 5.2(a)(iii)* than the Managing Member would have been required to make had no such election been made, then the Tax Credit Adjustment Payment due shall be calculated as if no such election had been made.

4.6 ABG, AML, and Sanction Compliance. The Managing Member hereby makes the following representations and warranties and covenants to the Company and the Investor Member, in connection with the Company and the Project, each of which representations and warranties are true and correct as of the date hereof and shall be true as of the date of this Agreement:

(a) *Unlawful Payments.* None of the Company, Managing Member, any Guarantor, nor any of their direct parent entities or subsidiaries or agents (nor the directors, officers, or Affiliates of any of the foregoing), in connection with the Project (i) has made, will make or will cause to be made any unlawful payments or gifts or anything of value, or any offer

or promise or agreement to make any unlawful payment or gift, directly or indirectly, to any Public Official to unlawfully secure an improper advantage or unlawfully obtain or retain business or an advantage in the conduct of business for the Company, any subsidiary or any of their respective Affiliates, or otherwise unlawfully cause such Public Official to perform his or her duties improperly; (ii) has unlawfully paid, offered to pay or agreed to pay, will unlawfully pay, offer to pay or agree to pay, or will cause an unlawful payment, offer to make such unlawful payment or enter into an agreement to unlawfully make such payment with respect to any political contributions or donations; (iii) has violated, will violate or is in violation of any provision of the Foreign Corrupt Practices Act of 1977, as amended; or (iv) has made, will make or will cause to be made any bribe, rebate, payoff, influence payment, kickback, offer or agreement to pay or other unlawful payment to any Public Official. The prohibitions in (i) and (ii) of this Section include, without limitation, all unlawful payments to Public Officials personally in connection with a government action, even when the purpose of the payment is merely to expedite or secure performance (other than in connection with the payment of fees owed in the ordinary course of business) of a routine governmental action by such Public Official such as obtaining official documents, processing governmental papers, or providing postal or utility services.

(b) *Money Laundering.* The operations of the Company, Managing Member, each Guarantor and the respective directors, officers, and Affiliates of each of the foregoing, are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended by the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001, as amended (the “**USA PATRIOT Act**”) and the regulations promulgated thereunder, the money laundering statutes of all applicable jurisdictions in which the Company, the Managing Member, each Guarantor and the respective directors, officers, and Affiliates of each of the foregoing conduct business, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency having jurisdiction over such Persons (collectively, the “**Money Laundering Laws**”). No action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving such Persons with respect to any Money Laundering Laws is pending or, to the knowledge of each of Managing Member, and each Guarantor, threatened in writing. None of the monies used in connection with the Project have been or will be derived from or related to any illegal activities, including but not limited to money laundering activities, and none of the proceeds of the Project will be used to finance any illegal activities.

(c) *OFAC.* None of the Company, Managing Member, any Guarantor nor the respective directors, officers, and Affiliates of each of the foregoing, is currently or will take any action or inaction to become the subject or the target of any economic sanctions administered or enforced by the U.S. Government, including, without limitation, the Office of Foreign Assets Control of the U.S. Department of the Treasury (or any successor thereto) (“**OFAC**”), or other relevant economic sanctions authority, including, without limitation, any economic or trade sanction imposed by the laws of the United States, the European Union, the United Kingdom or other relevant jurisdiction (collectively, “**Sanctions**”), and, in connection with the Project, Managing Member will not (i) take any action that could result in a violation by the Investor Member or an Affiliate of the Investor Member of any such Sanctions, (ii) engage in any

transaction or dealing involving the property of any individual or entity listed or designated for economic sanctions under any Sanctions; (iii) engage in any transaction or dealing with or involving any jurisdiction or government, or any individual or entity located in, ordinarily resident in, or organized under the laws of a particular jurisdiction, if such jurisdiction or government is the target of comprehensive economic sanctions under any Sanctions; or (iv) engage in any transaction or dealing involving goods, services, or technology that originate from, or are transshipped through, any jurisdiction that is the target of comprehensive economic sanctions under any Sanctions.

(d) None of the Company, Managing Member, any Guarantor nor any of their respective direct parent entities or subsidiaries (nor, to the knowledge of the Managing Member, the respective directors, officers, or Affiliates of each of the foregoing), is acting, or will act, on behalf of: (i) a country, territory or Person listed or designated for economic sanctions under any Sanctions, (ii) a Person that is known to Managing Member to reside in or has a place of business in a country or territory that is the target of comprehensive economic sanctions under any Sanctions or which is designated as a Non-Cooperative Jurisdiction by the Financial Action Task Force on Money Laundering, or whose subscription funds are transferred from or through such a jurisdiction, (iii) a “Foreign Shell Bank” within the meaning of the USA PATRIOT Act, as amended, (iv) a Person that is known by Managing Member to reside in, or be organized under the laws of, a jurisdiction designated by the Secretary of the Treasury under Section 311 or Section 312 of the USA PATRIOT Act as warranting special measures due to money laundering concerns, (v) a Person that is known by Managing Member to be designated by the Secretary of the Treasury as warranting such special measures due to money laundering concerns or (vi) a Person that otherwise is known by Managing Member to appear on any U.S.- government provided list of known or suspected terrorists or terrorist organizations. The Managing Member has in place and will continue to maintain internal policies and procedures that are reasonably designed to ensure the foregoing representations in this Section.

(e) *Governmental Inquiries.* The Managing Member warrants and covenants that it will promptly notify the Investor Member in reasonable written detail about any governmental inquiry, notice, or claim of which Managing Member has notice or knowledge and which arises out of this Agreement, or which affects or could reasonably be expected to affect any activities of Managing Member or any individual or entity acting on its behalf in connection with this Agreement.

(f) *Accuracy of Representations.* The Managing Member agrees to give prompt written notice to Investor Member in the event that, at any time during the term of this Agreement, any representation set forth herein is no longer accurate.

ARTICLE V

MEMBERS, MEMBERSHIP INTERESTS AND OBLIGATIONS OF THE MEMBERS

5.1 Members, Capital Contributions and Percentage Interests.

(a) (i) The Managing Member, its principal office and place of business, its Capital Contribution and its Percentage Interest are as follows:

PL Sara Manager LLC	\$100	0.01%
c/o Asland Capital Partners LLC		
601 Lexington Avenue, 52nd Floor		
New York, New York 10022		

(ii) If the Company has not paid all or any part of the Development Fee at the maturity date thereof as set forth in *Section 8.12* and the Development Agreement, the Managing Member shall on such maturity date make a Capital Contribution to the Company in an amount equal to any such remaining balance, and the Company shall thereupon make a payment in an equal amount to pay off the balance of the Development Fee.

(iii) The Managing Member has caused to be assigned to the Company by the Developer and any other Affiliate of the Managing Member any and all development rights with respect to the Project and hereby contributes all such development rights to the capital of the Company. For purposes of the Capital Accounts of the Company, no value shall be assigned to such contributed development rights.

(iv) The Capital Contributions of the Managing Member shall be made as of the date hereof.

(v) On the date hereof, the Company shall reimburse the Managing Member for pre-development expenses as approved by the Investor Member. The Managing Member represents that such expenses were paid on behalf of the Company in anticipation of entering into this Agreement with the Investor Member.

(vi) As of the date hereof, Withdrawing Member hereby withdraws from the Company as a Member and acknowledges that it no longer has any Interest in, or rights or claims against, the Company as a Member and that it has received a return of the balance of its Capital Account.

(b) Investor Member, its principal office and place of business, its Capital Contribution and its Percentage Interest are as follows:

GSB LIHTC Investor LLC	\$52,987,655	99.99%
c/o The Goldman Sachs Group, Inc.	as more specifically set	
200 West Street	forth in <i>paragraph (c)</i>	
New York, New York 10282	immediately below	

(c) Subject to the provisions of this Agreement, including, without limitation, the provisions of *Sections 5.2 and 5.4*, the Investor Member shall be obligated to make Capital Contributions to the Company in installments as follows:

(i) Initial Capital Contribution. After the review and approval by the Investor Member of the items described below, the Investor Member shall make the Capital Contribution as described in this *Section 5.1(c)(i)* (the “**Initial Capital Contribution**”):

(A) Managing Member’s Certificate. The Investor Member has received from the Managing Member a Managing Member’s Certificate in the form attached hereto as Exhibit F.

(B) Survey. The Investor Member has received a copy of an ALTA/NSPS survey of the Land certified to the Company and the title company issuing the title insurance policy required hereby, prepared by a licensed surveyor. Such survey shall contain the surveyor’s certification that there are no easements or other encroachments on the Land or on adjacent lands which prohibit or interfere with the use of the Land except as shown on the survey.

(C) Title Policy. The Investor Member has received a copy of the owner’s title insurance policy referred to in *Section 4.1(i)*, complying with the requirements therefor specified in such section.

(D) Environmental Matters. The Investor Member has received and approved a copy of the Environmental Report and other reports referred to in *Section 4.1(aa)* and reliance letters from the entities who prepared the Environmental Report, permitting reliance thereon by the Investor Member, and, if any other reports or actions are required by *Section 4.1(aa)*, the Investor Member shall be satisfied that they have been delivered or performed in accordance with *Section 4.1(aa)*.

(E) Tax Credit Determination. The Investor Member has received evidence satisfactory to it that the Company has received a valid Tax Credit Determination with respect to the Project.

(F) Project Documents. The Investor Member has received and approved a copy of each Project Document, including, without limitation, the Loan Documents and the Management Agreement, required to be in existence at the time of the Initial Capital Contribution or otherwise available at such time.

(G) Insurance. The Investor Member has received and approved evidence that the Company has obtained insurance coverage insuring the Company and covering the Project in accordance with *Section 4.1(r)* and Schedule 2 and certificates of insurance as required by Schedule 2.

(H) Permits. The Investor Member shall be satisfied that all necessary licenses, permits and authorizations of all Authorities necessary for the

applicable phase of demolition or construction of the Project have been received by the Company.

(I) Contractor. The Investor Member has approved the Contractor and has received and approved a copy of each of: (i) the scope of the construction; (ii) the Construction Contract; and (iii) the Plans and Specifications.

(J) Legal Opinions. The Investor Member has received (i) a legal opinion with conclusions reasonably satisfactory to the Investor Member from the Counsel to the Company, (ii) tax advice with conclusions reasonably satisfactory to the Investor Member from the Investor Member's counsel, and (iii) the Managing Member's certificate to the tax opinion of the Investor Member's counsel.

(K) Financial Information. The Investor Member has received and approved financial statements of each Guarantor for the most recently completed fiscal year, which financial statements fairly present the financial condition and results of operations of each Guarantor as at the end of and for the period covered thereby and, unless disclosed by the Managing Member in writing, there has been no Material Adverse Change in the financial condition of the any Guarantor between the date of the financial statements and the Closing that may have a Material Adverse Effect on the Managing Member's ability to perform its obligations hereunder and further provided that Guarantors shall not be deemed to have suffered a Material Adverse Change in the financial condition provided the Net Worth and Liquidity Requirements are satisfied.

(L) Organizational Documents. The Investor Member has received copies of all organizational documents of the Managing Member, the Guarantor, the Developer, and the Company, certified, to the extent applicable, by the appropriate governmental authority and the Managing Member and certificates of good standing for the Managing Member, the Guarantor, the Developer, and the Company, dated no earlier than 30 days prior to the date of the Initial Capital Contribution.

(M) Due Diligence Items. The Investor Member has received all requested due diligence items that are required to be delivered at or prior to the time of the Initial Capital Contribution (if not otherwise provided pursuant to any other Initial Capital Contribution Condition set forth herein), certified to the Investor Member as being true and correct and in form and substance satisfactory to the Investor Member in its sole discretion. The Investor Member has received and is satisfied with the results of such judgment, lien, litigation, tax and bankruptcy searches with respect to the Managing Member, the Developer, the Guarantor and their Affiliates as the Investor Member shall request.

(N) Intentionally Omitted.

(O) Bond Loan Closing. The closing of the Bond Loan has occurred and the Bond Loan Documents shall provide the Investor Member with such notices of default, cure rights, and rights to remove the Managing Member without Lender's consent, as shall be required by the Investor Member and the Bond Loan Documents shall be in form and substance consistent with the Projections and satisfactory to the Investor Member. In addition, the Investor Member has received (i) the resolution for the Tax-Exempt Bonds, (ii) the signed bond counsel opinion regarding the tax-exempt status of the Tax-Exempt Bonds and (iii) the fully executed IRS Form 8038 for the Tax-Exempt Bonds.

(P) HPD Loan. The closing of the HPD Loan and initial funding of the proceeds under the HPD Loan has taken place, and the HPD Loan Documents provide the Investor Member with such notices of default, cure rights and rights to remove the Managing Member without Lender's consent as shall be required by the Investor Member.

(Q) Outstanding Liabilities. The Investor Member shall have received a certificate from the Company Accountants or the Managing Member in form and substance satisfactory to the Investor Member, certifying that the Managing Member has no actual knowledge of any outstanding undisclosed liabilities, no claims, suits, causes of action, litigation or other proceedings, affecting the Company, and/or the Project.

(R) Budgets. The Investor Member has received and Consented to the Development Budget and the Operating Budget for the remainder of the current fiscal year of the Company as contemplated by *Section 8.19*.

(S) Plans and Specifications. The Investor Member and its Engineering Consultant have approved the Plans and Specifications.

(T) Residual Analysis. The Investor Member shall have received and be satisfied with a residual value analysis showing that the Company will be able to repay the Loans upon maturity.

(U) Projections. The Investor Member has received the Projections from the Managing Member and the Projections are acceptable to the Investor Member;

(V) Development Agreement. The Investor Member has received a copy of the Development Agreement, executed and delivered in the form of Exhibit B;

(W) Guaranty. The Guarantor has executed and delivered to the Investor Member the Guaranty in the form of Exhibit D.

(X) Wiring Instructions. The Investor Member has received a copy of the wiring instructions for the Initial Capital Contribution.

(Y) Extended Use Agreement; Regulatory Agreement. The Investor Member has received executed copies of the Extended Use Agreement and the Regulatory Agreement.

(Z) Tax Abatement. The Investor Member has received evidence that the Project and the Company will qualify for the Tax Abatement, which may be provided through an opinion letter from the Company's counsel.

(AA) Brownfield Tax Credits. The Investor Member has received evidence that the Project has been accepted into the Brownfield Cleanup Program, including, without limitation, an executed Brownfield Cleanup Agreement.

(BB) AHAP. The Investor Member has received a copy of the fully executed AHAP.

(CC) Payment and Performance Bonds. The Investor Member has received original Payment and Performance Bonds.

(DD) Other Documents. The Investor Member has received such other documents as may be reasonably required under the provisions of this Agreement or as the Investor Member or its counsel may reasonably require in order to evidence that the requirements of *Section 5.1(c)(i)* have been met.

The amount of the Initial Capital Contribution shall be in an amount equal to \$10,597,530 (or approximately 20% of the total Capital Contribution of the Investor Member attributable to the Federal Tax Credit and the Brownfield Tax Credits), payable upon satisfaction of each of the Initial Capital Contribution Conditions. The Company shall use the Initial Capital Contribution to pay amounts set forth in the Development Budget (including, without limitation, up to \$3,159 in Development Fee). The Investor Member hereby acknowledges that the Initial Capital Contribution Conditions have been met as of Closing. Each funding of the Initial Capital Contribution shall be made on a "construction draw basis" and shall be subject to the satisfaction of the Initial Capital Contribution Conditions and delivery of a "date-down" endorsement to the Title Policy extending the effective date of the Title Policy to the date of funding and showing no encroachments, liens or other exceptions to the title other than the Brownfield Cleanup Program Easement and exceptions reflected on the title policy as of Closing, except as shall be reasonably acceptable to the Investor Member. Notwithstanding the foregoing, the Investor Member agrees to accept a title continuation letter from the date of the title policy through the date of this request which will satisfy the requirements hereof. Managing Member acknowledges that not less than fourteen percent (14%) of Investor Member's total Capital Contribution shall be funded on the date hereof and the remaining portion of the Initial Capital Contribution shall be funded within six months of the date hereof. In the event that the full Initial Capital Contribution is not funded within six months of the date hereof, Investor Member shall have a right to contribute the remaining portion of the Initial Capital Contribution into a controlled account in accordance with the terms of the Loan Documents.

(ii) Stabilization Capital Contribution. After satisfaction of all of the Initial Capital Contribution Conditions (which shall be deemed satisfied upon contribution of the Initial Capital Contribution), and the review and approval by the Investor Member of the items described below, the Investor Member shall make the Capital Contribution as described in this *Section 5.1(c)(ii)* (the “**Stabilization Capital Contribution**”):

(A) Managing Member’s Certificate. The Investor Member has received from the Managing Member a Managing Member’s Certificate in the form attached hereto as Exhibit F.

(B) Intentionally Omitted.

(C) Stabilization. Stabilization has occurred.

(D) Stabilization Date. The Stabilization Date has occurred.

(E) Permits, Licenses and Certificates of Occupancy. The Investor Member has received a copy of any permits and licenses which are required for the operation, occupancy and use of the Project, including, without limitation, a temporary or final Certificate of Occupancy for the Project.

(F) Contractor and Contractor’s Certificate. Contractor shall have been paid all amounts properly due it to date (except amounts contained in the Stabilization Capital Contribution) and all advances previously made, if any, with respect to the Capital Contribution and the Loans (including releases from reserves or escrows created under the applicable Loan Documents), as applicable, have been properly applied. Contractor shall also have delivered to the Investor Member a certificate executed by Contractor and Managing Member certifying that the improvements constituting the Project have been completed (other than “punch list” items), as applicable, substantially in compliance with the Plans and Specifications, the construction and materials used therein are substantially according to the Plans and Specifications, all bills for labor, material and services then incurred and payable in connection with the Project have been paid or will be paid from the Substantial Completion Capital Contribution, and such other matters as Investor Member may reasonably require.

(G) Preliminary Cost Certification. At least 10 Business Days prior to submission to the Agency, the Managing Member has provided to the Investor Member for its review and Consent a preliminary cost certification prepared by the Company Accountants setting forth such matters as are reasonably requested by the Investor Member, including satisfaction of the Fifty Percent Test, Eligible Basis of the Project and the amount of the Projected Federal Credits of the Project.

(H) Preliminary Brownfield Tax Credits Cost Certification. The Investor Member shall have received a preliminary Brownfield Tax Credits Cost Certification.

(I) Final Receipts for Payment of Costs. Managing Member has (i) procured and delivered copies to the Investor Member of all Contractor's final mechanics' lien waivers, releases, affidavits and accepted bills as may be required by HFA's loan servicer or as reasonably required by the Investor Member, showing payment of all work performed and materials furnished prior to a date (excluding all "punch-list" items) which is not more than 30 days prior to the date of payment of the Substantial Completion Capital Contribution (except to the extent such charges are contested and any associated lien is bonded), and (ii) delivered invoices for any soft costs that individually exceed \$5,000.

(J) Lien Waivers. The Company has received (i) evidence that all amounts due under the Construction Contract have been paid, subject to amounts held by the Company under any contract as a retainage or other holdbacks for industry standard "punch-list" items and subject to the Investor Member's determination, which determination shall not be unreasonably withheld, conditioned or delayed, that an amount equal to 200% of the estimated cost to complete such "punch-list" items shall have been escrowed or otherwise are available to pay for such "punch-list" items (of which not less than \$50,000 shall be retained until receipt of the final Certificates of Occupancy) and (ii) lien waivers from the Contractor unless appropriate retainage or reserves, as reasonably acceptable to Investor Member, have been established for lien waivers not yet received.

(K) Approval of Architect and Architect's Certificate. The Architect shall have delivered to Investor Member the Architect's Certificate, executed by the Architect, and certifying in part, that the improvements constituting the Project have been constructed, as applicable, substantially in compliance with the Plans and Specifications, the construction and materials used therein are substantially according to the Plans and Specifications, that the work has been substantially completed, and such other matters as the Investor Member may reasonably require.

(L) Certification of Engineering Consultant. The Investor Member has received a certification or other evidence satisfactory to the Investor Member that the Project has been constructed substantially in accordance with the Plans and Specifications from the Engineering Consultant and that the Engineering Consultant has approved each of the items listed in clauses (iii), (iv) and (v) of the definition of Substantial Completion.

(M) Environmental Matters. To the extent the matters set forth in Schedule 3 have not previously been eliminated, controlled or abated as evidenced by a report or closure letter, the Investor Member has received either (i) the Certificate of Completion or (ii) a report or closure letter in form satisfactory to the Investor Member showing that any Hazardous Materials or other environmental matters listed in Schedule 3 as being required to be eliminated, controlled or abated, including without limitation, any asbestos contamination and

lead-based paint, if applicable, have been properly dealt with in accordance with the requirements of Schedule 3 and all Environmental Laws.

(N) Fifty Percent Test. The Investor Member has received evidence satisfactory to it that the Fifty Percent Test shall be satisfied by the Company, including a certificate from the Company Accountants in the form attached hereto as Exhibit G which is based on the preliminary cost certification, and that the Project has been placed in service for tax-exempt bond purposes.

(O) Adjustments. The adjustment provisions set forth in *Section 5.2* have been preliminarily calculated to the satisfaction of the Investor Member.

(P) Title Policy. The title insurance company shall have issued, to the extent issuable in the State, the following endorsements to the Company's title policy: a "date-down" endorsement to the title policy extending the effective date of the title policy to the date of funding and showing no encroachments, liens or other exceptions to the title other than the Brownfield Cleanup Program Easement and exceptions reflected on the title policy as of Closing, except as shall be reasonably acceptable to the Investor Member. Notwithstanding the foregoing, the Investor Member agrees to accept a title continuation letter from the date of the title policy through the date of this request which will satisfy the requirements hereof.

(Q) Insurance. The Investor Member has received and approved evidence that the Company has obtained insurance coverage required during operation of the Project in accordance with *Section 4.1(r)* and Schedule 2.

(R) Financial Information. The Investor Member has received and approved internally-prepared financial statements of the Managing Member, the Guarantor and the Company for the most recently completed fiscal year, which financial statements fairly present the financial condition and results of operations of the Managing Member, the Guarantor and the Company as at the end of and for the period covered thereby and, unless disclosed by the Managing Member in writing, there has been no Material Adverse Change in the financial condition of the Managing Member, any Guarantor or the Company between the date of the financial statements and the Closing that may have a Material Adverse Effect on the Managing Member or Guarantor's ability to perform its obligations hereunder and further provided that Guarantors shall not be deemed to have suffered a Material Adverse Change in the financial condition provided the Net Worth and Liquidity Requirements are satisfied.

(S) HAP Contract. The Investor Member shall have received a fully executed copy of the HAP Contract together with evidence such HAP Contract remains in full force and effect.

(T) As-Built Survey and As-Built Plans. The Investor Member has received and approved an as-built survey and as-built plans for the Project.

(U) Other Documents. The Investor Member has received such other documents as may be reasonably required under the provisions of this Agreement or as the Investor Member or its counsel may reasonably require in order to evidence that the requirements of *Section 5.1(c)(ii)* have been met.

The amount of the Stabilization Capital Contribution shall be in an amount equal to \$39,740,742 (or approximately 75% of the total Capital Contribution of the Investor Member attributable to the Federal Tax Credits and the Brownfield Tax Credits), payable within ten (10) Business Days of the satisfaction of the Stabilization Capital Contribution Conditions and subject to adjustment as set forth in *Section 5.2*. The Company shall use the Stabilization Capital Contribution to (i) to pay amounts set forth in the Development Budget (including, without limitation, up to \$1,499,818 to pay Development Fee) and (ii) to repay the Short Term Loan.

(iii) Final Capital Contribution. After satisfaction of all of the Stabilization Capital Contribution Conditions and the review and approval by the Investor Member of the items described below, the Investor Member shall make the Capital Contribution as described in this *Section 5.1(c)(iii)* (the “**Final Capital Contribution**”):

(A) Managing Member’s Certificate. The Investor Member has received from the Managing Member a Managing Member’s Certificate in the form attached hereto as Exhibit F.

(B) No Material Adverse Change. There has been no Material Adverse Change from the date of the Initial Capital Contribution to the time of the Final Capital Contribution.

(C) Cost Certification and 8609 Date. The Cost Certification and 8609 Date has occurred.

(D) Final Certificates of Occupancy. To the extent not delivered, the Investor Member has received a copy of a final Certificate of Occupancy for the building(s) in the Project; provided that all of the conditions to the Final Capital Contributions have been met except as required under *Section 5.1(c)(iii)(D)* and *Section 5.1(c)(iii)(J)*, the Investor Member will make the Final Capital Contribution and defer \$50,000 from the Final Capital Contribution (which shall not be the same \$50,000 described in *Section 5.1(iii)(J)*), which deferred \$50,000 shall be contributed upon the satisfaction of *Section 5.1(iii)(D)*.

(E) Final Cost Certification. At least 10 Business Days prior to submission to the Agency, the Managing Member has provided to the Investor Member for its review and Consent a final cost certification prepared by the Company Accountants setting forth such matters as are reasonably requested by the Investor Member, including satisfaction of the Fifty Percent Tent, Eligible Basis of the Project and the amount of the Projected Federal Credits of the

Project, including a certificate from the Company Accountants in the form attached hereto as Exhibit G.

(F) Final Brownfield Tax Credits Cost Certification. The Investor Member shall have received a final Brownfield Tax Credits Cost Certification.

(G) Adjustments. The adjustment provisions set forth in *Section 5.2* have been calculated to the satisfaction of the Investor Member.

(H) Title Policy. The title insurance company shall have issued, to the extent issuable in the State, the following endorsements to the Company's title policy: a "date-down" endorsement to the title policy extending the effective date of the title policy to the date of funding and showing no encroachments, liens or other exceptions to the title other than the Brownfield Cleanup Program Easement and the exceptions reflected on the title policy as of Closing, except as shall be reasonably acceptable to the Investor Member. Notwithstanding the foregoing, the Investor Member agrees to accept a title continuation letter from the date of the title policy through the date of this request which will satisfy the requirements hereof.

(I) Financial Information. The Investor Member has received and approved financial statements of the Managing Member, the Guarantor and the Company for the most recently completed fiscal year, which financial statements fairly present the financial condition and results of operations of the Managing Member, the Guarantor and the Company as at the end of and for the period covered thereby and, unless disclosed by the Managing Member in writing, there has been no Material Adverse Change in the financial condition of the Managing Member, any Guarantor or the Company between the date of the financial statements and the Closing that may have a Material Adverse Effect on the Managing Member or Guarantor's ability to perform its obligations hereunder and further provided that Guarantors shall not be deemed to have suffered a Material Adverse Change in the financial condition provided the Net Worth and Liquidity Requirements are satisfied.

(J) IRS Forms 8609. The Investor Member has received the IRS Form 8609 for each residential Building in the Project executed by the Agency; *provided*, that to the extent the IRS Forms 8609 hereunder are not available as of the date of the Final Capital Contribution and provided that all of the conditions to the Final Capital Contributions have been met except as required under *Section 5.1(c)(iii)(D)* and *Section 5.1(c)(iii)(J)*, the Investor Member will make the Final Capital Contribution and defer \$50,000 from the Final Capital Contribution (which shall not be the same \$50,000 described in *Section 5.1(iii)(D)*), which deferred \$50,000 shall be contributed upon the satisfaction of *Section 5.1(iii)(J)*.

(K) Completion of Punch-List. The Investor Member has received evidence that all work on the “punch-list” has been completed substantially in accordance with the Plans and Specifications.

(L) Wiring Instructions. The Investor Member has received a copy of the wiring instructions for the Final Capital Contribution.

(M) Developer Fee Note. To the extent that the Final Capital Contribution is insufficient to pay the entire remaining balance due in respect of the Development Fee, the Company shall have executed the Developer Fee Note, in the form approved by the Investor Member as set forth in Exhibit A to the Development Agreement, in satisfaction of such deficiency.

(N) Tenant Certifications. The Managing Member has conducted an initial tenant income certification, audited by the Compliance Consultant, with respect to the tenants of the Eligible Units and has provided to the Investor Member evidence of such income certification and a certified rent roll. In connection with the initial tenant income certification, the Managing Member shall provide electronic access to the Investor Member of the tenant files establishing that the tenants first occupying Eligible Units are qualified tenants.

(O) Tax Abatement Certificate of Eligibility. The Investor Member has received a copy of the Tax Abatement Certificate of Eligibility.

(P) Other Documents. The Investor Member has received such other documents as may be reasonably required under the provisions of this Agreement or as the Investor Member or its counsel may reasonably require in order to evidence that the requirements of *Section 5.1(c)(iii)* have been met.

The amount of the Final Capital Contribution shall be in an amount equal to \$2,649,383 (or approximately 5.0% of the total Capital Contribution of the Investor Member attributable to the Federal Tax Credits and the Brownfield Tax Credits), payable within ten (10) Business Days of the satisfaction of the Final Capital Contribution Conditions and subject to adjustment as set forth in *Section 5.2*. The Company shall use the Final Capital Contribution to pay the Development Fee.

(iv) Special Additional Capital Contributions. If, in any Taxable Year of the Company, the Investor Member’s Capital Account balance may be reduced to or below zero, such Investor Member may, in its sole and absolute discretion, make a special additional Capital Contribution to the Company, in an amount reasonably required to avoid the reduction of such Investor Member’s Capital Account balance to or below zero (“**Special Additional Capital Contribution**”). If such Investor Member makes a Special Additional Capital Contribution to the Company pursuant to this paragraph, such funds shall be deposited in a separate Company reserve account, withdrawals from which shall require the Consent of the Investor Member. All interest earned on such account shall be payable to such Investor Member, and an amount of income equal to the amount of such interest shall be specifically allocated to such

Investor Member. Such Investor Member shall receive a guaranteed payment pursuant to *Section 5.7* for the use of its Special Additional Capital Contribution. Whenever the Investor Member makes a Special Additional Capital Contribution to the Company pursuant to this paragraph, the Managing Member has the option, in its sole and absolute discretion, to make Special Additional Capital Contributions to the Company, up to the same amount and on the same terms in the aggregate as the Special Additional Capital Contribution made by the Investor Member at that time.

(d) Without the Consent of all of the Members, no additional Person may be admitted as additional or substitute (except in accordance with *Article IX*) Investor Member and Capital Contributions may be accepted only as and to the extent expressly provided for in this *Article V*.

(e) The cash portion of the Capital Contributions of each Member shall be deposited at the Managing Member's discretion in a checking, or savings account, to be established and maintained in the name of the Company, or invested in certificates of deposit issued by any bank. Thereafter, such amounts shall be utilized for the conduct of the Company business pursuant to the terms of this Agreement.

(f) Except as may otherwise be provided under applicable law, Investor Member shall not be bound by, or personally liable for, the expenses, liabilities or obligations of the Company.

5.2 Adjustments to Capital Contributions.

(a) Adjustments Due to Shortfall in Federal Tax Credits and Brownfield Tax Credits.

(i) Federal Tax Credit Downward Basis Adjustment. If at any time prior to the making of the Stabilization Capital Contribution and/or the Final Capital Contribution, the Projection Accountants determine that the Adjusted Aggregate Federal Credit Amount properly allocable to the Investor Member is or will be less than the Projected Aggregate Federal Credit Amount, then the Capital Contribution of the Investor Member shall be reduced in the aggregate by \$1.03 for each \$1.00 that the Adjusted Aggregate Federal Credit Amount is less than the Projected Aggregate Federal Credit Amount.

(ii) Federal Tax Credit Timing Adjustment. If at any time at or prior to the making of the Stabilization Capital Contribution and/or the Final Capital Contribution, the Projection Accountants determine that, or there shall be a Tax Credit Recapture/Reduction Event pursuant to which, the Actual Federal Credit properly allocable to the Investor Member for 2025 is less than the Projected Federal Credit for 2025 (the "Timing Adjustment Amount"), then the Capital Contribution of the Investor Member shall be decreased by as the case may be, an amount equal to \$0.35 for each \$1.00 that the Actual Federal Credits properly allocable to the Investor Member is less than the Projected Federal Credit for 2025, as applicable. Nothing in this subsection (ii) shall limit or alter any adjustment required to be made under subsections (i), (iii),

(iv), (v) and/or (vi) hereof and any such adjustments shall be made independently from the determination of the Timing Adjustment Amount.

(iii) Federal Tax Credit Upward Basis Adjustment. If upon receipt of the IRS Forms 8609 for the Project, the Projection Accountants determine that the Adjusted Aggregate Federal Credit Amount properly allocable to the Investor Member is greater than the Projected Aggregate Federal Credit Amount, then the Capital Contribution of the Investor Member shall be increased by \$1.03 for each \$1.00 that the Adjusted Aggregate Federal Credit Amount properly allocable to the Investor Member is greater than the Projected Aggregate Federal Credit Amount subject to the limitation set forth in *Section 5.2(e)*. It is acknowledged that the calculation described in this *Section 5.2(a)(iii)* shall be performed based on the Actual Applicable Fraction as of the date that the Investor Member receives IRS Forms 8609 for each Building regardless of the applicable fraction set forth in such IRS Forms 8609. No additional Capital Contribution shall be due from the Investor Member based on any increase in the Actual Applicable Fraction that may occur after the date that the Investor Member receives IRS Forms 8609 for each Building. Any amount contributed by the Investor Member under this *Section 5.2(a)(iii)* shall be used by the Company solely to pay Company expenses (including Development Fee) or to repay Company debt, and in no event shall this amount or any part thereof be used to make a distribution to any Member nor be treated as Net Cash Flow.

(iv) Brownfield Tax Credit Downward Basis Adjustment. If at any time at or prior to the making of the Stabilization Capital Contribution and/or the Final Capital Contribution, the Projection Accountants determine that the Adjusted Aggregate Brownfield Credit Amount properly allocable to the Investor Member is or will be less than the Projected Aggregate Brownfield Credit Amount, then the Final Capital Contribution of the Investor Member shall be reduced in the aggregate by \$0.65 for each \$1.00 that the Adjusted Aggregate Brownfield Credit Amount properly allocable to the Investor Member is less than the Projected Aggregate Brownfield Credit Amount.

(v) Brownfield Tax Credit Upward Basis Adjustment. If at any time at or prior to the making of the Stabilization Capital Contribution and/or the Final Capital Contribution, the Projection Accountants determine that the Adjusted Aggregate Brownfield Credit Amount properly allocable to the Investor Member is or will be more than the Projected Aggregate Brownfield Credit Amount, then the Final Capital Contribution or, if the final Brownfield Tax Credits Cost Certification has been received prior to the making of the Stabilization Capital Contribution, the Stabilization Capital Contribution of the Investor Member shall be increased in the aggregate by \$0.65 for each \$1.00 that the Adjusted Aggregate Brownfield Credit Amount properly allocable to the Investor Member is more than the Projected Aggregate Brownfield Credit Amount; provided, however, that in no event shall an adjustment pursuant to this *Section 5.2(a)(v)* exceed the limitation set forth in *Section 5.2(e)*. No additional Capital Contribution shall be due from an Investor Member under this *Section 5.2(a)(v)* after the date the Investor Member funds its Final Capital Contribution or, if the final Brownfield Tax Credits Cost Certification has been received prior to the making of the Stabilization Capital Contribution, the Stabilization Capital. Any amount contributed by the Investor

Member under this *Section 5.2(a)(v)* shall be used by the Company solely to pay Company expenses (including Development Fee) or to repay Company debt, and in no event shall this amount or any part thereof be used to make a distribution to any Member nor be treated as Net Cash Flow.

(vi) Brownfield Tax Credit Timing Adjustment. If at any time at or prior to the making of the Stabilization Capital Contribution and/or the Final Capital Contribution, the Projection Accountants determine that, or there shall be a Tax Credit Recapture/Reduction Event pursuant to which, the Actual Brownfield Tax Credits properly allocable to the Investor Member for 2023 or 2025 is less than the respective Projected Brownfield Tax Credit for 2023 or 2025 (the “**Brownfield Tax Credit Timing Adjustment Target Amounts**”), then the Capital Contribution of the Investor Member shall be reduced by reason of such variation of the Actual Brownfield Tax Credits from the Brownfield Tax Credit Timing Adjustment Target Amounts. Brownfield Tax Credit Timing Adjustment Target Amounts for purposes of the preceding sentence shall be adjusted by the product of (i) \$0.10 for each \$1.00 by which the Adjusted Aggregate Brownfield Tax Credit Amount is less than the Projected Brownfield Tax Credit and (ii) the total number of years by which the delivery of such Brownfield Tax Credits are delayed. Nothing in this *subsection (vi)* shall limit or alter any adjustment required to be made under *subsections (i), (ii), (iii), (iv) and/or (v)* hereof and any such adjustments shall be made independently from the determination of the Brownfield Tax Credit Timing Adjustment Target Amounts.

(b) Application of Adjustments.

(i) If, upon the occurrence of any determination or event giving rise to an adjustment in the Capital Contribution of the Investor Member under *Section 5.2(a)* (aggregating all concurrent adjustments applicable to the Investor Member under *Section 5.2(a)*), there is a reduction in such Capital Contribution, then Managing Member shall be given written notice thereof and such reduction shall be applied first to reduce the amount of any unpaid portion of the Capital Contribution of the Investor Member by a corresponding amount (in reverse order such that the adjustments reduce the last installment first).

(ii) If the reduction is an adjustment described in *Section 5.2(a)* and such reduction exceeds the amount of the unpaid portion of the Investor Member’s Capital Contribution, then the Managing Member shall make a payment to the Investor Member in the amount of such excess on an After-Tax Basis within 60 days after the date of the applicable determination and such payment by the Managing Member shall constitute a Managing Member Advance.

(iii) The payments described in *Section 5.2(b)(ii)* above, are each a “**Tax Credit Adjustment Payment**.” The Guarantor shall guarantee the obligations of the Managing Member and Company pursuant to this *Section 5.2(b)*. If full payment of any Tax Credit Adjustment Payment is not received within such 60 day period, the unpaid balance shall thereafter bear interest at the Prime Rate plus two percent. If, upon the occurrence of any determination or event giving rise to an adjustment in the Capital

Contribution of the Investor Member under this *Section 5.2* (aggregating and/or netting, as applicable, all concurrent adjustments under this *Section 5.2*), there is a net increase in such Capital Contribution, then such net increase shall be paid upon the payment of the Stabilization Capital Contribution or the Final Capital Contribution, as applicable. For the avoidance of doubt, Tax Credit Adjustment Payments that will be satisfied from subsequent Capital Contributions will not bear interest. Upon a determination of the adjustments required to be made pursuant to *Section 5.2(a)*, the Projected Federal Credits Schedule set forth on Schedule 1 shall be adjusted accordingly by the Projection Accountants.

(c) Provisional Adjustments. If at any time at or prior to the making of the Stabilization Capital Contribution and/or the Final Capital Contribution, the Investor Member shall have a reasonable basis to believe that the amount of such Capital Contribution payment would have been subject to reduction if the Projection Accountants had made a current determination or projection under any of the preceding provisions of this *Section 5.2*, the Investor Member may so notify the Managing Member in writing, and the Managing Member shall thereupon engage the Projection Accountants, at the Company's expense, to make such determination or projection (unless the Managing Member and Investor Member shall mutually agree upon the adjustments to be made). The amount of the Capital Contribution payment in question shall then be provisionally reduced in accordance with such projection or agreement; provided, however, that if the Projection Accountants' subsequent determinations with respect to matters giving rise to a provisional reduction under this paragraph shall vary from the determinations or mutual agreements described herein, then either (i) the Investor Member shall promptly pay to the Company the amounts, if any, by which the provisional reduction exceeded the reduction as subsequently determined or (ii) the amount, if any, by which the reduction as subsequently determined exceeded the provisional reduction shall be applied against future payments of Capital Contribution or paid by the Managing Member as provided in *Section 5.2(b)* above. The due date for payment by the Investor Member of the Stabilization Capital Contribution and/or the Final Capital Contribution which shall become the subject of the procedure described in this paragraph shall be tolled pending determination of the provisional reduction (if any) as provided herein.

(d) Determination of Adjustment Amounts. The Investor Member may disagree with the amount, the timing of the amount of Actual Federal Credit, Actual Brownfield Tax Credit, Adjusted Aggregate Federal Credit Amount or the Adjusted Aggregate Brownfield Tax Credit Amount certified by the Projection Accountants in the applicable Accountant's Certificate provided that any such objection by the Investor Member must be accompanied by written documentation setting forth reasonable evidence which shows the Accountant's determination is incorrect. The Investor Member's written disagreement as to the amount and/or the timing of the amount of Actual Federal Credit, Actual Brownfield Tax Credit, Adjusted Aggregate Federal Credit Amount or Adjusted Aggregate Brownfield Tax Credit Amount to which the Projection Accountants certify in the respective Accountant's Certificate, shall be given in a Notice to the Managing Member of such disagreement within 20 days after delivery of the respective Accountant's Certificate (the "**Contribution Dispute Notification**"), and the Investor Member shall pay that portion of the Capital Contribution based on that portion of the Actual Federal Credit, Actual Brownfield Tax Credit, Adjusted Aggregate Federal Credit Amount or Adjusted Aggregate Brownfield Tax Credit Amount not in dispute. With respect to

the amount or the timing of the amount of such Actual Federal Credit, Actual Brownfield Tax Credit, Adjusted Aggregate Federal Credit Amount, or Adjusted Aggregate Brownfield Tax Credit Amount in dispute, if the Managing Member and the Investor Member cannot agree on the amount of the adjustment to the Capital Contribution within five days after the giving of the Contribution Dispute Notification, the Managing Member and the Investor Member shall each designate a certified public accountant as an arbitrator and such two arbitrators shall designate a certified public accountant as a third arbitrator (or if the first two arbitrators cannot agree upon a third arbitrator within 20 days, such third arbitrator shall be a certified public accountant chosen by the American Arbitration Association). The designation of arbitrators hereunder shall automatically delay the due date for payment of the portion of Capital Contribution until 10 Business Days after the conclusion of such arbitration (unless prior to the expiration of such period the Managing Member and the Investor Member agree upon the amount of the adjustment, if any). Such arbitrators shall be directed to promptly conduct, at the expense of the Company, an arbitration to determine by majority vote the amount of the Actual Federal Credit, Actual Brownfield Tax Credit, Adjusted Aggregate Federal Credit Amount or Adjusted Aggregate Brownfield Tax Credit Amount which the Company is entitled to claim and to allocate to the Investor Member on a basis that is prudent and reasonable. Such arbitrators shall be directed to give notice of their determination within 30 days after the third arbitrator has been designated, and upon the giving of such notice of determination the amount determined by majority vote of such arbitrators shall be deemed the amount of Actual Federal Credit, Actual Brownfield Tax Credit, Adjusted Aggregate Federal Credit Amount or Adjusted Aggregate Brownfield Tax Credit Amount which the Company is entitled to claim and to allocate to the Investor Member for the purpose of determining any adjustment to the Capital Contribution. The costs and expenses of arbitration pursuant to this *Section 5.2(d)* shall be treated as a Company expense.

(e) Cap on Investor Member Contribution. NOTWITHSTANDING ANYTHING TO THE CONTRARY IN THIS *SECTION 5.2*, THE AGGREGATE AMOUNT OF ANY INCREASES TO THE INVESTOR MEMBER'S CAPITAL CONTRIBUTION PURSUANT TO THIS *SECTION 5.2* SHALL NOT EXCEED \$5,298,765, WHICH AMOUNT IS EQUAL TO TEN PERCENT (10%) OF THE TOTAL CAPITAL CONTRIBUTION OF THE INVESTOR MEMBER AS CONTEMPLATED IN *SECTION 5.1(b)* WITHOUT THE INVESTOR MEMBER'S CONSENT. FOR THE AVOIDANCE OF DOUBT, NOTWITHSTANDING ANYTHING TO THE CONTRARY IN *SECTION 5.1* AND *SECTION 5.2*, THE AGGREGATE AMOUNT OF ALL OF THE INVESTOR MEMBER'S CAPITAL CONTRIBUTIONS PURSUANT TO *SECTION 5.1* AND *SECTION 5.2* SHALL NOT EXCEED \$58,286,420 ("CONTRIBUTION CAP").

5.3 Return of Capital Contribution. Except as provided in this Agreement, no Member shall be entitled to demand or receive the return of its Capital Contribution.

5.4 Withholding of Capital Contribution Upon Default. If: (a) any Managing Member, or any successor Managing Member, shall be in default of any material provisions under this Agreement after Notice from the Investor Member of such noncompliance and the expiration of any applicable notice and cure periods, or (b) a material default shall have occurred, and is continuing after any applicable notice and cure periods, under the Loan Documents for reasons other than the Investor Member's failure to make a Capital Contribution

which failure to make a Capital Contribution is not a result of a default by a Managing Member (i.e., the Investor Member shall not be deemed to have failed to make a Capital Contribution if all conditions to the making of such Capital Contribution have not been satisfied), or (c) foreclosure proceedings shall have been commenced against the Project for reasons other than the Investor Member's failure to make a Capital Contribution which failure is not a result of a default by a Managing Member (i.e., the Investor Member shall not be deemed to have failed to make a Capital Contribution if all conditions to the making of such Capital Contribution have not been satisfied), and such proceedings are not dismissed within 30 days thereof, or (d) if the Management Agent is an Affiliate of a Managing Member and the Management Agent is in material default under the Management Agreement after expiration of applicable notice and cure periods, or (e) the Tax Credit Determination is revoked by the Agency or the Agency declares a default thereunder, then the Company and the Managing Member shall be in default of this Agreement, and the Investor Member, at its sole election, may, in addition to any of the other rights or remedies of the Investor Member in respect of such default, cause the withholding of payment of any Additional Capital Contribution otherwise payable to the Company.

All amounts so withheld by the Investor Member under this *Section 5.4* shall be promptly released to the Company after the Managing Member or the Company has cured the default justifying the withholding, as demonstrated by evidence reasonably acceptable to the Investor Member.

5.5 Casualty or Condemnation. In the event of any fire or other casualty to the Project or any portion thereof or eminent domain proceedings resulting in condemnation of the Project or any portion thereof, the Managing Member shall promptly give the Investor Member written notice thereof, and the following provisions shall be applicable (subject to the terms of the Loan Documents).

(a) **Obligation to Rebuild.** To the extent casualty insurance and condemnation award proceeds are available for rebuilding, net of expenses reasonably incurred in obtaining such proceeds and subject to the rights of third party mortgage lenders, the Managing Member shall use commercially reasonable efforts to rebuild the Project in such manner to preserve as fully as possible the originally projected Tax Attributes. Any casualty insurance or condemnation award proceeds that are received by the Company and are not fully expended in such rebuilding shall constitute proceeds of a Capital Transaction. In connection with any such rebuilding, the Managing Member shall seek legal, tax, and accounting counsel and take all necessary or advisable steps to preserve as fully as possible the originally projected Tax Attributes.

(b) **Decision Not to Rebuild.** Notwithstanding the foregoing, in the event the nature of the casualty or condemnation, or any lack of sufficient casualty insurance or condemnation award proceeds for rebuilding, or the effect of tax laws then applicable makes it impossible or unlikely that rebuilding of the Project or portion thereof can be accomplished, then the Managing Member shall, unless the Investor Member Consents in writing to any alternative proposal or any Lender requires the Company to rebuild, refrain from rebuilding and proceed to recover as proceeds of a Capital Transaction the Company's share of any casualty insurance or condemnation award proceeds allocable to the Project or such portion thereof. In such event, except in circumstances in which portions of the Project are unaffected by the casualty or

condemnation or are rebuilt if required hereunder, the Managing Member shall also, unless the Investor Member Consents in writing to any alternative proposal, proceed to terminate and liquidate the Company, selling Company assets, repaying indebtedness, and distributing net proceeds of Capital Transactions to the Members as provided in *Section 7.5*.

(c) Claim Under Title Policy. The Managing Member has the exclusive authority to pursue any claim under the owner's title insurance policy issued to the Company, subject to the provisions of this Agreement. However, if the Managing Member either fails to pursue a claim under the Title Policy after notice from the Investor Member, and the failure to pursue such claim will result in damages to the Company or the Investor Member, the Investor Member may either direct the Managing Member to pursue the claim or may pursue such claim itself. Any proceeds that may be paid by the title company pursuant to such policy shall not be disbursed without the Consent of the Investor Member or otherwise in accordance with this Agreement.

5.6 Repurchase Obligation.

(a) If (i) Substantial Completion has not occurred by the earlier of (a) the date which is 6 months after the Completion Date or (b) the date required under the Loan Documents or by the party providing Credit Enhancement (as the same may be extended by the Lenders or the party providing Credit Enhancement, as applicable); (ii) Stabilization has not occurred by the earlier of (a) the date which is 6 months after the Stabilization Date or (b) the date required under the Loan Documents or by the party providing Credit Enhancement (as the same may be extended by the Lenders or the party providing Credit Enhancement, as applicable); (iii) upon receipt by the Company of all IRS Forms 8609, the aggregate Actual Federal Credits for which the Company is eligible is less than 85% of the aggregate Projected Federal Credits; (iv) all IRS Forms 8609 for all Buildings have not been received by the Investor Member within two years of the tax return filing deadline for the year in which Substantial Completion occurs; (v) the Credit Enhancement is cancelled, expires or is otherwise terminated prior to Conversion and is not timely replaced with substitute Credit Enhancement or commitments acceptable to HFA; (vi) Conversion has not occurred on or before the date required in the Loan Documents (including any extensions therefor provided in the Loan Documents), unless further extended by the Lenders on terms reasonably satisfactory to the Investor Member or, prior to the Final Capital Contribution, a Lender has commenced a foreclosure action against the Project; (vii) the Project fails to satisfy the Fifty Percent Test; (viii) prior to the payment of the Final Capital Contribution, any circumstance occurs and continues beyond any applicable notice and cure period which would permit the Investor Member to exercise its rights pursuant to *Section 8.14*, (ix) the revocation of the Brownfield Certificate of Completion due to a failure of all or any portion of the Brownfield Property (including any part of the Project covered by or otherwise subject to the Brownfield Cleanup Agreement) failing to comply with the Brownfield Cleanup Agreement, the Brownfield Certificate of Completion, or any easement, restrictive covenant or site management plan entered into or issued in accordance the Brownfield Cleanup Agreement which results in the loss of the Brownfield Tax Credits, or (x) the AHAP or the HAP Contract is cancelled prior to Conversion, *then* the Investor Member shall, at its sole discretion, by Notice to the Managing Member within 6 months of such circumstance or determination, have the right to cause the Managing Member to repurchase the Interest of the Investor Member hereunder for a repurchase price (the "**Repurchase Price**") equal to the sum of (i) 110% of the Investor

Member's Capital Contributions (including any Brownfield Capital Contribution) paid to such date less the amounts described in *clause (vi)*, plus (ii) the amount of tax payable by the Investor Member on the amount described in *clause (i)* at the Effective Tax Rate, plus (iii) the Investor Member's out-of-pocket third-party expenses associated with such repurchase, plus the amount of any outstanding balance of Member Loans advanced by such date by the Investor Member, plus (iv) any transfer tax due as a result of the repurchase hereunder, plus (v) other amounts advanced to the Company by such date by any Affiliate of the Investor Member pursuant to the terms of this Agreement, less (vi) the aggregate amount of the Federal Tax Credits and/or Brownfield Tax Credits actually allocated to the Investor Member as of the date of the payment of the Repurchase Price as reflected on Schedule K-1 issued to the Investor Member as of such date (provided that this *clause (vi)* shall not include any Federal Tax Credits except to the extent that Investor Member is indemnified (to its reasonable satisfaction, including without limitation provisions of the Guaranty or an equivalent guaranty to apply to ensure payment of such indemnity) for any future loss of all or part of such Federal Tax Credits and/or Brownfield Tax Credits to the extent (but only to the extent) that such loss of Federal Tax Credits and/or Brownfield Tax Credits is attributable to a breach by the Managing Member of its representations, warranties, covenants or duties described in *Sections 4.3, 4.4 or 4.5*, and such event is not caused by (A) the breach of the obligations of the Investor Member under this Agreement or (B) Change in Law and that a payment would be required under the Guaranty (whether due to a Tax Credit Recapture/Reduction Event that has occurred or occurs later)). The exercise of the Investor Member's rights under *clause (b)* of *Section 8.14* to be admitted or cause its designee(s) to be admitted as the Managing Member shall not preclude (1) its rights to remove the Managing Member at a later date pursuant to *Section 8.14*, or (2) unless the Investor Member has removed the Managing Member as a Member of the Company, its rights to cause the Managing Member to repurchase the Interest of the Investor Member pursuant to this *Section 5.6*. Irrevocable payment in full of the Repurchase Price pursuant to the Investor Member's exercise of its rights to cause the Managing Member to repurchase the Investor Member's Interest shall preclude the Investor Member from exercising its rights to remove the Managing Member. If the Investor Member elects to require the Managing Member to repurchase the Investor Member's Interest, the Managing Member, within 60 days of the date of Notice given by the Investor Member of such election, shall acquire the entire Interest of the Investor Member in the Company by making irrevocable payment in full to the Investor Member, in cash, of an amount equal to the Repurchase Price. The obligation to repurchase under this Section is in addition to any obligations under *Section 5.2(a)*.

(a) If the Investor Member provides Notice to the Managing Member pursuant to *Section 5.6(a)* above to require the Managing Member to repurchase the Investor Member's Interest, the Managing Member shall have 30 days from the date of such Notice to cure the events described in (i) through (x) above, and upon failure to cure to the satisfaction of the Investor Member within such 30 day period, the Managing Member shall then acquire within the next succeeding 30 days the entire Interest of the Investor Member in the Company by making payment in full to the Investor Member, in cash, of an amount equal to the Repurchase Price as set forth above; provided however, that if the nature of the matter is such that it cannot be cured within the 30 days provided for herein, the Managing Member shall have an additional period of up to 30 days (60 days in total) to effectuate such cure so long as it has promptly commenced such cure and continues to diligently pursue same to completion.

(b) Upon the irrevocable payment in full to the Investor Member of the Repurchase Price, the Interest of the Investor Member and its obligations under this Agreement shall terminate and the Company and the Managing Member shall indemnify and hold harmless the Investor Member from any losses, damages, and/or liabilities to or as a result of claims of Persons other than members or Affiliates of the Investor Member, to which the Investor Member (as a result of its participation hereunder) may be subject.

5.7 Guaranteed Payments. No later than 90 days after the end of the Company's fiscal year, any Member who has made a Special Additional Capital Contribution pursuant to *Section 5.1(c)(iv)* shall receive an amount equal to the annual interest earned by the Company, if any, on such Special Additional Capital Contributions. Provided that the Managing Member is not required to assume any additional burdens outside the normal course of business, the Company shall invest any amounts contributed pursuant to *Section 5.1(c)(iv)* as reasonably directed by the contributing Member. Any guaranteed payment due to a Member shall be deemed an expense of the Company for purposes of determining Net Cash Flow. Any guaranteed payment which is not paid when due shall remain a liability of the Company and shall bear interest as set forth above.

5.8 Security. The Investor Member's agreement to make its Capital Contributions shall be secured by the Interests in the Company held by the Investor (the "Collateral"), which Collateral shall be pledged pursuant to the provisions of this *Section 5.8*. If the Investor Member shall fail to make payment of its Capital Contributions when the conditions to such payment have been satisfied as set forth in *Sections 5.1(c)(ii)*, and *5.1(c)(iii)*, such Capital Contributions have become due and payable, and such failure to pay shall continue for thirty (30) days following Notice by the Managing Member to the Investor, the Investor Member shall be in default to the Company. After such thirty (30) day period, the payment of the Capital Contribution due and payable shall bear interest at a rate of 10% per annum. The Company shall not assign or pledge the Collateral pledged under this *Section 5.8* without the Consent of the Investor. The security granted hereby shall automatically terminate upon the funding of the Final Capital Contribution. Nothing in this *Section 5.8* shall limit the Investor Member's right to transfer as set forth in *Section 9.4* of this Agreement.

ARTICLE VI

CAPITAL ACCOUNTS

6.1 Capital Accounts. A single Capital Account shall be established and maintained for each Member. To each Member's Capital Account there shall be credited (i) such Member's contributions of cash, (ii) the fair market value of property contributed by such Member (net of liabilities secured by such property that the Company is considered to assume or take under Code Section 752) as determined by the Managing Member with concurrence of the Investor Member, (iii) the amount of any Company liabilities that are assumed by such Member pursuant to Treasury Regulation Section 1.704-1(b)(2)(iv)(c), (iv) allocations to such Member of Profit pursuant to *Section 7.2* and (v) any items of income or gain that are specially allocated to such Member pursuant to *Sections 7.4, 7.6* or *7.7*, and to each Member's Capital Account there shall be debited (i) the amount of cash distributed to such Member, (ii) the fair market value of any property distributed to such Member pursuant to any provision of this Agreement (net of any

liabilities that such Member is considered to assume or take under Code Section 752) as determined by the Managing Member with concurrence of the Investor Member, (iii) the amount of any Member's individual liabilities that are assumed by the Company pursuant to Treasury Regulation Section 1.704-1(b)(2)(iv)(c), (iv) allocations to such Member of Loss pursuant to *Sections 7.2, 7.4, 7.6 or 7.7* and (v) any items in the nature of loss or deduction that are specially allocated to such Member under *Sections 7.6 or 7.7*. Each Member's Capital Account shall be maintained and adjusted in accordance with the Code and the Treasury Regulations thereunder. The foregoing provisions and the other provisions of this Agreement relating to the maintenance of Capital Accounts are intended to comply with Treasury Regulation §1.704-1(b), and shall be interpreted and applied in a manner consistent with such regulation.

ARTICLE VII

ALLOCATIONS AND DISTRIBUTIONS

7.1 Determination of Profits, Losses and Credits. Profits and Losses for all purposes of this Agreement shall be determined in accordance with the accrual accounting method.

7.2 Allocation of Profits, Losses and Credits.

(a) (i) Subject to the remainder of this *Section 7.2* and to *Sections 7.4, 7.5* and *7.7*, all Profits, Losses, Federal Tax Credits and Brownfield Tax Credits for each Taxable Year (or portion thereof) shall be allocated to the Members in accordance with their Percentage Interests.

(ii) Notwithstanding *Section 7.2(a)(i)*, the Losses allocated to any Member pursuant to this *Article VII* shall not exceed the maximum amount of Losses that can be allocated to that Member without causing or increasing an Adjusted Capital Account Deficit for such Member at the end of any Taxable Year. All Losses in excess of the amount that may be allocated to that Member shall be re-allocated to any other Members that would not have an Adjusted Capital Account Deficit as a result of the allocation, in proportion to their respective Percentage Interests, or, if no such Members exist, then to the Managing Member.

(b) For purposes of determining Profits, Losses or any other items allocable to any fiscal period, Profits, Losses and any such other items shall be determined on a daily, monthly or other basis, as determined by the Managing Member using any method that is permissible under Code Section 706. In any year in which a Member sells, assigns or transfers all or any portion of its Interest to any Person who during such year is admitted as a substitute Member, then, except as otherwise required by Code Section 706, the share of all Profits and Losses, all Net Cash Flow, and all cash proceeds distributable under *Section 7.5* which is attributable to the Interest sold, assigned or transferred shall be divided between the assignor and the assignee ratably on the basis of the number of monthly periods in such year before, and the number of monthly periods on and after, the first day of the month during which such Person is admitted as a substitute Member. As of the date of such sale, assignment or transfer, the transferee shall succeed to the Capital Account of the transferor Member with respect to the transferred Interest (or portion thereof).

(c) If there is a determination that there is any original issue discount or imputed interest attributable to the Capital Contribution of any Member, or any loan between a Member and the Company, any income or deduction of the Company attributable to such imputed interest or original issue discount on such Capital Contribution or loan (whether stated or unstated) shall be allocated solely to such Member.

(d) There shall be allocated to each Member an amount of gross income equal to the amount of Net Cash Flow distributed to such Member pursuant to *Section 7.3(a)(ix)*, to the extent that such distribution would cause a negative balance in such Member's Capital Account. If the deduction of all or a portion of any fee paid or incurred by the Company to a Member or an Affiliate of a Member is disallowed or recharacterized as a nondeductible distribution to a Member for federal income tax purposes by the IRS with respect to a Taxable Year of the Company, notwithstanding all other allocation provisions (other than the allocation provisions of *Section 7.7*) the Company shall then allocate to such Member an amount of gross income of the Company for such year equal to the amount of such fee as to which the deduction is disallowed or recharacterized.

(e) If any Member's Interest in the Company is reduced but not eliminated because of the admission of new Members or otherwise, or if any Member is treated as receiving any items of property described in Section 751(a) of the Code, the Member's Interest in such items of Section 751(a) property that was property of the Company while such Person was a Member shall not be reduced, but shall be retained by the Member so long as the Member has an Interest in the Company and so long as the Company has an Interest in such property.

(f) In accordance with Section 704(c) of the Code (relating to allocations with respect to appreciated contributed property), the traditional method with curative allocations shall, solely for tax purposes, direct the allocation of income, gain, loss, and deduction with respect to any property contributed to the capital of the Company among the Members so as to take account of any variation between the adjusted basis of such property to the Company for federal income tax purposes and its fair market value.

(g) When the value of any Company property is adjusted in accordance with Treasury Regulation Section 1.704-1(b)(2)(iv)(f) and *Section 9.5(d)* to reflect fair market value of such property, subsequent allocations of income, gain, loss and deduction with respect to such property shall take account of any variation between the adjusted basis of such asset for Federal income tax purposes and its fair market value in the same manner as under Code Section 704(c) and in accordance with the traditional method with curative allocations as set forth in Treasury Regulation Section 1.704-3(c).

(h) Except as provided in *Section 7.2(f)* and (g), for Federal income tax purposes, under the Code and Treasury Regulations, each Company item of income, gain, loss and deduction shall be allocated among the Members in the same manner as its correlative item of "book" income, gain, loss or deduction is allocated pursuant to this *Article VII*. Any elections or other decisions relating to such allocations shall be made by the Members in any manner that reasonably reflects the purpose and intention of this Agreement. Allocations pursuant to this *Section 7.2(h)* are solely for purposes of Federal, state and local taxes and shall not affect, or in

any way be taken into account in computing, any Member's Capital Account or share of Profits or Losses, other items or distributions pursuant to any provision of this Agreement.

(i) If the Managing Member makes any Managing Member Advances pursuant to *Section 8.11* or any other provision hereof, any deductions or losses of the Company attributable to the use of those funds (other than depreciation deductions) shall be specially allocated to the Managing Member and any income generated by any principal repayment or by the forgiveness or cancellation of any such loans shall be specially allocated to the Managing Member (including as a result of the operation of *Section 8.14(d)*).

(j) Any income recognized as a result of any receipt of taxable grants, debt forgiveness, contributions or subsidies by the Company shall be allocated (including, but not limited to, for the purposes of maintaining Capital Accounts and *Article VII*) 100% to the Managing Member.

(k) To the extent any adjustment to the adjusted tax basis of any Company asset pursuant to Code Section 734(b) or Code Section 743(b) is required, pursuant to Treasury Regulation Section 1.704-1(b)(2)(iv)(m), to be taken into account in determining Capital Accounts, the amount of such adjustment shall be treated as an item of gain (if the adjustment increases the basis of the asset) or loss (if the adjustment decreases such basis), and such gain or loss shall be specially allocated to the Members in a manner consistent with the manner in which their Capital Accounts are required to be adjusted pursuant to such Section of the Treasury Regulations.

(l) If any property is distributed in kind to any Member (whether in connection with a liquidation of the Company or otherwise), the difference between its fair value and its book value at the time of distribution shall be treated as Profits or Losses recognized by the Company and allocated pursuant to the provisions of this *Article VII*, in accordance with Treasury Regulation Section 1.704-1(b)(2)(iv)(f). For this purpose, the Members shall determine the fair value of any property.

(m) If at any time it is determined on final audit by the Internal Revenue Service that any Loan should be recharacterized as taxable income, or the Company reports, or is otherwise required to treat, any Loan as taxable income on any membership information return, then at the election of the Investor Member by Notice to the Managing Member either (a) the Profits resulting from the treatment of such Loan as taxable income shall be specially allocated to the Managing Member or (b) the Managing Member shall upon demand pay to the Investor Member an amount on an After-Tax Basis equal to the product of the amount of such taxable income and the Effective Tax Rate.

(n) Any Brownfield Tax Credits that are generated by, or allocated to, the Company shall be allocated to the Members in accordance with Percentage Interests. It is intended that the allocations pursuant to this *Section 7.2(n)* are made in accordance with the Members' respective interests in the Company in satisfaction of Treasury Regulations Section 1.704-1(b)(4)(ii), and the Members shall be allocated interests in the Brownfield Tax Credits Cost Basis with respect to such taxable period as may be necessary to give effect to the allocation of Brownfield Tax Credits described herein. If the allocation of Brownfield Tax

Credits set forth in this *Section 7.2(n)* is not respected by the applicable taxing authorities and Members are allocated Brownfield Tax Credits in a manner other than in the proportions contemplated in this *Section 7.2(n)* (unless such payment is waived by the Member who received a lower allocation of Brownfield Tax Credits (in such Member's sole and absolute discretion), which waiver may be made with respect to payments from all or some of the other Members) each Member who received a larger allocation of Brownfield Tax Credits than provided for herein shall pay, on a pro rata basis, and net of federal, state, and local tax, the amount of the excess allocation to all Members who received a lesser value of Brownfield Tax Credits than provided for herein. The payment provided for in the preceding sentence shall be made as soon as practicable after a final determination of the allocation of the Brownfield Tax Credits by the appropriate taxing authority and the earlier of (x) the expiration of all rights of appeal or (y) a decision by the Members not to pursue an appeal; provided that in the event any Member fails to make such payment and such payment was not otherwise waived, such over allocation amount shall be deemed to be a Member Loan and the Member who received the larger allocation of Brownfield Tax Credits than deserved shall be deemed a debtor Member.

7.3 Distributions of Net Cash Flow.

(a) Prior to Stabilization, any Net Cash Flow from the Project shall be accumulated by the Managing Member and used to pay for costs in the Development Budget as approved by the Investor Member. From and after Stabilization, Net Cash Flow (including any Net Cash Flow accumulated prior to Stabilization which has not been used to pay for costs in the Development Budget) shall be applied and/or distributed on each Payment Date (but in no event less frequently than annually and, if permitted by the Lenders and subject to the Consent of the Investor Member, quarterly, as more fully set forth below) in the following priority:

(i) first, to the payment to the Investor Member of an amount equal to the difference between the amount of the Projected Federal Credits and the Actual Federal Credits and/or Projected Brownfield Tax Credits and Actual Brownfield Tax Credits, as applicable, received by the Investor Member for any year to the extent that the Investor Member has not otherwise been compensated for such shortfall pursuant to *Sections 5.2* and *8.11(d)* (provided that such payment shall be in addition to, but not duplicative of, any payments or remedies available to the Investor Member pursuant to any other provision of this Agreement or the Guaranty);

(ii) second, an amount equal to any current and deferred Asset Management Fees shall be paid to the Investor Member (or its designee as provided in *Section 8.22* of this Agreement) and applied towards satisfaction of such fee payment obligation;

(iii) third, to the replenishment of the Operating Reserve to the extent of any withdrawals therefrom, up to the Minimum Balance;

(iv) fourth, to the payment, on a pari passu basis, of the outstanding principal balance of any Member Loans or other advances made by the Investor Member to the Company in excess of the Capital Contributions contemplated in *Section 5.1(c)* above;

(v) fifth, to the payment of unpaid principal of the Developer Fee Note;

(vi) sixth, to the payment of any Deferred Management Fee;

(vii) seventh, to the outstanding principal balance of any Member Loans or other advances made by the Managing Member to the Company in excess of the Capital Contributions contemplated in *Section 5.1(c)* above;

(viii) eighth, fifty percent (50%) to the Operating Reserve, with the balance being paid in accordance with the remaining provisions of *Section 7.3(a)*;

(ix) ninth, to the payment, on a pari passu basis, of accrued and unpaid interest of any Member Loans or other advances made by the Investor Member to the Company in excess of the Capital Contributions contemplated in *Section 5.1(c)* above;

(x) finally, any remaining Net Cash Flow shall be distributed to 10% to the Investor Member and 90% to the Managing Member.

Any amounts paid or distributed pursuant to this *Section 7.3(a)* in respect of unpaid amounts due and owing from the Managing Member under *Section 5.2* shall not, until paid in full, preclude the Investor Member from seeking any other remedies provided hereunder in connection with the Managing Member's failure to pay such amounts and such a distribution shall not, until paid in full, serve to cure any default hereunder caused by such failure to pay.

(b) The Company may, subject to any applicable limitation on the distribution of Net Cash Flow and any required approval by the Lender, distribute Net Cash Flow quarterly, but shall distribute Net Cash Flow not less frequently than annually, in the manner provided in *Section 7.3(a)* but only on Payment Dates or such other date as may be Consented to by the Investor Member. Upon each annual Payment Date (as defined in *clause (a)* of the definition of Payment Date), the Managing Member shall determine the total amount of Net Cash Flow to be distributed pursuant to *Section 7.3(a)(i)-(x)* above which determination shall be based on the audited financial statements for the preceding Taxable Year of the Company and shall take into account any quarterly distributions made during such preceding Taxable Year (the "**True Up Calculation**"). The True Up Calculation shall be based on the annual Project audit by the Company Accountants and approved by the Investor Member. If the Managing Member or the Developer (or any Affiliate thereof) shall have received any amount in excess of the True Up Calculation, then (i) such excess amount shall be deducted from any other distribution to be paid to the Managing Member on such Payment Date or (ii) if the amount of such excess payment exceeds the amount of any distribution to be made to the Managing Member on such Payment Date, then the Managing Member shall reimburse the Company within ten (10) Business Days of such Payment Date. If the Investor Member shall have received any amount in excess of the True Up Calculation, then (i) such excess amount shall be deducted from any other distribution to be paid to the Investor Member on such Payment Date or (ii) if the amount of such excess payment exceeds the amount of any distribution to be made to the Investor Member on such Payment Date, then the Investor Member shall reimburse the Company within three (3) Business Days of such Payment Date.

(c) Notwithstanding the foregoing, the Investor Member shall annually be entitled to a minimum of 10% of any remaining Net Cash Flow after the payment of items 7.3(a)(i) through (ix) above.

7.4 Allocation of Gains and Losses Upon Capital Transaction. Notwithstanding Section 7.2(a)(i), and except as otherwise provided in Section 7.7, gains and losses and any item of income, gain, loss or deduction that is recognized (or deemed to be recognized) by the Company upon the sale, exchange or other disposition of all or substantially all of the property owned by the Company shall be allocated in the following manner:

(a) Gains and any item of gain or income shall be allocated (i) first, to the Members with negative Capital Account balances (computed after taking into account items of income and gain and Profits or Losses for the period prior to such event in the Taxable Year in which such event occurs), that portion of gains (including any gains treated as ordinary income for federal income tax purposes) which is equal in amount to, and in proportion to, such Members' respective negative Capital Accounts in the Company; provided, that no gain shall be allocated under this Section 7.4(a)(i) to a Member once such Member's Capital Account is brought to zero; and (ii) second, gain in excess of the amount allocated under (i) shall be allocated to the Members in the amount and to the extent necessary to increase the Members' respective Capital Accounts so that each Member's positive Capital Account balance corresponds to the proceeds distributable to such Member under Section 7.5 (other than proceeds distributable under Section 7.5(vii)).

(b) Losses and any item of loss or deduction shall be allocated (i) first, to the extent and in such proportions as the respective positive balances in all Members' Capital Accounts; and (ii) second, any remaining loss to the Members in accordance with the manner in which they bear the economic risk of loss associated with such loss or, if none, to the Members in accordance with their Percentage Interests.

(c) Any portion of the gains treated as ordinary income for federal income tax purposes under Sections 1245 and 1250 of the Code ("**Recapture Amount**") shall be allocated on a dollar for dollar basis to those Members to whom the items of Company deduction or loss giving rise to the Recapture Amount had been previously allocated.

7.5 Distribution of Proceeds from Capital Transactions. Except as may be required under Section 11.2(b), the proceeds resulting from the liquidation of the Company assets pursuant to Section 11.2, and the net proceeds resulting from any Capital Transaction, as the case may be, shall be distributed and applied in the following order of priority:

(i) first, to the payment to the Investor Member of an amount equal to the difference between the amount of the Projected Federal Credits and the Actual Federal Credits and/or Projected Brownfield Tax Credits and Actual Brownfield Tax Credits, as applicable, received by the Investor Member for any year to the extent that the Investor Member has not otherwise been compensated for such shortfall pursuant to Sections 5.2 and 8.11(d) (provided that such payment shall be in addition to, but not duplicative of, any payments or remedies available to the Investor Member pursuant to any other provision of this Agreement or the Guaranty);

(ii) second, to the payment, on a pari passu basis, of accrued and unpaid interest and the outstanding principal balance of any Member Loans or other advances made by the Investor Member to the Company in excess of the Capital Contributions contemplated in *Section 5.1(c)* above;

(iii) third, in the case of a refinancing only (and not any other Capital Transaction), to the replenishment of the Operating Reserve to the extent of any withdrawals therefrom, up to the Minimum Balance;

(iv) fourth, to the payment of unpaid amounts of interest and principal of the Developer Fee Note;

(v) fifth, to the payment of the principal amount of and any accrued and unpaid interest on any Managing Member Advances and then to any Member Loans made by the Managing Member or Guarantor, each on a pari passu basis;

(vi) sixth, to the payment of any Deferred Management Fee;

(vii) seventh, to the extent a Member's Capital Account has a positive balance, to such Member(s) in accordance with Capital Accounts until all Capital Accounts have a zero balance;

(viii) eighth, to the Investor Member the amount of any exit tax liability incurred by the Investor Member or its members that result from the sale of its Interest or the Project; and

(ix) finally, the balance of such remaining sum 90% to the Managing Member and 10% to the Investor Member.

For purposes of calculating the amount of the distribution to be made to the Investor Member pursuant to *Section 7.5(viii)* above, the Investor Member's exit tax liability resulting from a Capital Transaction or liquidation of the Company in a given year shall be determined by reference to the Effective Tax Rate for such year.

Notwithstanding the foregoing provisions of *Sections 7.3* and *7.5*, at the time of distribution of proceeds under this *Section 7.5*, the amount distributed shall be adjusted such that the total amount of Net Cash Flow, proceeds from the sale and liquidation of the Company assets pursuant to *Section 11.2*, and net proceeds resulting from any Capital Transaction, as the case may be, distributed to the Investor Member over the life of the Company is no less than 10% of all amounts distributed after the application of *Sections 7.3(a)(i)* through *Section 7.3(a)(ix)* above and *Sections 7.5(i)* through *(viii)* above.

7.6 Variation of Allocations to Preserve and Protect Members' Intent.

(a) It is the intent of the Members that each Member's distributive share of income, gain, loss, deduction, or credit (or item thereof) shall be determined and allocated in accordance with this *Article VII* to the fullest extent permitted by Section 704(b) of the Code. In order to preserve and protect the determinations and allocations provided for in this *Article VII*,

with the Consent of the Investor Member, the Managing Member hereby is authorized and directed to allocate income, gain, loss, deduction, or credit (or item thereof) arising in any year differently than otherwise provided for in this *Article VII* to the extent that allocating income, gain, loss, deduction or credit (or item thereof) in the manner provided for in *Article VII* would cause the determinations and allocations of each Member's distributive share of income, gain, loss, deduction, or credit (or item thereof) not to be respected by Section 704(b) of the Code and Treasury Regulations promulgated thereunder. Any allocation made pursuant to this *Section 7.6* shall be deemed to be a complete substitute for any allocation otherwise provided for in this *Article VII* and no amendment of this Agreement or approval of any Member shall be required.

(b) In making any allocation (the "new allocation") under *Section 7.6(a)*, the Managing Member is authorized to act only after having been advised by the Company Accountants that, under Section 704(b) of the Code and the Treasury Regulations thereunder, (i) the new allocation is necessary, and (ii) the new allocation is the minimum modification of the allocations otherwise provided for in this *Article VII* necessary in order to assure that, either in the then current year or in any preceding year, each Member's distributive share of income, gain, loss, deduction, or credit (or item thereof) is determined and allocated in accordance with this *Article VII* to the fullest extent permitted by Section 704(b) of the Code and the Treasury Regulations thereunder.

(c) If the Managing Member is required by *Section 7.6(a)* to make any new allocation in a manner less favorable to the Investor Member than is otherwise provided for in this *Article VII*, then the Managing Member is authorized and directed, only after having been advised by the Company Accountants that it is permitted by Section 704(b) of the Code, to allocate income, gain, loss, deduction, or credit (or item thereof) arising in later years in such manner so as to bring the allocations of income, gain, loss, deduction, or credit (or item thereof) to the Investor Member as nearly as possible to the allocations thereof otherwise contemplated by this *Article VII*.

(d) New allocations made by the Managing Member under *Section 7.6(a)* and *Section 7.6(c)* in reliance upon the advice of the Company Accountants shall be deemed to be made pursuant to the fiduciary obligation of the Managing Member to the Company and the Investor Member, and no such allocation shall give rise to any claim or cause of action by the Investor Member.

7.7 Regulatory Allocations.

(a) Notwithstanding any other provision of *Article VII*, if there is a net decrease in Partnership Minimum Gain during a Company Taxable Year, each Member will be allocated items of income and gain for such year (and, if necessary, subsequent years) in proportion to, and to the extent of, an amount equal to such Member's share of the net decrease in Partnership Minimum Gain during the year, before any other allocation of Company items for such Taxable Year. A Member shall not be subject to this mandatory allocation of income or gain to the extent that any of the exceptions provided in Treasury Regulation §1.704-2(f)(2)-(5) applies. All allocations pursuant to this *Section 7.7(a)* shall be in accordance with Treasury Regulation §1.704-2(f). This provision is a "minimum gain chargeback" within the meaning of Treasury Regulation §1.704-2(f) and shall be construed as such.

(b) Notwithstanding any other provision of this *Article VII* except *Section 7.7(a)*, if during any Taxable Year there is a net decrease in Partner Nonrecourse Debt Minimum Gain, any Member with a share of that Partner Nonrecourse Debt Minimum Gain (determined in accordance with Treasury Regulation Section 1.704-2(i)(5)) as of the beginning of such year must be allocated items of Company income and gain for the Taxable Year (and, if necessary, for succeeding years) equal to that Member's share of the net decrease in the Partner Nonrecourse Debt Minimum Gain (determined in accordance with Treasury Regulation Section 1.704-2(i)(4)); provided, however, that this *Section 7.7(b)* shall not apply to the extent the circumstances described in the third and fifth sentences of Treasury Regulation Section 1.704-2(i)(4) exist. The items of Company income and gain to be allocated pursuant to this *Section 7.7(b)* shall be determined in accordance with Treasury Regulation Section 1.704-2(i)(4). This *Section 7.7(b)* is intended to comply with the minimum gain chargeback requirement in Treasury Regulation Section 1.704-2(i)(4) and shall be interpreted consistently therewith.

(c) If any Member unexpectedly receives any adjustments, allocations or distributions described in Treasury Regulation §§1.704-1(b)(2)(ii)(d)(4), (5) or (6) that create an Adjusted Capital Account Deficit as of the end of a Taxable Year, items of Company income and gain (consisting of a pro rata portion of each item of Company income, including gross income, and gain for such year) shall be specially allocated to each such Member in an amount and manner sufficient to eliminate (to the extent required by the Treasury Regulations under Code Section 704 (b)) the Adjusted Capital Account Deficit for each such Member as quickly as possible, provided that an allocation pursuant to this *Section 7.7(c)* shall be made if and only to the extent that such Member would have an Adjusted Capital Account Deficit after all other allocations provided for in this *Article VII* have been tentatively made as if this *Section 7.7(c)* were not in the Agreement. This provision is a "qualified income offset" within the meaning of Treasury Regulation §1.704-1(b)(2)(ii)(d) and shall be construed as such.

(d) If any Member has a deficit Capital Account at the end of any Taxable Year in excess of the sum of (i) the amount that such Member must restore to the Company upon liquidation, if any, and (ii) the amount such Member is deemed obligated to restore pursuant to the penultimate sentence of Treas. Reg. §1.704-2(g) and §1.704-2(i)(5), such Member shall be specially allocated items of Company income and gain in the amount of such excess as quickly as possible, provided that an allocation pursuant to this *Section 7.7(d)* shall be made if and only to the extent that such Member would have a deficit Capital Account in excess of such sum after all other allocations provided for in this *Article VII* have been tentatively made as if this *Section 7.7(d)* and *Section 7.7(c)* were not in the Agreement.

(e) If income, loss or items thereof are allocated to one or more Members pursuant to *Section 7.7(b)*, (c) or (d); subsequent income, loss or items thereof shall be allocated (subject to the provisions of *Section 7.7(b)*, (c) or (d)) to the Members so that, to the extent possible in the judgment of the Managing Member, the net amount of allocations shall be equal to the amount that would have been allocated had *Section 7.7* not been applied.

(f) Nonrecourse Deductions. Nonrecourse Deductions for any Taxable Year or other period shall be specially allocated as Losses in accordance with the Members' Percentage Interests in the manner provided in Treasury Regulation Section 1.704-2(j)(1)(ii).

(g) Partner Nonrecourse Deductions. Any Partner Nonrecourse Deductions for any Taxable Year or other period shall be specially allocated to the Member who bears the economic risk of loss with respect to the Partner Nonrecourse Debt to which such Partner Nonrecourse Deductions are attributable in accordance with Treasury Regulation Section 1.704-2(i).

(h) Items Relating to Centralized Company Audit Regime. To the extent that any item of income, gain, loss, deduction, expenditure or credit (including any notional item) is required, pursuant to Subchapter C of Chapter 63 of Subtitle F of the Code (including under Code Sections 6225, 6226, and 6233) or any corresponding provision of Code Section 704, and the Treasury Regulations thereunder, to be taken into account in determining Capital Accounts, such item of income, gain, loss, deduction, expenditure or credit shall be allocated in the manner required by Subchapter C of Chapter 63 of Subtitle F of the Code and Code Section 704 and the Treasury Regulations thereunder.

7.8 Deficit Restoration Obligations. The Investor Member shall have the right, in its sole discretion, but not the obligation to, by notice given to the Managing Member, to elect to be obligated to make a Capital Contribution to the Company upon dissolution of the Company equal to all or any specified amount of any deficit balance in the Investor Member's Capital Account as of such time. The Investor Member may, by Notice given to the Managing Member, reduce or eliminate any such obligation at any time in its discretion, but only to the extent that such reduction or elimination will not cause the Investor Member to have an Adjusted Capital Account Deficit. Except as expressly provided in any such election that has not been revoked, no Member shall have any obligation to make up any deficit balance in its Capital Account.

7.9 Cost Savings. On the date the Stabilization Capital Contribution occurs and subject the terms and provisions of the Loans, the Managing Member shall be reimbursed for any Additional Contingency it has paid, subject to the conditions in *Section 8.11(a)*, to the extent there is Cost Savings. Any additional Cost Savings shall be applied in accordance with *Section 7.3*.

ARTICLE VIII

RIGHTS, OBLIGATIONS AND POWERS OF THE MANAGING MEMBER.

8.1 Management of the Company.

(a) Except as otherwise set forth in this Agreement, the Managing Member, within the authority granted to them under this Agreement, shall have full, complete and exclusive discretion to manage and control the business of the Company for the purposes stated in *Article III*, shall make all decisions affecting the business of the Company and shall manage and control the affairs of the Company to the best of its ability and use commercially reasonable efforts to carry out the purpose of the Company. In so doing, the Managing Member shall act as fiduciary of the Investor Member and shall take all actions necessary or appropriate to protect the interests of the Investor Member and of the Company. The Managing Member shall devote itself exclusively to the affairs of the Company.

(b) Except as otherwise set forth in this Agreement, subject where required by this Agreement to the Consent of the Investor Member, and subject to the applicable Lender and/or Agency rules and regulations and the provisions of the Project Documents, the Managing Member, acting for and on behalf of the Company, in extension and not in limitation of the rights and powers given by law or by the other provisions of this Agreement, shall, in its sole discretion, have the full and entire right, power and authority in the management of the Company business to do any and all acts and things necessary, proper, convenient or advisable to effectuate the purpose of the Company. In furtherance and not in limitation of the foregoing provisions, subject where required by this Agreement to the Consent of the Investor Member, the Managing Member is specifically authorized and empowered to execute and deliver, on behalf of the Company, the Nominee Agreement, the Extended Use Agreement, the Regulatory Agreement, the Mortgages and the other Project Documents, and to execute any and all other instruments and documents, and amendments thereto, as shall be required in connection with the Loans, including, but not limited to, executing any mortgage, note, contract, building loan agreement, bank resolution and signature card, release, discharge, or any other document or instrument in any way related thereto or necessary or appropriate in connection therewith. All decisions made for and on behalf of the Company by the Managing Member in accordance with this Agreement shall be binding upon the Company. No person dealing with the Managing Member shall be required to determine its authority to make any undertaking on behalf of the Company, nor to determine any facts or circumstances bearing upon the existence of such authority.

8.2 Limitations Upon the Authority of the Managing Member.

(a) The Managing Member shall not have any authority to perform any act in material violation of any applicable law or regulation, Project Document or any agreement between the Company and any Authority or Lender; enter into, nor approve, any transaction on behalf of the Company which is not consistent with the purposes of the Company; take, or permit the Company to take, any of the following actions, in each case, without prior Consent of the Investor Member:

- (i) Do any act in contravention of this Agreement;
- (ii) Perform any act to in violation of any applicable law or regulation;
- (iii) Do any act required to be approved or ratified in writing by the Investor Member under the Code unless the right to do so is expressly otherwise given in this Agreement;
- (iv) Knowingly rent apartments in the Project such that the Project would not meet the requirements of the Rent Restriction Test or Minimum Set-Aside Test;
- (v) Perform any act in violation of the provisions of this Agreement, the Extended Use Agreement, the Regulatory Agreement, or any other Project Documents;

(vi) Possess property of the Company or assign rights in property of the Company, in either case, other than for the purposes of the Company;

(vii) Confess a judgment against the Company other than in connection with settlement of litigation permitted under *Section 8.2(b)(x)*;

(viii) Act in any manner which the Managing Member knows, or should know after due inquiry, will for federal income tax purposes (i) cause the termination of the Company, or (ii) cause the Company to be treated for federal income tax purposes as an association taxable as a corporation;

(ix) Except with respect to (i) tenant leases in accordance herewith and (ii) pursuant to the Purchase Option, transfer all or any portion of the Project or other property of the Company;

(x) amend this Agreement, any Loan Document, any other Project Document or any other agreement between the Company and the Managing Member or any of its Affiliates. Without limiting the generality of this clause, this includes any action to modify, prepay or refinance any of the Bond Loan or any other Loan except to (i) achieve Conversion on terms as provided in this Agreement or (ii) request any extension of or exercise any right to extend the date that is described as the Stabilization Date; or consent to any change in the terms or refinance or extend the terms contemplated in the Loan Documents;

(xi) Admit a Member to the Company except as specifically allowed by this Agreement;

(xii) Make a loan of funds of the Company to any Person, including the Managing Member or any of its Affiliates;

(xiii) Commingle funds of the Company with funds of any other Person;

(xiv) Dissolve the Company;

(xv) Make income tax elections or choices of method, except for those elections or choices which are provided for under this Agreement or approved by the Investor Member or are purely ministerial in nature;

(xvi) Acquire any items of real or personal property, tangible or intangible, in addition to items for the Project detailed in the Plans and Specifications or otherwise necessary or desirable for the Project, the value of which property exceeds the amount contemplated in the Development Budget or the Operating Budget;

(xvii) Except for (i) those certain guarantees provided to Lender prior to Conversion, (ii) as specifically set forth in this Agreement and (iii) customary recourse carveouts after Conversion, permit any Member or Affiliate of a Member to become personally liable on, or to guaranty, any Loan or other indebtedness of the

Company or otherwise to assume the economic risk of loss for payment of any Loan or other indebtedness of the Company, in any such case except for trade payables incurred by the Company in the ordinary course of business in respect of its own activities;

(xviii) Terminate the services of or engage a substitute or delegee of the Accountants, the Architect, the Developer, the Contractor or the Management Agent, for which the Consent of the Investor Member shall not be unreasonably withheld, conditioned or delayed;

(xix) Materially amend or terminate any Construction Contract, Development Agreement, or the Management Agreement, in each case, for which the Consent of the Investor Member shall not be unreasonably withheld, conditioned or delayed;

(xx) Cause the Company to redeem or repurchase all or any portion of the Interest of a Member; or

(xxi) Lease any unit in the Project or otherwise operate the Project in such a manner, or cause or permit the Company to take or omit to take any action, which would cause a recapture, reduction (other than as a result of a construction cost savings) or disallowance of any Federal Tax Credits anticipated to be recognized by the Company.

(b) The Managing Member shall not, without the Consent of the Investor Member, have any authority to:

(i) Other than the Purchase Option, sell or otherwise dispose of, at any time, all or substantially all of the assets of the Company or acquire any other real property, except for easements for the benefit of the Project and without the consent of the Lender, if required;

(ii) Other than the Loan Documents being executed at Closing, enter into a commitment for mortgage loan financing, or execute the Mortgage or Note, or increase or make application(s) for a change in the loan documents;

(iii) borrow in excess of \$50,000 in the aggregate at any one time outstanding on the general credit of the Company, except for Managing Member Advances, trade payables in the ordinary course of business, and except as and to the extent provided for in an approved Operating Budget pursuant to *Section 8.19*;

(iv) following Substantial Completion, construct any new or replacement capital improvements on the Project in an amount exceeding \$100,000 in the aggregate, except to the extent provided for in an approved Operating Budget pursuant to *Section 8.19*;

(v) refinance, extend the term (other than pursuant to extensions expressly permitted under the Loan Documents) or amend any terms of any of the Loans;

(vi) file or consent to the filing of a petition in Bankruptcy with respect to the Company or file or consent to any plan of reorganization in Bankruptcy or consent to any lifting of the automatic stay;

(vii) replace the Management Agent or substantially modify the terms of the Management Agreement or replace the Accountants;

(viii) Other than Change Orders for which the Consent of the Investor Member is not required under the terms of this Agreement and as otherwise permitted in by the express terms of this Agreement, make any modification to the Development Budget or Operating Budget prepared pursuant to *Section 8.19* or make any expenditure which is not consistent with the Development Budget or Operating Budget prepared pursuant to *Section 8.19*; provided that the Consent of the Investor Member shall not be unreasonably withheld for modifications to the Development Budget whereby five percent (5%) or less in the aggregate of the amount of a soft cost line item is reallocated to another line item expense in the Development Budget and such reallocation is from cost savings as reasonably determined by Investor Member;

(ix) amend in any manner the Loan Documents or any other Project Document;

(x) consent to the settlement of any lawsuit or any other legal or administrative proceeding involving the Company as a party requiring payment of any amount in excess of \$250,000;

(xi) enter into (a) any lease for all or any portion of the Project, but excluding any residential leases or (b) any agreement for the provision of personal or social services with respect to any portion of the Project (specifically including, but not limited to, agreements for food or health services). The Managing Member shall provide the Investor Member with copies of any such proposed commercial lease and/or service agreements at least 15 Business Days prior to the anticipated execution of such leases and/or agreements, together with such additional information as the Investor Member may reasonably request, including but not limited to: brochures, resumes and capability statements; financial and operating information regarding proposed commercial tenants and/or service providers; licenses and governmental approvals; architectural plans and fit-out budgets (in excess of \$20,000), and insurance certificates. Architectural plans, fit-out budgets (in excess of \$20,000) and insurance certificates shall be required for all commercial tenants and/or service providers. Any commercial lease and/or service agreement shall expressly allow for termination by the Company within 30 days of material noncompliance with the terms thereof by a commercial tenant and/or service provider;

(xii) make income tax elections or choices of method, except for those elections or choices which are purely ministerial in nature or otherwise are required by the express provisions of this Agreement;

(xiii) cause the Company to be treated other than as a partnership for federal income tax purposes;

(xiv) allow the Company to have any employees;

(xv) accept additional Capital Contributions other than those expressly provided for in this Agreement; or

(xvi) consent to any change in the terms contemplated for the Loans;

(xvii) submit any tenant management plan to the Agency; or

(xviii) modify or change any material terms or provisions of the Brownfield Cleanup Agreement or the other Brownfield Documents or make any decisions required to be made by the Company under the Brownfield Cleanup Agreement or the Brownfield Documents that would adversely affect the availability, allocation, timing, or amount of the Brownfield Tax Credits.

8.3 Reserved.

8.4 Purchase Option.

(a) The Managing Member (or its designee that is an Affiliate of Guarantor), so long as the Managing Member has not been removed as the managing member of the Company pursuant to this Agreement and the Managing Member is not, at the time of exercising or closing, in default of any of its material obligations hereunder after the expiration of any applicable notice and cure periods, shall have an option to purchase the Project or to purchase the Investor Member's Interest (the "**Purchase Option**"), which option shall be exercisable at each of the following times: beginning January 1st of the year following the final year of the Compliance Period for the Project and ending 12 months after such date (each, an "**Option Period**"). If the Managing Member exercises its option to purchase the Project, the purchase price shall be equal to the greater of (i) the fair market value of the Project *or* (ii) the sum of the amount (assuming payment of, or reservation for, prior obligations of the Company) necessary to (x) pay the existing debt on the Project or to which the Project is subject (which may be paid by the assumption of such debt) plus (y) distribute to the Investor Member the amount of any unreimbursed adjustment payments pursuant to *Sections 5.2 and 8.11(d)*. The calculation under *clause (y)* of the preceding sentence shall be based on the assumption that each Investor Member (or, if any such Investor Member is a pass through entity for tax purposes, each of the partners, members or participants of or in such entity) is subject to tax with respect to such disposition at the maximum marginal federal, state and local tax rates applicable to it. The fair market value of the Project shall be determined in the manner set forth in *clauses (i) through (iii)* below, as applicable to the Project. If the Managing Member exercises its option to purchase the Investor Member's Interest, then the amount to be paid to the Investor Member by the Managing Member for its Interest shall equal the greater of (i) the fair market value of Investor Member's Interest or (ii) the amounts necessary to distribute to the Investor Member the amount of any unreimbursed adjustment payments pursuant to *Sections 5.2 and 8.11(d)*. The fair market value of the Investor Member's Interest shall be determined in the manner set forth in *clauses (i) through (iii)* below, as applicable to the Investor Member's Interest.

(i) The Investor Member shall select an independent appraiser and the Managing Member shall select another independent appraiser within 30 days after the need for such appraisal arises. The appraisers selected shall be expert in the valuation of property comparable to the Project if the purpose of the appraisal is to determine the value of the Project in connection with a sale of the Project to the Managing Member, or expert in the valuation of Investor Member's Interest if the purpose of the valuation of the Investor Member's Interest in connection with a purchase by the Managing Member of the Investor Member's Interest. If either party fails to appoint an appraiser within 10 days after the other party has given notice of the name of its appraiser, the single appraiser appointed shall be the sole appraiser and shall establish the fair market value of the Project or the Investor Member's Interest, as applicable. If the two appraisers are appointed by the parties as above provided, they shall meet promptly and attempt to establish the fair market value of the Project, or the Investor Member's Interest, as applicable, within 60 days of such appointments. If any appraiser so appointed fails to deliver its report establishing its determination of fair market value within 60 days of such appointment, the fair market value of the Project or the Investor Member's Interest, as applicable, shall be determined by the value set forth in the report delivered within such 60 day period.

(ii) The fair market value of the Project or the Investor Member's Interest, as applicable, shall be the average of the appraisals rendered by each of the two real estate appraisers so selected; provided, however, that if one of the appraisals so rendered shall reflect a fair market value that is more than 10% greater or more than 10% less than the other appraisal so rendered, the two real estate appraisers shall promptly select a third independent real estate appraiser (or, if such real estate appraisers cannot agree on the selection of a third independent real estate appraiser, the third real estate appraiser shall be selected by the President of the New York Chapter of the American Arbitration Association or any successor organization upon application by either the Investor Member or the Managing Member), which real estate appraiser shall establish fair market value hereunder by designating the appraisal of the real estate appraiser of the Investor Member or the Managing Member as fair market value.

(iii) Any real estate appraiser engaged to render an appraisal hereunder must be experienced in valuing real estate similar to the Project. The appraisers shall take into account in determining the fair market value of the Project the continuing existence of any restriction on rents and income of the residents as set forth in any Project Document or Regulatory Agreement. Each party will bear the expenses of its own real estate appraiser, and the Investor Member shall bear 50% and the Managing Member shall bear 50% of the expenses incurred in engaging a third real estate appraiser.

(b) Reserved.

(c) Upon determination of the Project Option Purchase Price or the Interest Option Purchase Price, as applicable, the Company and the Managing Member shall enter into a written contract for the purchase and sale of the Project or the Investor Member's Interest, as applicable, in accordance with the terms of the Purchase Option and containing such other terms

and conditions as are standard and customary for similar affordable housing commercial transactions in the geographic area within which the Project is located, providing for a closing not later than 180 days after the price has been determined (which shall be extended to account for Agency and Lender delay in approving such transfer) and, if not closed by such date, any written contract entered into in connection with such transaction may, at the election of the Investor Member, be terminated whereupon the Managing Member shall pay to the Company and/or the Investor Member any reasonable out of pocket third party costs incurred in connection with such contemplated transaction and the Purchase Option shall remain in full force and effect in accordance with its terms; provided, however, that nothing herein shall extend the Option Period and any closing on the Purchase Option must occur no later than 360 days after end of the Option Period (the “**Outside Closing Date**”). If the Purchase Option has not been exercised and closed by the Outside Termination Date, then it shall terminate. In the absence of any such written contract, this Agreement shall be specifically enforceable upon the exercise of the Purchase Option. The purchase and sale of the Project hereunder shall be closed through a deed-and-money escrow with the title insurer for the Project or another mutually acceptable title company; provided, however, that the Project Option Purchase Price may be paid in cash or by assumption of debts of the Company, or a combination thereof. Upon closing of the purchase of the Project, the Company shall deliver to the Managing Member along with the deed to the property, an owner’s policy dated as of the close of escrow in the amount of the Project Option Purchase Price, subject to the liens, encumbrances and other exceptions then affecting the title. If the Purchase Option exercised is for the Project, the Company and/or the purchaser shall be responsible for all costs including, but not limited to, transfer taxes, title policy premiums and recording costs. If the Purchase Option exercised is for the Investor Member’s Interest, the Managing Member or the purchaser shall be responsible for all costs including, but not limited to, transfer taxes, title policy premiums and recording costs. Further, the purchaser shall be responsible for any transfer taxes due on the exercise of the Purchase Option or the purchaser shall structure the conveyance so as to be exempt from the payment of such transfer taxes. The Managing Member hereby acknowledges, covenants and agrees that the exercise of the Purchase Option shall not waive or release the Managing Member of any liability or obligations to make any payments to or otherwise indemnify the Investor Member pursuant to this Agreement, including, without limitation, under *Sections 8.10 and 8.11(d)* hereof.

(d) The Purchase Option shall automatically terminate if the Managing Member is removed as managing member of the Company pursuant to this Agreement. The Purchase Option is subordinate in all respects to the lien of mortgages securing the Bond Loan and the HPD Loan.

(e) The Purchase Option shall be subject and subordinate in all respects to the Extended Use Agreement and the Regulatory Agreement.

8.5 Put Option; Withdrawal of Investor Member.

The Investor Member shall have the option (the “**Credit Period Put Option**”) exercisable by thirty (30) days’ Notice given to the Managing Member to cause the Managing Member to purchase the Interest of the Investor Member at any time after the conclusion of the Credit Period, for an amount equal to \$100. The Managing Member shall pay the price due under the Credit Period Put Option in cash in full within 60 days after Notice is given by the

Investor Member. The Managing Member hereby acknowledges, covenants and agrees that the exercise of the Credit Period Put Option under this Agreement shall not waive or release the Managing Member of any liability or obligations to make any payments to or otherwise indemnify the Investor Member pursuant to this Agreement. If the Investor Member exercises the Credit Period Put Option set forth in this *Section 8.5*, the Managing Member shall continue to comply with the Extended Use Agreement and the Managing Member and the Guarantor shall continue to be responsible for their obligations under the Federal Tax Credit Recapture Guaranty as set forth in *Section 8.11(d)* and the Guaranty.

8.6 Management Purposes.

In conducting the business of the Company, the Managing Member shall be bound by the Company's purposes set forth in *Article III*.

8.7 Delegation of Authority.

(a) The Managing Member may appoint, employ, contract or otherwise deal with any Person for the transaction of the business of the Company, which Person may, under supervision of the Managing Member, perform any acts or services for the Company (including, but not limited to, with respect to identification of and budgeting for ESG Initiatives) as the Managing Member may approve, subject in the case of Affiliates of the Managing Member to the provisions of *Section 8.8* and provided that the Managing Member shall not cause or permit the Company to pay any such third party for any bookkeeping, reporting or company management duties that the Managing Member is obligated to perform pursuant to the provisions of this Agreement.

8.8 Managing Member or Affiliates Dealing with Company.

(a) The Managing Member or any Affiliate thereof may act as Management Agent on such terms and conditions permitted by *Section 8.15* and any applicable Lender and/or Agency requirements, and may receive compensation at the highest rates approved and permitted by the Lender and Investor Member at any time not exceeding amounts set forth under *Section 8.15*.

(b) Except as expressly permitted hereby, the Managing Member shall not cause or permit the Company to contract or otherwise deal with the Managing Member, or any Affiliates thereof, for the sale or provision of goods or services to the Company without the Consent of the Investor Member.

(c) Except for any Project Document with terms otherwise Consented to by the Investor Member (including, without limitation, the Loan Documents), any contract covering such transactions shall be in writing and shall be terminable without penalty on 30 days' Notice. Any payment made to the Managing Member or any Affiliate for such goods or services shall be fully disclosed to the Investor Member in the reports required under *Section 12.4*. Neither the Managing Member nor any Affiliate shall, by the making of lump-sum or periodic payments to any other Person for disbursement by such other Person, circumvent the provisions of this *Section 8.8(c)*.

(d) Notwithstanding the foregoing, if the Managing Member shall cease to be the Managing Member of the Company, the Investor Member shall have the right to terminate any agreement between the Company and any Affiliate of the Managing Member, without any obligation on behalf of the Company to pay any premium or penalty by reason of such termination. Upon any such termination, any fees which have accrued shall be payable to such Affiliates as provided in this agreement.

8.9 Other Activities.

The Managing Member's Affiliates may engage in or possess interests in other business ventures of every kind and description for their own account, including, without limitation, serving as general partner or managing member of other partnerships or limited liability companies which own, either directly or through interests in other partnerships or limited liability companies, government-assisted housing projects similar to the Project. Neither the Company nor any of the Members shall have any rights by virtue of this Agreement in or to such other permitted business ventures or to the income or profits derived therefrom.

8.10 Liability for Acts and Omissions.

Except as is otherwise expressly provided herein, no Managing Member or Affiliate thereof shall be liable, responsible or accountable in damages or otherwise to any of the Members for any act or omission performed or omitted by him or it in good faith on behalf of the Company and in a manner reasonably believed by him or it to be within the scope of the authority granted to him or it by this Agreement and in the best interest of the Company and the Investor Member, provided that this *Section 8.10* shall not limit any obligation of the Managing Member pursuant to any other Section of this Agreement or limit the obligations of any Guarantor under the Guaranty, and provided further that the protection afforded the Managing Member pursuant to this *Section 8.10* shall not apply to the extent of any gross negligence, willful misconduct, fraud or any breach of fiduciary or contractual duty. Except for any payment obligations of the Managing Member that are expressly set forth herein, any loss or damage incurred by the Managing Member or any Affiliate thereof by reason of any act or omission performed or omitted by him or it in good faith on behalf of the Company and in a manner reasonably believed by him or it to be within the scope of the authority granted by this Agreement and in the best interests of the Company and the Investor Member (but not, in any event, any loss or damage incurred by a Managing Member or an Affiliate thereof by reason of gross negligence, willful misconduct, or fraud or any breach of fiduciary or contractual duty) shall be paid from Company assets to the extent available (but the Investor Member shall not have any personal liability to the Managing Member or Affiliate(s) thereof under any circumstances on account of any such loss or damage incurred by the Managing Member or Affiliate(s) thereof or on account of the payment thereof). If one or more of the representations and warranties contained in this Agreement by the Managing Member, or made by the Managing Member, or its Affiliates in connection with the Loans shall prove to be untrue or inaccurate in any material respect, or if Managing Member shall commit any action or omit to take any action which constitutes gross negligence, willful misconduct, fraud or any breach of fiduciary duty then the Managing Member and Guarantor shall indemnify, defend and hold harmless the Investor Member (and its members, Affiliates, successors and assigns) and the Company from and against any loss, claim, damage, liability or expense incurred by such persons resulting from

any such material misrepresentation or from any such action or failure of performance, including, without limitation, reasonable attorneys' fees and accountants' fees. If the Managing Member or its Affiliates shall default in its performance of any contractual duty or any agreement or covenant hereunder beyond the expiration of any applicable grace period, the Managing Member shall indemnify, defend and hold harmless the Investor Member (and its members, Affiliates, successors and assigns) and the Company from and against any loss, claim, damage, liability or expense incurred by such persons resulting from any such failure of performance, including, without limitation, reasonable attorneys' fees and accountants' fees. The indemnification obligation of the Managing Member hereunder shall include, without limitation, any loss, claim, damage, liability or expense of any such person resulting from (a) any claim concerning the operation of the Project or the Company with respect to any time prior to the Closing, (b) any claim concerning the information presented by the Managing Member as to the transactions contemplated by this Agreement and (c) any claim made against the Investor Member by any person involved in the offering of interests therein due to the untruth or inaccuracy of any representation or warranty made by the Managing Member or of any information provided hereunder by the Managing Member, including any cost or expenses incurred by such indemnified party in defending such claims. For purposes of the indemnification provided in this Section, damages shall include any tax liability caused by breach or default by the Managing Member or anticipated tax benefit lost by such breach or default but only to the extent not otherwise compensated pursuant to the provisions of this Agreement.

8.11 Certain Managing Member Payment Obligations.

(a) Completion and Development Deficit Guaranty

(i) The Company has entered or will enter into the Construction Contract in a form approved by the Investor Member and has delivered or will deliver a true and correct copy thereof to the Investor Member. The Managing Member shall be responsible for (A) Substantial Completion of the Project by the Completion Date, free and clear of all liens other than that of the Lenders, other than the Brownfield Cleanup Program Easement and other than those Consented to by the Investor Member, have been released or bonded according to the construction mechanic's lien laws of the State and in a manner reasonably satisfactory to the Investor Member; (B) payment when due of all Excess Development Costs; (C) keeping all development sources "in balance" so as to assure timely Substantial Completion and to advance such amounts at any time such advances are reasonably required to be made in order to keep the development "in balance;" (D) completion of any environmental remediation work at the Project required by any applicable Authority; (E) causing the Contractor to complete any "punch-list" items in accordance with the Plans and Specifications; and (F) fulfilling all actions required to assure that the Project satisfies the Fifty Percent Test.

(ii) All amounts paid by the Managing Member up to \$3,236,311 pursuant to this *Section 8.11(a)* shall be treated as a Managing Member Advance; provided, however, if the treatment of any such amount advanced hereunder as a Managing Member Advance would result in an adverse tax consequence to the Investor Member as determined by tax counsel to the Investor Member, then such amounts shall

not be treated as Managing Member Advances or as a Capital Contribution by the Managing Member. Amounts paid by the Managing Member pursuant to this *Section 8.11(a)* in excess of \$3,236,311 (such excess, the “**Additional Contingency**”) will not be treated as a Managing Member Advance and neither Managing Member nor Guarantor shall have any right to receive any repayment on account of such payments other than as set forth in *Section 7.9*.

(iii) The obligations of the Managing Member described in this *Section 8.11(a)* are referred to as the “**Completion Guaranty**.”

(b) **Operating Deficit Guaranty**. If an Operating Deficit shall exist at any time prior to Stabilization, the Managing Member shall provide such funds to the Company as shall be necessary to pay such Operating Deficit(s). From and after the occurrence of the Stabilization and continuing for a period of 60 calendar months after the date of the Final Capital Contribution thereafter (the “**ODG Period**”), the Managing Member shall promptly provide such funds to the Company as shall be necessary to pay any Operating Deficit(s) with respect to the Project. If at the end of such 60 calendar month period, (i) the Project has failed to maintain a Debt Service Coverage Ratio of 1.15 to 1.0 for the immediately preceding twelve (12) month period and (ii) the Operating Reserve balance is less than the Minimum Balance, then the ODG Period shall be automatically extended until the Project has achieved a Debt Service Coverage Ratio of 1.15 to 1.0 for a period of twelve (12) months and the Operating Reserve balance has been replenished to an amount not less than the Minimum Balance, provided, however, under no circumstances shall the ODG Period extend beyond the earlier of (i) the end of the eighth (8th) year of the Credit Period or (ii) the seventh (7th) anniversary of Stabilization. At the end of the ODG Period, to the extent that the Operating Reserve balance is less than the Minimum Balance and has not been fully replenished from Net Cash Flow, the Managing Member shall be required to advance funds to replenish the Operating Reserve in an amount equal to the lesser of (a) the ODG Cap or (b) the positive difference between the Minimum Balance and the then current balance in the Operating Reserve. Any funds provided pursuant to this *Section 8.11(b)* shall constitute a Managing Member Advance. The Managing Member’s obligations to fund Managing Member Advances shall be limited to an amount equal to \$1,501,847 (the “**ODG Cap**”). The obligations of the Managing Member described in this *Section 8.11(b)* are referred to as the “**Operating Deficit Payment Obligation**.” The Managing Member may draw funds from the Operating Reserve prior to funding any Operating Deficit Payment Obligation.

(c) **Loan Repayment Guaranty**. In the event the Company is unable to achieve Conversion, then the Managing Member shall pay down (or cause the Guarantor to pay down) the Bond Loan and/or the HPD Loan, as applicable, in an amount necessary to cause the Conversion to occur by the date required under the Loan Documents, as the same may be extended, however, that, if the foregoing Loans do not allow such a pay down, then, at the reasonable request of the Investor Member (after giving due consideration to any debt service coverage requirement imposed by the Lenders), the Managing Member shall fund a debt service reserve in an amount, when added to actual project income, will cause the Company to achieve Conversion. All amounts paid by the Managing Member pursuant to this *Section 8.11(c)* not be treated as Managing Member Advances or Capital Contributions by the Managing Member. The obligations hereunder shall be guaranteed by the Guarantor under the Unconditional Guaranty.

(d) Tax Credit Recapture Guaranty.

(i) If a Tax Credit Recapture/Reduction Event occurs, to the extent such event is caused by a breach by the Managing Member of its representations, warranties, covenants, or duties under this Agreement, and such event is not caused by (a) the breach of the obligations of the Investor Member under this Agreement or (b) Change in Law, then the Managing Member shall make the payments set forth in *Section 8.11(d)(ii)* below (the “**Tax Credit Recapture/Reduction Event Payments**”) to the Investor Member.

(ii) The Tax Credit Recapture/Reduction Event Payments shall be paid on an After-Tax Basis in the following amounts in the following manner:

(A) within forty-five (45) days after the Tax Credit Recapture/Reduction Event, the aggregate amount of any tax deficiency assessed against the Investor Member or its members with respect to the Federal Tax Credits or Brownfield Tax Credits which are the subject of the Tax Credit Recapture/Reduction Event and any interest and penalties imposed by the Code on the Investor Member or its members with respect to such deficiency, and

(B) within ninety (90) days after the end of each calendar year after the occurrence of a Tax Credit Recapture/Reduction Event, an amount equal to the sum of (x) \$1.03 multiplied by all reductions in Federal Tax Credits and/or \$0.65 multiplied by all reduction in Brownfield Tax Credits allocable by the Company to the Investor Member with respect to the Project from the level reflected on the Projected Tax Credit Schedule set forth in Schedule 1 (as adjusted by the Projection Accountants to reflect any adjustments pursuant to *Sections 5.2(a)(ii)* and *5.2(b)*) and (y) any interest and penalties imposed by the Code on the Investor Member or its members with respect to such reduction. If it is determined by the Company Accountants that such Tax Credit Recapture/Reduction Event shall also reduce the amount of Federal Tax Credits allocable by the Company to the Investor Member in succeeding calendar years, then the amount due under this *Section 8.11(d)(ii)(B)* shall include \$1.03 multiplied by the aggregate amount of the reduction of Federal Tax Credits for the succeeding calendar years plus any interest and penalties imposed on the Investor Member or its members with respect to such aggregate reduction.

(iii) Any payment made by the Managing Member pursuant to this *Section 8.11(d)* shall not result in (1) any increase to the Capital Account of the Managing Member, or (2) any claim by the Managing Member against the Company of any kind or (3) any decrease to the Capital Account of the Investor Member.

(iv) All payments required to be made by the Managing Member hereunder shall bear interest at the rate of twelve percent (12%) per annum or the highest rate of interest permitted by law in the State, whichever is lower, from the date that such payment was due until such payments are received by the Investor Member.

8.12 Development Fee.

(a) The Company has entered into a Development Agreement dated as of even date herewith with the Developer in the form of Exhibit B for its services in connection with the construction of the Project. In consideration for such services, a Development Fee in a total amount equal to \$11,673,667 or the maximum amount permitted by the Agency, the Code and the regulations promulgated thereunder shall be payable by the Company, in accordance with the terms of the Development Agreement and *Articles VII and VIII*. The Development Budget contemplates that the Development Fee will be payable, provided the development sources are available and “in balance” at the time each such installment is due: (i) up to \$3,159 on the date the Initial Capital Contribution is made, (ii) up to \$1,499,818 on the date the Stabilization Capital Contribution is made, (iii) up to \$2,649,383 on the date of the Final Capital Contribution is made, and (iv) the remainder, if any, to be paid pursuant to the Developer Fee Note. Pursuant to the terms of this Agreement, payment of some or all of the Development Fee may be deferred and paid pursuant to the terms of the Developer Fee Note and the Development Agreement. The portion of the Development Fee that is not deferred in this manner is referred to herein as the “non-deferred portion” of the Development Fee. The portion of the Development Fee that is required to be paid pursuant to the Developer Fee Note is referred to herein as the “deferred Development Fee.” It is currently anticipated that \$7,521,307 of the Development Fee will be deferred. The portion of the Development Fee that is treated as deferred shall not be increased without the Consent of the Investor Member; provided, however, that the portion of the Development Fee that is treated as deferred may be increased if the Investor Member determines in its sole but reasonable discretion and based on updated Projections prepared by the Projection Accountants that the entire amount of the deferred Development Fee can be repaid in full from Cash Flow by the later of (i) the end of the 13th year of the Compliance Period or (ii) the 15th anniversary of Closing, which updated Projections shall use the same trending assumptions which were included in the Projections at Closing. The Members agree, that subject to the consent of any Lender (if required), any Loan proceeds or Capital Contributions which remain unspent after the payment of the other construction, development and financing costs set forth in the Development Budget shall be applied to the Development Fee. The Eligible Basis of the Project shall only include such portion of the Development Fee as is projected to be paid at or prior to the later of (x) the end of the 13th year of the Compliance Period, and (y) the end of the 15th year following the Closing. For the avoidance of doubt, all of the Development Fee shall be deemed earned no later than Placement in Service. Notwithstanding the foregoing, except for the payment of the Development Fee out of the Initial Capital Contribution, none of the Development Fee anticipated to be paid to Developer shall be paid to the Developer prior to the complete funding of the Operating Reserve.

(b) Upon the making of the Final Capital Contribution and provided all other current obligations of the Company have been satisfied, it is anticipated that 100% of the remaining non-deferred portion of the Development Fee will be paid from such Final Capital Contribution, if not already paid. The balance of the Development Fee (if any) that shall be deferred pursuant to a Developer Fee Note (“**Developer Fee Note**”), which Developer Fee Note shall not accrue interest and shall mature upon the later of the 15th anniversary of Closing or the end of the 13th year of the Compliance Period (which maturity date shall not be extended by the Managing Member without the Consent of the Investor Member). The deferred portion of the Development Fee shall be amortized over a period of 15 years and payable out of Net Cash Flow

pursuant to *Section 7.3*, *Section 7.5*, and the Development Agreement. If, in any year, there is insufficient Net Cash Flow to pay the full amount of the annual payment of the deferred portion of the Development Fee due, the unpaid amount shall accrue and be payable the following year or if not available, then during any future year until the maturity date thereof. The obligations of the Company to pay the Development Fee shall be recourse to the Company's assets only and shall be non-recourse to the Members. If, as of the maturity date of the deferred portion of the Development Fee, any earned but unpaid Development Fee exists, the Managing Member shall promptly make a Capital Contribution to the Company in an amount sufficient to enable the Company to pay in full such Development Fee and interest thereon and if PL Sara Manager LLC is no longer a Member, the Company shall cause the full earned but unpaid amount of the Development Fee and interest thereon to be paid upon the withdrawal or removal of PL Sara Manager LLC as Managing Member.

(c) To the extent the Managing Member does not pay (or cause to be paid) Excess Development Costs in accordance with *Section 8.11(a)(i)*, the Company may off-set any required payments of the Development Fee to the Developer pursuant to this *Section 8.12* in the amount of such Excess Development Costs which are not paid by the Managing Member.

8.13 Obligation of Managing Member to Pay Fees in Event of Default. If (a) the Managing Member or any successor Managing Member shall not have substantially complied with any material provisions under this Agreement after the expiration of any applicable notice and cure periods or any representation or warranty of Managing Member is materially untrue when made (or deemed remade in accordance with the terms of this Agreement), after Notice from the Investor Member of such noncompliance and failure to cure such noncompliance within such reasonable period as the Investor Member reasonably determines is necessary to avoid prejudice to the Company or the Investor Member, or (b) a default shall have occurred under any of the Loans and be continuing after the expiration of any applicable notice or cure periods for reasons other than the Investor Member's failure to make a Capital Contribution that is due and payable according to the provisions hereof (i.e., the Investor Member shall not be deemed to have failed to make a Capital Contribution if all conditions to the making of such Capital Contribution have not been satisfied) or (c) foreclosure proceedings shall have been commenced against the Project for reasons other than the Investor Member's failure to make a Capital Contribution that is due and payable according to the terms hereof (i.e., the Investor Member shall not be deemed to have failed to make a Capital Contribution if all conditions to the making of such Capital Contribution have not been satisfied), which proceeding is not dismissed within 30 days thereof, then the Managing Member shall be in default of this Agreement, and the Company shall withhold payment of any installment of fees and/or allowance payable pursuant to *Section 8.12*.

All amounts so withheld by the Company under this *Section 8.13* shall be promptly released to the payees thereof only after the Managing Member has cured the default justifying the withholding, as demonstrated by evidence reasonably acceptable to the Investor Member.

8.14 Removal of the Managing Member.

(a) The Investor Member shall have the right to remove the Managing Member and cause itself or its designee to be admitted as the managing member hereunder (i) for

any intentional misconduct or gross negligence by the Managing Member with respect to any matter in the discharge of its duties and obligations as Managing Member, or (ii) upon the occurrence of any of the following:

(A) breach of fiduciary duty by the Managing Member or the Managing Member shall have defaulted under any material provisions of the Project Documents or other document required in connection with the Loans or any material provisions of the Lender, in each case after expiration of applicable notice and cure periods and/or Agency requirements applicable to the Project, which violation has not been explicitly waived in writing by the Lender, or the Agency, as applicable, if such violation, after giving of applicable notice and the expiration of all applicable cure periods, results in, or would with the passage of time result in, a Material Adverse Effect;

(B) a Guarantor shall have violated an obligation to make a payment pursuant to any Guaranty or shall have violated any other provisions of any Guaranty (including, without limitation, any Net Worth and Liquidity Requirements or the reporting covenants in respect thereof), and in each case, such violation is not cured within 10 days after the giving of Notice by the Investor Member of such violation;

(C) the Managing Member shall have conducted its own affairs or the affairs of the Company in such manner as would be reasonably likely to:

(1) cause the termination of the Company for federal income tax purposes; or

(2) cause the Company to be treated for federal income tax purposes as an association taxable as a corporation;

(D) the amount of Actual Federal Credits for any year after the second full year of the Credit Period are less than 80% of the Projected Federal Credits for that year, unless due to condemnation or casualty and Managing Member has not made the payments due in connection therewith pursuant to *Sections 5.2 or 8.11(d)*;

(E) the Managing Member shall have defaulted under any material provision of this Agreement after the expiration of any applicable notice and cure periods, which default results in or, with the passage of time, could reasonably result in, a Material Adverse Effect;

(F) the Project shall fail to satisfy the Fifty Percent Test as of the time required pursuant to the Code;

(G) an event of Bankruptcy has occurred and is continuing with respect to the Managing Member, and/or the Guarantor; provided, however, that with respect to a Guarantor, the Managing Member shall have a period of not more than 60 days after notice of the event of Bankruptcy is given to the

Managing Member, to replace Guarantor with another person or entity with net worth and liquidity comparable to that originally required of such Guarantor;

(H) the Managing Member, the Guarantor or any Affiliate thereof has been convicted by a court of competent jurisdiction of a felony criminal offense or the Managing Member or an Affiliate thereof has pleaded guilty to such an offense; provided, however, that if an employee or an agent of Managing Member, Guarantor or any other Affiliate thereof causes a default under this clause (H) to occur, such action shall not constitute a default hereunder if (i) the Managing Member, Guarantor or other Affiliate thereof removes such employee or agent within five (5) Business Days after becoming aware of same, (ii) commences the cure of such default within five (5) Business Days after becoming aware of the same and thereafter diligently proceeds to cure same and completes such cure within thirty (30) days thereof and (iii) the Company is reimbursed by the Managing Member, the Guarantor, or any Affiliate thereof (by insurance proceeds or otherwise) for any damage caused to the Investor Member, or the Company by reason of such default within the thirty (30) day cure period described in clause (ii) above; and provided, further, that with respect to a Guarantor, the Managing Member shall have a period of not more than 60 days after notice of such conviction or guilty plea of such Guarantor is given to the Managing Member, to replace Guarantor with another person or entity with net worth and liquidity acceptable to Investor Member, subject to (a) satisfaction of Investor Member's "know-your-customer" requirements and (b) Investor Member's prior written consent, not to be unreasonably withheld, and upon such replacement such conviction or guilty pleas shall not constitute a removal event;

(I) the Managing Member, or an Affiliate thereof has committed fraud with respect to the Company or the Investor Member;

(J) an event of withdrawal has occurred with respect to the Managing Member pursuant to *Article IX*;

(K) the Managing Member fails to remove the Management Agent within thirty (30) days after the Investor Member has requested such removal pursuant to *Section 8.16*;

(L) all IRS Forms 8609 for all Buildings have not been received by the Investor Member within two (2) years of the tax return filing deadline for the year in which Conversion occurs;

(M) Asland ceases to Control the Managing Member, provided that Investor shall not remove Managing Member if Asland is removed as managing member of MM Member pursuant to a Joint Venture Bad Boy Act and Pembroke Controls Managing Member after giving effect to such removal, subject to all consent rights by Investor Member over changes of control of Managing Member as set forth in *Section 9.1(a)*; and/or

(N) the Managing Member or an Affiliate (such entity, the “**Breaching Affiliate**”) thereof is removed as a general partner or managing member of any entity in which the Investor Member or an Affiliate thereof are members or limited members, due to the gross negligence, fraud or willful misconduct of such Managing Member or Affiliate; provided that Investor may not remove Managing Member pursuant to this *Section 8.14(N)* if, within ten (10) days after the Managing Member receives written notice of the removal of the Breaching Affiliate, Managing Member delivers evidence to Investor Member that no Affiliate of the Breaching Affiliate has any rights to Control, direct or approve the actions of Managing Member.

(b) The Investor Member shall give Notice to all Members and Guarantors, and to the Lender, of its determination that the Managing Member shall be removed or that it or its designee be admitted as replacement managing member. If the Investor Member delivers such notice of its determination to remove the Managing Member, unless a notice and cure period is provided in the applicable document referenced in *Section 8.14* above, the Managing Member shall have 30 days after receipt of such Notice, or if such default is not reasonably capable of being cured in such 30 day period, such longer time as is reasonably necessary to cure such default, provided that the Managing Member commences such cure within such 30 day period and thereafter diligently pursues the cure of such default to completion, but in no event longer than 60 days after receipt of such Notice to cure such default or other reason for such removal, and during such period and from and after the date if such default or other reason for such removal is so cured, the Managing Member shall remain as Managing Member. If, at the end of 30 days or 60 days, as applicable, the Managing Member has not cured the default or other reason for such removal, the Managing Member shall cease to be Managing Member and the powers and authorities conferred on it as Managing Member under this Agreement shall cease and the Interest of such Managing Member shall be transferred to the Investor Member, or if so designated, its designee, which, without further action, shall become the sole managing member; in such event, upon becoming the Managing Member, such designee shall be bound by all applicable terms and conditions of this Agreement and of the Project Documents. Notwithstanding the foregoing, if the event giving rise to the determination that the Managing Member be removed is as set forth in *Section 8.14(a)(B), (C), (F), (G), (H), (I), (J), (L), (M)* and/or *(N)*, then there shall be no requirement for Notice and no opportunity to cure any such default. If the Investor Member has determined to cause itself or its designee to be admitted as the sole managing member, such admission shall occur on such date as is determined by the Investor Member, which may be on the date of the Notice to the Managing Member or at any time thereafter, but in no event prior to the expiration of any applicable notice and cure period set forth herein. If the Investor Member or its designee is admitted as the sole managing member pursuant to this *Section 8.14*, it shall not preclude the Investor Member from exercising its right to remove the Managing Member at any time thereafter pursuant to the provisions of this *Section 8.14*.

(c) If the Managing Member is removed as aforesaid, the removed Managing Member shall be and shall remain liable for all obligations and liabilities incurred by it as Managing Member of the Company through the date of removal but not for any obligations or liabilities first arising after the date of removal, including but not limited to the obligations and liabilities of the Managing Member with respect to its obligations set forth in this Agreement

(including without limitation the payment of all obligations under the Completion Guaranty accrued prior to the date of removal) and the Guarantor shall remain liable under the Guaranty for any such guaranteed obligations and liabilities incurred by the Managing Member through the date of removal of the Managing Member but not for any obligations or liabilities first arising after the date of removal; provided however, that if amounts otherwise payable to the Managing Member as fees are applied to meet the obligations of the Managing Member as stated in *Sections 5.4 and 8.12*, such application shall serve to reduce any such liabilities of the removed Managing Member or any of its successors, except for any liability incurred as the result of his or its gross negligence, misconduct, fraud or breach of his or its fiduciary duties as Managing Member of the Company. A Managing Member that is removed shall be free of any obligation or liability incurred on account of the activities of the Company from and after the effective date of such removal.

(d) If the Managing Member is removed as Member of the Company, then, immediately prior to removal, the Managing Member shall make a Capital Contribution to the Company in an amount equal to any unpaid principal and accrued interest of the Development Fee, and the Company shall thereupon make a payment in an equal amount to pay off all unpaid principal and accrued interest of the Development Fee. Upon any such removal of the Managing Member, the Company shall not be obligated to repay any Managing Member Advances or other Managing Member Member Loans to the Company made by the removed Managing Member.

8.15 Selection of Management Agent. The Company, with the approval of the Agency and/or the Lender, if required, shall engage such person, firm or company as the Managing Member may select, and as the Investor Member may approve, which approval shall not be unreasonably withheld, conditioned or delayed (hereinafter referred to as the “**Management Agent**”) to manage the operation of the Project. The Investor Member hereby approves Grenadier Realty Management LLC, as the Management Agent subject to the terms and conditions of this *Section 8.15* and *Sections 8.16 and 8.17*. The Management Agent shall be paid a Management Fee subject to the approval of the Agency and/or the Lenders, if required, but in no event will the annual Management Fee be greater than the amount that is reflected in the Schedule of Investor Member’s Underwritten Expenses attached hereto as Schedule 4. The Management Agent shall be required to prepare monthly operating statements with respect to the Project which statements shall be provided to the Managing Member no later than 15 days following the end of each month and which statement shall disclose any event or occurrence with respect to the Project which is asserted by an Authority to be violation of any Federal, state or local statute or regulation. The contract between the Company and the Management Agent and the management plan for the Project shall be in a form acceptable to the Agency and/or the Lender, if required, and acceptable to the Investor Member; such contract shall have an initial term of one (1) year and shall be renewable annually thereafter (provided that such contract shall provide that any such renewal shall not be effective without the Consent of the Investor Member) and shall provide, among other things, that it shall be cancelable without penalty upon 30 days prior notice from the Company. If the Management Agent is an Affiliate of the Managing Member, any Guarantor or the Developer, the Management Agent will be obligated to defer without interest up to forty percent (40%) of the Management Fee to the extent necessary at any time to prevent a default under the Loans or to avoid the existence of an Operating Deficit. Any such deferred Management Fee shall be repayable, without interest, from Net Cash Flow as a Managing Member Advance as provided in *Section 7.3* or net proceeds of a Capital Transaction

as provided in *Section 7.5*. Managing Member shall create written property manager oversight procedures, to Investor Member's reasonable satisfaction, at the earlier of (a) one (1) year after the date hereof or (b) the commencement of leasing activity.

8.16 Removal of the Management Agent. The Managing Member shall cause the Company's agreement with the Management Agent to provide that (i) the Managing Member may upon receiving the approval of the Investor Member and receiving any required approval of the Lender, dismiss or not renew the Management Agent as the entity responsible for the Project under the terms of the contract between the Company and the Management Agent, (ii) the Managing Member shall at the direction of the Investor Member (or the Investor Member shall have the authority on behalf of the Company to) remove the Management Agent (A) for material breach of the Management Agreement, (B) immediately in the event of theft or fraud by the Management Agent, and (C) if the Management Agent is an Affiliate of the Managing Member, immediately upon the removal of the Managing Member, (iii) include a rider in the form attached hereto as Exhibit K, and (iv) upon any termination of such agreement the Management Agent shall cooperate with the Company and its replacement to effectuate a smooth transition of management. The Investor Member shall have the power and authority to remove the Management Agent to the extent permitted under clause (ii) of the preceding sentence.

8.17 Replacement of the Management Agent. Upon the termination of the contract with the Management Agent or the removal of the Management Agent as the entity responsible for the management of the Project, a substitute Management Agent which, if the removed Management Agent was an Affiliate of the Managing Member, is not an Affiliate of the Managing Member, shall be named by the Managing Member, subject to the approval of the Lender, if required, and the approval of the Investor Member which shall not be unreasonably withheld, conditioned or delayed.

8.18 Loans to the Company. If additional funds are required by the Company for any purpose relating to the business of the Company or for any of its obligations, expenses, costs or expenditures, the Company may, with the Consent of the Investor Member, borrow such funds as are needed from any Member (or Affiliate thereof) or other Person or organization, including the Managing Member, for such period of time and on such terms as the Managing Member, the Investor Member and, if so required, the Lender(s), may agree and at the rate of interest then prevailing for comparable loans (except for Managing Member Advances); provided, however, that no such additional loans shall be secured by any mortgage or other encumbrance on the property of the Company without the Consent of the Investor Member and the approval of any Lender, if required; except that such approvals shall not be required in the case of the hypothecation of personal property purchased by the Company and not included in the security agreements executed by the Company at the time of Closing. Loans made under this Section shall be repaid as set forth in the definition of Net Cash Flow in *Article II* (except for Managing Member Advances), but any amount of any such loan that is outstanding at the time of the occurrence of any of the events described in *Sections 7.5 or 11.1* shall be repaid as provided in *Section 7.5*. The Investor Member or its Affiliates shall have the right at any time, or from time to time, to make loans to the Company for the purposes of eliminating Operating Deficits, preventing or curing defaults under the Project Documents or causing the Company to comply with the Project Documents, Loan Documents or any applicable laws, and upon making such loans the Managing Member shall apply the proceeds of such loans as directed by the Investor

Member. Such Member loans shall bear interest at a rate equal to the lesser of (i) twelve percent (12%) per annum or (ii) the maximum rate permitted for such loans under applicable law. Any and all Member Loans shall be deemed automatically subordinated to the prior and irrevocable payment in full of the Loans to the extent permitted by the Loan Documents. The Managing Member shall give prior notice to HPD of the making of any Member Loans in accordance with the HPD Regulatory Agreement (provided that, in the case of any Member Loan from the Investor Member, Investor Member provides Managing Member of written notice thereof). In the event Managing Member fails to provide such notice to HPD, Investor Member shall have the right to do so on behalf of the Company.

8.19 Operating and Capital Budgets. Prior to Substantial Completion (with respect to the remainder of the Company's then current Taxable Year) and not less than 30 days prior to the commencement of each subsequent Taxable Year thereafter, the Managing Member shall submit to the Investor Member for its review and approval (which approval shall not be unreasonably withheld), proposed operating and capital budgets for the Project and the Company for the next fiscal year (the "**Operating Budget**"). Such Operating Budgets shall specifically list all budgeted expenses in all major categories including, but not limited to, administration, operation, repairs and maintenance, utilities, taxes, insurance, interest, debt service with respect to the Loans, capital improvements, ESG Initiatives and all budgeted expenses which are to be paid to the Managing Member or its Affiliates. The Investor Member shall submit its response to such proposed Operating Budgets to the Managing Member within 30 days after its receipt of such proposed budgets; such response shall either evidence its approval of the proposed budgets or shall contain specific comments and recommendations with respect thereto. If no such response is submitted to the Managing Member within such period, the Investor Member will be deemed to have approved such Operating Budget but only if the Investor Member receives a written notice from the Managing Member at least 10 days prior to the end of such period stating that such Operating Budget shall be deemed approved if the Investor Member does not respond by the end of such period. If a response is submitted to the Managing Member within such period but such Operating Budget is not approved by the Investor Member prior to the commencement of such fiscal year for which such Operating Budget applies, the Managing Member shall operate the Company and the Project utilizing the last approved Operating Budget from the prior fiscal year with each line item thereof increased by three percent.

8.20 Replacement Reserve. Commencing no later than the date of Conversion or such earlier date as may be required by any Lender, the Company shall be obligated to make a payment to a reserve fund of the Company (the "**Reserve Fund for Replacements**") within the first 10 days of each month equal to (on an annualized basis) \$300 per apartment unit in the Project per year, increasing annually by the greater of 3.0% or the CPI Percentage (unless a greater amount is required by any Lender). If the Reserve Fund for Replacements exceeds the amount required by the Lender to be deposited into a replacement reserve account held by the Lender, then only such excess shall be deposited in the Reserve Fund for Replacements maintained by the Company. Any interest earned on such account shall become a part thereof. Withdrawals from the Reserve Fund for Replacements shall be used for capital improvements of the Project. No withdrawals from the Reserve Fund for Replacements shall be made if and to the extent such withdrawal would violate the Regulatory Agreement unless consented to by the Lender and/or the Agency, as applicable. Any withdrawals from the Reserve Fund for

Replacements in excess of \$5,000 shall require the prior Consent of the Investor Member, which shall not be unreasonably withheld, conditioned or delayed.

8.21 Operating Reserve.

(a) Concurrently with the payment of the Stabilization Capital Contribution, the Managing Member shall be obligated to cause the Company to establish a separate interest-bearing account in a depository institution insured by the Federal Deposit Insurance Corporation and approved by the Investor Member or as otherwise required by any Lender (“**Operating Reserve**”), which approval shall not be unreasonably, withheld, conditioned or delayed, into which the Company, on the date of the Stabilization Capital Contribution, will deposit an amount equal to \$750,924 and, thereafter, will maintain an amount equal to \$750,924, or such greater amount as required by any Lender (the “**Minimum Balance**”). All interest earnings on the Operating Reserve will be retained in the account and used for the aforesaid purposes. Notwithstanding the foregoing, the Operating Reserve shall require the signature of the Managing Member and the Consent of the Investor Member before withdrawals therefrom can be made to pay any Operating Expenses, debt service obligations or other expenses of the Company; provided, that no withdrawals shall be made while the Project is maintaining Breakeven Operations. To the extent withdrawals are made from the Operating Reserve, such funds shall be replenished from Net Cash Flow in accordance with *Section 7.3*. At or after the end of the Compliance Period, any remaining funds shall be distributed as Net Cash Flow in accordance with *Section 7.3* or *Section 7.5*.

8.22 Asset Management Fee. Commencing on Substantial Completion, the Managing Member shall cause the Company to pay the annual Asset Management Fee to the Investor Member (or its designee). The Asset Management Fee shall be pro-rated for periods less than a full calendar year and shall be payable from the Net Cash Flow of the Company available for distribution pursuant to *Section 7.3(a)*. If the Asset Management Fee for any year is not paid in full by the Company or the Managing Member from Net Cash Flow, the unpaid amount shall accrue (without interest) and shall be payable commencing on the applicable Payment Date until fully paid, from Net Cash Flow available in future years as contemplated by *Section 7.3(a)* or if not fully paid when the Project is sold, then from net proceeds of a Capital Transaction pursuant to *Section 7.5*.

8.23 ESG. Managing Member acknowledges receipt of Investor Member’s *Managing Real Estate Responsibly: Operational ESG Integration for Investments Guidebook* (as same may be amended from time to time, “**ESG Guidebook**”), which sets forth Investor Member’s environmental, social, and governance (“**ESG**”) objectives generally applicable to the Project (as contained therein, the “**ESG Benchmark Guidelines**”). Managing Member will use commercially reasonable efforts to seek out, propose to Investor Member, and implement projects (including, but not limited to, projects proposed by Investor Member and by the Management Agent and the Project’s vendors and service providers) that contribute to efforts in achieving the ESG Benchmark Guidelines (each an “**ESG Initiative**”) at the Project and include such ESG Initiatives in each proposed budget for the Project. ESG Initiatives shall include, but shall not be limited to, (a) Energy Star ratings and the use of energy efficient products or methods to reduce consumption; (b) green cleaning products, where applicable; (c) low-flow plumbing fixtures; (d) LED light bulbs; (e) procurement of recycled materials; (f) locally sourced

materials and services; (g) consideration of Diverse-Owned and Local Vendors; (h) sustainable landscaping techniques; and (i) pursuit of any applicable local incentive programs. Managing Member shall also provide a copy of the ESG Guidebook to the Management Agent and the Project's vendors and service providers and, to the extent applicable, Managing Member shall encourage the Management Agent and such vendors and service providers to incorporate practices consistent with the ESG Benchmark Guidelines in connection with the services provided or otherwise propose ESG Initiatives for the Property. To ensure that the ESG Benchmark Guidelines are met, Managing Member shall provide to Investor Member reporting upon request by Investor Member on its ESG efforts pursuant to Section 12.4 of this Agreement, and Investor Member may audit such ESG efforts by Managing Member pursuant to Section 12.12 of this Agreement. Managing Member shall also upload utility data to the Measurabl platform, which platform shall be provided and maintained at GS' sole expense. **"Diverse-Owned and Local Vendors"** shall include (x) businesses that are majority owned by ethnic minorities, indigenous peoples, LGBTQ individuals, disabled individuals, service-disabled veterans, or women or (y) locally owned small and medium enterprises.

8.24 **Brownfield Cleanup Program and Brownfield Tax Credit Obligations.** The Members acknowledge that (x) an application was made on by the Company for inclusion of the Project Property (the **"Brownfield Property"**) in the Brownfield Cleanup Program (designated as Site No. C203138), and (y) the Brownfield Cleanup Agreement identified by Index Number C203138-09-20 was executed by and between the Company and the DEC, effective as of November 16, 2020, with respect to the Brownfield Property. With respect to the Brownfield Property, Managing Member shall (i) diligently and expeditiously implement all required investigation and remediation of the Brownfield Property in accordance with the requirements of the Brownfield Cleanup Program and the Brownfield Cleanup Agreement in order to achieve a Track 2 level of remediation for a portion of the site and and Track 4 level of remediation for a portion of the site, (ii) by not later than thirty (30) days after the date hereof, commence construction and the remediation of the Brownfield Property, (iii) subject to Unavoidable Delays with respect to the Brownfield Property, complete the work necessary for the issuance of the Brownfield Certificate of Completion (as defined below) no later than twelve (12) months after the date hereof, (iv) deliver a temporary Certificate of Occupancy to the Investor Member no later than the Completion Date, (v) by not later than forty-five (45) days after completion of such investigation and remediation required in the preceding clause (iii), submit all initial documentation required to commence the process with DEC in order to seek a Brownfield Certificate of Completion for the Brownfield Property as defined under and in accordance with the Brownfield Cleanup Program and 6 NYCRR §§375-1.9 and 375-3.9 (the **"Brownfield Certificate of Completion"**) and timely submit all additional information and documentation required by DEC in connection with the Brownfield Certificate of Completion, and to the extent DEC requires additional or corrected information before issuing the Brownfield Certificate of Completion, submit such additional or corrected information to DEC as soon as is commercially reasonable, (vi) cause the Brownfield Certificate of Completion to remain in good standing after its issuance by the DEC including, *inter alia*, by ensuring strict compliance with any Site Management Plan or other restrictions pertaining to the Brownfield Property, and (vii) construct, operate, and maintain the Project in compliance with the Brownfield Cleanup Agreement and the Brownfield Certificate of Completion and as is otherwise required to ensure the Brownfield Property complies with applicable Environmental Laws so as to avoid, to the greatest extent practicable and commercially reasonable, the occurrence of any event causing the

limitation, reduction, disallowance, or recapture of all or any part of the Brownfield Tax Credits that are allowable based upon the Brownfield Tax Credits Cost Basis and are to be allocated in accordance with *Section 7.2(n)*. Managing Member shall promptly provide the Company and the Investor Member with (A) monthly work status updates in the form of copies of requisitions, (B) all material reports submitted to, and material correspondence with, DEC in connection with investigations or remediation activities regarding the Brownfield Property, (C) all material reports submitted to, and material correspondence with, DEC regarding any required post excavation sampling, including such reports and/or correspondence evidencing compliance with applicable reporting and notification requirements under applicable Environmental Laws, and (D) the Brownfield Certificate of Completion and the final approved Brownfield Documents. Finally, Managing Member shall cause the Company to comply with any Brownfield Documents.

ARTICLE IX

WITHDRAWAL OF MANAGING MEMBER; TRANSFERS OF INTERESTS

9.1 Withdrawal of the Managing Member .

(a) The Managing Member may not withdraw from the Company or sell, transfer or assign or permit the sale, transfer or assignment of its Interest (including without limitation any collateral assignment or encumbrance) in whole or in part as Managing Member or sell, transfer or otherwise dispose of any interest, directly or indirectly, in the Managing Member, or permit any sale, transfer or disposition of a Controlling interest in a Guarantor or the Managing Member without (i) the Consent of the Investor Member and (ii) the consent of the Agency and the Lenders (including, if applicable, the approval of HUD of the Form 2530) to the extent required, and only after being given written approval by the necessary parties as provided in *Section 9.2*. Notwithstanding the foregoing, (a) the members of the Managing Member may exercise their rights pursuant to a Joint Venture Bad Boy Act, subject to Investor Member's Consent, not be unreasonably withheld, conditioned or delayed and (b) after Conversion, a transfer of non-Controlling interest of the Managing Member shall be permitted, subject to Investor Member's Consent, not be unreasonably withheld, conditioned or delayed, subject to the following: (i) Asland and Pembroke continue to own, collectively, not less than 51% of the direct or indirect membership interests of the Managing Member, (ii) Asland continues to own not less than 30% of the direct or indirect membership interests of the Managing Member, and (iii) Pembroke continues to own not less than 20% of the direct or indirect membership interests of the Managing Member. All transfers permitted under the prior sentence shall be subject to satisfaction of Investor Member's "know-your-customer" requirements and reputational risk assessment.

(b) The Managing Member shall give Notice of such transfer, sale or assignment to the Investor Member not less than 30 days prior to such transfer, sale or assignment.

(c) If the Managing Member withdraws from the Company or sells, transfers or assigns its entire Interest pursuant to *Section 9.1(a)*, or sells, transfers or disposes of any

Controlling interest in the Managing Member, it shall be and shall remain liable for all obligations and liabilities incurred by it as a Managing Member before such withdrawal, sale, transfer or assignment shall have become effective, but shall be free of any obligation or liability incurred on account of the activities of the Company from and after the time such withdrawal, sale, transfer or assignment shall have become effective.

(d) Any transfer, sale, assignment or withdrawal by the Managing Member under this *Section 9.1* shall be at the sole cost and expense of the Managing Member. The Managing Member shall pay such reasonable expenses as may be incurred by the Company or the Investor Member in connection with such transfer, including, without limitation, any real property transfer taxes.

9.2 Admission of a Successor or Additional Managing Member. A Person shall be admitted as a Managing Member of the Company, as applicable, only if the following terms and conditions are satisfied:

(a) the admission of such Person shall have been Consented to by the Managing Member or its successor (provided that no Managing Member Consent shall be required for any admission pursuant to *Section 8.14*) and the Investor Member, and consented to by the Agency, and the Lender, if required;

(b) the successor or additional Person shall have accepted and agreed to be bound by (i) all the terms and provisions of this Agreement, by executing a counterpart thereof, and (ii) all the terms and provisions of the Project Documents, by executing counterparts thereof, if requested by the Lender, and (iii) all the terms and provisions of such other documents or instruments as may be required or appropriate in order to effect the admission of such Person as a Managing Member and this Agreement evidencing the admission of such Person as a Managing Member shall have been filed and all other actions required by *Section 1.5* in connection with such admission shall have been performed;

(c) if the successor or additional Person is a corporation, partnership, limited liability company, trust or other entity, it shall have provided the Company with evidence satisfactory to Counsel for the Company of its authority to become a Managing Member to do business in the State and to be bound by the terms and provisions of this Agreement;

(d) if requested by the Investor Member, counsel for the Company shall have rendered an opinion that the admission of the successor or additional Person is in conformity with the Code and that none of the actions taken in connection with the admission of the successor Person will cause the termination or dissolution of the Company or will cause it to be classified other than as a partnership for federal income tax purposes;

(e) the Company and the Investor Member shall have been reimbursed for all reasonable expenses, including reasonable legal fees incurred by the Company and the Investor Member in connection with such assignment; and

(f) the Guarantor shall be replaced by a successor Guarantor provided by the successor Managing Member with the Consent of the Investor Member.

9.3 Events of Withdrawal of a Managing Member.

(a) In the event of the Bankruptcy of a Managing Member or the withdrawal, death or dissolution of a Managing Member or an adjudication that a Managing Member is incompetent (which term shall include, but not be limited to, insanity) the business of the Company shall be continued by the other Managing Member(s); provided, however, that if the withdrawn, Bankrupt, deceased, dissolved or incompetent Managing Member is then the sole Managing Member, or if such Managing Member withdraws from the Company in contravention of the provisions of *Section 9.1(a)*, then the Company shall be dissolved, unless within 90 days after receiving Notice of such Bankruptcy, withdrawal, death, dissolution or adjudication of incompetence, a majority in Interest of the other Members elects to designate a successor Managing Member and continue the Company upon the admission of such successor Managing Member to the Company.

(b) Upon the Bankruptcy, death, dissolution or adjudication of incompetence of a Managing Member, such Managing Member shall immediately cease to be a Managing Member and its Interest shall without further action be converted to a non-managing member Interest; provided, however, that if such Bankrupt, dissolved, incompetent or deceased Managing Member is the sole remaining Managing Member, such Managing Member shall cease to be a Managing Member only upon the expiration of 90 days after Notice to the Investor Member of the Bankruptcy, death, dissolution or declaration of incompetence of such Managing Member. Except as set forth above, such conversion of a Managing Member Interest to a Member Interest shall not affect any rights, obligations or liabilities (including without limitation, any of the Managing Member's obligations under *Section 8.11*) of the Bankrupt, deceased, dissolved or incompetent Managing Member existing prior to the Bankruptcy, death, dissolution or incompetence of such person as a Managing Member (whether or not such rights, obligations or liabilities were known or had matured).

(c) If, at the time of the Bankruptcy, death, dissolution or adjudication of incompetence of a Managing Member, the Bankrupt, deceased, dissolved or incompetent Managing Member was not the sole Managing Member of the Company, the remaining Managing Member shall immediately (i) give Notice to the Investor Member of such Bankruptcy, death, dissolution or adjudication of incompetence, and (ii) make such amendments to this Agreement and execute and file such amendments or documents or other instruments as are necessary to reflect the conversion of the Interest of the Bankrupt, deceased, dissolved or incompetent Managing Member and his or its having ceased to be a Managing Member. Such action or actions by the remaining Managing Member shall, if permission of a bankruptcy court is necessary, be deemed to have been taken subject to *Section 9.3(d)* below. The remaining Managing Member or Managing Members and the Investor Member are hereby granted an irrevocable power of attorney, coupled with an interest, to execute any or all documents on behalf of the Members and the Company and to file such documents as may be required to effectuate the provisions of this *Section 9.3*.

(d) The Managing Member, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, agrees that if a Managing Member should make application for or seek protection or relief under any of the Sections or Chapters of the United States Bankruptcy Code (for purposes of this *Section 9.3*, the "**Bankruptcy Code**"), or if

any involuntary petition is filed against a Managing Member, which is not dismissed within 90 days from the date of such filing, then, in such event, any other Member shall thereupon be entitled to immediate relief from any automatic stay imposed by Section 362 of the Bankruptcy Code, or otherwise, on or against the exercise of the rights and remedies available to such Member pursuant to this Agreement, or otherwise. The foregoing shall in no way preclude, restrict or prevent the Managing Member from filing for protection under the Bankruptcy Code.

(e) The Members acknowledge and agree that this Agreement is a contract under which the Investor Member is excused from accepting performance from the Managing Member, its assignee or trustee, if a Managing Member makes application for or seeks protection under any of the Sections or Chapters of the Bankruptcy Code, or if an involuntary petition is filed against such Managing Member. The effect of this paragraph shall be that this Agreement is hereby deemed to be subject to the exceptions to assumption and assignment of contracts set forth in Sections 365(c)(1) and 365(e)(2)(A) of the Bankruptcy Code and that the Investor Member, by its refusal to consent to an assumption or assignment of this Agreement by the Managing Member, shall be able to prevent such assumption or assignment.

(f) If a Managing Member makes application for or seeks relief or protection under any of the Sections or Chapters of the Bankruptcy Code, or if any involuntary petition is filed against said Managing Member, then, in such event, any Member may apply to or move the bankruptcy court in which such petition is filed for a change of venue to the bankruptcy court where the Company has its principal place of business, and the Managing Member hereby agrees not to oppose or object to such application or motion in any way.

9.4 Restrictions on Transfer of Investor Member's Interest.

(a) The Investor Member may at any time and without the Consent of any other Member transfer, sell, or assign its Investor Member Interest (i) to any Affiliate, (ii) to any limited partnership of which Goldman Sachs & Co. LLC, or any subsidiary or Affiliate thereof is a general partner, (iii) to any limited liability company of which Goldman Sachs & Co. LLC, or any subsidiary or Affiliate thereof is the managing member (provided, however, that no such transfer, sale, assignment or pledge shall release the Investor Member from its obligations to make Capital Contributions in accordance herewith), (iv) to any financial institution, corporation, financial service firm or insurance company that is investment grade (defined as BBB- or better rating by S&P or similar rating agency) or has net assets of \$100,000,000 or more or is a wholly-owned subsidiary of such an entity, (v) to a syndicated tax credit fund whose manager has at least five (5) years of prior experience in tax credit funds which have totaled in the aggregate at least \$100,000,000 in equity, or (vi) after the Restricted Period, to any third party that is not a Prohibited Person, and upon the assumption by any such transferee of the obligations of the transferor hereunder the transferor shall be automatically released from further liability hereunder as the Investor Member. Notwithstanding the foregoing, Investor Member shall not transfer its interest to any entity that is (i) listed on Schedule 5; or (ii) is a plaintiff in litigation, arbitration, or any other adversary proceeding with Managing Member or any of its Affiliates (or Affiliate thereof), in each case without the prior written consent of the Managing Member.

(b) Prior to end of the Restricted Period and except as permitted by *Section 9.4(a)(i)-(v)*, no Transfer or assignment of the Interest of a the Investor Member shall be

permitted unless the Managing Member shall have consented thereto, which consent shall not be unreasonably withheld, and any Lender, if required, also shall have consented thereto and (if applicable) HUD shall have approved the Form 2530 associated with such transfer. As used herein, “**Restricted Period**” shall mean the period prior to the first to occur of (i) the making by the Investor Member of all of its required Capital Contributions pursuant to *Section 5.1(c)* or (ii) any event of default under the Company’s operating agreement has occurred and continues beyond the applicable notice or cure period.

(c) The Investor Member shall give Notice of such transfer, sale or assignment to the Managing Member prior to or within a reasonable time after such transfer, sale or assignment (but no such notice shall be required in the case of a pledge or collateral assignment by the Investor Member of its Investor Member Interest).

(d) The Managing Member shall promptly cooperate (at no cost to the Managing Member or the Company) with any request by the Investor Member in connection with the permitted transfer, sale, assignment or pledge of its Interests, including by executing and delivering any certificates, documents or instruments, and causing to be delivered such opinions, in each case for the benefit of the transferee, purchaser, assignee or pledgee of such Investor Member Interest, as the Managing Member is required to deliver or cause to be delivered as a condition of the making by the Investor Member of any Capital Contribution pursuant to *Section 5.1(c)*, and by entering into any amendments to this Agreement or the exhibits hereto that such transferee, purchaser, assignee or pledgee may reasonably request provided that the same do not materially adversely affect the essential economic or other interests of the Managing Member hereunder.

(e) The Investor Member shall pay such reasonable expenses as may be incurred by the Company in connection with such transfer, including, without limitation, any transfer fees due under the Project Documents and real property transfer taxes and shall indemnify the Company and the Managing Member from any real property transfer taxes or related costs in connection with such sale.

(f) Subject to any required consent of any Lender and/or Agency, nothing in this Agreement shall limit the authority of the Investor Member which is an entity to cause or permit the sale, transfer and/or assignment of equity interests within itself, in the sole discretion of the Investor Member, and no such sale, transfer or assignment shall be deemed to constitute a transfer of the Interests of the Investor Member for any purpose hereof.

9.5 Admission of Substitute Investor Member.

(a) Subject to the other provisions of this *Article IX*, an assignee of the Interest of an Investor Member (which shall be understood to include any purchaser, transferee, donee, or other recipient of any disposition of such Interest) shall be deemed admitted as a Substitute Investor Member of the Company only upon the satisfactory completion of the following:

(i) the assignee shall have accepted and agreed to be bound by the terms and provisions of this Agreement by executing a counterpart thereof or an

appropriate amendment hereto, and such other documents or instruments as the Managing Member may require in order to effect the admission of such Person as an Investor Member;

(ii) an amended Agreement and/or Articles evidencing the admission of such Person as an Investor Member shall have been filed for recording pursuant to the requirements of the Act, if necessary;

(iii) if the assignee is not a natural person, the assignee shall have provided the Managing Member with evidence satisfactory to Counsel for the Company of its authority to become an Investor Member under the terms and provisions of this Agreement; and

(iv) the assignee or the assignor shall have reimbursed the Company and the Managing Member for all reasonable expenses, including all reasonable legal fees and recording charges, incurred by the Company or the Managing Member in connection with such assignment.

(b) For the purpose of allocation of profits, losses and credits, and for the purpose of distributing cash of the Company, a Substitute Investor Member shall be treated as having become, and as appearing in, the records of the Company as a Member upon his, her or its signing of an amendment to this Agreement, agreeing to be bound hereby.

(c) The Managing Member shall reasonably cooperate with the Person seeking to become a Substitute Investor Member by preparing the documentation required by this Section and making all official filings and publications. The Company shall take all such action, including the filing, if required, of any amended Agreement and/or Articles evidencing the admission of any Person as an Investor Member, and the making of any other official filings and publications, as promptly as practicable after the satisfaction by the assignee of the Interests of the Investor Member of the conditions contained in this *Article IX* to the admission of such Person as an Investor Member of the Company. Any cost or expense incurred in connection with such admission shall be borne by the Substitute Investor Member.

(d) Solely for purposes of adjusting Members' Capital Accounts, if any new Members are admitted to the Company as substitute Members pursuant to this *Section 9.5*, the book value of the Company's assets shall be adjusted to reflect the fair value, as determined by the Managing Member, based upon the Capital Contribution of such new Members, in accordance with Treasury Regulation Section 1.704-1(b)(2)(iv)(f), and the difference between fair value and book value, if any, shall be treated as gain or loss, allocable as Profits or Losses, in accordance with *Section 7.2(a)*.

9.6 Rights of Assignee of Company Interest.

(a) Except as provided in this Article and as required by operation of law, the Company shall not be obligated for any purpose whatsoever to recognize the assignment by any Investor Member of its Interest until the Company has received actual Notice thereof.

(b) Any Person who is the assignee of all or any portion of an Investor Member's Interest, but does not become a Substitute Investor Member and desires to make a further assignment of such Interest, shall be subject to all the provisions of this *Article IX* to the same extent and in the same manner as any Investor Member desiring to make an assignment of its Interest.

9.7 General Restriction on Transfer.

(a) Notwithstanding anything to the contrary in this Agreement, no transfer by a Member of its Interest in the Company (or any economic or other interest, right or attribute therein) may be made to any Person if (a) in the opinion of legal counsel for the Company, it would result in the Company being treated as an association taxable as a corporation, or (b) such transfer is effectuated through an "established securities market" or a "secondary market" (or the substantial equivalent thereof) within the meaning of Code § 7704.

ARTICLE X

**RIGHTS AND OBLIGATIONS
OF INVESTOR MEMBER**

10.1 Management of the Company. No Investor Member shall take part in the management or control of the business of the Company nor transact any business in the name of the Company. Except as otherwise expressly provided in this Agreement, no Investor Member shall have the power or authority to bind the Company or to sign any agreement or document in the name of the Company. No Investor Member shall have any power or authority with respect to the Company except insofar as the Consent of any Investor Member shall be expressly required and except as otherwise expressly provided in this Agreement. Nothing in this Section shall limit or restrict the rights of the Investor Member set forth in this Agreement.

10.2 Limitation on Liability of Investor Member. The liability of the Investor Member shall be limited to its Capital Contribution (plus any accrued interest on defaulted Capital Contributions in accordance with the terms hereof) as and when payable under the provisions of this Agreement, and as provided under the Code. The Investor Member shall not have any other liability to contribute money to, or in respect of the liabilities or obligations of, the Company, nor shall the Investor Member be personally liable for any obligations of the Company, except as and to the extent provided in the Code. The Investor Member shall not be obligated to make loans to the Company.

10.3 Other Activities. Any Investor Member and any Affiliate thereof may engage in or possess interests in other business ventures of every kind and description for its own account, including without limitation, serving as general or limited partner of other partnerships or managing member or member of other limited liability companies which own, either directly or through interests in other partnerships or limited liability companies, government-assisted housing projects similar to the Project wherever located. Neither the Company nor any of the Members shall have any right by virtue of this Agreement in or to such other business ventures to the income or profits derived therefrom.

10.4 Investor Member as Lender. Subject to provisions of this Agreement with respect to related party loans, any member or Affiliate of the Investor Member, including, without limitation, a bank, insurance company, Goldman Sachs Bank USA or other financial institution (such member being referred to herein as a “**Mortgagee**”) at any time may make, guarantee, own, acquire, or otherwise credit enhance, in whole or in part, a loan secured by a mortgage, deed of trust, trust deed, or other security instrument encumbering the Project (for purposes of this *Section 10.4* only, any such loan being referred to as a “**Mortgage Loan**”). Under no circumstances will a Mortgagee be considered to be acting on behalf or as an agent or the alter ego of such Investor Member. A Mortgagee may take any actions that the Mortgagee, in its reasonable discretion, determines to be advisable in connection with a Mortgage Loan (including in connection with the enforcement of a Mortgage Loan). By acquiring an interest in the Company, each Member acknowledges that to the extent permitted by applicable law no Mortgagee owes the Company or any Member any fiduciary duty or other duty or obligation whatsoever by virtue of such Mortgagee being a member of the Investor Member. Neither the Company nor any Member will make any claim against a Mortgagee, or against the Investor Member, relating to a Mortgage Loan and alleging any breach of any fiduciary duty, duty of care, or other duty whatsoever to the Company or to any Member based in any way upon the Mortgagee’s status as a member of the Investor Member.

10.5 No Fiduciary Duty. Notwithstanding anything to the contrary herein and to the fullest extent permitted by law, the Company, the Managing Member and each Member hereby expressly agree (i) that no fiduciary or other duties will be owed by the Investor Member (in any capacity in which the Investor Member or its Affiliates may be acting hereunder, including as a Lender to the Company (whether directly or indirectly through any of its subsidiaries)) to the Company (or any of its subsidiaries), the Managing Member, or any Member of the Company, (ii) that in evaluating and deciding what actions and decisions to make for the Company, the Investor Member may consider and advance such interests, including its own interests, as the Investor Member shall determine in its discretion and (iii) that the Investor Member shall not be liable to the Company (or any of its subsidiaries) or to other Members in respect of such duties.

ARTICLE XI

SALE, DISSOLUTION AND LIQUIDATION

11.1 Dissolution of the Company. The Company shall be dissolved upon the earlier of:

(a) the withdrawal, Bankruptcy, death, dissolution or adjudication of incompetency of the Managing Member who is at that time the sole Managing Member, subject to the provisions of *Section 9.3*, unless the Investor Member, within 90 days after receiving Notice of such withdrawal, Bankruptcy, death, dissolution or adjudication of incompetence, elects to designate a successor Managing Member and continue the Company upon the admission of such successor Managing Member to the Company;

(b) the sale or other disposition of all or substantially all of the assets of the Company;

(c) the election by the Managing Member, with the Consent of the Investor Member; or

(d) any other event causing the dissolution of the Company under the laws of the State unless a majority in Interest of the Members within 90 days after receiving Notice of such event elects to continue the Company.

11.2 Winding Up and Distribution.

(a) Upon the dissolution of the Company pursuant to *Section 11.1*, (i) articles of dissolution shall be filed in such offices within the State as may be required or appropriate, and (ii) the Company business shall be wound up and its assets liquidated as provided in this *Section 11.2* and the net proceeds of such liquidation, except as provided in *Section 11.2(b)* below, shall be distributed in accordance with *Section 7.5*. Liquidation distributions shall be made by the end of the Taxable Year in which the liquidation occurs or, if later, within 90 days after the date of liquidation.

(b) It is the intent of the Members that, upon liquidation of the Company (within the meaning of Treasury Regulation Section 1.704-1(b)(2)(ii)(g)), any liquidation proceeds available for distribution to the Members be distributed in accordance with the Members' respective positive Capital Account balances and the Members believe that distributions under *Section 7.5* will effectuate such intent. If, upon liquidation, there is any conflict between a distribution pursuant to the Members' respective positive Capital Account balances and the intent of the Members with respect to distribution of proceeds as provided in *Section 7.5*, the Liquidator shall, notwithstanding the provisions of *Sections 7.2 and 7.4*, allocate the Company's gains, profits and losses in a manner that will cause (as nearly as possible) the Members' positive Capital Account balances to match the amounts that would be distributed under *Section 7.5*, and shall distribute liquidation proceeds to the Members in accordance with the Members' respective positive Capital Account balances.

(c) The Liquidator shall file all certificates and notices of the dissolution of the Company required by law. The Liquidator shall proceed without any unnecessary delay to sell and otherwise liquidate the Company's property and assets; provided, however, that if the Liquidator shall determine that an immediate sale of part or all of the Company property would cause undue loss to the Members, then in order to avoid such loss, the Liquidator may, except to the extent provided by the Code, defer the liquidation as may be necessary to satisfy the debts and liabilities of the Company to Persons other than the Members. Upon the complete liquidation and distribution of the Company assets, the Members shall cease to be Members of the Company, and the Liquidator shall execute, acknowledge and cause to be filed all certificates and notices required by the law to terminate the Company.

(d) Upon the dissolution of the Company pursuant to *Section 11.1*, the Company Accountants shall promptly prepare, and the Liquidator shall furnish to each Member, a statement setting forth the assets and liabilities of the Company upon its dissolution. Promptly following the complete liquidation and distribution of the Company property and assets, the Company Accountants shall prepare, and the Liquidator shall furnish to each Member, a statement showing the manner in which the Company assets were liquidated and distributed.

11.3 Obligation of Members to Restore Deficit. If the Company is liquidated within the meaning of Treasury Regulations Section 1.704-1(b)(2)(ii)(g), if a Managing Member's Capital Account has a deficit balance (after giving effect to all contributions, distributions and allocations), such Managing Member may make Capital Contributions in the amount of such deficit in compliance with Treasury Regulations Section 1.704-1(b)(2)(ii)(b)(3). In no event will Managing Member or Investor Member have any obligation to restore any negative balance in its Capital Account. Notwithstanding the foregoing, an Investor Member shall have the right, but not the obligation, at any time to elect, in its sole discretion, by Notice given to the Managing Member to become obligated to make a Capital Contribution upon such liquidation equal to all or a portion of any negative balance in its Capital Account which obligation may be subject to such conditions as may be set forth in such Notice, or any subsequent Notice given by the Investor Member to the Managing Member.

ARTICLE XII

BOOKS AND RECORDS, ACCOUNTING TAX ELECTIONS, ETC.

12.1 Books and Records. The books and records of the Company shall be maintained on an accrual basis in accordance with sound federal income tax accounting principles. These and all other records of the Company, including information relating to the status of the Project and information with respect to the sale by the Managing Member or any Affiliate thereof of goods or services to the Company, shall be kept at the principal office of the Company and shall be available for examination there by any Member, or his duly authorized representative, at any and all reasonable times. Any Member, or his duly authorized representative, upon paying the costs of collection, duplication and mailing, shall be entitled to a copy of the list of the name and address of the Investor Member.

12.2 Bank Accounts. All funds of the Company not otherwise invested shall be deposited in one or more accounts maintained in such banking institutions as the Managing Member shall determine, and withdrawals shall be made only in the regular course of Company business on such signature or signatures as the Managing Member may, from time to time, determine with the Consent of the Investor Member. No funds of the Company shall be deposited in any financial institution in which any Member is an officer, director or holder of any proprietary interest.

12.3 Accountants; Tax Returns.

(a) The Company Accountants shall annually prepare for execution by the Managing Member all tax returns of the Company, shall annually audit the books of the Company, and shall certify, in accordance with generally accepted accounting principles, a balance sheet, a profit and loss statement, and a cash flow statement. A full detailed statement shall be furnished to all Members, showing such assets, properties, and net worth and the profits and losses of the Company for the preceding Taxable Year. All Members shall have the right and power to examine and copy, at any and all reasonable times, the books, records and accounts of the Company. If the Investor Member notifies the Managing Member that the Investor Member and its Affiliates deem it necessary to engage another firm of accountants in order to facilitate the

preparation of the financial statements of the Investor Member and/or its Affiliates, the Managing Member shall, with the Consent of the Investor Member, engage the services of another firm of independent certified public accountants.

12.4 Reports to Members.

(a) The Managing Member shall cause to be prepared and distributed to all persons who were Members at any time during a tax year of the Company:

(i) Within 120 days after the close of each Taxable Year of the Company, audited financial statements prepared by the Company Accountants in accordance with generally accepted accounting principles, which shall include a balance sheet, an income statement, a statement of cash flows and a statement of Members' equity, provided that the Managing Member shall supply draft versions of such statements at least 10 Business Days prior to the due date set forth herein;

(ii) Prior to Rental Achievement and at any times thereafter as may be requested by the Investor Member, within 25 days of the end of each calendar month, and thereafter, within 25 days of the end of each fiscal quarter, a report of operations for such month or quarter containing:

(A) a statement of accounts receivable and payable agings;

(B) the check register of the Project;

(C) during initial lease-up, updates to the lease-up budget, reforecasted lease-up schedule and regular updates/traffic reports until the property achieves 100% occupancy;

(D) during initial lease-up, a completed qualified occupancy monitoring form, in a form acceptable to the Investor Member.

(E) bank statements for any reserve account; provided, however, that if the Lender is holding a reserve, the Managing Member shall provide bank statements to the extent available from the Lender;

(F) a statement describing (a) any new agreement, contract or arrangement between the Company and a Managing Member or any Affiliate of a Managing Member, (b) the amount of all fees and other compensation and distributions and reimbursed expenses paid by the Company for the quarter to a Managing Member or an Affiliate of a Managing Member, (c) accounts receivable of over 60 days, (d) accounts payable of over 60 days, (e) copies of all insurance policies or certificates of insurance, copies of which have not previously been furnished to the Members and (f) proof of payment of real estate taxes, if any; and

(G) other material information regarding the Company and its activities during the period covered by the report.

(b) Commencing upon lease-up of the first Eligible Unit, within 20 days of the end of each calendar month, a report prepared on an accrual basis for such month containing:

- (i) a balance sheet;
- (ii) a statement of income and expense and a cash flow statement for the period then ended, which may be unaudited;
- (iii) a trial balance in Excel format; and
- (iv) a tax credit monitoring form (in a form to be agreed by reasonably agreed to by the Managing Member and the Investor Member) and rent roll of the Project and an occupancy and rental report setting forth the units leased since the last report, the rent secured, the names of all tenants under applicable leases and a listing of the units yet to be leased in the Project.

(c) if the Company or the Land benefits from any type of subsidy, insurance or other assistance provided by HUD, such information from time to time as may be required to be reported on a HUD Form 2530 by any “principal” of the Company (as such term is defined in regulations promulgated by HUD), including the most recent management and physical rating inspection report(s).

(d) Within 90 days after the end of each tax year of the Company the Managing Member shall provide to the Investor Member:

(i) a certification, in the form attached hereto as Exhibit I, by the Managing Member that (a) all Loan payments and taxes and insurance payments with respect to the Project are current as of the date of the year-end report, (b) there is no material default under the Project Documents or this Agreement, or if there is any material default, a description thereof, and (c) it has not received notice of any building, health or fire code violation or similar violation of a governmental law, ordinance or regulation against the Project or, if any such notice of any violation has been received, a description thereof;

(ii) a descriptive statement of all transactions during the tax year between the Company and the Managing Member and/or any Affiliate, including the nature of the transaction and the payments involved (including accrued cash or other payments) which will be disclosed in the audited financial statements;

(iii) a copy of the annual report to be filed with the Agency concerning the status of the Project as low-income housing;

(iv) the occupancy levels of the Project during the preceding Taxable Year;

(v) if there are any Operating Deficits or anticipated Operating Deficits, the manner in which such deficits will be funded; and

(vi) a third party compliance audit (prepared by the Compliance Consultant) confirming compliance with the Minimum Set-Aside Tests.

(e) Upon the written request of the Investor Member for further information with respect to any matter covered in *Sections 12.4(a)* and *12.4(b)* above, for any other item produced or received by the Managing Member or the Management Agent, or for any other information with respect to the Project, the Managing Member shall furnish such information within 20 days of receipt of such request.

(f) Prior to November 15 of each year, the Managing Member, on behalf of the Company, shall send to the Investor Member an estimate of the Investor Member's share of Federal Tax Credits, profits and losses of the Company for federal income tax purposes for the current Taxable Year.

(g) Within five (5) Business Days after any of the following events shall have occurred:

(A) there is a material default by the Company under the Project Documents or in payment of any mortgage, taxes, interest or other obligation on secured or unsecured debt; or

(B) any reserve has been reduced or terminated by application of funds therein for purposes materially different from those for which such reserve was established;

the Managing Member shall send the Investor Member a detailed report of such event.

(h) Within fifteen (15) Business Days after any of the following events shall have occurred:

(A) the Managing Member has received any notice of a material fact which may substantially affect further distributions of Net Cash Flow or Capital Transaction proceeds or allocations of Profits, Losses or Federal Tax Credits; or

(B) any Managing Member has pledged or collateralized his Interest in the Company;

the Managing Member shall send the Investor Member a detailed report of such event.

(i) After the date of Substantial Completion, the Managing Member, on behalf of the Company, shall send to the Investor Member a copy of (i) all applicable periodic reports covering the status of the Project as may be required by the Agency, Lender, or any Authority within 10 days of submission of such reports to the Agency, Authority and/or applicable Lender; (ii) all monthly operating statements prepared by the Management Agent within five days of submission of such reports to the Managing Member; and (iii) any other

existing operating documents or reports prepared by the Management Agent promptly upon the request of the Investor Member.

(j) Within ninety (90) days of Substantial Completion, the Managing Member shall cause to be prepared and distributed to the Investor Member the draft cost certification prepared by the Company Accountants.

(k) Within fifteen (15) days before the expiration of any insurance certificates applicable to the Project, the Managing Member shall provide to the Investor Member copies of renewal insurance certificates replacing such certificates set to expire.

(l) If the Investor Member so directs by Notice given to the Managing Member, any or all of the reports described in this *Section 12.4* shall be submitted electronically to such data or web site as is identified in such Notice.

(m) If the reports or information provided for in *Sections 12.4(a)* and *12.4(b)* above are, at any time, not provided within thirty (30) days of written notice from the Investor Member to the Managing Member that such reports have not been received by the Investor Member, the Managing Member shall be obligated to pay to the Investor Member the sum of \$50 per day, as liquidated damages, for each day beginning on the dates upon which such reports or information is(are) due pursuant to the provisions of *Sections 12.4(a)* and *12.4(b)* above until the date upon which such reports or information is(are) received by the Investor Member but in no event in excess of \$2,500 in any fiscal year; provided however, that any delays beyond the aforesaid dates in the provision of the applicable reports or information due to factors beyond the control of the Managing Member may, in the sole discretion of the Investor Member, be a cause for waiver of the aforesaid liquidated damages, but only if the delayed reports or information were supplied by the applicable aforesaid date in a draft or estimated form.

(n) If the reporting requirements of the Company Accountants set forth in any of the above provisions of this *Section 12.4* are not met, the Investor Member, in its reasonable discretion, may direct the Managing Member to dismiss the Company Accountants, and to designate successor Company Accountants, subject to the approval of the Investor Member; provided, however, that if the Managing Member and the Investor Member cannot agree on the designation of successor Company Accountants, the successor Company Accountants shall be designated by the Investor Member in its sole reasonable discretion, and the fees of such successor Company Accountants shall be paid by the Company.

(o) The Managing Member shall cause to be kept all records (including the tenant qualification documents for each tenant throughout the Compliance Period), and cause to be made all elections and certifications pertaining to the number and size of the units in the Project, occupancy thereof by tenants, income levels of tenants, the units in the Project rent levels, set asides for low-income tenants and any other matters now or hereafter required to satisfy the requirements of the Code, the Agency or any Authority and to qualify for and maintain the full amount of Federal Tax Credits in connection with the occupancy of the Eligible Units.

(p) The Managing Member shall submit to the Investor Member for its review at least 10 days prior to submission to the Agency any cost certifications or other submissions in connection with obtaining Form 8609s from the Agency. The absence of any response or objection by the Investor Member shall not constitute a waiver by the Investor Member of its rights to challenge any Accountant's Certificate or other determination with respect to the amount of Federal Tax Credits that the Company is entitled to claim.

(q) During the construction of the Project, the Managing Member shall send or cause the Developer to send (i) copies of the monthly construction requisitions simultaneously with the delivery of such requisitions to the Lender to the Investor Member and the Engineering Consultant; and (ii) copies of any monthly statements of the Lender(s) provided to the Managing Member showing draws made on the Loans and the outstanding amounts available for draws for construction (including interest) on such Loans.

(r) In addition to any other regular reporting requirements provided for in this Agreement, upon occurrence of any of the following the Managing Member shall promptly, but in no event later than within ten (10) Business Days of its receipt of actual knowledge thereof, provide the Investor Member a detailed report of such event and including, where applicable, all relevant notices received:

(i) Managing Member's receipt of notice of any default by the Company or the Managing Member in any debt, taxes, interest or other financial obligation or under the Project Documents;

(ii) any reserve has been reduced or terminated by application of funds therein for purposes materially different from those for which such reserve was established;

(iii) any default or reduction in benefits receivable by the Company under any federal, state or local rent subsidy or other grant agreement;

(iv) any material litigation and/or alleged violation of law by the Company, the Managing Member or the Project;

(v) notice of noncompliance, or IRS Form 8823 Low Income Housing Agency's Report of Noncompliance, issued by the Agency;

(vi) any IRS proceeding involving the Company;

(vii) notice of any demand for payment or draw under any construction completion guarantee, performance bond or letter of credit regarding the Company;

(viii) notice of any scheduled audit or inspection by the Agency; and

(ix) at any time during the construction of the Project, (i) construction is, or may be, stopped or suspended for a period of 30 consecutive days, or (ii) construction has or may be delayed so that in the reasonable determination of the Managing Member, (A) Substantial Completion may not be achieved by the date set

forth in the Construction Contract or (B) after the second year of the Credit Period, the Projected Federal Credit for any year during the Credit Period (as adjusted pursuant to *Section 5.2*) may not be achieved.

(s) As soon as possible following any natural disaster and/or incident of widespread property damage having an impact on the Project, the Managing Member shall send to the Investor Member a report containing the following information: (i) the extent of the damage to the Project, (ii) any expected delays in construction and (iii) the effect that the damage sustained, if any, may have on marketing and lease-up activity.

(t) With respect to an audit of the Brownfield Tax Credits, any Member receiving notice of such audit shall promptly forward a copy of said notice to all other Members whereupon Managing Member, at the cost and expense of the Company, shall cause the Company to assume responsibility for providing all reasonable and available or reasonably obtainable documentation, support, and assistance needed by the Member in the handling the audit and the Members shall exercise good faith efforts to cooperate in the defense of the entitlements to the Brownfield Tax Credits.

(u) Managing Member shall make available to Investor Member rent credit reporting for tenants through Esusu or a comparable program acceptable to Investor Member.

(v) All books of account required to be maintained by the Managing Member hereunder (or any financial statements or other information required to be prepared and delivered by the Managing Member hereunder) shall be prepared and delivered using The Goldman Sachs Group, Inc.'s Yardi platform ("**GS Yardi**").

(w) To the extent not provided to the Company by the Management Agent pursuant to the Management Agreement, Managing Member will cooperate with any ESG reporting requirements, including the use of other third party software, as reasonably requested by the Investor Member from time to time for purposes (among others) of tracking the costs, implementation schedules, and economic and/or environmental impacts of ESG Initiatives, including but not limited to:

- (1) Any ESG reporting requirements captured through Measurabl or Aquicore, as required by Investor Member; and
- (2) ESG Tracker Report in the format required by Investor Member (quarterly). Managing Member shall confirm it has obtained the correct version of the ESG Tracker Report from Owner prior to delivery of the report, if required. In connection with the delivery of the ESG Tracker Report, Investor Member may require Managing Member to report, on an aggregate basis, the diversity and inclusivity of the on-site employees of Managing Member.

(x) The Managing Member shall prepare (or cause to be prepared), at the Company's expense, such additional financial reports and other information as the Investor Member may reasonably determine are appropriate. All decisions as to accounting principles shall be made by the Investor Member.

12.5 Section 754 Elections. In the event of a transfer of all or any part of the Interest of a Managing Member or of the Investor Member, or of the transfer of all or any part of the member interests in the Investor Member, the Company may, and shall upon the request of the Investor Member, elect, pursuant to Sections 743 and 754 of the Code (or any corresponding provision of succeeding law), to adjust the basis of the Company property if, in the opinion of the Investor Member, based upon the advice of the Company Accountants, such election would be most advantageous to the Investor Member. Each Member agrees to furnish the Company with all information necessary to give effect to such election.

12.6 Fiscal Year and Accounting Method. The fiscal year of the Company (including for tax purposes) shall be the calendar year and shall not be changed without the Investor Member's Consent. The fiscal year of the Company for accounting purposes shall be the calendar year. All Company accounts shall be determined on the accrual basis.

12.7 Partnership Representative.

(a) The Managing Member hereby is designated as "Partnership Representative" of the Company, and shall engage in such undertakings as are required of the Partnership Representative of the Company, as provided under the Partnership Audit Rules. Notwithstanding the foregoing, but subject to the completion of any notices or filings as may be required by applicable law, the Investor Member shall have the right by notice given to the Managing Member to act as the Partnership Representative in lieu of the Managing Member for any periods specified in such notice. Each Member, by its execution of this Agreement, Consents to such designation of the Partnership Representative and agrees to execute, certify, acknowledge, deliver, swear to, file and record at the appropriate public offices such documents as may be necessary or appropriate to evidence such Consent.

(b) The Partnership Representative shall have and perform all of the duties required under the Code, including the following duties:

(i) Furnish the name, address, profits interest, and taxpayer identification number of each Member to the IRS;

(ii) Appoint a "designated individual" to act on its behalf as required by Treasury Regulations Section 301.6223-1; and

(iii) Within 15 calendar days after the receipt of any correspondence or communication relating to the Company or a Member from the IRS, the Partnership Representative shall forward to each Member a photocopy of all such correspondence or communication(s). The Partnership Representative shall, within five (5) Business Days thereafter, advise each Member in writing of the substance and form of any conversation or communication held with any representative of the IRS. Notwithstanding the foregoing, the Investor Member shall have the right to review and comment on, or participate in, the proposed communications with the IRS and the Partnership Representative shall cooperate with the Investor Member to carry out the Investor Member's rights pursuant to this *Section 12.7(b)(ii)*.

(c) The Partnership Representative shall not without the Consent of the Investor Member:

(i) Extend the statute of limitations for assessing or computing any tax liability against the Company (or the amount or character of any Company tax items) or select the forum for judicial review;

(ii) Settle any audit with the IRS or other taxing authority;

(iii) File a request for an administrative adjustment with the IRS or other taxing authority at any time or file a petition for judicial review;

(iv) Initiate or settle any judicial review or action concerning the affairs of the Company or an amount or character of any partnership tax item(s);

(v) Intervene in any action brought by any other Member for judicial review of a final adjustment;

(vi) Make or fail to timely make an election under Section 6226 of the Code (or any corresponding election applicable to tiered partnerships under the Partnership Audit Rules);

(vii) Take any other action (or refrain from taking any action) which would have the effect of finally resolving a tax matter affecting the rights of the Company or the Investor Member; or

(viii) Take any other action not expressly permitted by this *Section 12.7* on behalf of the Members of the Company in connection with any administrative or judicial tax proceeding.

(d) In the event of any Company-level proceeding instituted by the IRS (or state or local tax authorities) pursuant to the Partnership Audit Rules (or state and local audit rules) or any resulting contest, the Partnership Representative shall consult with the Investor Member regarding the nature and content of all action and defense to be taken by the Company in response to such proceeding (including, but not limited to, (i) providing the Investor Member with copies of all correspondence received from the tax authorities; (ii) providing the Investor Member an opportunity to attend and participate in meetings with the tax authorities; (iii) providing the Investor Member with copies of all drafts of correspondence from the Managing Member to the tax authorities and the Investor Member shall have a reasonable opportunity to comment on such drafts; and (iv) considering in good faith any suggestions from the Investor Member regarding such proceedings). The Partnership Representative also shall consult with the Investor Member regarding the nature and content of all action and defense to be taken by the Company in response to any audit or other proceeding pursuant to the Partnership Audit Rules instituted by or on behalf of the Company (including the decision to institute proceedings, whether administrative or judicial, and whether in response to a previous tax authority proceeding against the Company or otherwise). Notwithstanding the foregoing, but subject to the completion of any notices or filings as may be required by applicable law, in the event of any Company-level proceeding instituted as described in this *Section 12.7(d)*, the

Investor Member shall have the right, but not the obligation, in its sole discretion, to assume control over such proceeding and be appointed as the Partnership Representative. If the Investor Member gives notice of its desire to assume such control, the Managing Member will cooperate fully with the Investor Member.

(e) The Company shall indemnify and reimburse the Partnership Representative and the designated individual for all expenses, including legal and accounting fees, claims, liabilities, losses and damages incurred in connection with any administrative or judicial proceeding with respect to the tax liability of the Members. The payment of all such expenses shall be made before any distributions are made from Net Cash Flow or any discretionary reserves are set aside by the Managing Member. The Company and Managing Member shall have the obligation to provide funds for such purpose. Notwithstanding the foregoing, the provisions on liability and indemnification of the Managing Member set forth in *Section 8.10* of this Agreement shall be fully applicable to the Partnership Representative in its capacity as such.

(f) If the Company receives a notice of final partnership administrative adjustment that would result in an “imputed underpayment” imposed on the Company as that term is defined in Code Section 6225 (as amended by the New Partnership Audit Provisions), then the Company shall, if directed by the Investor Member, elect pursuant to Code Section 6226 (as amended by the New Partnership Audit Provisions) so as to cause the Members (rather than the Company) to make payments with respect to such imputed underpayment.

12.8 Other Capitalized Costs Election. The Company shall make elections pursuant to Section 266 of the Code related to the capitalization of certain costs (including, but not limited to, construction period interest) and carrying charges described in Section 266 of the Code.

12.9 Tax Returns.

(a) Upon reasonable notice, the Investor Member shall have the right to receive, review and comment upon any draft tax returns that it may specify, and all reasonable comments of the Investor Member will be reflected in such tax returns prior to filing. If there is a disagreement concerning whether a comment of the Investor Member should be thus reflected, the dispute shall be referred to an independent accounting firm selected by the Investor Member and reasonably acceptable to the Managing Member, whose determination shall be binding.

(b) The Managing Member will engage the Company Accountants to prepare and file tax and information returns and all other tax filings for the Company, which shall be prepared in accordance with applicable law.

(c) Drafts of Schedule K-1 and other information required by the Investor Member and/or its Affiliates for the preparation of their financial statements or tax returns, including state apportionment information, will be provided to the Investor Member within 90 days of the end of the Taxable Year. If such information is not provided to the Investor Member within 90 days after the close of each Taxable Year of the Company, then the Managing Member shall after thirty (30) days’ prior notice and demand pay to the Investor Member \$50.00 per day until such information is provided, which shall not be required if the Managing Member shall

have paid a penalty for the same delay under *Section 12.4(i)*. Final Schedule K-1s (including for state tax purposes) shall be delivered to the Investor Member no later than 90 days after the end of the Taxable Year of the Company.

(d) If requested by the Investor Member, final drafts of material tax returns will be provided to the Investor Member for review and comment no later than 90 days before the due date of such return (including any applicable extensions). Furthermore, such returns will not be submitted to the appropriate taxing authority without the Consent of the Investor Member, such consent not to be unreasonably withheld or delayed. Disputes relating to the tax returns will be referred to an independent accounting firm selected by the Investor Member and reasonably acceptable to the Managing Member, whose determination shall be binding.

12.10 Tax Matters and Partnership Classification.

(a) The Members will treat the Company as a partnership for federal income tax purposes and, to the extent relevant, for state income tax purposes.

(b) Each Member will be bound by the allocations set forth in *Article VII* and will utilize such allocations in the reporting of its share of the Company's income and loss for tax purposes. Each Member will report its distributive share of the Company's items of income, gain, loss, deduction, and credit on its separate return in a manner consistent with the reporting to it by the Company.

12.11 Cooperation to Amend.

(a) The Managing Member shall reasonably cooperate with the Investor Member to amend this Agreement if, after promulgation of final or amended Regulations or other guidance or rules issued by the IRS implementing the Partnership Audit Rules, the Investor Member determines in good faith that an amendment to this Agreement is required in order to maintain the intent of the Members as expressed in this Section with respect to any issues raised by such final or amended Regulations or other guidance or rules.

12.12 Access; Audit.

(a) The Managing Member shall permit the Members to review and copy, during normal business hours and upon reasonable advance written notice to the Managing Member at the office of the Company, all Company financial records and information and ESG records. Each Member shall have the right to have such records and information audited at Company expense; provided, however, if such audit reveals material errors or omissions in such records and information due to a breach by the Managing Member of this Agreement, the Managing Member shall reimburse the Company for the expense of audit (except no such reimbursement shall be required for an audit of ESG records). The Managing Member shall maintain (at the office of the Company) reports required or otherwise prepared and delivered hereunder, copies of which shall be furnished to the Investor Member as soon as reasonably available following the date on which such reports are prepared, at Company expense, together with (upon request from any Member) such supplementary records and reports as necessary to reflect the allocation among the Members of the tax items and distributions of the Company shown on any reports furnished (or required to be furnished) to the Members under this

Agreement. Notwithstanding anything to the contrary in this Agreement, and subject to the terms and conditions of any loan documents to which the Company or any Subsidiary is a party, any audit of the Company or any Subsidiary shall be performed by PricewaterhouseCoopers LLP, or by such other nationally-recognized auditor as the Investor Member shall appoint (PricewaterhouseCoopers LLP or any such other auditor appointed by the Investor Member, the “Company Auditor”).

ARTICLE XIII

AMENDMENTS

13.1 Proposal and Adoption of Amendments. This Agreement may be amended by the Managing Member with the Consent of the Investor Member; provided that such Consent shall not be unreasonably withheld as to any proposed amendment which does not affect the obligations of the Managing Member or the rights or obligations of any of the Members under this Agreement. The Managing Member will provide the Guarantor 10 days’ prior notice of any amendment.

ARTICLE XIV

VOTING AND MEETINGS

14.1 Method of Giving Consent. Any Consent required by this Agreement may be given by a Consent given by the consenting Member and received by the Managing Member at or prior to the doing of the act or thing for which the Consent is solicited.

14.2 Submissions to Investor Member. The Managing Member shall give the Investor Member Notice of any proposal or other matter required by any provision of this Agreement or by law to be submitted for consideration and approval of the Investor Member. Such Notice shall include any information required by the relevant provision or by law.

14.3 Meetings; Submission of Matter for Voting. Subject to the provisions of *Section 10.1*, a majority in Interests of the Investor Member shall have the authority to convene meetings of the Company and to submit matters to a vote of the Members.

ARTICLE XV

GENERAL PROVISIONS

15.1 Successors and Assigns. This Agreement is binding upon the parties hereto and their respective successors, executors, administrators, legal representatives, heirs and legal assigns and inures to the benefit of the parties hereto and, except as otherwise provided herein, their respective successors, executors, administrators, legal representatives, heirs and legal assigns.

15.2 Partition. No Member or any successor-in-interest to any Member has the right to have the property of the Company partitioned, or to file a complaint or institute any proceeding

at law or in equity to have the property of the Company partitioned, and each Member, on behalf of itself, its successors, representatives, heirs and assigns, waives any such right.

15.3 GOVERNING LAW. THIS AGREEMENT IS GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK, WITHOUT REGARD TO CONFLICT OF LAW PROVISIONS THEREOF.

15.4 Counterparts. This Agreement may be executed in two or more counterparts, each of which constitutes an original and all of which, when taken together, constitutes one Agreement. To facilitate execution of this Agreement, the parties may execute and exchange by email in PDF format counterparts of the signature pages, which shall be deemed an original.

15.5 Invalidity. Every provision of this Agreement is intended to be severable. The invalidity and unenforceability of any particular provision of this Agreement in any jurisdiction will not affect the other provisions hereof, and this Agreement must be construed in all respects as if that invalid or unenforceable provision were omitted.

15.6 Entire Agreement. This Agreement, together with all Schedules and Exhibits attached hereto (which are incorporated herein by reference), supersedes all prior agreements among the parties with respect to the subject matter hereof and contains the entire agreement among the parties with respect to its subject matter.

15.7 Liability of the Investor Member. Notwithstanding anything to contrary contained herein, neither the Investor Member nor any of its members shall have any personal liability to any of the parties to this Agreement with regard to the representations and covenants extended, or the obligations undertaken, by the Investor Member under this Agreement. If the Investor Member shall be in default under any of the terms of this Agreement, the sole recourse of any party hereto for any indebtedness due hereunder, or for any damages resulting from any such default by the Investor Member, shall be against the Interest of the Investor Member; provided however, that under no circumstances shall the liability of the Investor Member for any such default be in excess of the amount of Capital Contributions payable by the Investor Member to the Company, under the terms of this Agreement, at the time of such default plus interest at the rate described in *Section 5.8* hereof less the value of the Interest of the Investor Member, if such Interest is claimed as compensation for damages.

15.8 Environmental Indemnification. The Company and the Managing Member shall at all times jointly and severally indemnify, defend, and hold harmless the Investor Member and its Affiliates from and against any and all actual losses, damages, liabilities, claims, actions, judgments, court costs and legal or other expenses (including, without limitation, reasonable attorneys' fees and expenses, but excluding consequential, punitive and special damages and any damages based upon loss in value) which the Company or the Managing Member may incur as a direct or indirect consequence of: (a) the use, generation, manufacture, storage, treatment, release, threatened release, discharge, disposal or transportation of any Hazardous Material in, on or under the Project and (b) the existence of any Hazardous Material that is (or would be) shown on any Phase II environmental assessment of the Project. Such indemnity shall include, without limitation: (i) the costs incurred by the Company or the Managing Member, whether foreseeable or unforeseeable, of any repair, cleanup or detoxification of the Project which is required by any

governmental entity or is otherwise necessary to render the Project in compliance with all laws and regulations pertaining to Hazardous Materials; (ii) any third party tort claims or governmental claims, fines or penalties against the Company or the Managing Member; and (iii) all court costs, reasonable attorneys' fees and expenses (including investigation expenses) paid or incurred by the Company or the Managing Member. Notwithstanding anything to the contrary herein, neither Company nor the Managing Member shall have any indemnity obligations under this *Section 15.8* with respect to claims, liabilities, costs, damages and expenses caused by the Company or the Managing Member or any other Person following the replacement of the Managing Member as managing member of the Company by the Investor Member, or another Person designated by the Investor Member, as applicable.

15.9 Notices. Unless otherwise specified in this Agreement, all notices, demands, elections, requests or other communications that any party to this Agreement may desire or be required to give hereunder must be in writing and must be given (i) by hand, (ii) by a recognized overnight courier service providing confirmation of delivery, or (iii) by email transmission with a confirmatory copy sent on the day of said transmission by one of the other two permitted methods (or, in the case of the Company, as designated by the Managing Member) upon written notice to all of the Members. All notices given pursuant to this *Section 15.9* are deemed to have been given on the date of delivery as established by the delivery/ courier service confirmation (or the date on which the return receipt, or delivery/courier service confirms that acceptance of delivery was refused by the addressee). All notices given pursuant to this *Section 15.9* by the method designated in clause (iii) are deemed to have been given on the date of delivery as established by a printed copy of the email transmission provided delivery of the required confirmatory copy was made as required. Any Notice required by the provisions of this Agreement to be given to one or more Members shall be addressed as follows:

- (a) To the Investor Member:

GSB LIHTC Investor LLC
Urban Investment Group
c/o Goldman Sachs Bank USA
200 West Street
New York, New York 10282
Attention: Urban Investment Group Portfolio Manager

with a copy to:

gs-uig-docs@gs.com
gs-uig-portfolio-manager@gs.com

with a copy to:

GSB LIHTC Investor LLC
Urban Investment Group
c/o Goldman Sachs Bank USA
2001 Ross Avenue #2800
Dallas, Texas 75201

Attention: Michael Dalton
Email: michael.dalton@gs.com

with a copy to:

Sidley Austin LLP
787 Seventh Avenue
New York, New York 10019
Attention: Steven C. Koppel, Esq.

(b) To the Managing Member:

PL Sara Manager LLC
c/o Asland Capital Partners LLC
601 Lexington Avenue, 52nd Floor
New York, New York 10022
Attention: James H. Simmons III

with a copy to:

PL Sara Manager LLC
c/o Pembroke Residential Holdings LLC
70 East 55th Street, 7th Floor
New York, New York 10022
Attention: David Goldban and Joshua Siegel

with a copy to:

Nixon Peabody LLP
55 West 46th Street
New York, New York 10036
Attention: Aaron Yowell, Esq.

15.10 Power of Attorney. The Investor Member hereby is granted an irrevocable power of attorney, coupled with an interest, to execute any and all documents on behalf of the Members and the Company as shall be legally necessary and sufficient to effect all of the provisions of *Sections 8.14(b)* and/or *8.16* (after the expiration of any applicable cure period); provided, however, that the Investor Member shall not exercise such Power of Attorney unless the documents necessary to effect such provisions of *Sections 8.14(b)* and/or *8.16* have been submitted to the Managing Member and such Managing Member has exhausted all available notice and cure rights. The Managing Member shall not grant any other power of attorney without the Consent of the Investor Member. The Managing Member covenants to execute such other and further documentation as may be necessary to give effect to the grant of the power of attorney described in this *Section 15.10*.

15.11 Interpretation. This Agreement has been negotiated at arms' length and between parties who are sophisticated and knowledgeable in the subject matter hereof and who have been represented by experienced and knowledgeable legal counsel. Accordingly, any rule of law or legal decisions that would require interpretation of any ambiguity in this Agreement against the party that has drafted it shall not apply and are hereby waived. The provisions of this Agreement shall be interpreted in a reasonable manner to effectuate the intent of the parties and the purposes of the Company. Whenever in this Agreement and Exhibits hereto, the Investor Member is provided the right or authority to Consent, approve, determine, exercise discretion or withhold such Consent or approval or to take or not take similar action, such action shall, unless specifically provided otherwise in this Agreement, be taken or withheld in the Investor Member's sole and absolute discretion, and in making any determination the Investor Member shall not be deemed a fiduciary of the Company or of any Member but shall be entitled to take into account solely the interests of the Investor Member.

15.12 Publicity.

(a) Other than (i) in connection with the marketing of space in the Project, and (ii) in connection with general marketing materials prepared by the Managing Member or its Affiliates (in either of which cases the name of the Investor Member or any known Affiliate thereof shall not be used without the prior written Consent of the Investor Member), neither the Company nor any Member may issue any public statement or press release regarding the Company, the Project or its business without the prior written Consent of the Investor Member, except as required by law or any competent governmental authority (provided that in the event of any such required disclosure, the disclosing Member or the Company shall give the other Members advance notice of such disclosure).

(b) Neither the Company nor the Managing Member will, without the Consent of the Investor Member, in each instance (a) use in advertising, publicity or otherwise the name of Goldman, Sachs & Co. LLC, the Investor Member, or any of their Affiliates, or any partner, member or employee of such Affiliate, nor any trade name, trademark, trade device, service mark, symbol or abbreviation, contraction or simulation thereof owned by Goldman, Sachs & Co. LLC, the Investor Member, or any of their Affiliates, or (b) represent directly or indirectly, that any product or service offered by the Company has been approved or endorsed by Goldman, Sachs & Co. LLC, the Investor Member, or any of their Affiliates.

(c) Notwithstanding anything to the contrary herein, the Investor Member (and each employee, representative, or other agent of the Investor Member) may disclose to any and all persons, without limitation of any kind, the tax treatment and tax structure of the investment by the Investor Member in this Company and all materials of any kind (including opinions or other tax analyses) that are provided to the Investor Member relating to such tax treatment and tax structure.

15.13 Goodwill. Neither the Company name, nor the right to its use, nor the same goodwill, if any, shall be considered as an asset of the Company, and no valuation shall be put thereon for the purpose of liquidation or distribution, or for any other purpose whatsoever.

15.14 Consent to Jurisdiction. Each Member (i) irrevocably submits to the jurisdiction of any New York State court or Federal court sitting in the Borough of Manhattan, in any action arising out of this Agreement, (ii) agrees that all claims in such action may be decided in such court, (iii) waives, to the fullest extent it may effectively do so, the defense of an inconvenient forum and (iv) consents, to the fullest extent it may effectively do so, to the service of process by mail. A final judgment in any such action shall be conclusive and may be enforced in other jurisdictions. Nothing herein shall affect the right of any party to serve legal process in any manner permitted by law or affect its right to bring any action in any other court.

15.15 Waiver of Jury Trial. TO THE EXTENT PERMITTED BY APPLICABLE LAW, EACH PARTY TO THIS AGREEMENT HEREBY IRREVOCABLY WAIVES ALL RIGHT TO TRIAL BY JURY IN ANY ACTION, PROCEEDING, OR COUNTERCLAIM (WHETHER BASED ON CONTRACT, TORT OR OTHERWISE) ARISING OUT OF OR RELATING TO THIS AGREEMENT OR ANY OF THE TRANSACTIONS CONTEMPLATED HEREBY.

15.16 Arbitration.

(a) Arbitration is the exclusive method for resolution of any claims or disputes between the Company and a Member or between the Members arising out of, or in connection with, *Section 8.14* of this Agreement, and the determination of the arbitrators will be final and binding (except to the extent there exist grounds for vacation or an award under applicable arbitration statutes) on the Members.

(i) The parties agree that they will give conclusive effect to the arbitrators' determination and award and that judgment thereon may be entered in any court having jurisdiction.

(ii) The AAA Commercial Arbitration Rules will apply to any proceedings commenced under this *Section 15.16*.

(iii) The arbitrators may issue awards for compensatory damages only and may not, and will have no power to, award indirect, consequential, or punitive damages.

(iv) The parties waive any claim for, and the arbitrators will have no power to award, damages for defamation, negligent or intentional infliction of emotional distress, or similar torts based on harm to one's reputation or emotional or mental condition.

(v) All fees and expenses of the arbitrator and all other expenses of the arbitration shall be borne initially by the Members equally (i.e., 50% for each Member), but ultimately shall be borne by the non-prevailing party in the arbitration. The arbitrators shall award the prevailing party its reasonable attorneys' fees and other costs incurred in connection with the proceeding. If any party fails to appear at any properly noticed arbitration proceeding, an award may be entered against that party by default or otherwise, notwithstanding such failure to appear.

(b) The number of arbitrators will be three, each of whom will be disinterested in the dispute or controversy and impartial with respect to all parties hereto. A Member must

commence arbitration by serving a demand for arbitration on the other Members and the AAA. The initiating Member (“**Claimant**”) must appoint an arbitrator within ten (10) Business Days of the demand. The respondent(s), collectively, must appoint an arbitrator within ten (10) Business Days of the appointment of an arbitrator by the Claimant. The third arbitrator will be appointed by both arbitrators within ten (10) Business Days of appointment of the second arbitrator. If they cannot agree, the AAA will appoint the third arbitrator. If either Member fails to appoint an arbitrator as required herein, then the arbitrator appointed by the other Member shall arbitrate the dispute.

(c) The place of arbitration will be New York, New York. The arbitration will be conducted in the English language. The arbitrators shall decide the dispute in accordance with the law of New York. To the fullest extent permitted by law, they shall apply the Commercial Arbitration Rules of the AAA, except to the extent that such rules conflict with the provisions of this *Section 15.16*, in which event the provisions of this *Section 15.16*. The arbitration provisions contained herein are self-executing and will remain in full force and effect after expiration or termination of this Agreement.

15.17 Miscellaneous. This Agreement and all instruments and agreements executed by or for the benefit of the Investor Member in connection with this Agreement, including, without limitation, the Development Agreement and the Guaranty, together with any and all certificates and instruments executed in accordance with the foregoing (collectively, the “**Transaction Documents**”), are also governed by the following except as expressly stated otherwise in any particular Transaction Document. Article and Section titles or captions contained in a Transaction Document are inserted only as a matter of convenience and for reference and in no way define, limit, extend or describe the scope of the Transaction Document or the intent of any provision hereof. Whenever the singular number is used in a Transaction Document and when required by the context, the same shall include the plural, and the masculine gender shall include the feminine and neuter genders and the word “person” shall include corporation, firm, company, or other form of association. The rights and obligations arising under the Transaction Documents exist exclusively for the benefit and duty of the individuals and entities executing the Transaction Documents and, in the case of the Investor Member, the members of the Investor Member. No rule of strict construction shall be applied against any party. Time is expressly made of the essence with respect to the performance of each and every obligation under the Transaction Documents. The parties have read the Transaction Documents and have executed them voluntarily after having been apprised of all relevant information and risks and having had the opportunity to obtain legal counsel of their choice. In the event of any conflict between the terms of this Agreement and those of any document entered into prior to this Agreement, this Agreement shall govern. The Transaction Documents may be enforced by rights and remedies in law and in equity, including injunctive relief and all of such rights and remedies shall be cumulative. The parties shall perform their respective obligations under the Transaction Documents in compliance with all applicable laws; provided, however, that notwithstanding anything to the contrary herein, neither the Investor Member nor any of its Affiliates shall be required to divest any of their businesses, properties or assets, or take or agree to take any other action (including agreeing to hold separate any business or assets or take other similar actions) or agree to any limitation or restriction, that the Investor Member determines would be or presents a risk of being, individually or in the aggregate, adverse to the Investor Member or any of its Affiliates in order to resolve any objections asserted by any Authority under the Hart-Scott-

Rodino Act, the Sherman Antitrust Act or any other foreign antitrust or combination laws with respect to the transactions contemplated by this Agreement or in any of the Transaction Documents. The parties hereto acknowledge and agree that nothing in the Transaction Documents shall create a fiduciary duty of Goldman, Sachs & Co. or any Affiliate of Goldman, Sachs & Co. to the Company or the Members. Notwithstanding anything to the contrary herein or in the Transaction Documents or any actions or omissions by representatives of Goldman, Sachs & Co. or any of its Affiliates in whatever capacity, including as a Member, it is understood that neither Goldman, Sachs & Co. nor any of its Affiliates is acting as a financial advisor, agent or underwriter to the Company or any of its Affiliates or otherwise on behalf of the Company or any of its Affiliates unless retained to provide such services pursuant to a separate written agreement. No indemnifications in this Agreement or any of the other Transaction Documents shall include any consequential, punitive or special damages (whether or not an exclusion for any consequential, punitive or special damages is expressly set forth in the relevant provisions of this Agreement or any such other Transaction Document); provided, however, this shall not be deemed to release the indemnitor from the obligation to indemnify the indemnified party against any consequential, punitive or special damages that such indemnified party is required to pay to a third party. All indemnifications, representations and warranties in the Transaction Documents, if any, shall survive the termination of the Transaction Documents for any reason with respect to circumstances existing prior to that termination. Drafts of the Transaction Documents are not intended to be offers, acceptances or binding contracts. A Transaction Document shall only be binding when duly executed and delivered by all the parties thereto.

15.18 Confidentiality.

(a) No Member shall disclose or permit the disclosure of any of the terms this Agreement or of any other confidential, non-public or proprietary information relating to the Project or the business of the Company (collectively, the “**Confidential Information**”), except that such disclosure may be made (i) to any Person who is a direct or indirect member, partner, officer, director or employee of such Member or an Affiliate of such Member or counsel to or accountants of such Persons solely for their use and on a need-to-know basis, as long as such Persons are notified of the Members’ confidentiality obligations hereunder agree to be bound by the confidentiality provisions herein contained; (ii) with the prior written consent of the other Members, (iii) subject to the next paragraph, as requested or required pursuant to a subpoena, civil investigative demand (or similar process), order, statute, rule or other legal or similar requirement promulgated or imposed by a court or by a judicial, regulatory, self-regulatory (including stock exchange) or legislative body, organization, commission, agency or committee or otherwise in connection with any judicial or administrative action or proceeding or to a regulatory authority (whether in a report or pursuant to audit, examination, interrogatories or requests for information or documents or routine supervisory oversight), (iv) to any governmental authority as required by the terms of any regulatory agreement, (v) to any Lender, the Agency or HUD and their consultants and employees, (vi) to any potential purchaser of any membership interests in the Company so long as such Persons are notified of the Members’ confidentiality obligations hereunder agree to be bound by the confidentiality provisions herein contained, and (vii) as may be required or requested by the IRS or any other taxing authority in connection with the membership interest in the Company or the Federal Tax Credits related thereto, including in connection with a request for any private letter ruling, any determination letter or any audit. For the avoidance of doubt, each Member acknowledges that the affairs of

the Company are proprietary and confidential. The provisions of this *Section 15.18* shall survive the withdrawal of any Member from the Company or the transfer of any Member's interest in the Company and shall be enforceable against such Member after such withdrawal or transfer. Notwithstanding anything to the contrary and without limiting any of the exceptions set forth in clauses (i) through (vi) of this *Section 15.18*, if the Company or any Member is obligated to disclose Confidential Information to a governmental authority, the Members shall discuss and agree how to respond to such request, including the determination of what information should be redacted. The parties further agree that no Member shall make a public announcement of the proposed transaction unless agreed to in writing by the Members. Notwithstanding the foregoing, no prior notice of or other action shall be required in respect to any disclosure made to any banking, financial, tax, accounting or similar supervisory authority exercising its routine supervisory or audit functions.

(b) If a Member receives a request or demand to disclose any Confidential Information pursuant to *Section 15.18(a)*, other than with respect to disclosure to a regulatory authority or pursuant to law or regulation (whether in a report or pursuant to audit, examination, interrogatories or requests for information or documents or routine supervisory oversight), that Member shall (i) promptly notify the other Members thereof, (ii) consult with the other Members on the advisability of taking steps to resist or narrow that request or demand and (iii) if disclosure is required or deemed advisable by the Managing Member, cooperate with any of the other Members to obtain an order or other assurance that confidential treatment will be accorded the Confidential Information that is disclosed.

(c) Notwithstanding anything herein to the contrary, each Member may disclose to any person, without limitation of any kind, the U.S. federal and state income tax treatment and tax structure of the transaction and all materials of any kind (including tax opinions or other tax analyses) that are provided to such Member relating to such tax treatment and tax structure. However, any information relating to the U.S. federal or state income tax treatment or tax structure shall remain subject to the confidentiality provisions hereof (and the foregoing sentence shall not apply) to the extent reasonably necessary to enable any person to comply with applicable securities laws. "Tax structure" is limited to any facts relevant to the U.S. federal or state income tax treatment of the transaction. Notwithstanding the foregoing, no prior notice of or other action shall be required in respect to any disclosure made to any banking, financial, Tax, accounting or similar supervisory authority exercising its routine supervisory or audit functions.

15.19 No Third Party Beneficiary. This Agreement does not grant any rights, benefits or privileges to any Person not a party to this Agreement. No creditor of the Company, or of any Member, has any right whatsoever to require any Member to contribute capital to the Company.

15.20 No Fiduciary Duty of Investor Member. Notwithstanding anything to the contrary herein and to the fullest extent permitted by law, the Company, the Managing Member, and each Member hereby expressly agree (i) that, other than its obligation to make its Capital Contributions on the terms and subject to the conditions set forth herein and to acquire the Investor Member's Interest as provided in *Section 8.4 and 8.5*, no fiduciary or other duties will be owed by the Investor Member to the Company, the Managing Member or any other Member of the Company or any Affiliate of same, (ii) that in evaluating and deciding what actions and

decisions to make for the Company, the Investor Member may consider and advance such interests, including its own interests, as the Investor Member shall determine in its discretion and (iii) that the Investor Member shall not be liable to the Company (or any of its subsidiaries) or to other Members in respect of such duties.

15.21 Effective Date. This Agreement shall be effective as of the date first above written (the “Effective Date”); provided, however, this Agreement (and the admission of Investor Member to the Company) shall be effective on the Effective Date immediately prior to the transfer of an interest in the Project under the Nominee Agreement.

15.22 Approvals. All consents, approvals and other matters of similar import required pursuant to the terms of this Agreement shall be in effect only if in writing signed by the party sought to be bound.

15.23 Waivers. No waiver of any provision hereof by any party hereto may be deemed a waiver by any other party of any other matter nor may any such waiver by any party be deemed a continuing waiver of any matter.

15.24 Relationship of Members. Except as provided herein, nothing herein contained shall be construed to constitute any Member hereof the agent of any other Member hereof or to limit in any manner the Members in the carrying on of their own respective businesses or activities.

15.25 Exculpation of Members. The Members agree that (a) except as expressly set forth in this Agreement, the obligations of each of them with respect to this Agreement shall not constitute personal obligations of theirs, respectively, and (b) the obligations of each of them shall not create or involve any claim against, or personal liability on the part of, any Member’s or their Affiliates’ respective members, partners (general or limited) shareholders or employees, and (c) the Members will look solely to the Company or, if expressly provided in this Agreement, the other Member, for satisfaction of any liability of such Member under or in respect of this Agreement and will not seek recourse against any member, partner (general or limited) or shareholder or employee of such Member, or its or their personal assets, for such satisfaction.

15.26 Involvement of Members in Certain Proceedings. Should any Member become involved in legal proceedings unrelated to the Company’s business in which the Company is required by court order or applicable law to disclose books, records, an accounting, or other information, then such Member shall reimburse the Company for all actual expenses incurred by the Company in complying with such court order or applicable law.

15.27 Attorney’s Fees. If any Member seeks to enforce such Member’s rights under this Agreement by legal proceedings or otherwise, the non-prevailing party shall pay the prevailing party’s costs and expenses, including without limitation, reasonable attorneys’ fees and costs and witness fees.

15.28 Signage. If the Managing Member elects to erect any display or signage, any such sign, emblem, banner or other display containing the name or trademark of either Member used in connection with the construction and development of the Project and operation of the

Company shall be subject to approval by the Member owning such name or trademark prior to display and the Investor Member may, at its option, require such sign, emblem, banner or display to contain a reference to the Investor Member, as approved by the Investor Member.

15.29 Incorporation of Exhibits, Recitals and Schedules. The Exhibits, Annexes, Recitals and Schedules identified in this Agreement are incorporated herein by reference and made a part hereof.

DRAFT

IN WITNESS WHEREOF, the parties have affixed their signatures and seals to this Operating Agreement of PL SARA LLC as of the date first above written.

MANAGING MEMBER:

PL SARA MANAGER LLC,
a New York limited liability company

By: 

Name: James H. Simmons III

Title: Authorized Signatory

[Signatures continue on next page.]

DRAFT

IN WITNESS WHEREOF, the parties have affixed their signatures and seals to this Operating Agreement of PL SARA LLC as of the date first above written.

INVESTOR MEMBER:

GSB LIHTC INVESTOR LLC,
a Delaware limited liability company

By: 

Name: Andrea Gift Allan

Title: Authorized Signatory

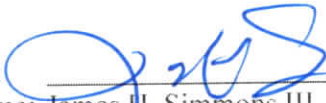
[Signatures continue on next page.]

DRAFT

IN WITNESS WHEREOF, the parties have affixed their signatures and seals to this Operating Agreement of PL SARA LLC as of the date first above written.

WITHDRAWING MEMBER:

ATREIDES HOLDINGS LLC,
a New York limited liability company

By: 
Name: James H. Simmons III
Title: Authorized Signatory

[Signatures continue on next page.]

DRAFT

IN WITNESS WHEREOF, the parties have affixed their signatures and seals to this Operating Agreement of PL SARA LLC as of the date first above written.

**DEVELOPER, WITH RESPECT TO ITS
OBLIGATIONS UNDER THIS AGREEMENT:**

PL SARA DEVELOPER LLC,
a New York limited liability company

By: 

Name: James H. Simmons III

Title: Authorized Signatory

DRAFT

Exhibit D

Certificate of Subsistence of the Borrower

DRAFT

STATE OF NEW YORK

DEPARTMENT OF STATE

Certificate of Status

I, ROBERT J. RODRIGUEZ, Secretary of State of the State of New York and custodian of the records required by law to be filed in my office, do hereby certify that upon a diligent examination of the records of the Department of State, as of the date and time of this certificate, the following entity information is reflected:

Entity Name: PL SARA LLC
DOS ID Number: 5232020
Entity Type: DOMESTIC LIMITED LIABILITY COMPANY
Entity Status: EXISTING
Date of Initial Filing with DOS: 11/09/2017

Statement Status: CURRENT
Statement Due Date: 11/30/2023

No information is available from this office regarding the financial condition, business activity or practices of this entity.



WITNESS my hand and official seal of the Department of State,
at the City of Albany, on March 08, 2022 at 03:31 P.M.

ROBERT J. RODRIGUEZ, Secretary of State

By Brendan C. Hughes
Executive Deputy Secretary of State

Authentication Number: 100001191537 To Verify the authenticity of this document you may access the
Division of Corporation's Document Authentication Website at <http://ecorp.dos.ny.gov>

Exhibit F

Articles of Organization of the Managing Member

DRAFT

NEW YORK STATE DEPARTMENT OF STATE
DIVISION OF CORPORATIONS, STATE RECORDS AND UNIFORM COMMERCIAL CODE
FILING RECEIPT

ENTITY NAME : PL SARA MANAGER LLC
DOCUMENT TYPE : ARTICLES OF ORGANIZATION
ENTITY TYPE : DOMESTIC LIMITED LIABILITY COMPANY

DOS ID : 6379843
FILE DATE : 01/19/2022
FILE NUMBER : 220120000234
TRANSACTION NUMBER : 202201190002271-543269
EXISTENCE DATE : 01/19/2022
DURATION/DISSOLUTION : PERPETUAL
COUNTY : NEW YORK



SERVICE OF PROCESS ADDRESS : THE LLC
70 EAST 55TH STREET, 7TH FLOOR
NEW YORK, NY, 10022, USA
FILER : DAVID GOLDBAN
70 EAST 55TH STREET, 7TH FLOOR
NEW YORK, NY, 10022, USA
SERVICE COMPANY : COGENCY GLOBAL INC.
SERVICE COMPANY ACCOUNT : 26
CUSTOMER REFERENCE : NYCORP

You may verify this document online at : <http://ecorp.dos.ny.gov>
AUTHENTICATION NUMBER : 100000943807

TOTAL FEES:	\$235.00	TOTAL PAYMENTS RECEIVED:	\$235.00
FILING FEE:	\$200.00	CASH:	\$0.00
CERTIFICATE OF STATUS:	\$0.00	CHECK/MONEY ORDER:	\$0.00
CERTIFIED COPY:	\$10.00	CREDIT CARD:	\$0.00
COPY REQUEST:	\$0.00	DRAWDOWN ACCOUNT:	\$235.00
EXPEDITED HANDLING:	\$25.00	REFUND DUE:	\$0.00

STATE OF NEW YORK
DEPARTMENT OF STATE

I hereby certify that the annexed copy for PL SARA MANAGER LLC, File Number 220120000234 has been compared with the original document in the custody of the Acting Secretary of State and that the same is true copy of said original.



WITNESS my hand and official seal of the
Department of State, at the City of Albany,
on January 20, 2022.

Brendan C. Hughes

Brendan C. Hughes
Executive Deputy Secretary of State



**Division of Corporations,
State Records and
Uniform Commercial Code**

New York State
Department of State
**DIVISION OF CORPORATIONS,
STATE RECORDS AND
UNIFORM COMMERCIAL CODE**
One Commerce Plaza
99 Washington Ave.
Albany, NY 12231-0001
www.dos.ny.gov

(This form must be printed or typed in black ink)

**ARTICLES OF ORGANIZATION
OF**

PL Sara Manager LLC

(Insert name of Limited Liability Company)

Under Section 203 of the Limited Liability Company Law

FIRST: The name of the limited liability company is:

PL Sara Manager LLC

SECOND: The county within this state in which the office of the limited liability company is to be located is: New York

THIRD: The Secretary of State is designated as agent of the limited liability company upon whom process against it may be served. The address within or without this state to which the Secretary of State shall mail a copy of any process against the limited liability company served upon him or her is:

70 East 55th Street – 7th Floor
New York, NY 10022

X /s/ David Goldban
(Signature of Organizer)

David Goldban
(Print or Type Name of Organizer)

ARTICLES OF ORGANIZATION
OF

PL Sara Manager LLC

(Insert name of Limited Liability Company)

Under Section 203 of the Limited Liability Company Law

Filer's Name and Mailing Address:

David Goldban

Name:

Company, if Applicable:

70 East 55th Street – 7th Floor

Mailing Address:

New York, NY 10022

City, State and Zip Code:

NOTES:

1. This form was prepared by the New York State Department of State for filing articles of organization for a domestic limited liability company. It does not contain all optional provisions under the law. You are not required to use this form. You may draft your own form or use forms available at legal stationery stores.
2. The Department of State recommends that legal documents be prepared under the guidance of an attorney.
3. The Limited Liability Company Law requires that the name end with "Limited Liability Company," "LLC" or "L.L.C." The name of the limited liability company must be uniformly stated throughout this certificate.
4. The filer may not be the limited liability company being formed.
5. The certificate must be submitted with a \$200 filing fee made payable to the Department of State.

(For Office Use Only)

Exhibit G

Operating Agreement of the Managing Member

DRAFT

EXECUTION

PL SARA MANAGER LLC

AMENDED & RESTATED OPERATING AGREEMENT

This **AMENDED & RESTATED OPERATING AGREEMENT** (this “**Agreement**”) of **PL SARA MANAGER LLC** is made effective as of March 31, 2022 (the “**Effective Date**”) by and between **ATREIDES HOLDINGS LLC**, a New York limited liability company having an address at c/o Asland Capital Partners LLC, 601 Lexington Avenue, 52nd Floor, New York, New York 100022 (the “**Atreides**”) and **HP PARK LANE SENIOR HOUSING DEVELOPMENT FUND COMPANY, INC.**, a New York not-for-profit corporation organized pursuant to Article XI of the Private Housing Finance Law of the State of New York, having an address at c/o NYC Partnership Housing Development Fund Company, Inc., 253 West 35th Street, 3rd Floor, New York, New York 10001 (the “**HDFC**”).

WITNESSETH:

WHEREAS, the Company was formed on January 19, 2022 (the “**Formation Date**”), by the filing of Articles of Organization with the Secretary of State of the State of New York; and

WHEREAS, **Atreides**, entered into an Operating Agreement dated as of the Formation Date (the “**Original Operating Agreement**”) for the Company under the Act (defined herein), pursuant to which **Atreides** is the sole member of the Company; and

WHEREAS, the parties hereto wish to enter into this Agreement in order to (i) provide for the admission of the **HDFC** to the Company as of the Effective Date, and (ii) amend and restate the Original Operating Agreement and the terms and conditions of the business, operation, and management of the Company;

NOW, THEREFORE, in consideration of the foregoing, of mutual promises of the parties hereto set forth herein and of other good and valuable consideration, the receipt and sufficiency of which hereby are acknowledged, the parties hereby agree to continue the Company pursuant to the Act, as set forth in this Agreement, and that the Statement in Lieu is hereby terminated and superseded by the provisions of this Agreement, as follows:

ARTICLE ONE

DEFINITIONS

The defined terms used in this Agreement shall, unless the context otherwise requires, have the meanings specified in this Article One.

“Act” shall mean the New York Limited Liability Company Law, Chapter 34 of the consolidated Laws of the State of New York, Section 101, et. seq. (McKinney 2001), as it may be amended from time to time, and any successor to said Law.

“Adjusted Capital Account Deficit” shall have the meaning set forth in Section 6.2.1.

“Affiliate” shall mean with respect to any Member, a Person that directly or indirectly, through one or more intermediaries, has control of, is controlled by, or is under common control with, such Member. For these purposes, control means the possession, directly or indirectly, of the power to direct or cause the direction of the management of any Person whether through the ownership of voting securities, by contract or otherwise.

“Approved Scope of Work” shall mean the plans of the work to be performed in connection with the Construction, which plans shall be subject to the approval of the Managing Member.

“Articles of Organization” shall mean the Company’s Articles of Organization as filed with the Secretary of State, as it may be amended, supplemented or restated from time to time.

“Capital Account” shall have the meaning set forth in Section 3.2.

“Capital Contribution” shall mean the amount of cash and the fair market value of any property (other than cash) that a Member contributes or is deemed to have contributed to the Company pursuant to Section 3.1.

“Code” shall mean the Internal Revenue Code of 1986, as amended from time to time (or any corresponding provisions of any succeeding law).

“Company” shall have the meaning set forth in Section 2.2.

“Compliance Period” shall have the meaning ascribed to it in Section 42(i) of the Code.

“Consent” or **“Consent of the Members”** or **“Consent of the Managing Member(s)”** shall mean the unanimous vote of the Managing Member(s) or Members, as applicable, then entitled to vote on such matter, without regard to Percentage Interests.

“Construction” shall mean the construction of the Project to be performed in accordance with the Approved Scope of Work.

“Depreciation” shall mean, with respect to each fiscal year or other period, an amount equal to the depreciation, amortization or other cost recovery deduction allowable with respect to a Company asset for such year or other period, except that, if the Gross Asset Value of an asset differs from its adjusted basis for Federal income tax purposes at the beginning of such year or other period, Depreciation shall be an amount that bears the same ratio to such beginning Gross Asset Value as the Federal income tax depreciation, amortization or other cost recovery

deduction for such year or other period bears to such beginning adjusted tax basis; provided, however, that if the Federal income tax depreciation, amortization, or other cost recovery deduction for such asset for such year is zero, Depreciation shall be determined with reference to such beginning Gross Asset Value using any reasonable method selected by the Managing Member(s).

“Developer” shall have the meaning set forth in Section 2.7.4.

“Development Agreement” shall have the meaning set forth in Section 2.7.4.

“Developer Fee” shall have the meaning set in Section 2.7.4.

“Distributive Rights” shall mean a Member’s right to receive distributions under this Agreement.

“GC” shall have the meaning set forth in Section 2.7.7(c).

“Gross Asset Value” shall mean the adjusted basis for Federal income tax purposes of each item of Company property, except that the Gross Asset Value of each such item shall be adjusted to equal its gross fair value at the time of any of the events described in Section 3.2.3. Following any such adjustment, the Gross Asset Value of such item shall be reduced by Depreciation with respect to such item.

“Indemnified Person” shall have the meaning set forth in Section 4.3.

“Initial Contributions” shall have the meaning set forth in Section 3.1.1.

“Managing Member” or **“Managing Members”** shall have the meaning set forth in Section 2.7.1.

“Member Loans” shall have the meaning set forth in Section 3.3.

“Members” shall have the meaning set forth in Section 2.6.1.

“Membership Interest” or **“Membership Interests”** shall have the meaning set forth in Section 2.6.1.

“Net Cash Flow” shall mean the gross receipts on a cash basis derived, either directly or through the Owner, from the operation and leasing of the Project, funds available to the Company as a result of mortgage financing or refinancing, the sale of a portion or the whole of the Project (including the principal and interest received in payment of any note received as consideration for any such sale), an award in partial condemnation, or proceeds of insurance, arising by reason of a taking, or damage to, or destruction of part of the Project not applied to the costs of restoration thereof, interest or other income from reserves or from any source including without limitation the Company, other than the capital contributions of the Members, plus any

reductions in the amount of the reserve previously established pursuant to subparagraph (iii) hereof, less (i) cash expenses incurred in the ordinary course of the operation of the business of the Company, including interest and principal repayments on obligations to third parties, if any, taxes, insurance and payments of all other operating expenses (but not including depreciation or amortization taken with respect to the Company's assets); (ii) cash expenditures for capital expenses, improvements and replacements, to the extent not funded by borrowing, capital contributions, or similar means; and (iii) a reasonable reserve, if any, which is required by any lender and/or investor of the Company or the Owner.

"Net Income" or **"Net Loss"** shall mean with respect to each fiscal year or other period, an amount equal to the Company's Taxable Income or Tax Loss, as the case may be, for such year or period, together with the following adjustments:

(a) any income of the Company that is exempt from Federal income tax and not otherwise taken into account in computing Net Income or Net Loss pursuant to this definition shall be added to such Taxable Income or Tax Loss;

(b) any expenditures of the Company described in Code Section 705(a)(2)(B) or treated as Code Section 705(a)(2)(B) expenditures pursuant to Regulations §1.704-1(b)(2)(iv)(i) and not otherwise taken into account in computing Net Income or Net Loss pursuant to this definition shall be subtracted from such Taxable Income or Tax Loss;

(c) in the event the Gross Asset Value of any Company property is adjusted pursuant to Section 3.2.3, (A) the amount of such adjustment shall be taken into account as a gain or loss on disposition of such property for purposes of computing Net Income and Net Loss, and (B) in lieu of the depreciation, amortization, and other cost recovery deductions taken into account in computing such taxable income or loss, there shall be taken into account Depreciation for such fiscal year or other period, computed in accordance with the definition of Depreciation herein;

(d) gain or loss resulting from any disposition of Company property with respect to which gain or loss is recognized for Federal income tax purposes shall be computed by reference to the Gross Asset Value of the property disposed of, notwithstanding that the adjusted tax basis of such property may differ from its Gross Asset Value; and

(e) notwithstanding any other provision of this definition of Net Income and Net Loss, any items comprising the Company's Net Income or Net Loss that are allocated pursuant to Section 6.2 shall not be taken into account in computing Net Income or Net Loss.

"Owner" shall mean PL SARA LLC, the beneficial owner of the Project.

"Ownership Change" shall have the meaning set forth in Section 6.3.2.

"Percentage Interest" shall mean the percentage interest of each Member as set forth on Schedule "A".

“Person” shall mean any individual, partnership, corporation, limited liability company, unincorporated organization or association, trust or other entity.

“Premises” shall mean the real property and the improvements now or hereafter situated thereon located at 1940 Turnbull Avenue, Bronx, New York, and designated on the Tax Map of the City of New York, Queens County as Block 3672, Lot 30.

“Prime Rate” shall mean a rate per annum equal to the annual rate of interest publicly announced from time to time by Goldman Sachs Bank USA, as its prime rate in effect at its principal office in New York City.

“Proceeding” shall have the meaning set forth in Section 4.3.

“Project” shall mean the affordable housing residential rental project being developed by the Owner on the Premises consisting of one building comprised of a total of 154 residential rental units for persons and families of low-income and moderate-income inclusive of one (1) superintendent’s unit and ancillary residential space.

“Regulations” shall mean the Income Tax Regulations promulgated under the Code, as such regulations may be amended from time to time (including corresponding provisions of any succeeding regulations).

“Secretary of State” shall mean the New York Secretary of State.

“Substitute Member” shall mean any Person who or which is admitted to the Company as a Substitute Member pursuant to Section 7.2.

“Taxable Income” or **“Tax Loss”** shall mean with respect to each fiscal or other period, an amount equal to the Company’s taxable income or loss for such year or period determined in accordance with Code Section 703(a) (for this purpose, all items of income, gain, loss or deduction required to be separately stated pursuant to Code Section 703(a)(1) shall be included in such taxable income or loss).

“Tax Matters Member” shall have the meaning set forth in Section 10.6.

“Transfer” shall mean any sale, transfer, gift, assignment, pledge or grant of a security interest, by operation of law or otherwise, in or of an interest in the Company or of rights under this Agreement, excluding, however, any grant of such a security interest in favor of the Company.

ARTICLE TWO

ORGANIZATION

2.1 Continuation. The undersigned hereby continue the Company as a limited liability company under the Act.

2.2 Name. The name of the Company shall be “PL SARA Manager LLC” (the “**Company**”).

2.3 Purposes. The purposes for which the Company is formed are as follows: to serve as managing member of Owner; to directly or indirectly, acquire, finance, own, maintain, improve, operate, develop, construct, rehabilitate, manage, lease and if appropriate or desirable, sell or otherwise dispose of all or any portion of the Project; to engage in any and all manner of business incidental to the foregoing activities; and subject to the unanimous consent of the Members, to engage in any lawful act or activity for which limited liability companies may be organized pursuant to the laws of the State of New York. The Company shall have the power to do any and all acts and things necessary, appropriate, proper, advisable, incidental to or convenient for furtherance and accomplishment of its purposes.

2.4 Principal Office. The location of the principal office of the Company shall be located at the c/o Asland Capital Partners LLC, 601 Lexington Avenue, 52nd Floor, New York, New York 100022, or shall be at such other locations as the Managing Member may, from time to time, designate.

2.5 Duration. The term of the Company commenced on the date that the Articles of Organization were filed by the Secretary of State and shall continue in full force and effect in perpetuity, unless earlier terminated in accordance with the provisions of this Agreement.

2.6 Members and Membership Interests.

2.6.1 The Members of the Company and their percentage membership interests (individually the “Membership Interest” or collectively the “**Membership Interests**”) are listed on Schedule “A” attached hereto (collectively, the “**Members**” and, individually, each a “**Member**”). A Member’s Membership Interest or Membership Interests is his, her or its interest in the Company’s assets, liabilities, capital, Net Income or Net Loss, subject to the provisions of and except as otherwise described in this Agreement and the Act. The Membership Interest or Membership Interests shall be personal property for all purposes.

2.6.2 Additional Members may be admitted into the Company as provided for in this Agreement. Unless named in this Agreement, or unless admitted to the Company as a Substitute Member as provided herein, no Person shall be considered a Member, and the Company need deal only with the Members so named and so admitted. The Company shall not be required to deal with any other Person by reason of an assignment by a Member or by reason of the dissolution, death or bankruptcy of a Member, except as otherwise provided in this Agreement.

2.6.3 No Member shall be entitled to any fees, commissions or other compensation from the Company for any services rendered to or performed for the Company, except as provided in this Agreement.

2.6.4 Except as otherwise provided herein, no Member shall give any consent on any matter or take any action as a Member acting on behalf of or binding the Company, unless such matter shall first have been approved or consented to by the Managing Member(s). Except as otherwise provided in this Agreement or as required by the Act (which requirement shall not be permitted by the Act to be waived by this Agreement), the Members shall not be entitled to vote on any matter. It is the intention of the Members that, to the fullest extent permissible under the Act and except as otherwise provided herein, all matters shall be determined and all action taken by the Managing Member(s), rather than the Members. The Company shall not be required to hold annual or other meetings of the Members. Subject to the foregoing, a meeting of the Members may be called at any time by the Managing Member(s). If called, meetings of Members shall be held at the Company's principal place of business or such other location selected by the Managing Member(s). Not less than five (5) days nor more than thirty (30) days before each meeting, the Managing Member(s) shall give written notice of the meeting to each Member entitled to vote at the meeting. The notice shall state the time, place and purpose of the meeting. Notwithstanding the foregoing provisions, each Member who is entitled to notice waives notice if before or after the meeting the Member signs a waiver of notice which is filed with the records of Members' meetings, or is present at the meeting in person or by proxy. At a meeting of Members, the presence in person or by proxy of Members holding not less than two-thirds (2/3) of the Membership Interests shall constitute a quorum. A Member may vote either in person or by written proxy signed by the Member or by its duly authorized attorney in fact. Members may participate in a meeting by means of conference telephone or similar communications equipment by means of which all persons participating in the meeting can speak to and hear each other. Such participation shall constitute presence in person at the meeting. Whenever the Members are required or permitted to take any action by vote, such action may, upon the consent of the requisite number of Members setting forth the actions so taken and signed by the Members (or the required number thereof), be taken without a meeting.

2.6.5 The HDFC shall not engage in any business or venture or possess any interest in any business or venture other than that arising out of the ownership, operation and development of the Project without the prior written consent of all of the Members.

2.7 Management.

2.7.1 The business, operations and affairs of the Company shall be managed by one or more managing members (the "**Managing Member**" or "**Managing Members**"). The Members hereby irrevocably agree to vote and do hereby vote their interests to elect Atreides as the sole initial Managing Member of the Company. Any vacancy among the Managing Member(s) shall be filled by Consent of the Members. Each Managing Member shall serve until its resignation.

2.7.2 Each Managing Member, upon prior written notice to the Members, may designate one or more individuals to act on its behalf as Managing Member hereunder.

2.7.3 Notwithstanding anything to the contrary in this Agreement, the following shall be “Major Decisions” and the Managing Member(s) shall not undertake any of the following actions without the unanimous consent of the Members:

- (a) Amend this Agreement;
- (b) Deviate from any of the purposes of the Company as set forth in Section 2.3;
- (c) Cause the Company to guarantee the obligations of any Person other than the Owner;
- (d) Admit any other Members to the Company except as provided herein;
- (e) Transfer a Membership Interest, except as otherwise provided in this Agreement;
- (f) Resign or otherwise withdraw from the Company, except as otherwise provided in this Agreement;
- (g) Acquire any interest in any entity other than Owner;
- (h) Merge, combine, or consolidate the Company with any other Person; and
- (i) cause the Owner to take, or consent to the Owner taking, any of the foregoing actions with respect to the Owner, the Company’s participation in the Owner, the members of the Owner, or the Project, as the case may be.

2.7.4 (a) The Managing Member(s) shall be entitled to and shall be reimbursed by the Company for all reasonable out-of-pocket expenses (exclusive of normal overhead expenses, such as, without limitation, office rent, office staff and personnel, telephone, meals, automobile transportation) incurred by any Managing Member on behalf of the Company.

(b) A development fee (“**Developer Fee**”) shall be paid to an affiliate of Atreides (in such capacity, the “**Developer**”) pursuant to a certain development agreement to be entered into between the Developer and the Owner (“**Development Agreement**”). The Developer Fee shall be payable as and when described in the Development Agreement.

2.7.5 All decisions made for and on behalf of the Company by Consent of the Managing Member(s) shall be binding upon the Company. No Person dealing with any Managing Member shall be required to determine its authority to enter into any undertaking on behalf of the Company, nor to determine any fact or circumstance bearing on the existence of such authority; provided, however, that nothing herein contained shall extinguish, limit or condition the liability of any Managing Member to the Members to discharge its obligations in accordance with this Agreement and the Act. Any one Managing Member can execute, on behalf of the Company, contracts, agreements, instruments, leases, notes or bonds, mortgages on

Company assets securing indebtedness and any and all other documents incidental thereto provided there is the requisite Consent as provided in this Agreement to take such action.

2.7.6 The Members agree that (i) the Project will be beneficially owned by the Owner; and (ii) the Company shall serve as the managing member of Owner. The Project shall be developed and operated such that it shall be eligible to receive an allocation of low-income housing tax credits under Section 42 of the Internal Revenue Code of 1986, as amended. The Members agree to cause the Owner to admit a low income housing tax credit investor member with an approximate 99.99% membership interest in the Owner (the “**Low Income Housing Tax Credit Investor**”) to be selected by the Managing Member in its sole discretion.

2.7.7 (a) The Members agree that, subject to the approval of the Investor Member and the Project’s lenders, the Company shall cause the Owner to hire Grenadier Realty Management LLC to serve as the initial management agent for the Project (“**Management Agent**”) pursuant to a Management Agreement to be entered into between the Management Agent and the Owner (the “**Management Agreement**”) and shall be paid a management fee as described therein. Any change in the Management Agent shall require the Consent of the Managing Member(s).

(b) The HDFC may (i) participate with and, if requested by Atreides, coordinate with Atreides and the Management Agent in the marketing and leasing of the residential rental units contained in the Project; and (ii) participate with and, if requested by Atreides, coordinate with Atreides in formulating a method of tenant selection in conformance with all governmental and low-income housing tax credit requirements.

(c) Subject to the approval of Investor Member and Project’s lender approval, the Company shall cause the Owner to hire Consigli Construction Co., Inc., or an affiliate thereof (“**GC**”) as the general contractor for the Project pursuant to the terms of a fixed price or stipulated sum construction contract.

2.7.8 Except as specifically provided in Sections 2.7.3 and 2.7.7, all decisions and actions by or on behalf of the Company, including all decisions and actions concerning the financing, development and operation of all or any portion of the Project, shall be made by Consent of the Managing Member(s). The Managing Member(s) in addition to (and not in limitation of) all other powers held by them, shall have the power and authority to:

(a) Make any changes to all or any portion of the Project’s development budget and approve construction change orders;

(b) Make any change to the Approved Scope of Work;

(c) Enter into or modify any agreement or contract binding on the Company or the Owner;

(d) Terminate the services of the Company's accountant or attorneys or cause the Owner to terminate the services of the Owner's accountants, the Owner's attorneys, the architect for the construction of all or any portion of the Project, the GC, the Management Agent for the Project or terminate, amend or modify the contract with any of them or any material agreement affecting all or any portion of the Project or grant any material waiver of consent thereunder; and

(e) Cause the Owner to sell and/or refinance all or any portion of the Project.

2.7.9 The Managing Member(s) shall arrange debt and equity financing for the Project. It is contemplated that the financing will consist of (i) construction mortgage loans and permanent mortgage loans from, or credit enhanced by, as the case may be, a private financial institution, the New York City Department of Housing Preservation and Development and/or the State of New York Housing Finance Agency; and (ii) equity from the proceeds of low-income housing tax credits.

2.7.10 If the Members or Managing Member(s) are unable to agree upon any matter or matters arising under this Agreement for which unanimous consent or approval of the Members or Managing Member(s) is required, such matter shall, upon the request of any party involved, be submitted to, and settled by, arbitration in the County in which the principal place of business of the Company is then located, pursuant to the commercial arbitration rules then in effect of the American Arbitration Association (or at any other time or place or under any other form of arbitration mutually acceptable to the parties involved). Any award rendered shall be final and conclusive upon the parties and a judgment thereon may be entered in a court of competent jurisdiction. The expenses of the arbitration shall be borne equally by the parties to the arbitration, provided that each party shall pay for and bear the cost of its own experts, evidence and attorneys' fees, except that in the discretion of the arbitrator any award may include the attorneys' fees of a party if the arbitrator expressly determines that the party against whom such award is entered has caused the matter, dispute, controversy or claim to be submitted to arbitration as a dilatory tactic or in bad faith.

ARTICLE THREE

CAPITAL; CAPITAL ACCOUNTS; AND LOANS

3.1 Capital Contributions.

3.1.1 Each Member has made the initial Capital Contributions (the "**Initial Contributions**") as set forth opposite his or her name on Schedule A hereto.

3.1.2 Except as provided in Section 3.1.1, no Member shall be required to make any other contribution of capital to the Company, in cash or any other property.

3.1.3 No Member shall be entitled to withdraw any part of its Capital Contribution from the Company or to receive any distribution from the Company, except as expressly provided in

this Agreement. No Member shall be entitled to demand or receive any property from the Company other than cash as expressly provided herein.

3.1.4 No Member shall be paid interest on any Capital Contribution.

3.2 Capital Accounts. An individual capital account (the “**Capital Account**”) shall be maintained for each Member in accordance with the following provisions:

3.2.1 Each Member’s initial Capital Account balance is as set forth on Schedule “A” hereto. Following the date hereof, each Member’s Capital Account shall be credited with (1) the amount of additional contributions made by such Member to the Company; and (2) the amount of such Member’s allocable share of Net Income and any items of Company income and gain that are specially allocated to such Member pursuant to Article Six hereof.

3.2.2 Each Member’s Capital Account shall be charged with (1) the amount of cash distributed to such Member by the Company (other than cash distributed in repayment of any loan by such Member to the Company or as payment of interest thereon); (2) the amount of such Member’s allocable share of Net Loss and any items of Company loss and deduction that are specially allocated to such Member pursuant to Article Six hereof; (3) the Gross Asset Value of any property distributed to such Member by the Company (net of liabilities secured by such distributed property that such Member is considered to assume or take subject to under Code Section 752); and (4) the amount of any expenditures described in Code Section 705(a)(2)(B) allocated to such Member.

3.2.3 In the event of (1) the acquisition of an additional interest in the Company by any new or existing Member in exchange for more than a de minimis Capital Contribution, (2) the distribution by the Company to a Member of more than a de minimis amount of the assets of the Company as consideration for an interest in the Company, (3) the liquidation of the Company for federal income tax purposes pursuant to Regulation §1.704-1(b)(2)(ii)(g), or (4) in connection with an election under Sections 734(b) or 743(b), but only as provided in Regulation §1.704-1(b)(2)(iv)(m), the Gross Asset Values of the Company’s assets shall be adjusted (limited, in the case of the events described in clauses (1) and (2), to adjustments which the Managing Member(s) determine are necessary or appropriate to reflect the relative economic interests of the Members) to equal their then fair market values (as determined by the Managing Member(s)), and the Capital Accounts of each Member shall be credited or charged with such Member’s share (as determined under Article Six hereof) of the Net Income or Net Loss resulting from such revaluation of Company assets.

3.2.4 In the event that any Membership Interest in the Company is transferred in accordance with the terms of this Agreement, the transferee shall succeed to the Capital Account of the transferor to the extent it relates to the transferred interest.

3.2.5 The foregoing provisions and the other provisions of the Agreement relating to the maintenance of Capital Accounts are intended to comply with Regulation §1.704-1(b), and shall be interpreted and applied in a manner consistent with such Regulation.

3.3 Member Loans. In the event that any Member reasonably determines that additional funds are required in connection with the operation of the Company, the Company may borrow such funds, in whole or in part, from the Members and/or any Affiliate of the Members, and such shall constitute Member loans (“**Member Loans**”). Such Member Loans shall:

3.3.1 bear interest at the Prime Rate plus ten percent (10%); provide for payment of accrued interest and mandatory prepayment of principal from Net Cash Flow, in accordance with the distribution priority set forth in Section 5.2;

3.3.2 be due and payable within two (2) years from the date of making such loan; and

3.3.3 be evidenced by a note of the Company, provided that failure of the Company to execute and deliver such note shall not affect the Company’s obligation to repay such loan.

Notwithstanding any provision to the contrary herein, the HDFC shall not be required to make any Member Loan.

ARTICLE FOUR

LIABILITY OF MEMBERS

4.1 Members Not Liable for Company Losses. Except as expressly provided under the Act, the Members, and/or its past, present, and future partners, officers, directors, shareholders, members, managers, employees, agents and affiliates shall have no personal liability for the losses, debts, claims, expenses or encumbrances of or against the Company or its property.

4.2 Liability of Members and Managing Member(s) to other Members and the Company. Neither the Members, and/or its past, present, and future partners, officers, directors, shareholders, members, managers, employees, agents and affiliates nor the Managing Member(s) shall be liable, responsible, or accountable in damages or otherwise to the Company or any of its Members for any failure to take any action or the taking of any action within the scope of authority conferred on them by this Agreement made in good faith. The Managing Member(s) shall not be liable to the Members because any taxing authorities disallow or adjust any deductions or credits in the Company’s income tax returns or for the return of all or any portion of the capital contributions of the Members. A Member and a Managing Member shall be liable, responsible and accountable in damages to the Company and the Members only for any acts performed by such Member or Managing Member arising out of or resulting from the fraud, criminal action, gross negligence or willful misconduct of such Member or Managing Member. Nothing in this paragraph shall be deemed to make the Members, and/or its past, present, and future partners, officers, directors, shareholders, members, managers, employees, agents and affiliates or Managing Member(s) liable, responsible or accountable to persons other than the Company or the Members.

4.3 Right to Indemnification. Subject to the limitations and conditions provided for in this Article and the Act, each Person (an “**Indemnified Person**”) who was or is made a party or is threatened to be made a party to or is involved in any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative, arbitral or investigative (a “**Proceeding**”), or any appeal in such a Proceeding, by reason of the fact that he or she was or is a Member, a Managing Member or an officer of the Company or he or she was or is the legal representative of, or a member, manager, director, officer, partner, venturer, proprietor, trustee, employee, agent or similar functionary of, a Member or Managing Member, or arising out of any actions taken by any of them in such capacity, shall be indemnified by the Company against judgments and penalties (including excise and similar taxes and punitive damages), fines, settlements and reasonable costs and expenses (including, without limitation, reasonable attorneys’ fees) actually incurred by such Indemnified Person in connection with such Proceeding if the Managing Member(s) or the Members holding not less than two-thirds (2/3) of the Percentage Interests determine that such Indemnified Person acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of the Company and, with respect to any criminal Proceeding, had no reasonable cause to believe such conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction, or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that the Indemnified Person did not act in good faith and in a manner which he or she reasonably believed to be in or not opposed to the best interests of the Company or, with respect to any criminal Proceedings, that the Indemnified Person had reasonable cause to believe such conduct was unlawful.

Notwithstanding anything contained herein to the contrary, the Managing Member(s), the Company, and the Members, with the exception of the HDFC (collectively, the “**Indemnitors**”, and each an “**Indemnitor**”, as the case may be), shall fully protect, defend, indemnify, and hold the HDFC, Housing Partnership Development Corporation, and each of their members, directors, employees and officers harmless from and against any and all liabilities, obligations, claims, causes of actions, judgments, damages, penalties, costs and expenses (including without limitation attorneys’ fees and expenses) whether incurred in disputes, both litigated and non-litigated, with the Indemnitors, or with any third parties by reason of the HDFC being a Member of the Company or, arising out of or in any way relating to the HDFC’s Membership Interest.

4.4 Derivative Claims. Subject to the limitations and conditions provided for in this Article and the Act, the Company shall and does hereby indemnify any Person who was or is a party, or is threatened to be made a party, to any threatened, pending or completed action or suit by or in the right of the Company to procure a judgment in its favor by reason of the fact that such Person is or was a Member, Managing Member or an officer of the Company, the legal representative of a Member, Managing Member or officer, or a member, manager, director, officer, partner, venturer, proprietor, trustee, employee, agent or similar functionary of a Member or Managing Member, or arising out of any actions taken by any of them in such capacity, against costs and expenses (including reasonable attorneys’ fees) actually and reasonably incurred by such Person in connection with the defense or settlement of such action or suit, if such Person acted in good faith and in a manner he or she reasonably believed to be in, or not

opposed to, the best interests of the Company, provided that no indemnification shall be made in respect of any claim, issue or matter as to which such Person shall have been adjudged to be liable for gross negligence or willful misconduct in the performance of his or her duties to the Company unless, and only to the extent that, the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability, but in view of all circumstances of the case, such Person is fairly and reasonably entitled to indemnity for such expenses as the court shall deem proper.

4.5 Success on Merits. To the extent that a Person has been successful, on the merits or otherwise, in the defense of any Proceeding referred to in Sections 4.3 or 4.4 or in defense of any claim, issue or matter therein, such Person shall be indemnified against expenses (including attorneys' fees and disbursements) actually and reasonably incurred by such Person in connection therewith.

4.6 Determinations. Any indemnification under this Article (unless ordered by a court) shall be made by the Company only as authorized in the specific case, upon a determination that indemnification is proper in the circumstances because such Person has met the applicable standard of conduct set forth therein. Such determination shall be made (i) by the Managing Member(s) or by the holders of two-thirds (2/3) of the Membership Interests who were not parties to such Proceedings; or (ii) if such a quorum is not obtainable, or even if obtainable, if a quorum of disinterested Members so directs, by the Company's independent legal counsel in a written opinion.

4.7 Survival. Indemnification under this Article shall continue as to a Person who has ceased to serve in the capacity, which initially entitled such Person to indemnity hereunder. The rights granted pursuant to this Article shall be deemed contract rights, and no amendment, modification or repeal of this Article shall have the effect of limiting or denying any such rights with respect to actions taken or Proceedings arising prior to any such amendment, modification or repeal.

4.8 Advance Payment. The right to indemnification conferred by this Article shall include the right to be paid or reimbursed by the Company for the reasonable expenses incurred in advance of the final disposition of the Proceeding and without any determination as to the Person's ultimate entitlement to indemnification; provided, however, that the payment of such expenses incurred in advance of the final disposition of a Proceeding shall be made only upon delivery to the Company of a written affirmation by such Person of his or her good faith belief that he or she has met the standard of conduct necessary for indemnification under this Article and a written undertaking, by or on behalf of such Person, to repay all amounts so advanced if it shall ultimately be determined that such Person is not entitled to be indemnified under this Article or otherwise.

4.9 Nonexclusivity of Rights. The right to indemnification and the advancement and payment of expenses conferred by this Article shall not be exclusive of any other right which a Person may have or hereafter acquire under any law (common or statutory), any provision of the Articles of Organization or this Agreement, any vote of the Members or otherwise.

4.10 Insurance. The Company may purchase and maintain insurance, at its expense, to protect itself and any Indemnified Person against any expense, liability or loss, whether or not the Company would have the power to indemnify such Person against such expense, liability or loss under this Article.

4.11 Savings Clause. If this Article or any portion thereof shall be invalidated on any ground by any court of competent jurisdiction, then the Company shall nevertheless indemnify and hold harmless each Indemnified Person as to costs, charges and expenses (including attorneys' fees), judgments, fines and amounts paid in settlement with respect to any Proceeding, whether civil, criminal, administrative or investigative to the full extent permitted by any applicable portion of this Article that shall not have been invalidated and to the fullest extent permitted by applicable law.

ARTICLE FIVE

DISTRIBUTIONS

5.1 Distributions Generally.

5.1.1 Except as otherwise provided in this Section 5.1, the time and amount of any distributions of Net Cash Flow of the Company shall be determined by Consent of the Managing Member(s) acting in their sole discretion; provided, however, that distributions of Net Cash Flow shall be made no less frequently than annually within 60-90 days following the end of each fiscal year of the Company.

5.1.2 The Company shall retain funds necessary to cover its reasonable business needs, which shall include reserves against possible losses and the payment and making provision for the payment, when due, of obligations of the Company, and may retain funds for any other Company purposes. In addition, the Company, as managing member of Owner, shall from time to time cause the Owner to retain funds necessary to cover the Owner's business needs. The amounts of all such reserves and the purposes for which all such reserves are made shall be determined by Consent of the Managing Member(s).

5.2 Application and Distribution of Net Cash Flow. Except as provided in Section 8.2, the Net Cash Flow of the Company for each year (including any year in which the Company is liquidated) shall be applied (i) first to repay any Member Loans described in Section 3.3 above; and (ii) then, one hundred percent (100%) to Atreides.

ARTICLE SIX

ALLOCATIONS

6.1 Allocations of Net Income and Net Loss. After making the allocations (if any) required by Section 6.2 hereof, Net Income and Net Loss shall be allocated (subject to any allocations otherwise mandated by this Section 6.1) as follows:

6.1.1 Net Income and Net Loss attributable to operation and leasing of the Project (or for any reason other than a sale, exchange or other disposition of the Project, as described in subparagraphs (b) and (c) below) shall be allocated one hundred percent (100%) to Atreides.

6.1.2 Net Income recognized by the Company upon the sale, exchange or other disposition of the Project shall be allocated as follows: (i) first, that portion of gain (including any gain treated as ordinary income for federal income tax purposes) which is equal in amount to the Members' negative Capital Accounts shall be allocated to the Members with negative Capital Account balances, in proportion to such negative balances and (ii) second, gain in excess of the amount allocated under clause (i) shall be allocated to the Members in an amount necessary to increase their Capital Accounts as nearly as possible to the amount of cash each Member would receive under Section 5.2 solely in its capacity as a Member if the aggregate balance of all Capital Accounts were cash available for distribution under Section 5.2.

6.1.3 Net Loss recognized by the Company upon the sale, exchange or other disposition of the Project shall be allocated (i) first, to the extent and in such proportions as shall be necessary such that, after giving effect thereto, the respective balances in all Members' Capital Accounts are proportionate to the Members' economic interests in the Company; (ii) second, to the Members until each Member's Capital Account equals its Capital Contribution to the Company not previously returned to it; (iii) third, to the Members to the extent of and in proportion to each Member's Capital Account (after the adjustment in clause (ii)) until all Capital Accounts are reduced to zero; and (iv) fourth, any remaining loss to the Members in accordance with the manner in which they bear the economic risk of loss.

6.1.4 Any portion of the gains treated as ordinary income for federal income tax purposes under Code Sections 1245 and 1250 shall be allocated on a dollar-for-dollar basis to those Members to whom the items of Company deduction or loss giving rise to the amount so treated as ordinary income under Code Section 1245 or 1250 had been previously allocated.

6.1.5 Nonrecourse deductions for any fiscal year of the Company or other period shall be specially allocated one hundred percent (100%) to Atreides.

6.1.6 In the event the deduction of all or a portion of any fee paid or accrued to a Member or an Affiliate of a Member is disallowed for Federal income tax purposes by the IRS with respect to a taxable year of the Company, the Company shall then allocate to such Member an amount of gross income of the Company for such year equal to the amount of such fee with respect to which the deduction is disallowed.

6.2 Regulatory Allocations.

6.2.1 Notwithstanding any other provision of this Agreement, Net Loss (or items of deduction as computed for book purposes) shall not be allocated to a Member to the extent that

the Member has or would have, as a result of such allocation, an Adjusted Capital Account Deficit. As used herein, a Member's "Adjusted Capital Account Deficit" shall mean and refer to such Member's Capital Account, increased by any amounts which such Member is obligated to restore pursuant to the terms of this Agreement or is deemed to be obligated to restore pursuant to the penultimate sentences of Regulation §1.704-2(g)(1) and §1.704-2(i)(5), and reduced by any adjustments, allocations or distributions described in Regulation §1.704-1(b)(2)(ii)(d)(4), (5) or (6). Any loss (or items of deduction as computed for book purposes) which otherwise would be allocated to a Member, but which cannot be allocated to such Member because of the application of the immediately preceding sentence, shall instead be allocated to the other Members, in accordance with their respective Percentage Interests, subject to the limitation imposed by the immediately preceding sentence.

6.2.2 In order to comply with the "qualified income offset" requirement of the Regulations under Code Section 704(b), and notwithstanding any other provision of this Agreement to the contrary, except Section 6.2.3, in the event a Member for any reason (whether or not expected) has an Adjusted Capital Account Deficit, items of Net Income (consisting of a pro rata portion of the items thereof) shall be allocated to such Member in an amount and manner sufficient to eliminate as quickly as possible the Adjusted Capital Account Deficit.

6.2.3 In order to comply with the "minimum gain chargeback" requirements of Regulation §1.704-2(f)(1) and §1.704-2(i)(4), and notwithstanding any other provision of this Agreement to the contrary, in the event there is a net decrease in a Member's share of Company minimum gain (as defined in Regulation §1.704-2(d)(1)) and/or Member nonrecourse debt minimum gain (as defined in Regulation §1.704-2(i)(2)) during a Company taxable year, such Member shall be allocated items of income and gain for that year (and if necessary, for other years) as required by and in accordance with Regulation §1.704-2(f)(1) and §1.704-2(i)(4) before any other allocation is made.

6.2.4 Notwithstanding any other provision of this Agreement, all items of deduction and loss that, pursuant to Regulation §1.704-2(i), are attributable to a nonrecourse debt for which a Member (or a Person related to such Member under Regulation §1.752-4(b)) bears the economic risk of loss (within the meaning of Regulation §1.752-2), shall be allocated to such Member as required by Regulation §1.704-2(c).

6.3 Other Allocation Rules.

6.3.1 Each separate item of income, deduction, gain and loss of the Company shall be allocated among the Members in the same proportion as the portion of the total Net Income or Net Loss for the period which is credited or charged to the Capital Account of each Member bears to the total Net Income or Net Loss for such period.

6.3.2 If the Percentage Interests of the Members change during a year, then, unless otherwise determined by the Managing Member, Net Income or Net Loss for such year shall be allocated among the Members for the periods before and after the date on which the change in Percentage Interests (hereinafter called an "**Ownership Change**") became effective, based on an

interim closing of the books. This Section 6.3.2 shall apply both for purposes of computing a Member's Capital Account and for allocation purposes.

6.3.3 Income, gain, loss and deductions of the Company shall, solely for income tax purposes, be allocated among the Members in accordance with Code Section 704(c), so as to take account of any difference between the adjusted basis of the assets of the Company for Federal income tax purposes and their respective Gross Asset Values, and otherwise shall be allocated in the same manner as the related book items were allocated under Sections 6.1 and 6.2 hereof. Except as otherwise determined by Consent of the Managing Member(s), any allocations required by Code Section 704(c) shall be effectuated using the traditional method described in Regulation §1.704-3(b)(1).

Notwithstanding any provision to the contrary herein, the HDFC hereby acknowledges that it has or will receive an Administrative Fee (as defined in the RSA) in the amount of Seventy Thousand Dollars (\$70,000) pursuant to that certain Reimbursement for Services Agreement dated as of the date hereof, by and between HPDC and Owner (the "RSA"), and that it will receive a guaranteed annual management fee pursuant to the RSA in lieu of future distributions under this Agreement.

ARTICLE SEVEN

TRANSFERS OF MEMBERSHIP INTERESTS; ADMISSION OF ADDITIONAL MEMBERS

7.1 Transfers of Membership Interests. Except as specifically provided in this Agreement and in the Nominee Agreement, no Member shall have the right to Transfer or otherwise dispose of all or any portion of his or her Membership Interest in the Company, without the Consent of the Managing Member(s) (which Consent may be granted or withheld in its or their sole and absolute discretion), provided, however, that upon the death of a Member, such Member's Distributive Rights may be transferred to his estate or beneficiaries, but such transferee(s) shall acquire no other rights hereunder unless admitted as Members in accordance with the provisions of Section 7.2 hereof.

Notwithstanding anything to the contrary contained herein, provided the HDFC reasonably determines in good faith that the use of the Project does not comply with the HDFC's certificate of incorporation and/or applicable regulatory agreements encumbering the Project, subject to any required Project lender or governmental agency consents, and provided such non-compliance is not cured within 45 Business Days after notice thereof is delivered by the HDFC to the Company and the Owner, the HDFC shall have the right to convey its Membership Interest to another entity designated by the Company, provided such transfer will enable Owner to continue to qualify for the 420-c Tax Exemption at the time of transfer, for nominal consideration at the Company's expense.

7.2 Substitute Members. Subject to the provisions of Section 7.1 above, and notwithstanding anything to the contrary contained in this Agreement, the assignee of a

Membership Interest shall have the right to become a substitute member in the Company only if (1) the consent referred to in Section 7.1 has been obtained; (2) the assignor so provides in an instrument of assignment; (3) the assignee agrees in writing to be bound by the terms of this Agreement and the Articles of Organization in the form of joinder attached hereto as Exhibit 1; and (4) the assignee pays the reasonable costs incurred by the Company in preparing and recording any necessary amendments to this Agreement and the Articles of Organization, unless waived by Consent of the Managing Member(s).

ARTICLE EIGHT

DISSOLUTION, LIQUIDATION AND TERMINATION

8.1 Dissolution.

8.1.1 The Company shall dissolve upon, but not before, the first to occur of the following:

- (a) by the unanimous vote of the Members;
- (b) the disposition of substantially all of the assets of the Company or the Owner in a transaction other than a sale-leaseback, or an installment sale transaction;
- (c) the dissolution, bankruptcy, death, resignation, expulsion or incompetency of any Member unless the holders of two-thirds (2/3) of the remaining Membership Interests consent to continue the business of the Company; and
- (d) any other event, which, under the Act, would cause the dissolution of a limited liability company unless the holders of two-thirds (2/3) of the remaining Membership Interests consent to continue the business of the Company.

8.1.2 Upon dissolution of the Company, the Company shall immediately commence to wind up its affairs and the Managing Member(s) shall proceed with reasonable promptness to liquidate the business of the Company.

8.1.3 During the period of the winding up of the affairs of the Company, the rights and obligations of the Members shall continue.

8.2 Liquidation. The Company shall terminate after its affairs have been wound up and its assets fully distributed in liquidation as follows:

- (a) first, to the payment of the debts and liabilities of the Company (other than loans made by a Member or an Affiliate of a Member to the Company pursuant to Section 3.3) and the expenses of liquidation;

(b) next, to the setting up of any reserves which the Managing Member(s) by Consent may deem reasonably necessary for any contingent or unforeseen liabilities or obligations of the Company provided that any reserves not necessary to satisfy such liabilities or obligations are distributed as soon as practicable;

(c) next, to the Members or an Affiliate of a Member, to the extent such Persons have made loans to the Company pursuant to Section 3.3, an amount equal to any unpaid accrued interest on, and then the principal balance of, such loans; provided, however, that in the event the liquidation proceeds shall be insufficient to pay all such interest and principal, payment first shall be made of interest on such loans in the order in which such loans were made and then repayment of the principal shall be made in the order in which such loans were made;

(d) next, to the Members to repay any Capital Contributions made by them, *pari passu*, in proportion to their respective Capital Contributions; and

(e) thereafter, to the Members, in proportion to their positive Capital Account balances (after taking into account all adjustments to Capital Accounts as provided in this Agreement for all periods including such fiscal year).

8.3 Cancellation of Certificate of the Company. Upon the completion of the liquidation of Company's property, the Managing Member(s) shall cause the cancellation of the Articles of Organization and all qualifications of the Company as a foreign limited liability company in jurisdictions other than the State of New York.

ARTICLE NINE

COMPANY PROPERTY

9.1 Company Property. The Company's property shall consist of all Company assets and all Company funds. Title to the property and assets of the Company may be taken and held only in the name of the Company or in such other name or names as shall be determined by the Consent of the Managing Member(s). All property now or hereafter owned by the Company shall be deemed owned by the Company as an entity and no Member, individually, shall have any ownership of such property. Title to the assets and properties, real and personal, now or hereafter owned by or leased to the Company, shall be held in the name of the Company or in such other name or names as the Managing Member(s) by Consent shall determine; provided, however, that if title is held other than in the name of the Company, the Person or Persons who hold title shall certify by instrument duly executed and acknowledged, in form for recording or filing, that title is held as nominee and/or trustee for the benefit of the Company pursuant to the terms of this Agreement and an executed copy of such instrument shall be delivered to each Member.

9.2 Prohibition Against Partition. Each Member hereby permanently waives and relinquishes any and all rights he or she may have to cause all or any part of the property of the Company to be partitioned, it being the intention of the Members to prohibit any Member from bringing a suit for partition against the other Members, or any one of them.

ARTICLE TEN

RECORDS AND ACCOUNTING; FISCAL AFFAIRS

10.1 Fiscal Year. The fiscal year of the Company shall be the calendar year.

10.2 Bank Accounts. All funds of the Company shall be deposited in such bank or savings and loan account or accounts as shall be designated by the Managing Member(s). Withdrawals from any such bank account shall be made upon such signatures as the Managing Member(s) may designate, and shall be made only for the purposes of the Company.

10.3 Books and Records. The Managing Member(s) shall, at the Company's cost and expense, maintain full and accurate books of the Company, in accordance with the Company's accounting policies consistently applied, at the principal place of business of the Company, showing all receipts and expenditures, assets and liabilities, Net Income or Net Loss, and all other records necessary for recording the Company's business and affairs, including those sufficient to record the allocations and distributions provided for in this Agreement. The books and records shall, upon reasonable prior notice to the Company, be open for inspection and copying by any Member or his or her duly authorized representatives during regular business hours at such principal place of business. Any expense for any inspection or examination shall be borne by the Member causing such inspection or review to be conducted. Any information obtained by a Member with respect to the affairs of the Company shall, except as may be required by law, be kept strictly confidential.

10.4 Tax Status. Each of the Members hereby recognizes that the Company will be treated as a partnership for Federal, state and local income tax purposes and will be subject to all provisions of Subchapter K of Chapter 1 of Subtitle A of the Code.

10.5 Tax Returns; Elections.

10.5.1 The Tax Matter Member shall cause all income tax and information returns for the Company and HDHC to be prepared by the Company's accountant and shall cause such tax returns to be timely filed with the appropriate authorities. The Company shall be a cash basis taxpayer. All decisions regarding tax elections shall be made by Consent of the Managing Member(s) with the consent of the Tax Matters Member. Copies of such tax and information returns shall be kept at the principal office of the Company or at such other place as the Tax Matters Member shall determine and shall be available for inspection by the Members or their representatives during normal business hours. The Managing Member(s) shall furnish each Member within ninety (90) days after the end of each fiscal year with such information as may

be necessary to enable each Member to file his Federal income tax return and any required state income tax return. The Managing Member(s) shall cause the Company to pay, out of available cash flow and other assets of the Company, any taxes payable by the Company.

10.5.2 The Company may, but is not required to, make an election for Federal income tax purposes to the extent permitted by applicable law and regulations, as follows:

(1) in case of a transfer of all or part of any Member's Membership Interest, the Company may elect in a timely manner pursuant to Code Section 754 and pursuant to corresponding provisions of applicable state and local tax laws to adjust the bases of the assets of the Company pursuant to Code Sections 734 and 743; and

(2) all other elections required or permitted to be made by the Company shall be made in such a manner as the Managing Member(s), in consultation with the Company's attorneys or the Company's accountant, determine by Consent of the Managing Member(s) to be most favorable to the Members.

10.5.3 Each Member agrees to report, on his own income tax returns each year, each item of income, gain, loss, deduction and credit as reported by the Company to such Member on the Schedule K-1 (or other similar tax report) issued by the Company to such Member for such year. Except as otherwise required by law, no Member shall take any tax reporting position that is inconsistent in any respect with any tax reporting positions taken by the Company or any entity in which the Company owns any equity interest, and, in the event of a breach by such Member of the provisions of this Section 10.5.3, shall be liable to the Company and the Members for any costs, liabilities and damages (including, without limitation, consequential damages) incurred by any of them on account of such breach.

10.6 Tax Matters Member. Pursuant to Code Section 6231(a)(7)(A) (and any comparable provision of applicable state and local tax laws), Atreides is hereby designated as the "Tax Matters Member" of the Company for all purposes of the Code and for the corresponding provision of any state or local statute. All of the Members hereby consent to such designations and agree to take any such further action as may be required by regulations or otherwise to effectuate and maintain such designations.

10.7 Company's Accountants. The Company shall retain Marks Paneth LLP as its independent certified public accountant, or other accountant selected by the Managing Member(s) in its sole and absolute discretion.

10.8 HDFC Election. The HDFC hereby agrees to make the special tax election under Section 168(h)(6)(f)(ii) of the Code in connection with the filing of its 2022 Federal tax return so that no portion of the Project will constitute "tax-exempt use property" as defined in Section 168(h) of the Code, and to promptly provide the Managing Member(s) with evidence of same upon request therefor. The HDFC covenants and agrees that it will not seek federal tax exempt status for so long as it is a member of the Company without the prior written consent of

Managing Member, which consent may be granted or withheld in Managing Member(s)'s sole discretion.

ARTICLE ELEVEN

MISCELLANEOUS

11.1 Notice. All notices, requests, demands and other communications hereunder shall be made in writing and shall be deemed to have been given if delivered by hand, by reputable overnight courier or by facsimile with (if sent by facsimile) a confirmation copy mailed first class, registered mail, return receipt requested, postage and registry fees prepaid to the Members at the addresses set forth in the preamble. Any address may be changed by notice given to the Members, as aforesaid, by the party whose address for notice is to be changed.

11.2 Separability. The invalidity or unenforceability of any provision in this Agreement shall not affect the other provisions hereof and this Agreement shall be construed in all respects as if such invalid or unenforceable provision were omitted.

11.3 Interpretation. This Agreement shall be interpreted and construed in accordance with the laws of the State of New York. The parties hereby consent to personal jurisdiction and venue in the State of New York, County of New York, with respect to any action or proceeding brought in connection with this Agreement. All pronouns and any variations thereof shall be deemed to refer to the masculine, feminine, neuter, singular, or plural as the identity of the Person or Persons referred to may require. The captions of sections of this Agreement have been inserted as a matter of convenience only and shall not control or affect the meaning or construction of any of the terms or provisions hereof.

11.4 Entire Agreement. The parties hereto agree that all understandings and agreements heretofore made between them are merged in this Agreement, which alone fully and completely expresses their agreement with respect to the subject matter hereof. There are no promises, agreements, conditions, understandings, warranties, or representations, oral or written, express or implied, among the parties hereto, other than as set forth in this Agreement, and the Articles of Organization. All prior agreements among the parties are superseded by this Agreement, which integrates all promises, agreements, conditions, and understandings among the parties with respect to the Company and its property.

11.5 Termination, Revocation, Waiver, Modification or Amendment. No termination, revocation, waiver, modification or amendment of this Agreement shall be binding unless consented to in writing and executed by all the Members.

11.6 Counterparts; Effective Date. This Agreement may be executed in multiple counterparts, each of which shall be deemed an original and all of which shall constitute one agreement. The signatures of any party to a counterpart shall be deemed to be a signature to, and may be appended to, any other counterpart. This Agreement may be executed by electronic signature and such electronic signature shall be deemed to be an original signature (and, for the

avoidance of doubt, electronic signatures utilizing the DocuSign platform shall be deemed approved). This Agreement is dated and shall be effective among the parties as of the date first above written.

11.7 Binding Effect. This Agreement shall be binding upon, and shall inure to the benefit of, the parties hereto and their respective successors, permitted assigns, heirs, executors, administrators and legal representatives.

11.8 Further Assurances. Each of the parties hereto agrees to execute, acknowledge, deliver, file, record and publish such further certificates, instruments, agreements and other documents, and to take all such further action as may be required by law or deemed by the Members to be necessary or useful in furtherance of the Company's purposes and the objectives and intentions underlying this Agreement and not inconsistent with the terms hereof.

11.9 Waiver. No consent or waiver, express or implied, by any Member or Managing Member to or of any breach or default by any other Member or Managing Member in the performance by any other Member or Managing Member of his or her obligations hereunder shall be deemed or construed to be a consent to or waiver of any other breach or default in the performance by such other Member or Managing Member of the same or any other obligation of such Member hereunder. Failure on the part of a Member or Managing Member to complain of any act or failure to act of any other Member or Managing Member or to declare such other Member or Managing Member in default, irrespective of how long such failure continues, shall not constitute a waiver by such Member or Managing Member of his or her rights hereunder.

11.10 Additional Remedies. The rights and remedies of any Member or Managing Member hereunder shall not be mutually exclusive. The respective rights and obligations hereunder shall be enforceable by specific performance, injunction or other equitable remedy, but nothing herein contained is intended to, nor shall it limit or affect, any other rights in equity or any rights at law or by statute or otherwise of any party aggrieved as against the other for breach or threatened breach of any provision hereof, it being the intention of this paragraph to make clear the agreement of the parties hereto that their respective rights and obligations hereunder shall be enforceable in equity as well as at law or otherwise.

11.11 No Reliance by Third Parties. The provisions of this Agreement are not for the benefit of any creditor or other Person other than a Member to whom any losses, debts, claims, expenses or encumbrances are owed by, or who otherwise has any claim against, the Company or any Member, and no creditor or other Person shall obtain any rights under this paragraph or by reason of this paragraph, or shall be able to make any claim in respect of any debts, liabilities, or obligations against the Company or any Member.

[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement effective as of the date first above written.

ATREIDES:

ATREIDES HOLDINGS LLC, a New York limited liability company

By: _____

Name: David Goldban

Title: Vice President

HDFC:

**HP PARK LANE SENIOR HOUSING
DEVELOPMENT FUND COMPANY, INC.** a New York not-for-profit corporation

By: _____

Name: Esther Toporovsky

Title: Vice President

IN WITNESS WHEREOF, the parties hereto have executed this Agreement effective as of the date first above written.

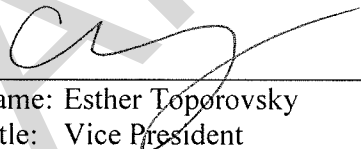
ATREIDES:

ATREIDES HOLDINGS LLC, a New York limited liability company

By: _____
Name: David Goldban
Title: Vice President

HDFC:

**HP PARK LANE SENIOR HOUSING
DEVELOPMENT FUND COMPANY, INC.** a New York not-for-profit corporation

By:  _____
Name: Esther Toporovsky
Title: Vice President

EXECUTION

SCHEDULE "A"

**PL SARA MANAGER LLC
AMENDED & RESTATED OPERATING AGREEMENT
PERCENTAGE INTERESTS**

<u>Members Account</u>	<u>Membership Interest</u>	<u>Percentage Interest</u>	<u>Initial Capital</u>
Atreides Holdings LLC	50.0%	50.0%	\$50.00
HP Park Lane Senior Housing Development Fund Company, Inc.	50.0%	50.0%	\$50.00

EXECUTION

EXHIBIT 1

Form of Joinder Agreement

The undersigned, a proposed transferee (the “**Transferee**”) of the Membership Interest of _____ (the “**Membership Interest**”), in _____ a New York limited liability company (the “**Company**”), from _____ (the “**Transferor**”), hereby agrees to be bound by all of the provisions of the Articles of Organization of _____ and the Operating Agreement effective as of the ____ day of _____, 200_, between *[name and address of Member]*, *[name and address of Member]*, *[name and address of Member]*, *[name and address of Member]* and *[name and address of Member]* which is applicable to the Transferor at the time of transfer of the Membership Interest.

Dated as of _____, _____,

[Transferee]

Exhibit H

Certificate of Subsistence of the Managing Member

DRAFT

STATE OF NEW YORK

DEPARTMENT OF STATE

Certificate of Status

I, ROBERT J. RODRIGUEZ, Secretary of State of the State of New York and custodian of the records required by law to be filed in my office, do hereby certify that upon a diligent examination of the records of the Department of State, as of the date and time of this certificate, the following entity information is reflected:

Entity Name: PL SARA MANAGER LLC
DOS ID Number: 6379843
Entity Type: DOMESTIC LIMITED LIABILITY COMPANY
Entity Status: EXISTING
Date of Initial Filing with DOS: 01/19/2022

Statement Status: CURRENT
Statement Due Date: 01/31/2024

No information is available from this office regarding the financial condition, business activity or practices of this entity.



WITNESS my hand and official seal of the Department of State,
at the City of Albany, on March 07, 2022 at 09:40 A.M.

ROBERT J. RODRIGUEZ, Secretary of State

By Brendan C. Hughes
Executive Deputy Secretary of State

Authentication Number: 100001184862 To Verify the authenticity of this document you may access the
Division of Corporation's Document Authentication Website at <http://ecorp.dos.ny.gov>

WRITTEN CONSENT OF THE MEMBERS OF PL SARA LLC

The undersigned, being the Members of PL SARA LLC, a New York limited liability company (the "Company"), do hereby resolve that:

1. Joshua Siegel is a Vice President of PL SARA LLC, and has the full power and authority on behalf of the Company, as an Authorized Signatory, to:
 - a. Execute the following documents in connection with the application of the Company for participation in the New York State Brownfield Cleanup Program (the "BCP") and enter into the following agreements with the New York State Department of Environmental Conservation (the "DEC") in connection with the Company's participation in the BCP:
 - i. Environmental Easement;
 - ii. Environmental Easement Checklist;
 - iii. Notice of Certificate of Completion;
 - iv. Application to Amend Brownfield Cleanup Agreement and Amendment; and
 - v. Change of Use Form.
2. The authority hereby conferred shall be deemed retroactive, and any and all acts authorized herein which were performed prior to the passage of this consent are hereby approved and ratified. The authority hereby conferred shall continue in full force and effect until the DEC shall have received notice, in writing, of the revocation hereof by a resolution duly adopted by the Members of the Company. Any such revocation shall be effective only as to actions taken by the Company subsequent to DEC's receipt of such notice.
3. The undersigned hereby represent and warrant that (i) the undersigned are the Member(s) of the Company; and (ii) the consent of the Members is sufficient to authorize the Company to take the aforementioned actions.

Dated: 7/28/22
New York, NY

PL SARA MANAGER LLC, a New York limited liability company

By: 

Name: Joshua Siegel

Title: V.P.

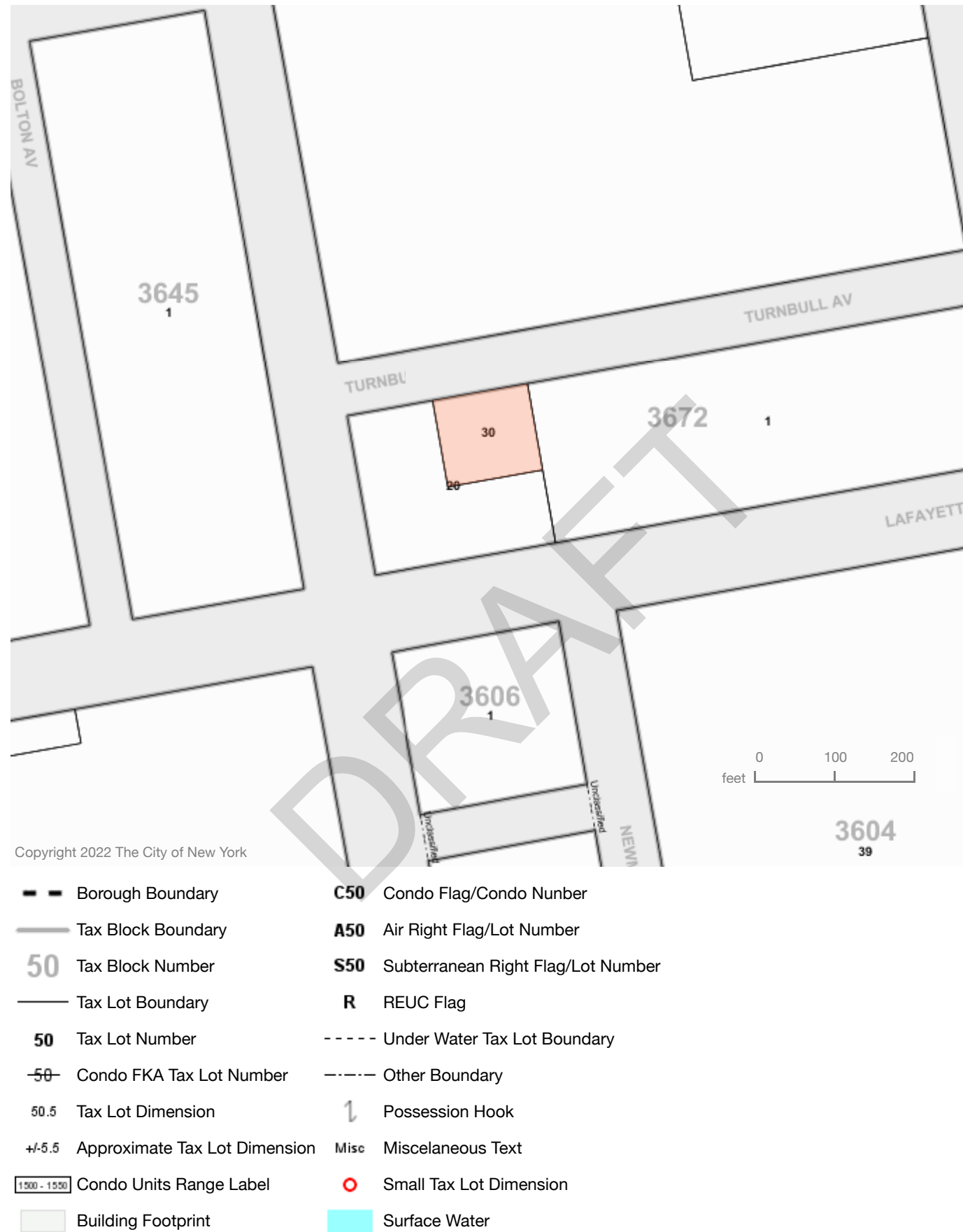
GSB LIHTC INVESTOR LLC, a Delaware limited liability company

By: 

Name: Sherry Wang

Title: Authorized Signatory

[Tax Map 3672-30 - Digital Tax Map - New York City Dept. of Finance \(5/5/2022\)](#)



BRONX Block: 3672 Lot: 30

- Additional Tax Lot Information

Tax Lot

ACRIS	Effective Tax Year
View	2020 - 2021

DRAFT

Environmental Easement Legal Description

1940 Turnbull Avenue, Bronx, New York 10473, Block 3672 Lot 30

ALL THAT CERTAIN plot, piece or parcel of land, situate, lying and being in the Borough and County of the Bronx, City and State of New York, bounded and described as follows:

BEGINNING at a point on the southerly side of Turnbull Avenue distant 106.75 feet easterly from the intersection of the southerly side of Turnbull Avenue and the Easterly side of White Plains Road;

RUNNING THENCE southerly along a line forming an angle on the East with the southerly side of Turnbull Avenue of 90 Degrees 0 Minutes 9 Seconds and parallel with White Plains Road a distance of 108.50 feet to a point;

THENCE easterly along a line forming an angle on the North with the last described course of 89 Degrees 59 Minutes 51 Seconds and parallel with Turnbull Avenue a distance of 117.75 feet to a point;

THENCE northerly along a line forming an angle on the West with the last described course of 90 Degrees 0 Minutes 9 Seconds and parallel with White Plains Road a distance of 108.50 feet to the southerly side of Turnbull Avenue;

THENCE westerly along the southerly side of Turnbull Avenue a distance of 117.75 feet to the point or place of BEGINNING.

For Information Only: Said premises are known as 1940 Turnbull Avenue, Bronx, NY and designated as Block 3672 Lot 30 as shown on the Tax Map of the City of New York, County of the Bronx.

ALTA/NSPS LAND TITLE SURVEY

TITLE NO. 915140
EFFECTIVE DATE: JANUARY 10, 2022

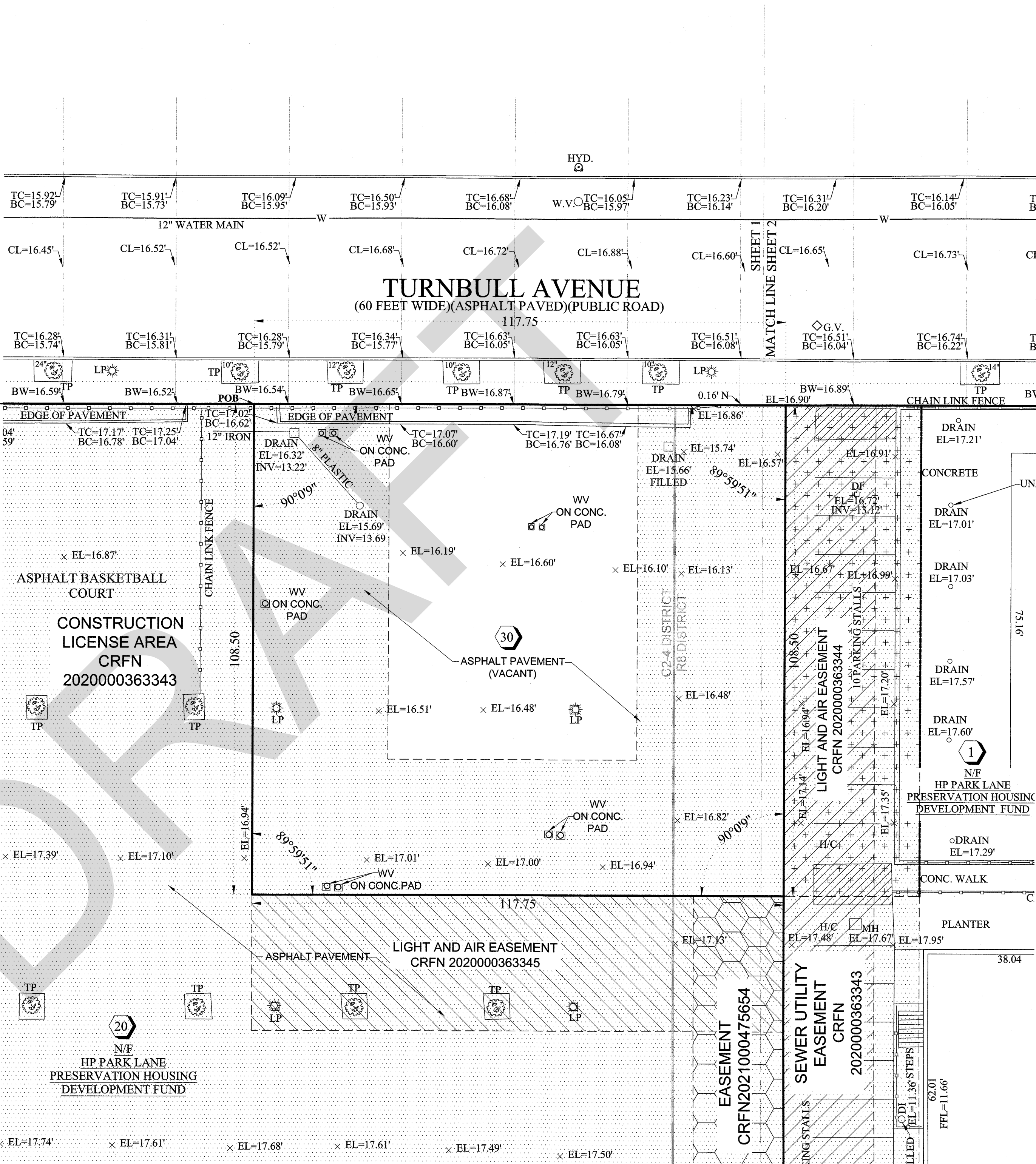
NOTES:
THE PROPERTY HAS DIRECT PHYSICAL ACCESS TO TURNBULL AVENUE, A DEDICATED PUBLIC STREET OR HIGHWAY
THE PROPERTY DESCRIBED HERE IS THE SAME AS THE PROPERTY DESCRIBED IN THE ABOVE REFERENCED TITLE COMMITMENT AND ALL SURVEY RELATED EASEMENTS, COVENANTS AND RESTRICTIONS REFERENCED IN SAID TITLE COMMITMENT ARE PLOTTED OR NOTED
THE ABOVE CAPTIONED PREMISES LIES WITHIN FLOOD ZONE "X"
PANEL: 0103F COMMUNITY: 360497
EFFECTIVE DATE: SEPTEMBER 5, 2007
THE ABOVE CAPTIONED PREMISES HAS A "R6" ZONING CLASSIFICATION AND A PROPOSED "R8/C2-4 OVERLAY" ZONING CLASSIFICATION
NO OBSERVED EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
NO OBSERVED EVIDENCE OF RECENT STREET OR SIDEWALK REPAIRS. NO KNOWN PROPOSED CHANGES IN STREET RIGHT OF WAY LINES
THERE ARE 31 MARKED PARKING STALLS AND 2 HANDICAP STALLS ON THE SUBJECT PREMISES SCHEDULE B EXCEPTIONS:
8. ZONING LOT DEVELOPMENT AND EASEMENT AGREEMENT
BASKETBALL EASEMENT RECORDED IN CRFN 2020000363343 - NOT PLOTTED - BLANKET ENCUMBERS LOT 20
SEWER UTILITY EASEMENT RECORDED IN CRFN 2020000363343 - PLOTTED
CONSTRUCTION LICENSE AREA RECORDED IN CRFN 2020000363343 - PLOTTED
9. LOT 1 AND LOT 30 LIGHT AND AIR EASEMENT AGREEMENT RECORDED IN CRFN 2020000363344 - PLOTTED
10. LOT 20 AND LOT 30 LIGHT AND AIR EASEMENT AGREEMENT RECORDED IN CRFN 2020000363345 - PLOTTED
11. PARKING EASEMENT AGREEMENT RECORDED IN CRFN 2020000363346 - NOT PLOTTABLE - BLANKET
14. EASEMENT RECORDED IN CRFN 2021000475654 - PLOTTED

AUFGANG ARCHITECTS
ZONING ANALYSIS
DATE: DECEMBER 22 2021
DRAWING No. Z-001.00
EXISTING R6 RESIDENTIAL DISTRICT WITH A PROPOSED R8 WITH A C2-4 OVERLAY
DENSITY:
R6: RESIDENTIAL (NARROW STREET): 2.2
R8: RESIDENTIAL (BASE): 5.4
RESIDENTIAL (BONUS): 7.2
RESIDENTIAL (AIRS): 7.2
ADJUSTED: 5.80
COMMUNITY FACILITY: 6.50
SETBACKS:
R8: NONE
HEIGHT:
MINIMUM HEIGHT: 60'-0" FEET
MAXIMUM HEIGHT: 105'-0" FEET
MAX BUILDING: 145'-0"/142'5"/21
PARKING REQUIREMENTS:
COMMUNITY FACILITY: NONE REQUIRED
RESIDENTIAL: 10%, 15 SPACES

To: SURVEYOR'S CERTIFICATE
1. HP Park Lane Senior Housing Development Fund Company, Inc., its successors and/or assigns
2. NYC Partnership Housing Development Fund Company, Inc., its successors and/or assigns
3. Housing Partnership Development Corporation, its successors and/or assigns
4. New York State Housing Finance Agency, its successors and/or assigns, as its interests may appear
5. Goldman Sachs Bank USA, a New York state-chartered bank, its successors and/or assigns, as its interests may appear
6. State of New York Mortgage Agency, its successors and/or assigns, as its interests may appear
7. PL SARA LLC, a New York limited liability company
8. The City of New York, its successors and/or assigns
This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 2, 3, 4, 6(a), 6(b), 7(a), 7(b), 7(c), 8, 9, 10, 13, 14, 16, 17, 18 and 19 of Table A thereof. The field work was completed on February 9, 2022 and updated on March 25, 2022
Date of Plat or Map: March 25, 2022
Robert Fehringer
New York State Licensed Land Surveyor
License No. 050001

LEGAL DESCRIPTION
ALL THAT CERTAIN plot, piece or parcel of land, situate, lying and being in the Borough and County of the Bronx, City and State of New York, bounded and described as follows:
BEGINNING at a point on the southerly side of Turnbull Avenue distant 106.75 feet easterly from the intersection of the southerly side of Turnbull Avenue and the Easterly side of White Plains Road;
RUNNING THENCE southerly along a line forming an angle on the East with the southerly side of Turnbull Avenue of 90 Degrees 0 Minutes 9 Seconds and parallel with White Plains Road a distance of 108.50 feet to a point;
THENCE easterly along a line forming an angle on the North with the last described course of 89 Degrees 59 Minutes 51 Seconds and parallel with Turnbull Avenue a distance of 117.75 feet to a point;
THENCE northerly along a line forming an angle on the West with the last described course of 90 Degrees 0 Minutes 9 Seconds and parallel with White Plains Road a distance of 108.50 feet to the southerly side of Turnbull Avenue;
THENCE westerly along the southerly side of Turnbull Avenue a distance of 117.75 feet to the point or place of BEGINNING.
CONTAINING WITHIN SAID BOUNDS 12,775.87 Sq. Feet or 0.2933 Acres.
Together with those easement rights arising under that certain Lot 1 and Lot 30 Light and Air Easement Agreement made by and between HP Park Lane Preservation Housing Development Fund Company, Inc. and PL Preservation LLC, dated as of 11/30/2020 and recorded 12/21/2020 as CRFN 2020000363344.
Together with those easement rights arising under that certain Lot 20 and Lot 30 Light and Air Easement Agreement made by and between HP Park Lane Preservation Housing Development Fund Company, Inc. and PL
Preservation LLC, dated as of 11/30/2020 and recorded 12/21/2020 as CRFN 2020000363345. Together with those easement rights arising under that certain Parking Easement Agreement made by and between HP Park Lane Preservation Housing Development Fund Company, Inc. and PL Preservation LLC, dated as of 11/30/2020 and recorded 12/21/2020 as CRFN 2020000363346.
Together with those easement rights arising under that certain Declaration of Maintenance made by and between HP Park Lane Preservation Housing Development Fund Company, Inc. and PL Preservation LLC, dated 11/16/2021 and recorded 12/3/2021 as CRFN 2021000475653.
Together with those easement rights arising under that certain Grant of Easement made by HP Park Lane Preservation Housing Development Fund Company, Inc. to PL Preservation LLC, dated 11/16/2021 and recorded 12/3/2021 as CRFN 2021000475654

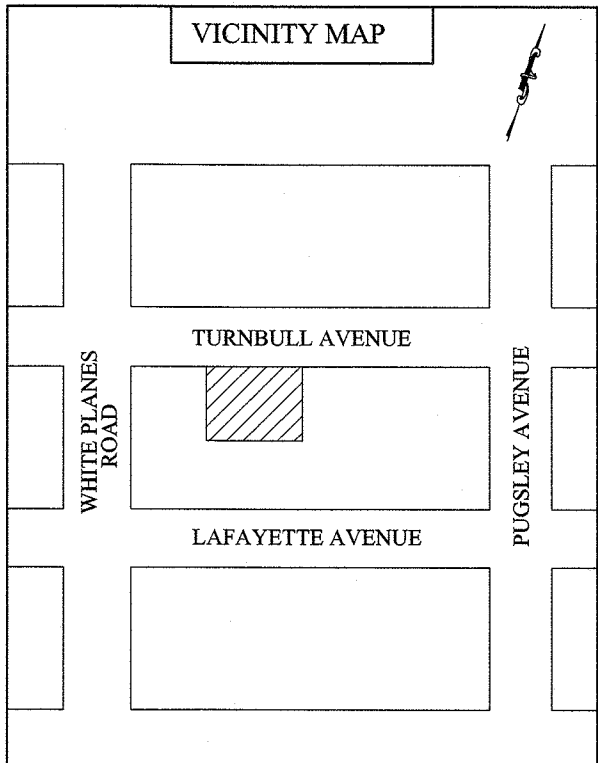
WHITE PLAINS ROAD



- LOT 20 AND 30 LIGHT AND AIR EASEMENT CRFN 2020000363345
- SEWER UTILITY EASEMENT CRFN 2020000363343
- LOT 1 AND 30 LIGHT AND AIR EASEMENT CRFN 2020000363344
- EASEMENT CRFN 2021000475654
- CONSTRUCTION LICENSE AREA CRFN 2020000363343

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 New York Environmental Conservation Law. The engineering and institutional controls for this Easement are set forth in the Site Management Plan (SMP). A copy of the SMP must be obtained by any party with an interest in the property. The SMP can be obtained from NYS Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 or at derweb@dec.ny.gov

LEGEND			
HYD	FIRE HYDRANT	---	OVERHEAD UTILITY WIRES
T.P.	TREE PIT	—W—	WATER
DC	DROP CURB	—E—	ELECTRIC
CB	CATCH BASIN	—G—	GAS
MM	MUNI-METER	—S—	SEWER
EB	ELECTRIC BOX	—ST—	STEAM
TSP	TRAFFIC SIGN POLE	—T—	TELEPHONE
LP	LIGHT POLE	CE MH	CON ED MANHOLE COVER
TC	TOP OF CURB	EMH	ELECTRIC MANHOLE COVER
BC	BOTTOM OF CURB	WMH	WATER MANHOLE COVER
BW	BACK OF WALK	SMH	SEWER MANHOLE COVER
CLF	CHAIN LINK FENCE	TMH	TELEPHONE MANHOLE COVER
WIF	WROUGHT IRON FENCE	CO MH	CLEAN OUT MANHOLE COVER
WSF	WOOD STOCKADE FENCE	WH	WATER VALVE
PRF	POST AND RAIL FENCE	GV	GAS VALVE
CE	CELLAR ENTRANCE	UP	UTILITY POLE
PA	PLANTED AREA	AS	AUTO SPRINKLER
—	SIGN	SP	STAND PIPE
○	TAX LOT	OF	OIL FILL



FEHRINGER SURVEYING, P.C.
ROBERT FEHRINGER
LICENSED LAND SURVEYOR
WWW.FEHRINGERSURVEYING.COM
2200 JACKSON AVENUE
SEAFORD, N.Y. 11783
(516) 763 - 5515 FAX NO. (516) 763 - 5525
FS@FEHRINGERSURVEYING.COM

UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW. COPIES OF THIS SURVEY MAP NOT BEARING THE LAND SURVEYOR'S INKED SEAL OR EMBOSSED SEAL SHALL NOT BE CONSIDERED TO BE A VALID TRUE COPY

GUARANTEES INDICATED HEREON SHALL RUN ONLY TO THE PERSON FOR WHOM THE SURVEY IS PREPARED, AND ON HIS BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND LENDING INSTITUTION LISTED HEREON, AND TO THE ASSIGNEES OF THE LENDING INSTITUTION. GUARANTEES ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.

SURVEYED: JANUARY 21, 2016
SCALE: 1" = 20'
DRAWN BY: MF

10.00' 20.00' 30.00'
0 10 30 60

BLOCK: 3672
LOT: 30
TOTAL LOT AREA:
SQ. FT.: 12,775.87
ACRES: 0.2933

SURVEY OF PROPERTY SITUATED IN:
1940 TURNBULL AVENUE
BOROUGH OF THE BRONX
COUNTY OF BRONX
CITY OF NEW YORK
STATE OF NEW YORK

SIVE | PAGET | RIESEL

KAYLEY MCGRATH
DIRECT DIAL: 646.378.7200
KMCGRATH@SPRLAW.COM

July 27, 2023

BY: CERTIFIED MAIL

Mayor Eric Adams
City Hall
New York, NY 10007

Re: Notice of Environmental Easement: 1940 Turnbull Ave., Bronx NY (Block 3672, Lot 30)
DEC Site No. C203138

Dear Mayor Adams:

Attached please find a copy of an Environmental Easement granted to the New York State Department of Environmental Conservation ("Department") on [DATE] by PL SARA LLC for property located at 1940 Turnbull Ave., Bronx, NY 10473, Block 3672, Lot 30, known as DEC Site No. C203138. This Environmental Easement restricts future use of the above referenced property to restricted residential, commercial, and industrial uses. Any on-site activity must be done in accordance with the Environmental Easement and Site Management Plan, which is incorporated into the Environmental Easement. Department approval is also required prior to any groundwater use.

Article 71, Section 71-3607 of the New York State Environmental Conservation Law requires that:

1. Whenever the Department is granted an Environmental Easement, it shall provide each affected local government with a copy of such Easement and shall also provide a copy of any documents modifying or terminating such Environmental Easement.
2. Whenever an affected local government receives an application for a building permit or any other application affecting land use or development of land that is subject to an Environmental Easement and that may relate to or impact such Easement, the affected local government shall notify the Department and refer such application to the Department. The Department shall evaluate whether the application is consistent with the Environmental Easement and shall notify the affected local government of its determination in a timely fashion, considering the time frame for the local government's review of the application. The affected local government shall not approve the application until it receives formal approval from the Department.

An electronic version of every Environmental Easement that has been accepted by the Department is available to the public at: <http://www.dec.ny.gov/chemical/36045.html>. Please forward this notice to your Building and/or Planning Departments, as applicable, to ensure your compliance with the provisions of the New York State Environmental Conservation Law. If you have any questions or comments regarding this matter, please do not hesitate to contact me.

Sincerely,

Kayley R. McGrath

**ENVIRONMENTAL EASEMENT
CHECKLIST/CERTIFICATION
SITE No. C203138**

The following requirements and attachments must be included as part of the submission to the Department for an Environmental Easement. Upon completion of the review, an attorney must sign the checklist indicating that they have fully completed the checklist. The Department will not accept submissions which have not been signed as being accurate and complete by both the Remedial Party and Attorney. Where the property owner is not the Remedial Party, the Department also requires the Owner to sign the checklist.

1) Special Circumstances

The last owner search was completed and the deed transfer is by Quit Claim or other restricted transfer deed ☐ Yes ☒ No

The property in the Brownfield Cleanup Agreement includes lands under water
☐ Yes ☒ No

The property has multiple owners ☐ Yes ☒ No

If you answered "Yes" to any of these items, contact the Department's Environmental Easement contact person for a determination as to whether further title work is necessary.

2) Verification of ownership of the property

- ☒ Submit documentation (such as a corporate resolution) that the signatory on the easement has authority to sign the Easement
- ☒ Ownership of the property matches the current deed.
- ☒ Verification reviewed and included for authority to sign Easement.
- ☒ Updated copies of legal organizational documents have been reviewed and are included. Examples of the appropriate documentation will include, for:
 - corporations: articles of incorporation, organizational agreements, minutes of annual meetings, resolutions, authorities for signature;
 - partnerships: a copy of the partnership agreement; verification that necessary parties are participating in the Easement;
 - trusts: trust agreement, affidavit of no change in the trust; and
 - estates: estate letters, powers of attorney.

3) Verification of Property Subject to Easement

- ☒ Description of the property for the Easement and DEC Agreement/Order/SAC matches description of property in the deed (Separate submittal must be included to explain to the satisfaction of the Department why there is any discrepancy).
- ☒ The Tax Map identifier (SBL) matches on all documents.

4) Survey Review

- ☒ Survey includes metes and bounds description.
- ☒ Survey includes a graphic scale.
- ☒ Survey includes Tax Map Section, Block and Lot.
- ☒ Survey includes physical address and is consistent with the DEC Agreement/Order/SAC.
- ☒ The survey must bear the name, address, telephone number, signature and certification of the professional land surveyor who performed the survey, his or her official seal and registration number, the date the survey was completed, the dates of all of the surveyor's revisions.
- ☒ The survey boundaries must be drawn to a convenient scale, with that scale clearly indicated. A graphic scale, shown in feet and meters, must be included.
- ☒ The symbols and abbreviations that are used on the survey must be identified by the use of a legend.
- ☒ Diagrams must be accurately presented.
- ☒ The point of beginning of the legal description must be shown.
- ☒ The legal description must be correct.
- ☒ The legal description must state the acreage.
- ☒ If the deed(s) description differs from the measured bearings/angles/distances, both must be indicated on the survey.
- ☒ The survey must show the location of all buildings/monuments/overlaps/encroachments upon the surveyed property with their locations defined by measurement perpendicular to the nearest perimeter boundaries.
- ☒ The survey must depict the location of visible improvements within five feet of each side of boundary lines.
- ☒ The survey must show ponds, lakes, springs, rivers or a natural water boundary bordering on or running through the surveyed property; the survey must measure the location of the natural water boundary and note on the survey the date of the measurement.
- ☒ The survey must correctly depict the environmental easement area with corresponding metes & bounds description and acreage, and include the following sentence: *"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 New York Environmental Conservation Law. The engineering and institutional controls for this Easement are set forth in the Site Management Plan (SMP). A copy of the SMP must be obtained by any party with an interest in the property. The SMP can be obtained from NYS Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 or at derweb@dec.ny.gov".* This reference must be located on the face of the survey and be in at least 15-point type.
- ☒ If the survey consists of more than one sheet, sheets must be numbered and the total number of sheets must be indicated on each sheet.

- ☒ In addition to county-specific requirements, submittal of the approved survey to the Department must include the following:
- A "D" sized copy (24" x 36") of the final signed, stamped map
 - A 600 DPI scan of the final signed, stamped map
 - An Autocad .dwg or exported .dxf file of the polyline (at a minimum) of the final survey

5) Submissions

- ☒ The Environmental Easement Package being submitted to the Department includes the applicable documents set forth in Attachment A.

PLEASE READ THE FOLLOWING CAREFULLY

The Remedial Party and the Remedial Party's attorney understand and acknowledge that the New York State Department of Environmental Conservation will rely on each and every answer in this statement: (1) to determine whether the Easement Package can be reviewed in a timely fashion; and (2) to determine whether the Easement Package should be approved. The Remedial Party and the Remedial Party's attorney understand and acknowledge that any false statement or misrepresentation herein will constitute cause for the revocation of the Certificate of Completion issued in reliance on this checklist and accompanying documentation. The Remedial Party and the Remedial Party's attorney further acknowledge that the failure to provide the Department with valid and enforceable Environmental Easement on the property may be grounds for the Department to revoke any Certificate of Completion for the site.

Statement of Certification and Signatures

I have reviewed the information being submitted in relation to this Easement Package and this information, to the best of my knowledge and belief, is accurate and correct. I further acknowledge that the failure to provide the Department with valid and enforceable Environmental Easement on the property may be grounds for the Department to revoke any Certificate of Completion for the site.

1) By Remedial Party:

I hereby affirm that information provided on this form and its attachments is true and complete to the best of my knowledge and belief. I further acknowledge that the failure to provide the Department with valid and enforceable Environmental Easement on the property may be grounds for the Department to revoke any Certificate of Completion for the site.

Date: 7/26/22

Signature: [Signature], V.P.

Print Name: Joshua Siegel, V.P.

2) By Remedial Party's Attorney:

I hereby affirm that I am the attorney for PL Sara LLC (entity); that I am authorized by that entity to make this certification; that this certification was prepared by me or under my supervision and direction; and that information provided on this form and its attachments is true and complete to the best of my knowledge and belief.

Date: 7/26/22

Signature: [Signature]

Print Name: Kayley R. McGrath

Attachment

Attachment A

Documents required to be sent in hard copy with electronic formats copied to the Project Manager and Project Attorney for a complete Environmental Easement package:

- 1) Copy(ies) of current deed(s) and supporting title documentation (see Department Title Requirements).
- 2) Copy of tax map.
- 3) Proof of authority to obligate owner of property as set forth in "Verification of ownership of property" on the Easement checklist.
- 4) Legal description of the easement area, electronic copy to be in an electronic text format (i.e., MS Word or Rich Text Format).
- 5) One full-sized, signed Survey and an electronic Survey submitted as a fully rendered PDF (not scanned).
- 6) A draft Notice to Municipality, with appropriate site-specific provisions.
- 7) Easement Checklist with certification signed by Remedial Party and Remedial Party's attorney.
- 8) Signed transfer tax forms (TP-584 or ACRIS Forms).

Hard copy submission shall be sent to:

Bradford Burns, Esq.
New York State Department of Environmental Conservation
Office of General Counsel
625 Broadway
Albany, NY 12233-1500

**Combined Real Estate Transfer Tax Return,
Credit Line Mortgage Certificate, and
Certification of Exemption from the
Payment of Estimated Personal Income
Tax for the Conveyance of Real Property
Located in New York City**

See Form TP-584-NYC-I, Instructions for Form TP-584-NYC, before completing this form. Print or type.

Schedule A – Information relating to conveyance

Grantor/Transferor	Name (if individual, last, first, middle initial) (<input type="checkbox"/> mark an X if more than one grantor)	Social Security number (SSN)
<input type="checkbox"/> Individual	HP Park Lane Senior Housing Development Fund Company, Inc.	
<input checked="" type="checkbox"/> Corporation	Mailing address	SSN
<input type="checkbox"/> Partnership	253 West 35th Street, 3rd Floor	
<input type="checkbox"/> Estate/Trust	City State ZIP code	Employer identification number (EIN)
<input type="checkbox"/> Single member LLC	New York NY 10001	87-3600507
<input type="checkbox"/> Multi-member LLC	Single member's name if grantor is a single member LLC (see instructions)	Single member EIN or SSN
<input type="checkbox"/> Other		
Grantee/Transferee	Name (if individual, last, first, middle initial) (<input type="checkbox"/> mark an X if more than one grantee)	SSN
<input type="checkbox"/> Individual	People of the State of New York by Dept. Environmental Conservation	
<input type="checkbox"/> Corporation	Mailing address	SSN
<input type="checkbox"/> Partnership	625 Broadway	
<input type="checkbox"/> Estate/Trust	City State ZIP code	EIN
<input type="checkbox"/> Single member LLC	Albany NY 12233	14-6013200
<input type="checkbox"/> Multi-member LLC	Single member's name if grantee is a single member LLC (see instructions)	Single member EIN or SSN
<input checked="" type="checkbox"/> Other		

Location and description of property conveyed

Tax map designation – Section, block & lot (include dots and dashes)	SWIS code (six digits)	Street address	City, town, or village	County
2 - 3672 - 30	650000	1940 Turnbull Avenue	New York	Bronx

Type of property conveyed (mark an X in applicable box)

- 1 ☐ One- to three-family house
2 ☐ Residential cooperative
3 ☐ Residential condominium
4 ☒ Vacant land
5 ☐ Commercial/Industrial

- 6 ☐ Apartment building
7 ☐ Office building
8 ☐ Four-family dwelling
9 ☐ Other _____

Date of conveyance

month	day	year
-------	-----	------

☐ Contract executed on or before
April 1, 2019 (see instructions)

Percentage of real property
conveyed which is residential
real property _____ %
(see instructions)

Condition of conveyance (mark all that apply)

- | | | |
|---|--|--|
| a. <input type="checkbox"/> Conveyance of fee interest | f. <input type="checkbox"/> Conveyance which consists of a mere change of identity or form of ownership or organization (attach Form TP-584.1, Schedule F) | l. <input type="checkbox"/> Option assignment or surrender |
| b. <input type="checkbox"/> Acquisition of a controlling interest (state percentage acquired _____ %) | g. <input type="checkbox"/> Conveyance for which credit for tax previously paid will be claimed (attach Form TP-584.1, Schedule G) | m. <input type="checkbox"/> Leasehold assignment or surrender |
| c. <input type="checkbox"/> Transfer of a controlling interest (state percentage transferred _____ %) | h. <input type="checkbox"/> Conveyance of cooperative apartment(s) | n. <input type="checkbox"/> Leasehold grant |
| d. <input type="checkbox"/> Conveyance to cooperative housing corporation | i. <input type="checkbox"/> Syndication | o. <input checked="" type="checkbox"/> Conveyance of an easement |
| e. <input type="checkbox"/> Conveyance pursuant to or in lieu of foreclosure or enforcement of security interest (attach Form TP-584.1, Schedule E) | j. <input type="checkbox"/> Conveyance of air rights or development rights | p. <input type="checkbox"/> Conveyance for which exemption from transfer tax claimed (complete Schedule B, Part 4) |
| | k. <input type="checkbox"/> Contract assignment | q. <input type="checkbox"/> Conveyance of property partly within and partly outside the state |
| | | r. <input type="checkbox"/> Conveyance pursuant to divorce or separation |
| | | s. <input checked="" type="checkbox"/> Other (describe) <u>Envntl. Easement</u> |

For recording officer's use	Amount received	Date received	Transaction number
	Schedule B, Part 1 \$ _____		
	Schedule B, Part 2 \$ _____		
	Schedule B, Part 3 \$ _____		

Schedule B – Real estate transfer tax return (Tax Law Article 31)**Part 1 – Computation of tax due** (*in addition to the tax on line 4, you must compute the tax on lines 5a and 5b, if applicable*)

1	Enter amount of consideration for the conveyance (if you are claiming a total exemption from tax, mark an X in the Exemption claimed box, enter consideration and proceed to Part 4) <input checked="" type="checkbox"/> Exemption claimed	1.	0
2	Continuing lien deduction (see instructions if property is taken subject to mortgage or lien)	2.	0
3	Taxable consideration (subtract line 2 from line 1)	3.	0
4	Tax: \$2 for each \$500, or fractional part thereof, of consideration on line 3	4.	0
5a	Tax: \$1.25 for each \$500, or fractional part thereof, of consideration for the conveyance of residential real property located in New York City if the amount on line 3 is \$3 million or more (see instructions)	5a.	0
5b	Tax: \$1.25 for each \$500, or fractional part thereof, of consideration for the conveyance of property located in New York City other than residential real property, if the amount on line 1 is \$2 million or more (see instructions)	5b.	0
6	Total before credit(s) claimed (add lines 4, 5a, and 5b)	6.	0
7	Amount of credit claimed for tax previously paid (see instructions and attach Form TP-584.1, Schedule G)	7.	0
8	Total tax due* (subtract line 7 from line 6)	8.	0

Part 2 – Computation of additional tax due on the conveyance of residential real property for \$1 million or more (see instructions)

1	Enter amount of consideration for conveyance (from Part 1, line 1)	1.	
2	Taxable consideration (multiply line 1 by the percentage of the premises which is residential real property, as shown in Schedule A) ...	2.	
3	Total additional transfer tax due* (multiply line 2 by 1% (.01))	3.	

Part 3 – Computation of supplemental tax due on the conveyance of residential real property, or interest therein, located in New York City, for \$2 million or more (see instructions)

1	Enter amount of consideration for conveyance (from Part 1, line 1)	1.	
2	Taxable consideration (multiply line 1 by the percentage of the premises which is residential real property, as shown in Schedule A) ...	2.	
3	Total supplemental transfer tax due* (multiply line 2 by tax rate, see instruction for rates)	3.	

*** The total tax (from Part 1, line 8; Part 2, line 3; and Part 3, line 3 above) is due within 15 days from the date of conveyance.**

Part 4 – Explanation of exemption claimed on Part 1, line 1 (mark an X in any boxes that apply)

The conveyance of real property is exempt from the real estate transfer tax for the following reason:

- a. Conveyance is to the United Nations, the United States of America, New York State, or any of their instrumentalities, agencies, or political subdivisions (or any public corporation, including a public corporation created pursuant to agreement or compact with another state or Canada)..... a ☒
- b. Conveyance is to secure a debt or other obligation..... b ☐
- c. Conveyance is without additional consideration to confirm, correct, modify, or supplement a prior conveyance..... c ☐
- d. Conveyance of real property is without consideration and not in connection with a sale, including conveyances conveying realty as bona fide gifts..... d ☐
- e. Conveyance is given in connection with a tax sale..... e ☐
- f. Conveyance is a mere change of identity or form of ownership or organization where there is no change in beneficial ownership. (This exemption cannot be claimed for a conveyance to a cooperative housing corporation of real property comprising the cooperative dwelling or dwellings.) Attach Form TP-584.1, Schedule F f ☐
- g. Conveyance consists of deed of partition..... g ☐
- h. Conveyance is given pursuant to the federal Bankruptcy Act..... h ☐
- i. Conveyance consists of the execution of a contract to sell real property, without the use or occupancy of such property, or the granting of an option to purchase real property, without the use or occupancy of such property..... i ☐
- j. Conveyance of an option or contract to purchase real property with the use or occupancy of such property where the consideration is less than \$200,000 and such property was used solely by the grantor as the grantor's personal residence and consists of a one-, two-, or three-family house, an individual residential condominium unit, or the sale of stock in a cooperative housing corporation in connection with the grant or transfer of a proprietary leasehold covering an individual residential cooperative apartment..... j ☐
- k. Conveyance is not a conveyance within the meaning of Tax Law, Article 31, § 1401(e) (attach documents supporting such claim) k ☐

Schedule C – Credit Line Mortgage Certificate (Tax Law Article 11)

Complete the following only if the interest being transferred is a fee simple interest.

This is to certify that: (mark an X in the appropriate box)

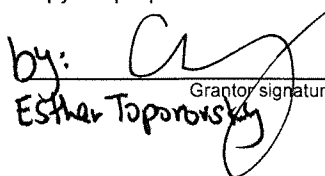
1. ☐ The real property being sold or transferred is not subject to an outstanding credit line mortgage.
 2. ☐ The real property being sold or transferred is subject to an outstanding credit line mortgage. However, an exemption from the tax is claimed for the following reason:
 - a ☐ The transfer of real property is a transfer of a fee simple interest to a person or persons who held a fee simple interest in the real property (whether as a joint tenant, a tenant in common or otherwise) immediately before the transfer.
 - b ☐ The transfer of real property is (A) to a person or persons related by blood, marriage or adoption to the original obligor or to one or more of the original obligors or (B) to a person or entity where 50% or more of the beneficial interest in such real property after the transfer is held by the transferor or such related person or persons (as in the case of a transfer to a trustee for the benefit of a minor or the transfer to a trust for the benefit of the transferor).
 - c ☐ The transfer of real property is a transfer to a trustee in bankruptcy, a receiver, assignee, or other officer of a court.
 - d ☐ The maximum principal amount secured by the credit line mortgage is \$3 million or more, and the real property being sold or transferred is **not** principally improved nor will it be improved by a one- to six-family owner-occupied residence or dwelling.

Note: for purposes of determining whether the maximum principal amount secured is \$3 million or more as described above, the amounts secured by two or more credit line mortgages may be aggregated under certain circumstances. See TSB-M-96(6)-R for more information regarding these aggregation requirements.

 - e ☐ Other (attach detailed explanation).
3. ☐ The real property being transferred is presently subject to an outstanding credit line mortgage. However, no tax is due for the following reason:
 - a ☐ A certificate of discharge of the credit line mortgage is being offered at the time of recording the deed.
 - b ☐ A check has been drawn payable for transmission to the credit line mortgagee or the mortgagee's agent for the balance due, and a satisfaction of such mortgage will be recorded as soon as it is available.
 4. ☐ The real property being transferred is subject to an outstanding credit line mortgage recorded in _____ (insert liber and page or reel or other identification of the mortgage). The maximum principal amount of debt or obligation secured by the mortgage is _____. No exemption from tax is claimed and the tax of _____ is being paid herewith. (Make check payable to county clerk where deed will be recorded or, if the recording is to take place in New York City but not in Richmond County, make check payable to the NYC Department of Finance.)

Signature (both the grantors and grantees must sign)

The undersigned certify that the above information contained in Schedules A, B, and C, including any return, certification, schedule, or attachment, is to the best of their knowledge, true and complete, and authorize the person(s) submitting such form on their behalf to receive a copy for purposes of recording the deed or other instrument effecting the conveyance.

by:  _____ Grantor signature	Vice President _____ Title	_____ Grantee signature	_____ Title
_____ Grantor signature	_____ Title	_____ Grantee signature	_____ Title

Reminder: Did you complete all of the required information in Schedules A, B, and C? Are you required to complete Schedule D? If you marked e, f, or g in Schedule A, did you complete Form TP-584.1? If the contract was executed prior to April 1, 2019, did you attach the necessary verification? Have you attached your check(s) made payable to the county clerk where recording will take place or, if the recording is in the New York City boroughs of Manhattan, Bronx, Brooklyn, or Queens, to the **NYC Department of Finance**? If no recording is required, send this return and your check(s), made payable to the **NYS Department of Taxation and Finance**, directly to the NYS Tax Department, RETT Return Processing, PO Box 5045, Albany NY 12205-0045. If not using U.S. Mail, see Publication 55, *Designated Private Delivery Services*.

Schedule D – Certification of exemption from the payment of estimated personal income tax (Tax Law, Article 22, § 663)

Complete the following only if a fee simple interest or a cooperative unit is being transferred by an individual or estate or trust.

If the property is being conveyed by a referee pursuant to a foreclosure proceeding, proceed to Part 2, mark an X in the second box under *Exemptions for nonresident transferors/sellers*, and sign at bottom.

Part 1 – New York State residents

If you are a New York State resident transferor/seller listed in Form TP-584-NYC, Schedule A (or an attachment to Form TP-584-NYC), you must sign the certification below. If one or more transferors/sellers of the real property or cooperative unit is a resident of New York State, **each** resident transferor/seller must sign in the space provided. If more space is needed, photocopy this Schedule D and submit as many schedules as necessary to accommodate all resident transferors/sellers.

Certification of resident transferors/sellers

This is to certify that at the time of the sale or transfer of the real property or cooperative unit, the transferor/seller as signed below was a resident of New York State, and therefore is not required to pay estimated personal income tax under Tax Law § 663(a) upon the sale or transfer of this real property or cooperative unit.

Signature	Print full name	Date
Signature	Print full name	Date
Signature	Print full name	Date
Signature	Print full name	Date

Note: A resident of New York State may still be required to pay estimated tax under Tax Law § 685(c), but not as a condition of recording a deed.

Part 2 – Nonresidents of New York State

If you are a nonresident of New York State listed as a transferor/seller in Form TP-584-NYC, Schedule A (or an attachment to Form TP-584-NYC) but are not required to pay estimated personal income tax because one of the exemptions below applies under Tax Law § 663(c), mark the box of the appropriate exemption below. If any one of the exemptions below applies to the transferor/seller, that transferor/seller is not required to pay estimated personal income tax to New York State under Tax Law § 663. **Each** nonresident transferor/seller who qualifies under one of the exemptions below must sign in the space provided. If more space is needed, photocopy this Schedule D and submit as many schedules as necessary to accommodate all nonresident transferors/sellers.

If none of these exemption statements apply, you must complete Form IT-2663, *Nonresident Real Property Estimated Income Tax Payment Form*, or Form IT-2664, *Nonresident Cooperative Unit Estimated Income Tax Payment Form*. For more information, see *Payment of estimated personal income tax*, on Form TP-584-NYC-I, page 1.

Exemption for nonresident transferors/sellers

This is to certify that at the time of the sale or transfer of the real property or cooperative unit, the transferor/seller (grantor) of this real property or cooperative unit was a nonresident of New York State, but is not required to pay estimated personal income tax under Tax Law § 663 due to one of the following exemptions:

- ☐ The real property or cooperative unit being sold or transferred qualifies in total as the transferor's/seller's principal residence (within the meaning of Internal Revenue Code, section 121) from _____ to _____ (see instructions).
Date Date
- ☐ The transferor/seller is a mortgagor conveying the mortgaged property to a mortgagee in foreclosure, or in lieu of foreclosure with no additional consideration.
- ☐ The transferor or transferee is an agency or authority of the United States of America, an agency or authority of New York State, the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation, the Government National Mortgage Association, or a private mortgage insurance company.

Signature	Print full name	Date
Signature	Print full name	Date
Signature	Print full name	Date
Signature	Print full name	Date



FINANCE
NEW YORK
THE CITY OF NEW YORK
DEPARTMENT OF FINANCE

NYC
RPT

NEW YORK CITY DEPARTMENT OF FINANCE
REAL PROPERTY TRANSFER TAX RETURN
(Pursuant to Title 11, Chapter 21, NYC Administrative Code)

TYPE OR PRINT LEGIBLY

If the transfer involves more than one grantor or grantee or a partnership, the names, addresses and Social Security Numbers or Employer Identification Numbers of all grantors or grantees and general partners must be provided on Schedule 3, page 3.

R

GRANTOR ▼

● Name

HP Park Lane Senior Housing Development Fund Company, Inc.

● Grantor is a(n): ☐ individual ☐ partnership (must complete Schedule 3)
(check one) ☒ corporation ☐ other _____

Telephone Number

● Permanent mailing address after transfer (number and street)

253 West 35th Street, 3rd Floor

● City and State

New York, NY

Zip Code

10001

● EMPLOYER IDENTIFICATION NUMBER

8 7 - 3 6 0 0 5 0 7

OR

● SOCIAL SECURITY NUMBER

- - - - -

DO NOT WRITE IN THIS SPACE
FOR OFFICE USE ONLY

● RETURN NUMBER ▲

● DEED SERIAL NUMBER ▲

● NYS REAL ESTATE TRANSFER TAX PAID ▲

GRANTEE ▼

● Name

People of New York by Dept. Environmental Conservation

● Grantee is a(n): ☐ individual ☐ partnership (must complete Schedule 3)
(check one) ☐ corporation ☒ other governmental agency _____

Telephone Number

518-402-9518

● Permanent mailing address after transfer (number and street)

625 Broadway

● City and State

Albany

Zip Code

12233

● EMPLOYER IDENTIFICATION NUMBER

1 4 - 6 0 1 3 2 0 0

OR

● SOCIAL SECURITY NUMBER

- - - - -

PROPERTY LOCATION ▼

LIST EACH LOT SEPARATELY. ATTACH A RIDER IF ADDITIONAL SPACE IS REQUIRED

● Address (number and street)	Apt. No.	Borough	Block	Lot	# of Floors	Square Feet	● Assessed Value of Property
1940 Turnbull Avenue		Bronx	3672	30	0		99,450.00

● DATE OF TRANSFER TO GRANTEE: _____

● PERCENTAGE OF INTEREST TRANSFERRED: _____ %

CONDITION OF TRANSFER ▼ See Instructions

● Check (✓) all of the conditions that apply and fill out the appropriate schedules on pages 5-11 of this return. Additionally, Schedules 1 and 2 must be completed for all transfers.

- | | |
|--|--|
| <p>a. <input type="checkbox"/>Arms length transfer</p> <p>b. <input type="checkbox"/>Transfer in exercise of option to purchase</p> <p>c. <input type="checkbox"/>Transfer from cooperative sponsor to cooperative corporation</p> <p>d. <input type="checkbox"/>Transfer by referee or receiver (complete Schedule A, page 5)</p> <p>e. <input type="checkbox"/>Transfer pursuant to marital settlement agreement or divorce decree</p> <p>f. <input type="checkbox"/>Deed in lieu of foreclosure (complete Schedule C, page 6)</p> <p>g. <input type="checkbox"/>Transfer pursuant to liquidation of an entity (complete Schedule D, page 6)</p> <p>h. <input type="checkbox"/>Transfer from principal to agent, dummy, strawman or conduit or vice-versa (complete Schedule E, page 7)</p> <p>i. <input type="checkbox"/>Transfer pursuant to trust agreement or will (attach a copy of trust agreement or will)</p> <p>j. <input type="checkbox"/>Gift transfer not subject to indebtedness</p> <p>k. <input type="checkbox"/>Gift transfer subject to indebtedness</p> <p>l. <input type="checkbox"/>Transfer to a business entity in exchange for an interest in the business entity (complete Schedule F, page 7)</p> | <p>m. <input checked="" type="checkbox"/>Transfer to a governmental body</p> <p>n. <input type="checkbox"/>Correction deed</p> <p>o. <input type="checkbox"/>Transfer by or to a tax exempt organization (complete Schedule G, page 8)</p> <p>p. <input type="checkbox"/>Transfer of property partly within and partly without NYC</p> <p>q. <input type="checkbox"/>Transfer of successful bid pursuant to foreclosure</p> <p>r. <input type="checkbox"/>Transfer by borrower solely as security for a debt or a transfer by lender solely to return such security</p> <p>s. <input type="checkbox"/>Transfer wholly or partly exempt as a mere change of identity or form of ownership. Complete Schedule M, page 9)</p> <p>t. <input type="checkbox"/>Transfer to a REIT or to a corporation or partnership controlled by a REIT. (Complete Schedule R, pages 10 and 11)</p> <p>u. <input type="checkbox"/>Other transfer in connection with financing (describe): _____</p> <p>v. <input checked="" type="checkbox"/>Other (describe): <u>environmental easement</u></p> |
|--|--|

● **TYPE OF PROPERTY (✓)**

a. ☐ 1-3 family house

b. ☐ Individual residential condominium unit

c. ☐ Individual cooperative apartment

d. ☐ Commercial condominium unit

e. ☐ Commercial cooperative

f. ☐ Apartment building

g. ☐ Office building

h. ☐ Industrial building

i. ☐ Utility

j. ☒ OTHER. (describe):
Non-residential vacant land

● **TYPE OF INTEREST (✓)**

Check box at LEFT if you intend to record a document related to this transfer. Check box at RIGHT if you do not intend to record a document related to this transfer.

REC.	NON REC.
a. <input type="checkbox"/> Fee	<input checked="" type="checkbox"/>
b. <input type="checkbox"/> Leasehold Grant	<input checked="" type="checkbox"/>
c. <input type="checkbox"/> Leasehold Assignment or Surrender	<input checked="" type="checkbox"/>
d. <input checked="" type="checkbox"/> Easement	<input type="checkbox"/>
e. <input type="checkbox"/> Development Rights	<input checked="" type="checkbox"/>
f. <input type="checkbox"/> Stock	<input checked="" type="checkbox"/>
g. <input type="checkbox"/> Partnership Interest	<input checked="" type="checkbox"/>
h. <input type="checkbox"/> OTHER. (describe):	<input checked="" type="checkbox"/>

SCHEDULE 1 - DETAILS OF CONSIDERATION ▼

COMPLETE THIS SCHEDULE FOR ALL TRANSFERS AFTER COMPLETING THE APPROPRIATE SCHEDULES ON PAGES 5 THROUGH 11. ENTER "ZERO" ON LINE 11 IF THE TRANSFER REPORTED WAS WITHOUT CONSIDERATION.

1. Cash.....	● 1.		
2. Purchase money mortgage.....	● 2.		
3. Unpaid principal of pre-existing mortgage(s)	● 3.		
4. Accrued interest on pre-existing mortgage(s)	● 4.		
5. Accrued real estate taxes	● 5.		
6. Amounts of other liens on property	● 6.		
7. Value of shares of stock or of partnership interest received	● 7.		
8. Value of real or personal property received in exchange.....	● 8.		
9. Amount of Real Property Transfer Tax and/or other taxes or expenses of the grantor which are paid by the grantee	● 9.		
10. Other (describe):	● 10.		
11. TOTAL CONSIDERATION (add lines 1 through 10 - must equal amount entered on line 1 of Schedule 2) (see instructions)	● 11.		\$0.00

See instructions for special rules relating to transfers of cooperative units, liquidations, marital settlements and transfers of property to a business entity in return for an interest in the entity.

SCHEDULE 2 - COMPUTATION OF TAX ▼

A. Payment	Pay amount shown on line 14 - See Instructions	Payment Enclosed
1. Total Consideration (from line 11, above).....	● 1.	\$0.00
2. Excludable liens (see instructions).....	● 2.	
3. Consideration (Line 1 less line 2).....	● 3.	\$0.00
4. Tax Rate (see instructions)	● 4.	0 %
5. Percentage change in beneficial ownership (see instructions)	● 5.	%
6. Taxable consideration (multiply line 3 by line 4)	● 6.	
7. Tax (multiply line 6 by line 4)	● 7.	\$0.00
8. Credit (see instructions)	● 8.	
9. Tax due (line 7 less line 8) (if the result is negative, enter zero).....	● 9.	
10. Interest (see instructions).....	● 10.	
11. Penalty (see instructions).....	● 11.	
12. Total tax due (add lines 9, 10 and 11)	● 12.	\$0.00
13. Filing Fee	● 13.	50 00
14. Total Remittance Due (line 12 plus line 13).....	● 14.	\$50.00

SCHEDULE 3 - TRANSFERS INVOLVING MULTIPLE GRANTORS AND / OR GRANTEE(S) OR A PARTNERSHIP ▼**NOTE** If additional space is needed, attach copies of this schedule or an addendum listing all of the information required below.**GRANTOR(S)/PARTNER(S)**

NAME PERMANENT MAILING ADDRESS AFTER TRANSFER CITY AND STATE ZIP CODE	SOCIAL SECURITY NUMBER OR EMPLOYER IDENTIFICATION NUMBER
NAME PERMANENT MAILING ADDRESS AFTER TRANSFER CITY AND STATE ZIP CODE	SOCIAL SECURITY NUMBER OR EMPLOYER IDENTIFICATION NUMBER
NAME PERMANENT MAILING ADDRESS AFTER TRANSFER CITY AND STATE ZIP CODE	SOCIAL SECURITY NUMBER OR EMPLOYER IDENTIFICATION NUMBER
NAME PERMANENT MAILING ADDRESS AFTER TRANSFER CITY AND STATE ZIP CODE	SOCIAL SECURITY NUMBER OR EMPLOYER IDENTIFICATION NUMBER

GRANTEE(S)/PARTNER(S)

NAME PERMANENT MAILING ADDRESS AFTER TRANSFER CITY AND STATE ZIP CODE	SOCIAL SECURITY NUMBER OR EMPLOYER IDENTIFICATION NUMBER
NAME PERMANENT MAILING ADDRESS AFTER TRANSFER CITY AND STATE ZIP CODE	SOCIAL SECURITY NUMBER OR EMPLOYER IDENTIFICATION NUMBER
NAME PERMANENT MAILING ADDRESS AFTER TRANSFER CITY AND STATE ZIP CODE	SOCIAL SECURITY NUMBER OR EMPLOYER IDENTIFICATION NUMBER
NAME PERMANENT MAILING ADDRESS AFTER TRANSFER CITY AND STATE ZIP CODE	SOCIAL SECURITY NUMBER OR EMPLOYER IDENTIFICATION NUMBER

GRANTOR'S ATTORNEY ▼


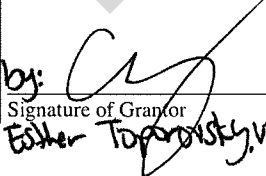


Name of Attorney Theresa Omansky, Esq. c/o Housing Partnership		Telephone Number (646) 217-3390	
Address (number and street) 253 West 35th Street, 3rd Floor		City and State New York, NY	Zip Code 10001
EMPLOYER IDENTIFICATION NUMBER	<input type="text"/> - <input type="text"/>	OR	SOCIAL SECURITY NUMBER
			<input type="text"/> - <input type="text"/> - <input type="text"/>

GRANTEE'S ATTORNEY ▼

Name of Attorney NYS Department of Environmental Conservation		Telephone Number (518) 402-9518	
Address (number and street) 625 Broadway		City and State Albany, NY	Zip Code 12233
EMPLOYER IDENTIFICATION NUMBER	1 4 - 6 0 1 3 2 0 0	OR	SOCIAL SECURITY NUMBER
			<input type="text"/> - <input type="text"/> - <input type="text"/>

CERTIFICATION ▼

I swear or affirm that this return, including any accompanying schedules, affidavits and attachments, has been examined by me and is, to the best of my knowledge, a true and complete return made in good faith, pursuant to Title 11, Chapter 21 of the Administrative Code and the regulations issued thereunder.

GRANTOR		GRANTEE	
Sworn to and subscribed to	87- 3600507	Sworn to and subscribed to	14-6013200
before me on this <u>14th</u> day	EMPLOYER IDENTIFICATION NUMBER OR SOCIAL SECURITY NUMBER	before me on this _____ day	EMPLOYER IDENTIFICATION NUMBER OR SOCIAL SECURITY NUMBER
of <u>July</u> , <u>2022</u>	HP Park Lane Senior Housing Development Fund Company, Inc.	of _____, _____	People of State of New York by Dept. Environmental Conservation
	Name of Grantor		Name of Grantee
	by: 		Signature of Grantee
Signature of Notary	Signature of Grantor	Signature of Notary	
			
MILEIKA BETHANCOURT Notary Public, State of New York No. 01BE6220876 Qualified in Kings County Commission Expires April 19, 2022		GRANTEE: To ensure that your property and water/sewer tax bills are sent to the proper address you must complete the Registration forms included in this packet. Owner's Registration Cards can also be obtained by calling the Department of Finance at (718) 935-9500.	

HP PARK LANE SENIOR HOUSING DEVELOPMENT FUND COMPANY, INC.

By: _____

Name: Esther Toporovsky

Title: Vice President

STATE OF NEW YORK)

) SS:

COUNTY OF NEW YORK)

On this 14th day of July in the year 2022 before me, the undersigned, a Notary Public in and for said State, personally appeared **Esther Toporovsky**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her capacity, and that by her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Notary Public

MILEIKA BETHANCOURT
Notary Public, State of New York
No. 01BE6220876
Qualified in Kings County
Commission Expires April 19, 2024

SIVE | PAGET | RIESEL

KAYLEY MCGRATH
DIRECT DIAL: 646.378.7200
KMCGRATH@SPRLAW.COM

August 2, 2022

VIA FEDEX & FTS

Cheryl Salem
New York State Department of Environmental Conservation
Office of General Counsel
625 Broadway
Albany, NY 12233-1500

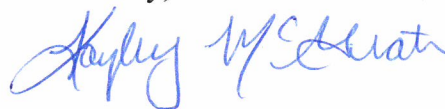
Re: Brownfield Cleanup Program ("BCP"),
1940 Turnbull Avenue, Bronx, NY, Site No. C203138
Environmental Easement Application Submission

Dear Ms. Salem,

On behalf of PL Sara LLC, the Applicant under Brownfield Cleanup Agreement ("BCA") Index No. C203138-09-20, enclosed please find an Environmental Easement Checklist/Certification for the above-referenced BCP Site No. C203138 (the "Site") and all required supporting documents listed in Attachment A to the Checklist/Certification form. Please be advised that the Applicant has also submitted a BCA Amendment that is currently under review by the New York State Department of Environmental Conservation to: (i) change the fee owner of the Site to "HP Park Lane Senior Housing Development Fund Company, Inc."; (ii) add Applicant—PL Sara LLC—as a new beneficial owner of the Site; and (iii) request a determination that the Site is eligible for tangible property credits. PL Sara LLC will remain the sole Remedial Party of this Site.

Please do not hesitate to contact me if there are any questions or concerns. Thank you for your time and attention to this matter.

Sincerely,



Kayley R. McGrath

List of Site Contacts

DRAFT

APPENDIX B – LIST OF SITE CONTACTS

<u>Name</u>	<u>Phone/Email Address</u>
Site Owner and Remedial Party: Joshua Siegel (PL SARA LLC)	(917) 364-7148 j.siegel@dvln.com
Qualified Environmental Professional: Frank Cherena, P.G. Roux Environmental Engineering and Geology, D.P.C.	(631) 232-2600 (office) (631) 445-0357 (mobile) fcherena@rouxinc.com
Remedial Engineer: Charles McGuckin, P.E. Roux Environmental Engineering and Geology, D.P.C.	(631) 232-2600 (office) (631) 921-6857 (mobile) cmcguckin@rouxinc.com
NYSDEC DER Project Manager: Christopher Allan	(718) 482-4065 Christopher.Allan@dec.ny.gov
NYSDEC DER Project Manager's Supervisor: Jane O'Connell	(718) 482-4599 Jane.OConnell@dec.ny.gov
NYSDEC Site Control	(518) 402-9553 DERSiteControl@dec.ny.gov
NYSDOH Project Manager: Sally Rushford	(518) 402-7860 Sally.Rushford@health.ny.gov
Remedial Party Attorney: Sive, Paget & Riesel P.C. % Michael Bogin	(212) 421-2150 ext. 210 mbogin@sprlaw.com

Excavation Work Plan

DRAFT

APPENDIX C – EXCAVATION WORK PLAN (EWP)

C-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination or breach or alter the site's cover system, the site owner or their representative will notify the NYSDEC contacts listed in the table below. Table C-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.

Table C-1: Notifications*

NYSDEC Project Manager: Christopher Allan	Phone: (718) 482-4065 Email: Christopher.Allan@dec.ny.gov
NYSDEC Project Manager's Supervisor: Jane O'Connell	Phone: (718) 482-4599 Email: Jane.OConnell@dec.ny.gov
NYSDEC Site Control	Phone: (518) 402-9553 Email: DERSiteControl@dec.ny.gov

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

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, any modifications of truck routes, 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, and submittals (e.g., reports) to the NYSDEC documenting the completed intrusive work;
- A summary of the applicable components of this EWP;

- A statement that the work will be performed in compliance with this EWP, 29 CFR 1910.120 and 29 CFR 1926 Subpart P;
- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix E of this SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with the required request to import form and all supporting documentation including, but not limited to, chemical testing results.

The NYSDEC project manager will review the notification and may impose additional requirements for the excavation that are not listed in this EWP. The alteration, restoration and modification of engineering controls must conform with Article 145 Section 7209 of the Education Law regarding the application professional seals and alterations.

C-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed during all excavations into known or potentially contaminated material (remaining contamination) or a breach of the cover system. A qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State will perform the screening. Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal and material that requires testing to determine if the material can be reused on-site as soil beneath a cover or if the material can be used as cover soil. Further discussion of off-site disposal of materials and on-site reuse is provided in Sections C-6 and C-7 of this Appendix.

C-3 SOIL STAGING METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each 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.

C-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and remedial party (if applicable) and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site. A site utility stakeout will be completed for all utilities prior to any ground intrusive activities at the site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements). Trucks transporting contaminated soil must have either tight-fitting opaque covers that are secured on the sides and/or back, or opaque covers that are locked on all sides.

A truck wash will be operated on-site, as appropriate. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials. Material accumulated from the street cleaning and egress cleaning activities will be disposed off-site at a permitted landfill facility in accordance with all applicable local, State, and Federal regulations.

C-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be secured with either tight-fitting opaque covers that are secured on the sides and/or back, or opaque covers that are locked on all sides. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

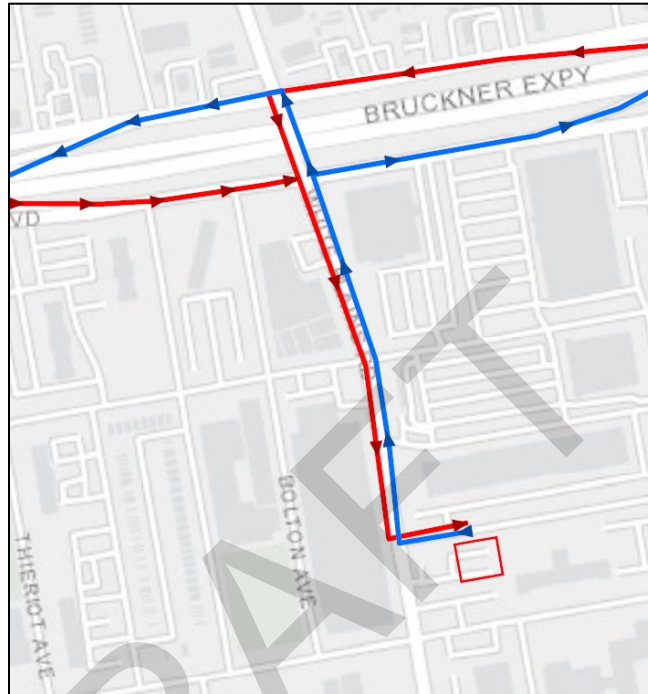
Truck transport routes are as follows:

From Site:

- Head west on Turnbull Avenue.
- Turn right onto White Plains Road
- Turn left onto Bruckner Boulevard
- Take ramp onto Bruckner Expressway

To Site:

- From Bruckner Expressway take Exit 53 (White Plains Road)
- Head south on White Plains Road towards Story Avenue
- Turn left onto Turnbull Avenue and proceed to the Site



All trucks loaded with site materials will exit the vicinity of the site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

C-6 MATERIALS DISPOSAL OFF-SITE

All material excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed off-site in a permitted facility in accordance with all local, State and Federal regulations. If disposal of material from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC project manager. Unregulated off-site management of materials from this site will not occur without formal NYSDEC project manager approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, (e.g. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C&D debris recovery facility). Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include, but will not be limited to: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled consistent with 6 NYCRR Parts 360, 361, 362, 363, 364 and 365. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State C&D debris recovery facility (6 NYCRR Subpart 360-15 registered or permitted facility).

C-7 MATERIALS REUSE ON-SITE

The qualified environmental professional, as defined in 6 NYCRR Part 375, will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material (i.e. contaminated) does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on-site will be placed below the demarcation layer or impervious surface, and will not be reused within the cover system or within landscaping berms. Contaminated on-site material may only be used beneath the site cover as backfill for subsurface utility lines with prior approval from the DEC project manager.

Proposed materials for reuse on-site must be sampled for full suite analytical parameters including per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane. The sampling frequency will be in accordance with DER-10 Table 5.4(e)10 unless prior approval is obtained from the NYSDEC project manager for modification of the sampling frequency. The analytical results of soil/fill material testing must meet the site use criteria presented in NYSDEC DER-10 Appendix 5 – Allowable Constituent Levels for Imported Fill or Soil for all constituents listed, and the NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances April 2023 guidance values. Approvals for modifications to the analytical parameters must be obtained from the NYSDEC project manager prior to the sampling event.

Soil/fill material for reuse on-site will be segregated and staged as described in Sections C-2 and C-3 of this EWP. The anticipated size and location of stockpiles will be provided in the 15-day notification to the NYSDEC project manager. Stockpile locations will be based on the location of site excavation activities and proximity to nearby site features. Material reuse on-site will comply with requirements of NYSDEC DER-10 Section 5.4(e)4. Any modifications to the requirements of DER-10 Section 5.4(e)4 must be approved by the NYSDEC project manager.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

C-8 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 off-site at a permitted facility 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.

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.

Liquids discharged into the New York City sewer system will be addressed through approval by the New York City Department of Environmental Protection (NYCDEP).

C-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the RAWP. The existing cover system is comprised of a minimum of:

- Parking lot comprised of asphalt paving underlain by 24 inches of sub-base aggregate backfill.

The demarcation layer, consisting of sub-base aggregate backfill, will be replaced to provide a visual reference to the top of the remaining contamination zone, the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this SMP. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the remaining contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in an updated SMP. The alteration, restoration and modification of engineering controls must conform with Article 145 Section 7209 of the Education Law regarding the application professional seals and alterations.

C-10 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional, as defined in 6 NYCRR Part 375, 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. A copy of the form is presented in Appendix G.

Material from industrial sites, spill sites, 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 6 NYCRR 375-6.7(d) and DER-10 Appendix 5 for Restricted Residential Use. 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 9. Soils that meet 'general' fill requirements under 6 NYCRR Part 360.13, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC project manager. Soil material will be sampled for the full suite of analytical parameters, including PFAS and 1, 4-dioxane. 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.

C-11 STORMWATER POLLUTION PREVENTION

Erosion and sediment controls to be installed during future disturbance of residual contamination, if required, will be in conformance with requirements presented in the New York State Guidelines for Urban Erosion and Sediment Control. As required, silt fence, 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.

C-12 EXCAVATION CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition. The NYSDEC project manager will be promptly notified of the discovery.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes [TAL metals, TCL volatiles and semi-volatiles (including 1,4-dioxane), TCL pesticides and PCBs, and PFAS], unless the site history and previous sampling results provide sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC project manager for approval prior to sampling. Any tanks will be closed as per NYSDEC regulations and guidance.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone within two hours to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Report.

C-13 COMMUNITY AIR MONITORING PLAN

The CAMP is included within Appendix C of the HASP, which is located in Appendix E of this SMP.

C-14 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 limiting open excavation areas and covering excavated soil (i.e., with polyethylene sheeting or covered in roll-off containers). 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.

C-15 DUST CONTROL PLAN

Particulate monitoring must be conducted according to the Community Air Monitoring Plan (CAMP) provided in Appendix C of the HASP, which is included as Appendix E of this SMP. If particulate levels at the site exceed the thresholds listed in the CAMP or if airborne dust is

observed on the site or leaving the site, the dust suppression techniques listed below will be employed. The remedial party will also take measures listed below to prevent dust production on the site.

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 using 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.

C-16 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.

Responsibilities of Owner and Remedial Party

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Responsibilities

The responsibilities for implementing the Site Management Plan (“SMP”) for the Park Lane Senior site (the “site”), number C203138, are divided between the site owner(s) and a Remedial Party, as defined below. The owner(s) is/are currently listed as:

PL SARA LLC (the “owner”)

Joshua Siegel

j.siegel@dvln.com

(917) 364-7148

Solely for the purposes of this document and based upon the facts related to a particular site and the remedial program being carried out, the term Remedial Party (“RP”) refers to any of the following: certificate of completion holder, volunteer, applicant, responsible party, and, in the event the New York State Department of Environmental Conservation (“NYSDEC”) is carrying out remediation or site management, the NYSDEC and/or an agent acting on its behalf. The RP is:

PL SARA LLC

Joshua Siegel

j.siegel@dvln.com

(917) 364-7148

Nothing on this page shall supersede the provisions of an Environmental Easement, Consent Order, Consent Decree, agreement, or other legally binding document that affects rights and obligations relating to the site.

Site Owner’s Responsibilities:

- 1) The owner shall follow the provisions of the SMP as they relate to future construction and excavation at the site.
- 2) In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that all Institutional Controls set forth in an Environmental Easement remain in place and continue to be complied with. The owner shall provide a written certification to the RP, upon the RP’s request, in order to allow the RP to include the certification in the site’s Periodic Review Report (PRR) certification to the NYSDEC.

- 3) In the event the site is delisted, the owner remains bound by the Environmental Easement and shall submit, upon request by the NYSDEC, a written certification that the Environmental Easement is still in place and has been complied with.
- 4) The owner shall grant access to the site to the RP and the NYSDEC and its agents for the purposes of performing activities required under the SMP and assuring compliance with the SMP.
- 5) The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. If damage to the remedial components or vandalism is evident, the owner shall notify the site's RP and the NYSDEC in accordance with the timeframes indicated in Section 1.3-Notifications.
- 6) If some action or inaction by the owner adversely impacts the site, the owner must notify the site's RP and the NYSDEC in accordance with the time frame indicated in Section 1.3-Notifications and coordinate the performance of necessary corrective actions with the RP.
- 7) The owner must notify the RP and the NYSDEC of any change in ownership of the site property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the site property. 6 NYCRR Part contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following: Sixty days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 1.3 of the SMP. A change of use includes, but is not limited to, any activity that may increase direct human or environmental exposure (e.g., day care, school or park). A 60-Day Advance Notification Form and Instructions are found at <http://www.dec.ny.gov/chemical/76250.html>.
- 8) The owner will maintain fences, conduct mowing, etc. on behalf of the RP. The RP remains ultimately responsible for maintaining the engineering controls.

Remedial Party Responsibilities

- 1) The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the site.
- 2) The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, periodic review reports and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.

- 3) Before accessing the site property to undertake a specific activity, the RP shall provide the owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the owner, upon the owner's request, (ii) the NYSDEC, and (iii) other entities, if required by the SMP, a copy of any data generated during the site visit and/or any final report produced.
- 4) If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and obtain final approval from the NYSDEC. Within 5 business days after NYSDEC approval, the RP shall submit a copy of the approved SMP to the owner(s).
- 5) The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of and reporting with respect to any remedial system (Engineering Controls). The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at <http://www.dec.ny.gov/chemical/76250.html>.
- 6) The RP shall notify the NYSDEC of any damage to or modification of the systems as required under Section 1.3- Notifications of the SMP.
- 7) Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the RP shall submit to the NYSDEC for approval an amended SMP.
- 8) Any change in use, change in ownership, change in site classification (*e.g.*, delisting), reduction or expansion of remediation, and other significant changes related to the site may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP shall contact the NYSDEC project manager to discuss the need to update such documents.

Change in RP ownership and/or control and/or site ownership does not affect the RP's obligations with respect to the site unless a legally binding document executed by the NYSDEC releases the RP of its obligations.

Future site owners and RPs and their successors and assigns are required to carry out the activities set forth above.

Health and Safety Plan

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Site-specific Health and Safety Plan

Site Name: Park Lane Senior
NYSDEC BCP Site No. C203138

Site Address: 1940 Turnbull Avenue
Bronx, New York
Tax Block 3672, Tax Lot 30

May 18, 2020

Prepared for:

PL Sara LLC
70 East 55th Street
Bronx, New York

Prepared by:

**Roux Environmental Engineering
and Geology, D.P.C.**
209 Shafter Street
Islandia, New York 11749

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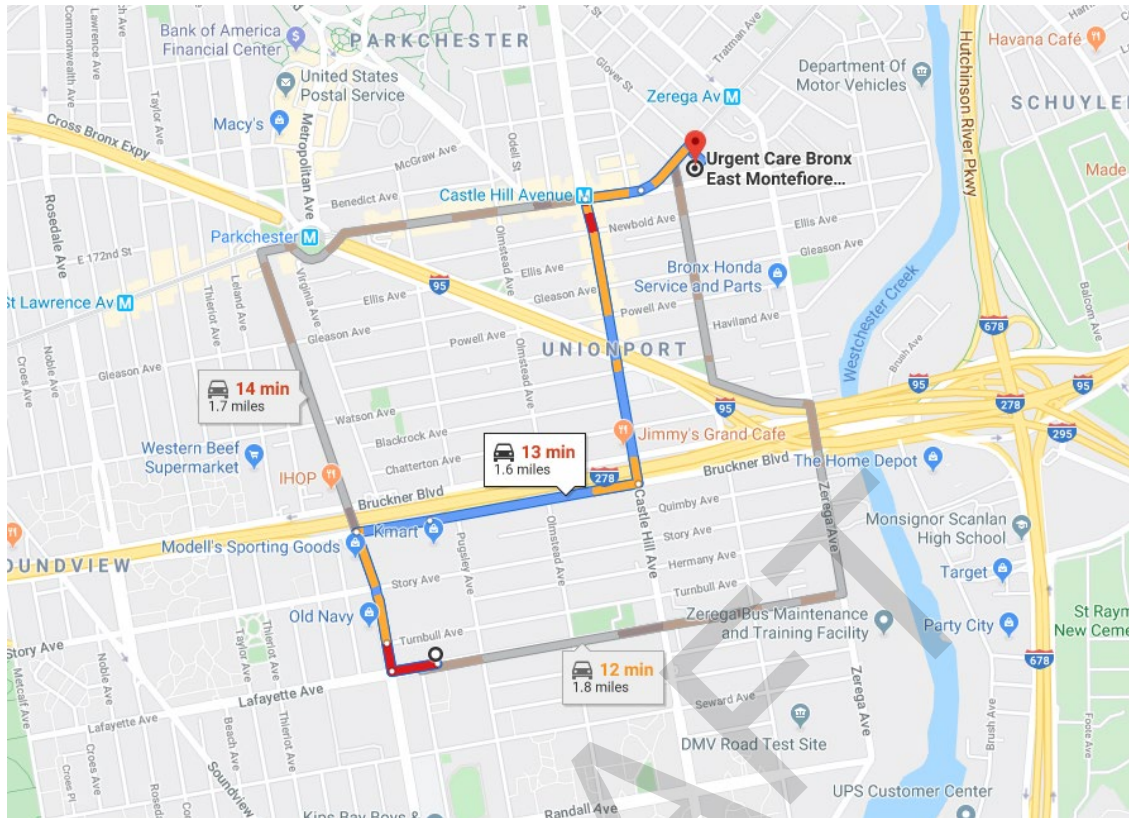
- A. Job Safety Analysis (JSA) Forms
- B. Personal Protective Equipment (PPE) Management Program
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- E. Heavy Equipment Exclusion Zone Policy
- F. COVID-19 Interim Health and Safety Guidance

Site-Specific Emergency Information

Emergency Phone Numbers

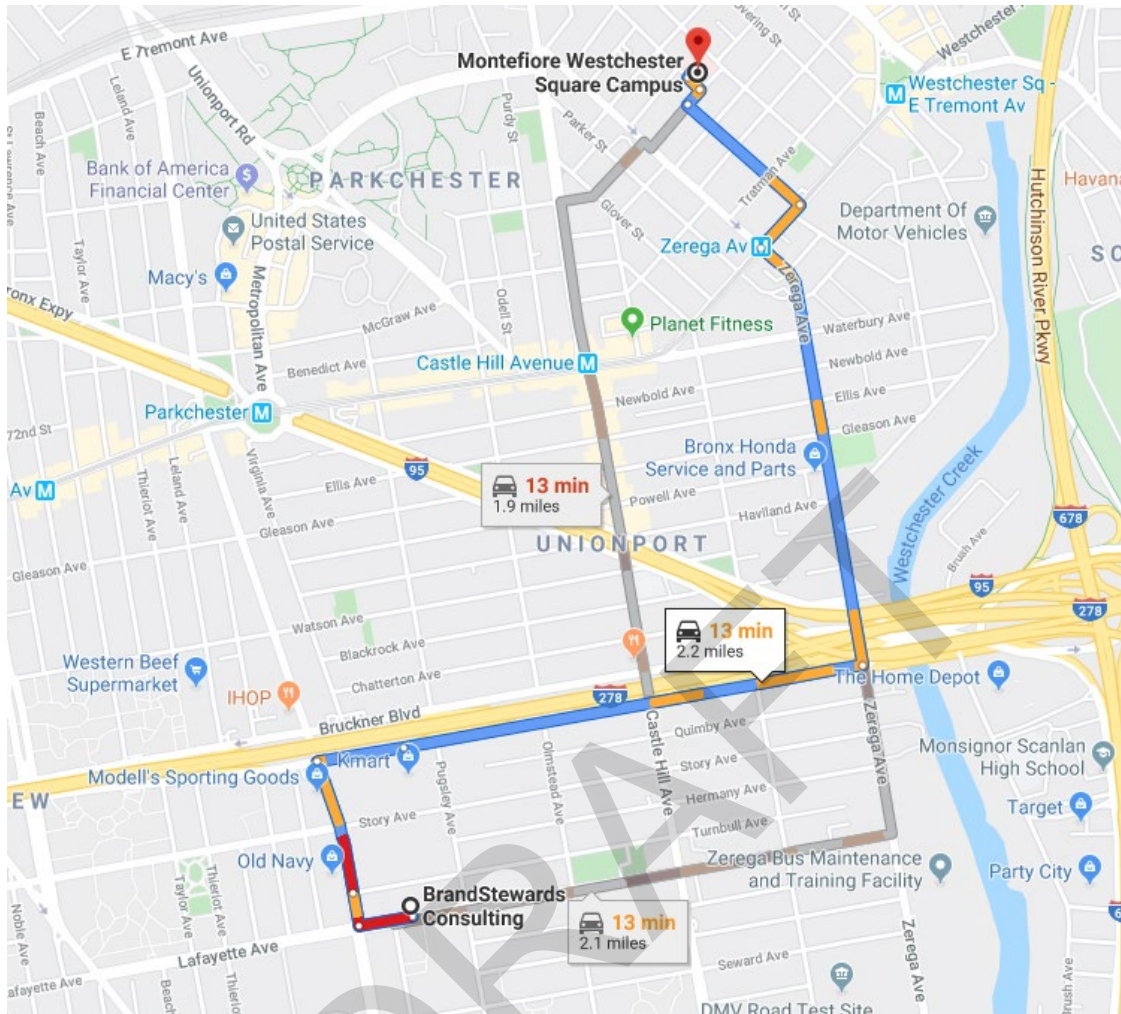
Most emergency services can be obtained by calling **911**. Where 911 service is not available, use the telephone numbers provided in the below table. The following is a master emergency phone list for use by the project management personnel. A more condensed version of the emergency numbers listed below will be posted throughout project work areas. Emergencies encountered on the site will be responded to by a combination of off-site emergency services and site personnel.

Emergency Contact Information			
Site Personnel			
Title	Contact	Telephone	
Project Manager (PM)	Kathryn Sommo	Main: (631)232-2600 Direct: (631)630-2390 Mobile: (631)214-0929	
Project Principal (PP)	Frank Cherena	Main: (631)232-2600 Direct: (631)630-2388 Mobile: (631)445-0357	
Site Supervisor (SS)	Kathryn Sommo	Main: (631)232-2600 Direct: (631)630-2390 Mobile: (631)214-0929	
Site Health and Site Safety Officer (SHSO)	To be Determined (TBD)	Main: (631)232-2600 Direct: TBD Mobile: TBD	
Office Health and Safety Manager (OHSM)	Kristina DeLuca	Main: (631)232-2600 Direct: (631)630-2406 Mobile: (516)830-1189	
Corporate Health and Safety Manager (CHSM)	Brian Hobbs, CIH, CSP	Main: (631)232-2600 Direct: (631)630-2419 Mobile: (631)807-0193	
Client Emergency Contact	Joshua Siegel	Main: (212)350-9900 Direct: (212)527-9903 Mobile: (917)364-7148	
Outside Assistance			
Agency	Contact	Telephone	Address/Location
Ambulance/emergency medical services (EMS)	Police Dispatches	911	2300 Westchester Ave, The Bronx, NY 10462
Police	NYPD 43 rd Precinct	911/ (718)542-0888	900 Fteley Ave, The Bronx, NY 10473
Fire	FDNY Engine 96, Ladder 54	911/(212)639-9675	1689 Story Ave, The Bronx, NY 10473
Site Address	1940 Turnbull Avenue, Bronx, New York		



Directions to Urgent Care Bronx East Montefiore Medical Group:

1. Head west on Lafayette Ave toward Stickball Blvd
2. Use the middle lane to turn right onto White Plains Rd
3. Continue straight to stay on White Plains Rd
4. Turn right onto Bruckner Blvd
5. Keep right to stay on Bruckner Blvd
6. Turn left onto Castle Hill Ave
7. Use the middle lane to turn right onto Westchester Ave
8. Turn right onto Glover St
9. Turn right
10. Slight left



Directions to Westchester Square Medical Center (General Hospital):

1. Head west on Lafayette Ave toward Stickball Blvd
2. Use the middle lane to turn right onto White Plains Rd
3. Continue straight to stay on White Plains Rd
4. Turn right onto Bruckner Blvd
5. Keep right to stay on Bruckner Blvd
6. Turn left onto Zerega Ave
7. Turn right onto Westchester Ave
8. Turn left onto Rowland St
9. Turn right onto St Raymond Ave
10. Turn left onto Seddon St
11. Turn right

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1. Introduction

This Site-specific Health and Safety Plan (HASP) has been prepared by Roux Environmental Engineering and Geology, D.P.C. (Roux) for use during the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) eligibility investigation at the PL SENIOR LLC Turnbull Avenue property ("the Site"), located at 1940 Turnbull Avenue (Block 3672, Lot 30) in the Bronx, New York (see **Figure 1**). These activities fall within the scope of operations covered by the Occupational Safety and Health Administration (OSHA) standards promulgated at 29 CFR 1910.120 and 29 CFR 1926.65, both commonly referred to as the Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard. In accordance with the HAZWOPER Standard, this Site-specific HASP was prepared to address the safety and health hazards associated with the sampling activities being performed at the Site by Roux and to provide requirements and procedures for the protection of Roux employees, subcontractor personnel, government oversight personnel, Site personnel, and the general public. It also addresses client- and Site-specific requirements for health and safety.

Implementation of this HASP is the joint responsibility of the Project Manager (PM), the Site Health and Safety Officer (SHSO), and all field staff, with assistance from the Project Principal (PP), Office Health and Safety Manager (OHSM), and Corporate Health and Safety Manager (CHSM). The PM for this project is Frank Cherena/Kathryn Sommo. The Site Supervisor (SS) is Kathryn Sommo and Site Health and Safety Officer (SHSO) is yet to be determined.

This HASP will be introduced to, reviewed, and signed off on by all Roux personnel through a formal training session prior to commencing work. A copy of the HASP will be kept at the Site at all times. The Roux SHSO or PM will be responsible for posting any changes, amendments, memos, etc. to the HASP. Any revisions to this HASP will be signed by appropriate personnel, which can include Roux's PP, CHSM, and SS. Any changes will be announced to all workers at the next safety meeting.

1.1 Roles and Responsibilities

Overall Roles and Responsibilities (R&Rs) of Roux personnel are provided in Roux's Policies and Procedures Manual. Only those R&Rs specific to HASP requirements are listed below.

Project Manager (PM)

The PM has responsibility and authority to direct all work operations. The PM coordinates safety and health functions with the Site Health and Safety Officer (SHSO), has the authority to oversee and monitor the performance of the SHSO, and bears ultimate responsibility for the proper implementation of this HASP. The specific duties of the PM are:

- preparing and coordinating the Site work plan;
- providing Site supervisor(s) with work assignments and overseeing their performance; Coordinating safety and health efforts with the SHSO;
- ensuring effective emergency response through coordination with the Emergency Response Coordinator (ERC);
- serving as primary Site liaison with public agencies and officials and Site contractors.

Site Health and Safety Officer (SHSO)

The SHSO has full responsibility and authority to develop and implement this HASP and to verify compliance. The SHSO reports to the Project Manager. The SHSO is on Site or readily accessible to the Site during all work operations and has the authority to halt Site work if unsafe conditions are detected. The specific responsibilities of the SHSO include:

- managing the safety and health functions on this Site;
- serving as the Site's point of contact for safety and health matters;
- ensuring Site monitoring, worker training, and effective selection and use of PPE;
- assessing Site conditions for unsafe acts and conditions and providing corrective action;
- assisting the preparation and review of this HASP;
- maintaining effective safety and health records as described in this HASP; and
- coordinating with the Site Supervisor(s) and others as necessary for safety and health efforts.

Site Supervisor

The Site Supervisor is responsible for field operations and reports to the Project Manager (PM). The Site Supervisor ensures the implementation of the HASP requirements and procedures in the field. The specific responsibilities of the Site Supervisor include:

- executing the work plan and schedule as detailed by the PM;
- coordination with the SHSO on safety and health; and
- ensuring Site work compliance with the requirements of this HASP.

Employees

All Roux employees are responsible for reading and following all provisions of the Corporate Health and Safety Manual, including this HASP. Employees report to the SS at the project Site. Each employee is also responsible for the following:

- wearing all appropriate PPE as outlined within this HASP;
- attending all safety meetings;
- inspecting tools and equipment prior to use, and taking any defective tools or equipment out of service;
- appropriately documenting field events as they occur within a logbook or equivalent;
- properly operating machinery and/or equipment only if trained to do so;
- stopping work operations if unsafe conditions exist;
- identifying and mitigating hazards when observed;
- reporting all incidents and near misses to the Roux SHSO and SS immediately; and
- knowing where emergency equipment is located (e.g. first aid kit, fire extinguisher).

Subcontractors and Visitors

Subcontractors and visitors are responsible for complying with the same health and safety requirements. It is the responsibility of all to make sure subcontractors and visitors comply and uphold the HASP.

Subcontractors and visitors have the following additional responsibilities:

- designating a qualified safety representative for the project that can make the necessary changes in work practices, as necessary;
- attending all safety meetings while participating in Roux Site work activities;
- reporting all incidents and near misses to Roux SHSO and SS immediately;
- conducting initial and periodic equipment inspections in accordance with manufacturer and regulatory guidelines; and
- providing copies of all Safety Data Sheets (SDS) to Roux SHSO for materials brought to the Site.

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2. Background

Relevant background information is provided below, including a general description of the Site; a brief review of the Site's history with respect to hazardous material use, handling, and/or storage; and a review of known and potential releases of hazardous substances at the Site.

2.1 Site Description

The Site is located at 1940 Turnbull Avenue (Block 3672, Lot 30) in the Bronx, New York. The Scope of Work will focus on the affordable senior housing development project which will be approximately 12,000 square feet (SF). The proposed development Site is located east of the existing basketball courts, north and east of the parking lot and west of a Mitchell Lama building and the associated recreational space (playground and pools).

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3. Scope of Work

A specific scope of work will be prepared for different project tasks and will vary depending on the task and the objectives for that task. In general, the scope of work may include the following:

- Site survey;
- Site inspections;
- Site maintenance;
- BCP Remedial Investigation (RI) advancement of soil borings and soil sample collection;
- BCP RI groundwater sample collection.
- BCP RI soil vapor sample collection.

If there are any changes with the scope a revision of the HASP will be required to address any new hazards.

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4. Site Control

This Site control program is designed to reduce the spread of hazardous substances from contaminated areas to clean areas, to identify and isolate contaminated areas of the Site, to facilitate emergency evacuation and medical care, to prevent unauthorized entry to the Site, and to deter vandalism and theft.

4.1 Site Map

A map of this Site, showing Site boundaries, designated work zones, and points of entry and exit is provided in **Figure 2**.

4.2 Site Access

Access to the Site is restricted to reduce the potential for exposure to its safety and health hazards. During hours of Site operation, Site entry and exit is authorized only at the points identified in **Figure 2**. Entry and exit at these points are controlled by the following: guarded gates. When the Site is not operating, access to the Site is controlled by the following: guarded gates.

4.3 Buddy System

This section is not applicable for all components of the SOW described in Section 3.0. Some Site inspections are completed by a single Roux employee. However, when completing these tasks, the single Roux employee is accompanied either by Roux subcontractors or the Site caretaker/other representatives from PL Senior LLC. Any time Roux is on-site, PL Senior LLC is made aware and communications with PL Senior LLC and the Roux PM is maintained via cellular phone.

While working in the Exclusion Zone, Site workers use the buddy system. The buddy system means that personnel work in pairs and stay in close visual contact to be able to observe one another and summon rapid assistance in case of an emergency. The responsibilities of workers using the buddy system include:

- Remaining in close visual contact with partner;
- Providing partner with assistance as needed or requested;
- Observing partner for signs of heat stress or other difficulties;
- Periodically checking the integrity of partner's PPE; and
- Notifying the Site manager or other Site personnel if emergency assistance is needed.

4.4 Site Communications

The following communication equipment is used to support on-site communication: cell phones, and visual hand signals

As applicable, hand signals will be used according to the following:

Hand Signals

SIGNAL	MEANING
Hand gripping throat	Out of air, can't breathe
Grip partner's wrist	Leave area immediately
Hands on top of head	Need assistance
Thumbs up	I'm alright, okay
Thumbs down	No, negative

4.5 Site Work Zones

This Site is divided into three (3) major zones, described below. These zones are characterized by the presence or absence of biological, chemical, or physical hazards and the activities performed within them. Zone boundaries are clearly marked at all times and the flow of personnel among the zones is controlled. The Site is monitored for changing conditions that may warrant adjustment of zone boundaries. Zone boundaries are adjusted as necessary to protect personnel and clean areas. Whenever boundaries are adjusted, zone markings are also changed, and workers are immediately notified of the change.

Exclusion Zone

The area where contamination exists is the Exclusion Zone (EZ). All areas where excavation and handling of contaminated materials take place are considered the EZ. This zone will be delineated by orange high visibility fencing. Safety tape may be used as a secondary delineation within the EZ. The zone delineation markings may be opened in areas for varying lengths of time to accommodate equipment operation or specific construction activities. The SHSO may establish more than one EZ where different levels of protection may be employed or where different hazards exist. Personnel are not allowed in the EZ without:

- A buddy (co-worker)
- Required minimum level PPE
- Medical Authorization
- Training certification
- Requirement to be in the zone

Contamination Reduction Zone

A Contamination Reduction Zone (CRZ) is established between the exclusion zone and the support zone. The CRZ contains the Contamination Reduction Corridor (CRC) and provides an area for decontamination

of personnel and equipment. The CRZ will be used for general Site entry and egress in addition to access for heavy equipment and emergency support services. Personnel are not allowed in the CRZ without:

- A buddy (co-worker)
- Appropriate PPE
- Medical authorization
- Training certification
- Requirement to be in the zone

Support Zone

The Support Zone (SZ) is an uncontaminated area that will be the field support area for the Site operations. If required, The SZ will be determined before the start of work. Appropriate sanitary facilities and safety equipment will be located in this zone. Potentially contaminated personnel or materials are not allowed in this zone. The only exception will be appropriately packaged/decontaminated and labeled samples.

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5. Job Hazard Evaluation

Roux's work at the Site is expected to entail a variety of physical, chemical, and biological hazards, all of which must be sufficiently managed to allow the work to be performed safely. Some of the hazards are Site-specific, i.e., they are associated with the nature, physical characteristics, and/or routine operation of the Site itself, while others are activity-specific, i.e., they are associated with (or arise from) the particular activity being performed. The various hazards can be grouped into the following categories:

Caught/Crushed – the potential to become caught in, under, between, or by an object or parts of an object, such as equipment with parts that open and close or move up and down (“pinch points”) or equipment that rotates, and the accompanying potential to have body parts cut, mangled, or crushed thereby.

Contact – the potential to be struck by or against moving or stationary objects that can cause physical injury, such as heavy machinery, overhead piping, moving vehicles, falling objects, and equipment (including tools and hand-held equipment) or infrastructure with the ability to cut or impale.

Energy Sources – the potential for bodily harm associated with energy sources, most notably electricity, but also including latent energy sources such as compressed air and equipment under tension (which when released could cause injurious contact or a fall).

Ergonomics – the potential for musculoskeletal injury associated with lifting/carrying, pushing/pulling, bending, reaching, and other physical activity attributable to poor body position/mechanics, repetitive motion, and/or vibration.

Exposure – the potential for injury/illness due to physical, chemical, or biological exposures in the work environment, including but not limited to temperature extremes, solar radiation, and noise (physical), chemical splashes and hazardous atmospheres (chemical), and animal/insect bites and poisonous plants (biological).

Falls – the potential to slip or trip and thus fall or drop a load, resulting in bodily injury to oneself or others.

The foregoing is intended to provide Roux employees with a general awareness of the hazards involved with Site work. A more detailed review of the potential hazards associated with each specific activity planned for the Site (or ongoing activity, as the case may be) is provided in the activity-specific Job Safety Analysis (JSA) forms in **Appendix A**. As can be seen in the JSA forms, the hazards are identified by category per the above, and specific measures designed to mitigate/manage those hazards are also identified. In preparing the JSA forms, all categories of hazards were considered, and all anticipated potential hazards were identified to the extent possible based on the experience of the personnel preparing and reviewing the JSA forms. However, there is always the possibility for an unanticipated hazard to arise, potentially as condition change over the course of the workday. Roux personnel must maintain a continual awareness of potential hazards in the work zone, regardless of whether the hazard is identified in the JSA form. Particular attention should be paid to hazards associated with exposure to hazardous substances (see Table 1 for a listing of the hazardous substances most likely to be encountered in environmental media at the Site) and to Site personnel being located “in the line of fire” with respect to moving equipment, pinch points, and latent energy, e.g., being located or having body parts located within the swing radius of an excavator, between two sections of pipe being connected, below a piece of suspended equipment, or adjacent to a compressed air line.

5.1 Hazard Communication and Overall Site Information Program

The information in the JSAs and safety data sheets is made available to all employees and subcontractors who could be affected by it prior to the time they begin their work activities. Modifications to JSAs are communicated during routine pre-work briefings.

The information in the JSAs and Safety Data Sheets (SDSs) is made available to all employees and subcontractors who could be affected by an exposure to the hazards covered in them prior to the time they begin their work activities. Modifications to JSAs are communicated during routine pre-work briefings, and periodically updated as needed in the HASP. SDSs will be maintained by the SHSO/SS for new chemicals brought on-site as needed.

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6. Emergency Response Plan

This emergency response plan details actions to be taken in the event of Site emergencies. The PM and SHSO is responsible for the implementation of emergency response procedures onsite. The SHSO/PM provides specific direction for emergency action based upon information available regarding the incident and response capabilities and initiates emergency procedures and notification of appropriate authorities. In the event of an emergency, Site personnel are evacuated and do not participate in emergency response activities, response is facilitated through external emergency services.

6.1 Emergency Response

The SHSO, after investigating the incident and relevant information, shall determine the level of response required for containment, rescue and medical care. Limited on-site emergency response activities could occur therefore the SHSO is responsible for notifying external emergency response agencies. The SHSO provides relevant information to the responding organizations, including but not limited to the hazards associated with the emergency incident, potential containment problems, and missing Site personnel.

6.2 Emergency Alerting and Evacuation

If evacuation notice is given, Site workers leave the worksite, if possible, by way of the nearest exit. Appropriate primary and alternate evacuation routes and assembly areas have been identified and are shown on the Site Plan with Emergency Muster Area **Figure 2**. The routes and assembly area will be determined by conditions at the time of the evacuation based on wind direction, the location of the hazard source, and other factors as determined by SHSO/PM.

Personnel exiting the Site gather at a designated assembly point. To determine that everyone has successfully exited the Site, personnel will be accounted for at the assembly Site. If any worker cannot be accounted for, notification is given to so that appropriate action can be initiated. Subcontractors on this Site have coordinated their emergency response plans to ensure that these plans are compatible and potential emergencies are recognized, alarm systems are clearly understood, and evacuation routes are accessible to all personnel relying upon them.

6.3 Emergency Medical Treatment and First Aid

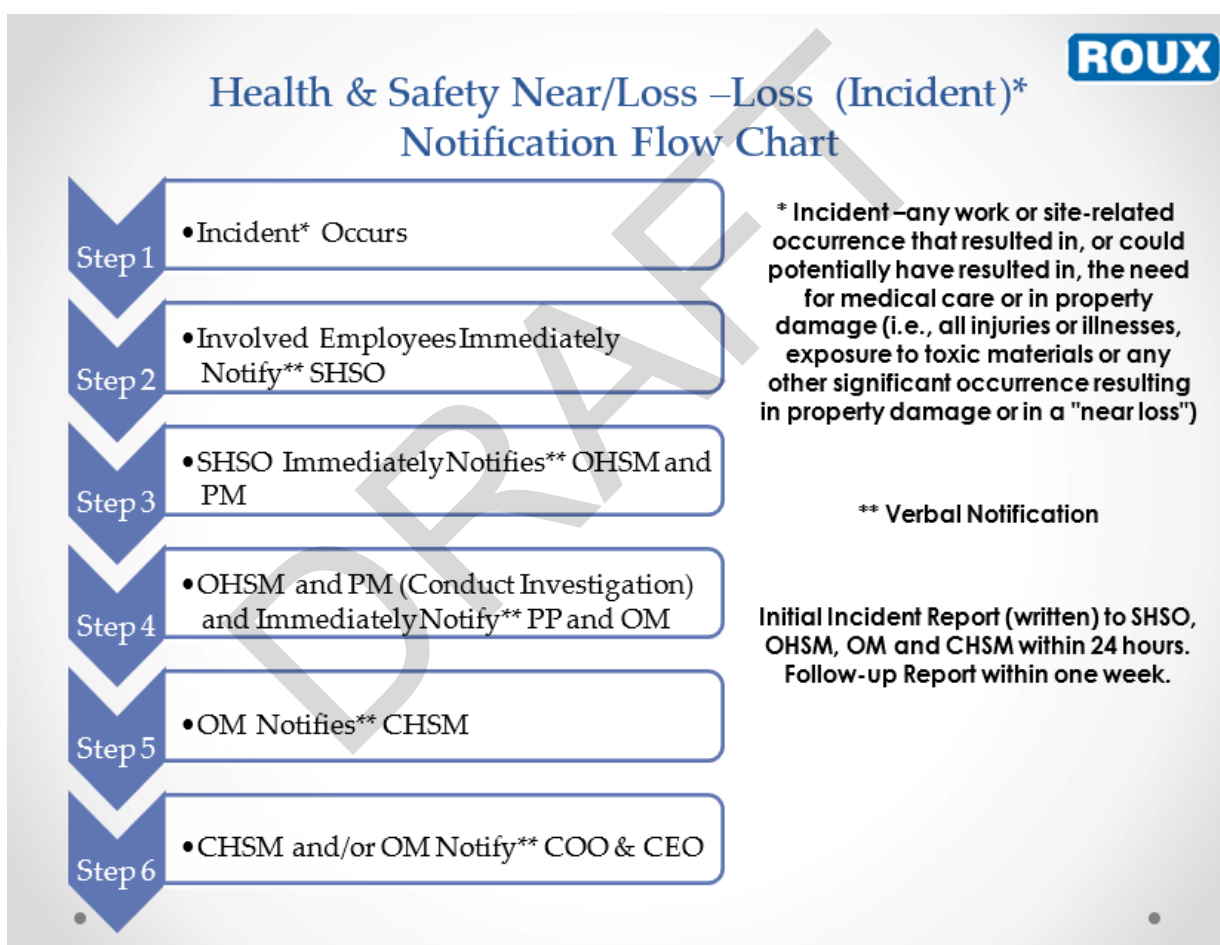
In the event of a work-related injury or illness, employees are required to follow the procedures outlined below. All work-place injury and illness situations require Roux's Project and Corporate Management Team to be notified when an injury/illness incident occurs, and communication with the contracted Occupational Health Care Management Provider, AllOne Health (AOH), is initiated. The Injury/Illness Notification Flowchart is provided below and within Roux's Incident Investigation and Reporting program included within Roux's Corporate Health and Safety Manual.

If on-site personnel require any medical treatment, the following steps will be taken:

- a. Notify Roux's Project and Corporate Management Team for any work-related injury and/or illness occurrence and communicate with the contracted Occupational Health Care Management Provider, AOH, immediately following the notifications provided above.
- b. Based on discussions with the Project Team, Corporate Management and the AOH evaluation, if medical attention beyond onsite First Aid is warranted, transport the injured / ill person (IP) to the

Urgent Care Center, or notify the Fire Department or Ambulance Emergency service and request an ambulance or transport the victim to the hospital, and continue communications with Corporate Management Team. An Urgent Care/Hospital Route map with location to Urgent Care Bronx East Montefiore Medical Group and Montefiore Westchester Square is included on Page 2 of this HASP.

- c. Decontaminate to the extent possible prior to administration of first aid or movement to medical or emergency facilities.
- d. First aid medical support will be provided by onsite personnel trained and certified in First Aid, Cardio Pulmonary Resuscitation (CPR), Automatic External Defibrillation (AED), and Blood-Borne Pathogens (BBP) Awareness, until relieved by emergency medical services (EMS).
- e. The SHSO and Project Manager will perform a Loss Investigation (LI) and the Project Team will complete the final Loss Report. If a Roux employee is involved in a vehicular incident, the employee must also complete the Acord Automobile Loss Notice.



6.4 Adverse Weather Conditions

In the event of adverse weather conditions, the SHSO or project principal will determine if work can continue without sacrificing the health and safety of all field workers. Some of the items to be considered prior to determining if work should continue are:

- Potential for heat stress and heat-related injuries.
- Potential for cold stress and cold-related injuries.

- Treacherous weather-related conditions.
- Limited visibility.
- Electrical storm potential.

Site activities will be limited to daylight hours 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.

6.5 Electrical Storm Guidelines

In the event that lightning and/or thunder are observed while working onsite, all onsite activities shall stop and personnel shall seek proper shelter (e.g., substantial building, enclosed vehicle, etc.). Work shall not resume until the threat of lightning has subsided and no lightning or thunder has been observed for 30 minutes. If the possibility of lightning is forecast for the day, advise the onsite personnel on the risks and proper procedure at the pre-work safety briefing. Continuously monitor for changing weather conditions and allow enough time to properly stop work if lightning is forecast.

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7. Safety Procedures

This section of the HASP presents the specific safety procedures to be implemented during Roux's activities at the Site in order to protect the health and safety of various on-site personnel. Minimum OSHA-mandated procedures are presented first, followed by client- and Site-specific procedures. Lastly, activity-specific procedures are discussed. These Site and activity-specific procedures supplement the general safety procedures included in Roux's Corporate Health and Safety Manual, which also must be followed in their entirety.

7.1 Training

At a minimum, Site personnel who will perform work in areas where there exists the potential for toxic exposure will be health and safety-trained prior to performing work onsite per OSHA 29 CFR 1910.120(e) and 29 CFR 1926.65(e). More specifically, all Roux, subcontractor, and other personnel engaged in sampling and remedial activities at the Site and who are exposed or potentially exposed to hazardous substances, health hazards, or safety hazards must have received at a minimum the 40 hour initial HAZWOPER training consistent with the requirements of 29CFR 1910.120(e)(3)(i) training and a minimum of 3 days' actual field experience under the direct supervision of a trained experienced supervisor, plus 8 hours of refresher training on an annual basis. Depending on tasks performed, less training may be permitted. Evidence of such training must be maintained at the Site at all times. Furthermore, all onsite management and supervisory personnel directly responsible for or who supervise the employees engaged in Site remedial operations, must have received an additional 8 hours of specialized training at the time of job assignment on topics including, but not limited to, the employer's safety and health program and the associated employee training program, personal protective equipment program, spill containment program, and health hazard monitoring procedure and techniques, plus 8 hours of refresher training on an annual basis.

Roux personnel training records are maintained in a corporate database with records available upon request from either the OHSM/SHSO/CHSM or Human Resources Department.

7.2 Site-Specific Safety Briefings for Visitors

A site-specific briefing is provided to all site visitors who enter this site beyond the site entry point. For visitors, the site-specific briefing provides information about site hazards, the site lay-out including work zones and places of refuge, the emergency alarm system and emergency evacuation procedures, and other pertinent safety and health requirements as appropriate.

7.3 HASP Information and Site-Specific Briefings for Workers

Site personnel review this HASP and are provided a site-specific tailgate briefing prior to the commencement of work to ensure that employees are familiar with this HASP and the information and requirements it contains as well as relevant JSAs. Additional briefings are provided as necessary to notify employees of any changes to this HASP as a result of information gathered during ongoing site characterization and analysis. Conditions for which we schedule additional briefings include but are not limited to: changes in site conditions, changes in the work schedule/plan, newly discovered hazards, and incidents occurring during site work.

7.4 Medical Surveillance

The medical surveillance section of the Health and Safety Plan describes how worker health status is monitored at this site. Medical surveillance is used when there is the potential for worker exposure to hazardous substance at levels above OSHA permissible exposure limits or other published limits. The purpose of a medical surveillance program is to medically monitor worker health to ensure that personnel are not adversely affected by site hazards. The provisions for medical surveillance at this site are based on the site characterization and job hazard analysis found in Section 4 of this HASP and are consistent with OSHA requirements in 29 CFR 1910.120(f) as applicable.

7.4.1 Site Medical Surveillance Program

Medical surveillance requirements are based on a worker's potential for exposure as determined by the site characterization and job hazard analysis documented in Section 4 and JSAs within **Appendix A** of this HASP and in compliance with the requirements of 29 CFR 1910.120(f)(2). Based on site information and use of direct reading instruments, limited use of respirators (less than 30 days per year), and the absence of an employee-staffed HAZMAT team, a limited medical surveillance program is required and implemented at this site. The medical surveillance program provides that:

1. Workers assigned to tasks requiring the use of respirators receive medical examinations in accordance with 29 CFR 1910.134(e) to ensure they are physically capable to perform the work and use the equipment, and
2. If a worker is injured, becomes ill, or develops signs or symptoms of possible over-exposure to hazardous substance or health hazards, medical examinations are provided to that worker as soon as possible after the occurrence and as required by the attending physician.
3. These medical examinations and procedures are performed by or under the supervision of a licensed physician and are provided to workers free of cost, without loss of pay, and at a reasonable time and place. In addition, the need to implement a more comprehensive medical surveillance program will be re-evaluated after any apparent over-exposure.

7.4.2 Medical Recordkeeping Procedures

Medical recordkeeping procedures are consistent with the requirements of 29 CFR 1910.1020 and are described in the company's overall safety and health program. A copy of that program is available at our Islandia, NY office.

The following items are maintained in worker medical records:

- Respirator fit test and selection
- Physician's medical opinion of fitness for duty (pre-placement, periodic, termination)
- Physician's medical opinion of fitness for respirator protection (pre-placement, periodic)
- Exposure monitoring results

7.4.3 Program Review

The medical program is reviewed to ensure its effectiveness. The Corporate Health and Safety Manager in coordination with the Human Resources Director is responsible for this review. At minimum, this review consists of:

- Review of accident and injury records and medical records to determine whether the causes of accidents and illness were promptly investigated and whether corrective measures were taken wherever possible;
- Evaluation of the appropriateness of required medical tests based on site exposures; and
- Review of emergency treatment procedures and emergency contacts list to ensure they were site-specific, effective, and current.

7.5 Personnel Protection

Site safety and health hazards are eliminated or reduced to the greatest extent possible through engineering controls and work practices. Where hazards are still present, a combination of engineering controls, work practices and PPE are used to protect employees. Appropriate personal protective equipment (PPE) shall be worn by Site personnel when there is a potential exposure to chemical hazards or physical hazards (e.g., falling objects, flying particles, sharp edges, electricity and noise), as determined by the SHSO. The level of personal protection, type and kind of equipment selected will depend on the hazardous conditions and in some cases cost, availability, compatibility with other equipment, and performance. An accurate assessment of all these factors will be made before work can be safely executed.

Roux maintains a comprehensive written PPE program that addresses proper PPE selection, use, maintenance, storage, fit and inspection. Roux's PPE program can be found within **Appendix B**. PPE to be used at the Site will meet the appropriate American National Standards Institute (ANSI) standards and the following OSHA (General/Construction Industry) standards for minimum PPE requirements.

The minimum level of PPE for entry onto the Site is Level D. The following equipment shall be worn:

- Work uniform (long pants, sleeved shirt)
- Hard hat
- Steel or composite toe work boots
- Safety Glasses (must comply with one of the following ANSI/ISEA Z87.1-2010, ANSI Z87.1-2003, ANSI Z87.1-2003)
- Boot Covers (as needed)
- Hearing Protection (as needed)
- High visibility clothing (shirt/vest)
- Hand Protection (e.g., minimum cut resistance meeting ANSI 105-2000 Level 2)

Note that jewelry shall be removed or appropriately secured to prevent it from becoming caught in rotating equipment or unexpectedly snagged on a fixed object. (e.g., wrist watches bracelets, rings, chains and necklaces, open earrings). Do not wear loose clothing and all shoulder length hair should be tied back.

Site specific PPE ensembles and materials are identified within task specific JSAs located within **Appendix A**, and any upgrades or downgrades of the level of protection (i.e., not specified in the JSA) must be approved by the PP and immediately communicated to all Roux personnel and subcontractors as applicable. PPE is used in accordance with manufacturer's recommendations.

7.5.1 Hearing Conservation

Hearing protection is made available when noise exposures equal or exceed an 8-hour time-weighted average sound level of 85 dBA. Hearing protection is required when the 8-hour time weighted average sound level \geq 90 dBA. Where noise exposure meets or exceeds this level, noise is listed as a physical hazard in the JSA for the tasks/operation, and hearing protection is included as one of the control measures (PPE).

7.6 Monitoring

An air monitoring program is important to the safety of on- and off-Site personnel, and the surrounding area. A preliminary survey, to establish background conditions in the immediate sampling area, may be made prior to the initiation of Site work including, but not limited to, monitoring wind direction (e.g. wind socks) and approximate temperature during all invasive Site activities. This survey will be conducted with the appropriate pre-calibrated air monitoring instrument(s), as warranted by the field activity. Once this survey has been complete, any changes in the type of PPE will be determined and relayed to those working on-Site.

Work zone air monitoring will be performed to verify that the proper level of PPE is used, and to determine if increased protection or work stoppage is required. The following equipment shall be used to monitor conditions:

- A Photoionization Detector (PID) with a lamp energy of 10.6 eV will be used to provide direct readings of organic vapor concentrations during intrusive activities to determine that personnel protection is adequate. Concentrations shall be recorded during intrusive activities with the potential to encounter contaminant vapors.

Personal exposure monitoring utilizing activated charcoal tubes may be considered based on whether or not the area sample results are at or above half of the PEL. The decision to perform the monitoring will be made by, and under the control of, the CHSM.

Below are monitoring action levels for Site-specific chemicals of concern. In the event that PID readings above the thresholds identified below are sustained for 5 minutes in the breathing zone, worker protection will require upgrading following notification to the OHSM and applicable parties (e.g., client, board of health, regulators, etc.).

7.6.1 Action Levels for Air Monitoring

PPE can remain at Level D if breathing zone VOC concentrations are less than 5 ppm and benzene is non-detect. Personnel are required to evacuate the Site when breathing zone VOC readings exceed 25 ppm.

The following tables include summaries of the air monitoring, work practices, and action levels for the expected contaminants. The action levels to initiate testing with colorimetric tubes for airborne volatiles is 1 ppm (PID reading) and is based on the Permissible Exposure Limit (PEL) for benzene (1 ppm). The colorimetric tubes are used to confirm the presence or absence of specific constituents, and they do not provide a measured concentration.

Air Monitoring Summary and Action Levels Organic Vapors	
PID Reading in Breathing Zone (ppm) ¹	Action
0-1 ppm above background ²	Continue monitoring
1-5 ppm sustained 60 seconds	Continue monitoring, if applicable initiate additional collection of benzene using colorimetric tubes.
<5 ppm and no presence of benzene	Continue Monitoring, ventilate space
≥ 5 ppm - ≤ 25 ppm and no presence of benzene	Ventilate space until PID reads < 5 ppm. If < 25 ppm cannot be achieved, upgrade to Level C ³ .
≥ 25 ppm	Ventilate space and evacuate area.

¹ Based on relative response/sensitivity of PID to benzene.

² Background concentrations should be established at the beginning of each workday. It may be necessary to re-establish background concentrations and ambient conditions vary through the day.

³ Measured air concentrations of known organic vapors will be reduced by the respirator to one half of the PEL or lower, and the individual and combined compound concentrations shall be within the service limit of the respirator cartridge.

7.6.2 Air Monitoring Equipment and Calibration

A PID calibrated to an appropriate calibration mixture will be used to detect organic vapors in and around the work areas. Monitoring will be conducted in and around all work areas and at the workers breathing zone before activities commence to establish a background level, then at 15-minute intervals throughout the day. All equipment will be calibrated according to the manufacturer's recommendation. A calibration log will be maintained and will include the name of the person who performed the calibration, the date and time calibrated, and the instrument reading at the time of calibration. A manual bellows pump or equivalent with colorimetric tubes for formaldehyde will be utilized to determine the course of action related to upgrading or downgrading the level of respiratory protection, as applicable.

If air monitoring data indicate safe levels of potentially harmful constituents at consistent intervals (5-minute intervals), then monitoring can be conducted less frequently (every 30 minutes). This determination will be made by the onsite SHSO. Monitoring data, including background readings and calibration records, will be documented. Work to be performed on-Site will conform to Roux's Standard Operating Procedures (SOPs). Conformance with these guidelines as well as the guidelines described in this HASP will aid in mitigating the physical and chemical hazards mentioned throughout this HASP. Further details regarding air monitoring are provided in the Community Air Monitoring Plan in **Appendix C**.

7.7 Tailgate Safety Meetings

A designated Site worker will provide daily safety briefings (e.g., tailgate meetings) including, but not limited to, the following scenarios:

- When new operations are to be conducted;

- Whenever changes in work practices must be implemented; and
- When new conditions are identified and/or information becomes available.

Daily safety briefings shall be recorded on the Roux Daily Tailgate Health and Safety Meeting Log/Daily Site Safety Checklist, and all completed forms will become a part of the project file.

7.8 Spill Containment

Spill containment equipment and procedures should, at a minimum, meet the requirements of the facility's Spill Prevention, Control and Countermeasure Plan, if applicable. Otherwise, spill containment equipment and procedures must be considered depending on the task including, but not limited to, chemical/product transfer points and handling.

7.8.1 Initial Spill Notification and Response

Any worker who discovers a hazardous substance spill will immediately notify Frank Cherena (Project Principal). The worker will, to his/her best ability, report the hazardous substance involved, the location of the spill, the estimated quantity of material spilled, the direction/flow of the spill material, related fire/explosion incidents, and any associated injuries without compromising their own safety.

7.8.2 Spill Evaluation and Response

Frank Cherena (Project Principal) is responsible for evaluating spills and determining the appropriate response. When this evaluation is being made, the spill area will be isolated and demarcated to the extent possible. If necessary to protect nearby community members, notification of the appropriate authorities is made by the PM as appropriate. On-site response is limited to small spills (e.g., <10 gallons), large spills require external emergency responders who will be contacted by the SHSO.

7.9 Decontamination

The decontamination section of the HASP describes how personnel and equipment are decontaminated when they leave the Exclusion Zone. This section also describes how residual waste from decontamination processes is disposed. The site decontamination procedures are designed to achieve an orderly, controlled removal or neutralization of contaminants that may accumulate on personnel or equipment. These procedures minimize worker contact with contaminants and protect against the transfer of contaminants to clean areas of the site and off-site. They also extend the useful life of PPE by reducing the amount of time that contaminants contact and can permeate PPE surfaces. Decontamination is facilitated within the contamination reduction zone at this site.

7.9.1 Decontamination Procedures for Personnel and PPE

The following are general decontamination procedures established and implemented at this site.

1. Decontamination is required for all workers exiting a contaminated area. Personnel may re-enter the Support Zone only after undergoing the decontamination procedures described below in the next section.
2. Protective clothing is decontaminated, cleaned, laundered, maintained and/or replaced as needed to ensure its effectiveness.
3. PPE used at this site that requires maintenance or parts replacement is decontaminated prior to repairs or

4. PPE used at this site is decontaminated or prepared for disposal on the premises. Personnel who handle contaminated equipment have been trained in the proper means to do so to avoid hazardous exposure.
5. This site uses an off-site laundry for decontamination of PPE. The site has informed that facility of the hazards associated with contaminated PPE from this site.
6. The site requires and trains workers that if their permeable clothing is splashed or becomes wetted with a hazardous substance, they will immediately exit the work zone, perform applicable decontamination procedures, shower, and change into uncontaminated clothing.
7. Procedures for disposal of decontamination waste meet applicable local, State, and Federal regulations.

7.9.2 Decontamination Procedures for Equipment

All tools, equipment, and machinery from the Exclusion Zone or CRZ are decontaminated in the CRZ prior to removal to the Support Zone. Equipment decontamination procedures are designed to minimize the potential for hazardous skin or inhalation exposure and to avoid cross-contamination and chemical incompatibilities.

General Equipment Decontamination Procedures:

1. Decontamination is required for all equipment exiting a contaminated area. Equipment may re-enter the Support Zone only after undergoing the equipment decontamination procedures.
2. Vehicles that travel regularly between the contaminated and clean areas of the site are carefully decontaminated each time they exit the Exclusion Zone and the effectiveness of that decontamination is monitored to reduce the likelihood that contamination will be spread to other parts of the site.
3. Particular attention is given to decontaminating tires, scoops, and other parts of heavy equipment that are directly exposed to contaminants and contaminated soil.

The following items may be used to decontaminate equipment:

- Fresh water rinse;
- Non-phosphorus detergent wash;
- Distilled water rinse;
- Acetone rinse;
- Distilled water rinse; and
- A steam cleaner or pressure washer (heavy equipment only)

7.9.3 Monitoring the Effectiveness of Decontamination Procedures

Visual examination and sampling are used to evaluate the effectiveness of decontamination procedures. Visual examination is used to ensure that procedures are implemented as described and that they appear to control the spread of contaminants under changing site conditions. Visual examination is also used to inspect for signs of residual contamination or for contaminant permeation of PPE.

Personnel who work in contaminated areas of the site, either the Contamination Reduction Zone (CRZ) or the Exclusion Zone, are trained in the principles and practices of decontamination described in this section

of the HASP and in related SOPs. If site procedures are changed as a result of inspection and monitoring, all affected employees are notified of these changes.

7.10 Confined Space Entry

Confined Space entry is not anticipated to be performed at the Site. If required, the following is a list of the safety requirements for confined space entry at the Site:

- **ROUX PERSONNEL ARE NOT AUTHORIZED TO ENTER AN OSHA PERMIT REQUIRED CONFINED SPACE;**
- Currently the scope of work **DOES NOT** require personnel to enter permitted confined space for this project; and
- Any changes to the field activities that may necessitate confined space entry will be reported to the Project Principal and OHSM.

Confined space is defined as any space, depression, or enclosure that:

- Has limited opening for entry and egress;
- Is large enough for an employee to enter and perform assigned work; and
- Is not intended for continuous occupancy.

A permit required confined space is one that meets the definition of a confined space and has one or more of the following characteristics:

- May contain or produce life-threatening atmospheres due to oxygen deficiency the presence of toxic, flammable, or corrosive contaminants;
- Contains a material that has the potential for engulfment;
- Has an internal configuration that may cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section; and
- Contains any other serious safety or health hazards.

Although Roux personnel will not perform confined space entry, it is expected that subcontractors performing cleaning and mitigation and/or remedial measures activities may be required to enter structures that are considered to be a permit required confined space. Permitting of the confined space as well as hazard mitigation for entry will be completed by the subcontractor in accordance with 1910.146.

7.11 Client and Site-Specific

In addition to the OSHA-specific procedures discussed above, there may be client and site-specific safety procedures that must be adhered to during the performance of remedial activities at the Site.

7.12 Unusual or Significant Risks

Field activities that appear to have unusual or significant risks that cannot be adequately managed with existing risk tools such as LPS, HASPs, traffic safety plans, work permits, design and O&M practices, equipment HAZOPS or other safety tools must be referred to the CHSM to help with the assessment and management of the associated potential safety risks. Examples include the use of explosives for demolition, use of firearms to control wildlife, rappelling, demolition over water, etc.

7.13 Activity-Specific

In addition to the general hazards discussed above, there are activity-specific hazards associated with each work activity planned for the Site. An activity specific JSA has been completed for each of the activities planned for the Site. JSAs are provided in **Appendix A**. In the event that new work activities or tasks are planned, JSAs will be developed and implemented prior to performing the new activities. In the absence of a JSA, the personnel performing work must prepare a field JSA and receive clearance from a designated competent safety official prior to performing any task with significant risk. In emergency situations where time is critical SPSAs will be utilized to identify the task, associated hazards and mitigative actions to take. For lower risk activities (as deemed by the discretion of a Competent Person) where a JSA is determined to not be needed, the individual(s) conducting the activities must perform SPSAs prior to and during the work.

7.13.1 Electrical and Other Utility Assessment and Accommodations

Roux shall perform a site walk to identify any potential overhead electrical or utility lines. All applicable guidelines will be followed in the vicinity of overhead power and utility lines (see Section 7.13.3 below).

A One-Call will be made prior to any subsurface work to identify any buried utility lines to identify potential hazards.

Roux has also reviewed all available Site maps showing buried utility lines to identify potential hazards, which revealed that no underground hazards are known to exist in the vicinity of the areas of the Site pertinent to this HASP.

7.13.2 Subsurface Work

Subsurface work activities will require adherence to Roux's Corporate Subsurface Utility Clearance Management program found within **Appendix D**.

7.13.3 Heavy Equipment

Use of heavy equipment at the Site will require adherence to Roux's Corporate Heavy Equipment Exclusion Zone Management Program found within **Appendix E**. Additionally, operation of the drill rig/other heavy equipment will maintain clearances from overhead power lines in accordance with OSHA 29 CFR1926.1408 Table A Minimum Clearance Distances provided below.

Minimum Required Clearances for Energized Overhead Power Lines

Nominal System Voltage of Power Line (K V)	Minimum Required Clearance (feet)
0-50	10
51-100	12
101-200	15
201-300	20
301-500	25
501-750	35
751-1000	45

1 kilovolt (KV) = 1,000 volts

7.14 Heat Stress

The National Oceanic and Atmospheric Administration records average minimum/maximum temperatures of 17-97 degrees Fahrenheit during the year in the Bronx, New York.

7.14.1 Heat Stress

Heat stress is a significant potential hazard and can be associated with heavy physical activity and/or the use of personal protective equipment in hot weather environments. Heat cramps are brought on by prolonged exposure to heat. As an individual sweats, water and salts are lost by the body resulting in painful muscle cramps. The signs and symptoms of heat stress are as follows:

- Severe muscle cramps, usually in the legs and abdomen;
- Exhaustion, often to the point of collapse; and
- Dizziness or periods of faintness.

First aid treatment includes, but is not limited to, shade, rest, and fluid replacement. Typically, the individual should recover within one-half hour while being monitored constantly. If the individual has not improved substantially within 30 minutes and the body temperature has not decreased, the individual should be transported to a hospital for medical attention.

7.14.2 Heat Exhaustion

Heat exhaustion may occur in a healthy individual who has been exposed to excessive heat while working or exercising. The circulatory system of the individual fails as blood collects near the skin to rid the body of excess heat through transference. The signs and symptoms of heat exhaustion are as follows:

- Rapid and shallow breathing;
- Weak pulse;
- Cold and clammy skin with heavy perspiration;
- Skin appears pale;

- Fatigue and weakness;
- Dizziness; and
- Elevated body temperature.

First aid treatment includes, but is not limited to, cooling the victim, elevating the feet, and replacing fluids.

If the individual is not substantially improved within 30 minutes and the body temperature has not decreased, the individual should be transported to the hospital for medical attention.

7.14.3 Heat Stroke

Heat stroke occurs when an individual is exposed to excessive heat and stops sweating. This condition is classified as a MEDICAL EMERGENCY requiring immediate cooling of the victim and transport to a medical facility. The signs and symptoms of heat stroke are as follows:

- Dry, hot red skin;
- Body temperature approaching or above 105 degrees F;
- Confusion, altered mental state, slurred speech;
- Seizures;
- Large (dilated) pupils; and
- Loss of consciousness – the individual may go into a coma.

First aid treatment requires immediate cooling and transportation to a medical facility. Heat stress is a significant hazard if any type of protective equipment (semi-permeable or impermeable) that prevents evaporative cooling is worn in hot weather environments.

7.15 Cold Stress

Cold stress is a danger at low temperatures and when the wind-chill factor is low. Prevention of cold-related illnesses is a function of whole-body protection. Adequate insulating clothing must be used when the air temperature is below 60°F. A work/rest regimen will be initiated when ambient temperatures and protective clothing cause a stressful situation. In addition, reduced work periods followed by rest in a warm area may be necessary in extreme conditions. The signs and symptoms of cold stress include the following:

- Severe shivering;
- Abnormal behavior;
- Slowing;
- Weakness;
- Stumbling or repeated falling;
- Inability to walk;
- Collapse; and/or
- Unconsciousness.

First aid requires removing the victim from the cold environment and seeking medical attention immediately. Also, prevent further body heat loss by covering the victim lightly with blankets. Do not cover the victim's face. If the victim is still conscious, administer hot drinks and encourage activity such as walking, wrapped in a blanket.

7.16 COVID-19

Measures for protecting workers from exposure to, and infection with, SARS-CoV-2, the virus that causes Coronavirus Disease 2019 (COVID-19), depend on the type of work being performed and exposure risk, including potential for interaction with people with suspected or confirmed COVID-19 and contamination of the work environment. Roux has performed an analysis of these risks based upon published government agency guidelines. Roux has developed health and safety guidance specific to COVID-19 which is provided as **Appendix F**.

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8. Field Team Review

Each person performing work at or visiting this site shall sign this section after site-specific training is completed and before being permitted to access the CRZ or Exclusion Zone.

I have read and understand this Site-Specific Health and Safety Plan. I will comply with the provision contained therein.

Site/Project: PL Senior LLC – 1940 Turnbull Avenue, Bronx, NY

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9. Approvals

By their signature, the undersigned certify that this HASP is approved and will be utilized at the Turnbull Avenue Site.

_____ Site Health and Safety Officer	_____ Date
_____ Kristina DeLuca - Office Health and Safety Manager	_____ Date
_____ Kathryn Sommo – Project Manager	_____ Date
_____ Frank Cherena – Project Principal	_____ Date

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FIGURES

1. Site Location Map
2. Site Plan with Emergency Muster Area

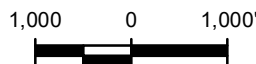
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SITE →

QUADRANGLE LOCATION



Title:

SITE LOCATION MAP

1940 TURNBULL AVENUE
BRONX, NY

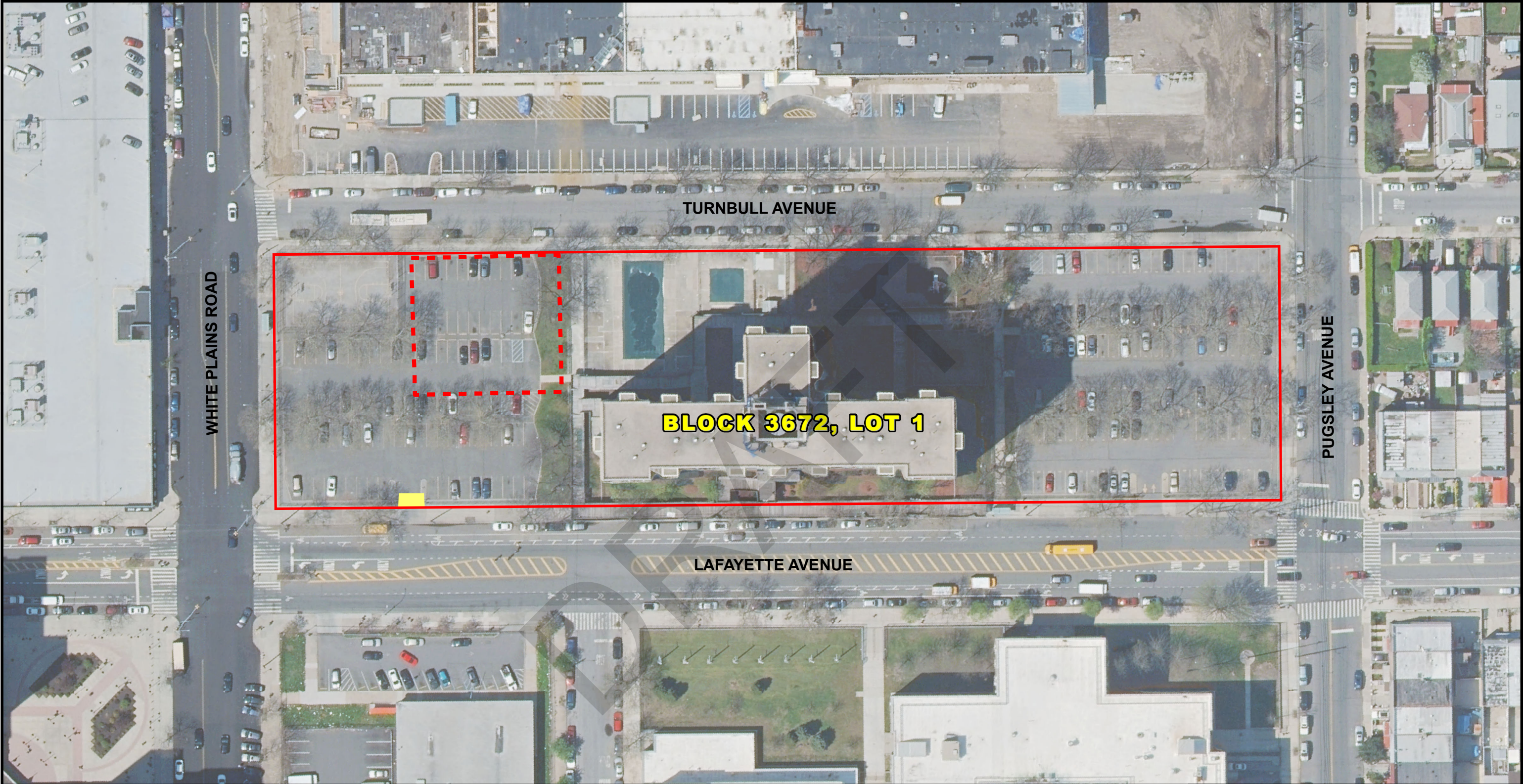
Prepared for:

PL SENIOR LLC



Compiled by: A.N.	Date: 0413/20	FIGURE 1
Prepared by: J.R.	Scale: AS SHOWN	
Project Mgr: K.S.	Project: 3475.0001Y000	
File: 3475.0001Y109.1.mxd		

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LEGEND

LOT BOUNDARY

SITE BOUNDARY

EMERGENCY MUSTER AREA



Title:

SITE PLAN WITH EMERGENCY MUSTER AREA
1940 TURNBULL AVENUE
BRONX, NY

Prepared for:

PL SENIOR LLC



Compiled by: A.N.

Prepared by: J.R.

Project Mgr: K.S.

File: 3475.0001Y109.2.mxd

Date: 02/17/20

Scale: AS SHOWN

Project: 3475.0001Y000

FIGURE

2

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APPENDICES

- A. Job Safety Analysis (JSA) Forms
- B. Personal Protective Equipment (PPE) Management Program
- C. Community Air Monitoring Program
- D. Subsurface Utility Clearance Management Program
- E. Heavy Equipment Exclusion Zone Policy
- F. COVID-19 Interim Health and Safety Guidance

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APPENDIX A

Job Safety Analysis (JSA) Forms

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DRAFT

JOB LOSS ANALYSIS		Ctrl. No. GEN-005	DATE 1/4/2018	<input type="checkbox"/> NEW <input checked="" type="checkbox"/> REVISED	PAGE 1 of 2
JLA TYPE CATEGORY: Generic		WORK TYPE: Drilling		WORK ACTIVITY (Description): Direct Push Soil Borings / Well Installation	
DEVELOPMENT TEAM		POSITION / TITLE		REVIEWED BY:	
Timothy Zei		Project Hydrogeologist		Raymond Olson	
				Christine Pietrzyk	
				Brian Hobbs	
				Joe Gentile	
				Staff Assistant Geologist	
				Office Health & Safety Manager	
				Senior Health & Safety Manager	
				Corporate Health & Safety Manager	
REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT					
<input type="checkbox"/> LIFE VEST <input checked="" type="checkbox"/> HARD HAT <input type="checkbox"/> LIFELINE / BODY HARNESS <input checked="" type="checkbox"/> SAFETY GLASSES		<input type="checkbox"/> GOGGLES <input type="checkbox"/> FACE SHIELD <input checked="" type="checkbox"/> HEARING PROTECTION: (as needed) <input checked="" type="checkbox"/> SAFETY SHOES: <u>Composite-toe or steel toe boots</u>		<input type="checkbox"/> AIR PURIFYING RESPIRATOR <input type="checkbox"/> SUPPLIED RESPIRATOR <input checked="" type="checkbox"/> PPE CLOTHING: <u>Fluorescent reflective vest or high visibility clothing. Long Sleeve Shirt</u> <input checked="" type="checkbox"/> GLOVES: <u>Leather, Nitrile and cut resistant</u> <input checked="" type="checkbox"/> OTHER: <u>Insect Repellent, sunscreen (as needed)</u>	
REQUIRED AND / OR RECOMMENDED EQUIPMENT					
Geoprobe or Truck-Mounted Direct Push Drill Rig, Hand Tools, Photoionization Detector, Multi-Gas Meter (or equivalent), Macrocore liners, Liner Opening Tool, 20 lb. Type ABC Fire Extinguisher, 42" Cones & Flags, "Work Area" Signs, Water					
COMMITMENT TO LPS- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LPSAs					
EXCLUSION ZONE (EZ) – All non-essential personnel will maintain a distance of 10 feet from drilling equipment while equipment is moving/engaged					
"SHOW ME YOUR HANDS"					
Driller and helper should show that hands are clear from controls and moving parts					
Assess JOB STEPS		Analyze POTENTIAL HAZARDS		Act CRITICAL ACTIONS	
1. Mobilization of drilling rig (ensure the Subsurface Clearance Protocol and Drill Rig Checklist are completed)		1a. CONTACT: Equipment/property damage. 1b. FALL: Slip/trip/fall hazards. 1c. CONTACT: Crushing from roll-over.		1a. The drill rig's tower/derrick will be lowered and secured prior to mobilization. 1a. A spotter should be utilized while moving the drill rig. If personnel move into the path of the drill rig, the drill rig will be stopped until the path is again clear. Use a spotter for all required backing operations. 1a. Set-up the work area and position equipment in a manner that eliminates or reduces the need for backing of support trucks and trailers. 1a. When backing up truck rig with an attached trailer use a second spotter if there is tight clearance simultaneously on multiple sides of the equipment or if turning angles limit driver visibility. 1a. Inspect the driving path for uneven terrain. Level or avoid if needed. 1a. Drill rig should have a minimum exclusion zone of 10 feet for non-essential personnel (i.e., driller helper, geologist) when the rig is moving/ in operation. 1b. Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. 1b. Do not climb over stored materials/equipment; walk around. Practice good housekeeping. 1b. Use established pathways and walk on stable, secure ground. 1c. Geoprobe should cross all hills/obstructions head on with the mast down to reduce risk of roll-over.	
2. Raising tower/derrick of drill rig		2a. CONTACT: Overhead hazards. 2b. CONTACT: Pinch Points/Amputation Points when raising the rig and instability of rig		2a. Prior to raising the tower/derrick, the area above the drilling rig will be inspected for wires, tree limbs, piping, or other structures, that could come in contact with the rig's tower and/or drilling rods or tools. 2a. Maintain a safe distance of 10' from overhead structures. 2b. Inspect the equipment prior to use and avoid pinch/amputation points. 2b. Lower outriggers to ensure stability prior to raising rig tower/derrick. 2b. If the rig needs to be mounted, be sure to use three points of contact.	
3. Advancement of drilling equipment and well installation		3a. CONTACT: Flying debris 3b. EXPOSURE: Noise and dust.		3a. Be aware of and avoid potential lines of fire and wear required PPE such as eye, ear, and hand protection. 3b. Wet borehole area with sprayer to minimize dust. 3b. Stand upwind and keep body away from rig. 3b. Dust mask should be worn if conditions warrant. 3b. Wear hearing protection when the drill rig is in operation.	

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² A hazard is a potential danger. Break hazards into five types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source - electricity, pressure, compression/tension.

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Assess 1JOB STEPS	Analyze 2POTENTIAL HAZARDS	Act 3CRITICAL ACTIONS
3. Advancement of drilling equipment and well installation (Continued)	<p>3a. CONTACT: Flying debris</p> <p>3b. EXPOSURE: Noise and dust.</p> <p>3c. FALL: Slip/trip/fall hazards.</p> <p>3d. CAUGHT: Limb/extremity pinching; abrasion/crushing.</p> <p>3e. CONTACT: Equipment imbalance during advancement of drill equipment.</p> <p>3f. EXPOSURE: Inhalation of contamination/vapors.</p> <p>3g. EXERTION: Potential for muscle strain/injury while lifting and installing well casings, lifting sand bags, and/or lifting rods.</p>	<p>3c. Contain drill cuttings and drilling water to prevent fall hazards from developing in work area.</p> <p>3c. See 1b.</p> <p>3d. Ensure all Emergency Safety Stop buttons function properly.</p> <p>3d. Always wear leather gloves when making connections and using hand tools; wear cut-resistant (i.e., Kevlar) gloves when handling cutting tools.</p> <p>3d. Inspect the equipment prior to use for potential pinch/amputation points. Keep hands away from pinch/amputation points and use of tools is preferable compared to fingers and hands.</p> <p>3d. Inspect drill head for worn surface or missing teeth; replace if damaged or blunt.</p> <p>3d. Ensure all jewelry is removed, loose clothing is secured, and PPE is secured close to the body.</p> <p>3d. All non-essential personnel should stay away from the immediate work area; position body out of the line-of-fire of equipment.</p> <p>3d. Drillers and helpers will understand and use the "Show Me Your Hands" Policy.</p> <p>3d. Spinning rods/casing have an exclusion zone of 10 feet while in operation.</p> <p>3e. Drillers will advance the borehole with caution to avoid causing the rig to become imbalanced and/or tip.</p> <p>3e. The blocking and leveling devices used to secure the rig will be inspected by drillers and Roux personnel regularly to see if shifting has occurred.</p> <p>3e. In addition, personnel and equipment that are non-essential to the advancement of the borehole will be positioned away from the rig at a distance that is at least as far as the boom is high (minimum exclusion zone of 10 feet).</p> <p>3f. Monitor ambient air for dangerous conditions using a calibrated photoionization detector (PID) to periodically monitor the breathing zone of the work area.</p> <p>3f. If a reading of >5ppm is recorded, the Roux field personnel must temporarily cease work, instruct all Site personnel to step away from the area of elevated readings and inform the Roux PM of the condition. The Roux PM will then recommend additional precautions in accordance with the site specific health and safety plan.</p> <p>3f. Use a multi-gas meter to monitor ambient air for dangerous conditions (i.e. unsafe levels of carbon monoxide when drilling indoors or the presence of explosive vapors).</p> <p>3g. Keep back straight and bend at the knees.</p> <p>3g. Utilize team lifting for objects over 50lbs.</p> <p>3g. Use mechanical lifting device for odd shaped objects.</p>
4. Remove sample liner.	<p>4a. EXERTION: Potential for muscle strain/injury while removing liner from probe rod.</p> <p>4b. CONTACT: Pinch points and cuts</p> <p>4c. EXPOSURE: Inhalation and/or dermal contact with contaminants.</p>	<p>4a. Utilize team lifting for objects over 50lbs.</p> <p>4a. Use hydraulic liner extruder if available.</p> <p>4b. Place liner on sturdy surface when opening.</p> <p>4b. Don cut-resistant gloves and use appropriate liner cutter when opening liners.</p> <p>4b. Always cut away from the body.</p> <p>4c. Wear chemical-resistant disposable gloves when handling liners.</p> <p>4c. See 3e.</p>
5. Decontaminate equipment.	<p>5a. EXPOSURE/CONTACT: To contamination (e.g., Separate Phase Hydrocarbons (SPH), contaminated groundwater, vapors).</p> <p>5b. EXPOSURE: To chemicals in cleaning solution including ammonia.</p>	<p>5a. Wear chemical-resistant disposable gloves and safety glasses.</p> <p>5a. Contain decontamination water so that it does not spill.</p> <p>5a. Use an absorbent pad to clean spills, if necessary.</p> <p>5a. Spray equipment from side angle, not straight on, to avoid backsplash.</p> <p>5a. See 3b.</p> <p>5b. See 4a. Review SDS to ensure appropriate precautions are taken and understood.</p>

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JOB LOSS ANALYSIS		Ctrl. No. GEN-011	DATE 1/4/2018	<input type="checkbox"/> NEW <input checked="" type="checkbox"/> REVISED	PAGE 1 of 2
JLA TYPE CATEGORY Generic		WORK TYPE: Gauging and Sampling		WORK ACTIVITY (Description): Gauging and Sampling	
DEVELOPMENT TEAM		POSITION / TITLE		REVIEWED BY:	
Brandon Tufano		Staff Geologist		Brian Hobbs	
				Joe Gentile	
				Senior Health & Safety Manager	
				Corporate Health & Safety Manager	
REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT					
<input checked="" type="checkbox"/> LIFE VEST <input checked="" type="checkbox"/> HARD HAT <input type="checkbox"/> LIFELINE / BODY HARNESS <input checked="" type="checkbox"/> SAFETY GLASSES: Spoggles required for winds >15 mph		<input type="checkbox"/> GOGGLES <input type="checkbox"/> FACE SHIELD <input type="checkbox"/> HEARING PROTECTION <input checked="" type="checkbox"/> SAFETY SHOES: <u>Composite-toe or steel toe boots</u>		<input type="checkbox"/> AIR PURIFYING RESPIRATOR <input type="checkbox"/> SUPPLIED RESPIRATOR <input checked="" type="checkbox"/> PPE CLOTHING: <u>Fluorescent reflective vest with long sleeved shirt or long sleeved high visibility clothing</u>	
<input checked="" type="checkbox"/> GLOVES: <u>Nitrile and cut resistant</u> OTHER: <u>Knee pads, Insect Repellent, sunscreen (as needed)</u>					
REQUIRED AND / OR RECOMMENDED EQUIPMENT					
42-inch Safety Cones, Caution Tape, Interface Probe and/or Water Level Meter, 20-lb., Type ABC Fire Extinguisher, Buckets. Tools as needed: Socket Wrench, Screw Driver, Crow Bar, Mallet, and Wire Brush.					
COMMITMENT TO LPS- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LPSAs					
Assess 1¹JOB STEPS		Analyze 2²POTENTIAL HAZARDS		Act 3³CRITICAL ACTIONS	
1. Mobilization to monitoring well(s).		1a. FALL: Personal injury from slip/trip/fall due to uneven terrain and/or obstructions. 1b. CONTACT: With traffic/third parties. 1c. EXERTION: Muscle strain from lifting equipment 1d. EXPOSURE: To biological hazards.		1a. Inspect pathway and plan for most suitable designated pathway prior to mobilization. 1a. Use established pathways, walk and/or drive on stable, secure ground and avoid steep hills or uneven terrain. 1a. If working near open water with an unguarded edge, wear life vest. 1b. Identify potential traffic sources and delineate work area with 42-inch traffic safety cones. Position vehicle to protect against oncoming traffic. Use caution tape to provide a more visible delineation of the work area if necessary. 1b. Wear appropriate PPE including high visibility clothing or reflective vest. 1b. Face traffic, maintain eye contact with oncoming vehicles, and establish a safe exit route. 1c. Use proper lifting techniques when handling/moving equipment; bend knees and keep back straight. 4c. Use mechanical assistance or team lifting techniques when equipment is 50 lbs. or heavier. 4c. Make multiple trips to carry equipment. 1d. Inspect work area for bees and insects. 1d. Use insect/tick repellent as necessary.	
2. Open/close well.		2a. EXERTION: Muscle strain. 2b. CAUGHT: Pinch/crush points associated with removing/replacing manholes and working with hand tools. 2c. CAUGHT: Pinch points associated with placing J-plug back onto PVC pipe. 2d. EXPOSURE: To potential hazardous vapors.		2a. Use proper lifting techniques; keep back straight, lift with legs and bend knees when reaching to open/close well. 2b. Wear leather gloves or cut resistant gloves when working with well cover and hand tools. 2b. Use proper tools (ratchet and pry bar for well cover) and inspect before use. 2b. Do not put fingers under well cover. 2c. See 2b. 2c. Keep fingers out of line-of-fire when securing cap. 2d. No open flames/heat sources. 2d. To minimize exposure to vapors, allow well to vent after opening it and before sampling activities begin. 2d. Stand up-wind, if possible, to avoid inhaling vapors.	
3. Gauge well.		3a. CONTACT: With contamination (e.g. contaminated groundwater). 3b. CONTACT: With traffic.		3a. Wear chemical-resistant disposable gloves (over cut-resistant gloves) and safety glasses when gauging well. 3a. Insert and remove probe slowly to avoid splashing. 3a. Use an absorbent pad to clean probe. 3b. See 1b.	

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Assess ¹ JOB STEPS	Analyze ² POTENTIAL HAZARDS	Act ³ CRITICAL ACTIONS
4. Purge and sample well	<p>4a. EXPOSURE/CONTACT: To contamination (e.g., SPH, contaminated groundwater, vapors) and/or sample preservatives.</p> <p>4b. CONTACT: Personal injury from cuts, abrasions, or punctures by glassware or sharp objects.</p> <p>4c. EXERTION: Muscle strain while carrying equipment.</p> <p>4d. CONTACT: With traffic.</p> <p>4e. CONTACT: Pinch points with groundwater pump components (i.e., wheel, line, clamps).</p> <p>4f. EXERTION: Muscle strain from repetitive motion of bailing and sampling a well.</p>	<p>4a. Open and fill sample jars slowly to avoid splashing and contact with preservatives.</p> <p>4a. Wear cut-resistant gloves and chemical-resistant disposable gloves when sampling.</p> <p>4a. Fill sample containers over purge container to avoid spilling water onto the ground.</p> <p>4a. Use an absorbent pad to clean spills.</p> <p>4a. When using a bailer to purge a well, pull the bailer slowly from the well to avoid splash hazards.</p> <p>4a. When sampling or purging the water using a bailer, pour out water slowly to reduce the potential for splash hazards with groundwater.</p> <p>4a. When using a tubing valve always remove the valve slowly after sample collection to release any pressure and avoid pressurized splash hazards.</p> <p>4a. When collecting a groundwater sample always point sampling apparatus (tubing, bailer, etc.) away from face and body.</p> <p>4b. To avoid spills or breakage, place sample ware on even surface.</p> <p>4b. Do not over tighten caps on glass sample ware.</p> <p>4b. Wear chemical-resistant nitrile disposable gloves over cut-resistant (i.e., Kevlar) gloves when sampling and handling glassware (i.e., VOA vials) or when using cutting tools.</p> <p>4c. Use proper lifting techniques when handling/moving equipment, bend knees and keep back straight.</p> <p>4c. Use mechanical assistance or team lifting techniques when equipment is 50 lbs. or heavier.</p> <p>4c. Make multiple trips to carry equipment.</p> <p>4d. See 1b.</p> <p>4e. Wear leather gloves when working with groundwater pumps.</p> <p>4e. Never place hands on or near pinch points such as the wheel, clamps or other moving parts during pump operations.</p> <p>4e. Use the correct mechanisms, such as a pump reel, to lower pump into well.</p> <p>4e. Never attempt to manually stop any moving part of equipment including hose reels and/or tubing.</p> <p>4f. See 4c.</p> <p>4f. Include a stretch break when repetitive motions are part of the task.</p>
5. Management of purge water.	<p>5a. EXPOSURE/CONTACT: To contamination (e.g., SPH, contaminated groundwater, vapors).</p> <p>5b. EXERTION: Muscle strain from lifting/carrying and moving containers.</p>	<p>5a. Do not overfill container and pour liquids slowly so that they do not splash.</p> <p>5a. Properly dispose of used materials/PPE in appropriate container in designated storage area.</p> <p>5b. Use proper lifting techniques when lifting / carrying or moving container(s) (see 4c.).</p> <p>5b. Do not overfill container(s).</p>
6. Decontaminate equipment.	<p>6a. EXPOSURE/CONTACT: To contamination (e.g., SPH, contaminated groundwater, vapors).</p> <p>6b. CAUGHT: Pinch points associated with handling hand tools</p>	<p>6a. Work on the upwind side, where possible, of decon area.</p> <p>6a. Wear chemical-resistant disposable gloves and safety glasses.</p> <p>6a. Use an absorbent pad to clean spills.</p> <p>6b. See 2b.</p> <p>6b. Inspect hand tools for sharp edges before decontaminating.</p>

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JOB LOSS ANALYSIS		Ctrl. No. GEN-016	DATE: 1/4/2018	<input type="checkbox"/> NEW <input checked="" type="checkbox"/> REVISED	PAGE 1 of 2
JLA TYPE CATEGORY GENERIC		WORK TYPE Site Recon		WORK ACTIVITY (Description) Site Walk and Inspection	
DEVELOPMENT TEAM		POSITION / TITLE		REVIEWED BY:	
Sara Barrientos		Staff Geologist		Brian Hobbs	
				Joe Duminuco	
				Joe Gentile	
				Corporate Health and Safety Manager	
REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT					
<input type="checkbox"/> LIFE VEST <input checked="" type="checkbox"/> HARD HAT <input type="checkbox"/> LIFELINE / BODY HARNESS <input checked="" type="checkbox"/> SAFETY GLASSES		<input type="checkbox"/> GOGGLES <input type="checkbox"/> FACE SHIELD <input checked="" type="checkbox"/> HEARING PROTECTION: ear plugs as necessary <input checked="" type="checkbox"/> SAFETY SHOES: <u>Steel or composite toed</u>		<input type="checkbox"/> AIR PURIFYING RESPIRATOR SUPPLIED <input type="checkbox"/> RESPIRATOR <input checked="" type="checkbox"/> PPE CLOTHING: <u>High-visibility vest with long sleeved shirt or long sleeved high-vis outerwear</u>	
<input checked="" type="checkbox"/> GLOVES: <u>Leather/cut-resistant/chemical resistant</u> <input checked="" type="checkbox"/> OTHER: Tyvek and rubber boots as necessary, dust mask as necessary					
REQUIRED AND / OR RECOMMENDED EQUIPMENT					
Required Equipment: Site map, emergency contact list, documentation of urgent care/hospital routes and / or guide familiar with Site, operating cell phone or walkie-talkie if Site allows.					
Commitment to LPS – All personnel onsite will actively participate in LPSA performance by verbalizing LPSAs throughout the day.					
EXCLUSION ZONE (EZ): A minimum 10' exclusion zone will be maintained around equipment.					
SITE SECURITY: Prior to site inspection verify appropriate method to address Site Security concerns as it relates to potential criminal activity, homeless population, and/or isolation concerns. Work with the Project Principal and/or Project Manager to address appropriately.					
Assess ¹JOB STEPS		Analyze ²POTENTIAL HAZARDS		Act ³CRITICAL ACTIONS	
1. Check in with Site contact.		1a. CONTACT/EXPOSURE/FALL: Personal injury caused by lack of site specific hazards.		1a. Inquire about hazards and other activities taking place at the Site. 1a. Inform Site contact of work scope, timeline and location(s). 1a. Discuss emergency evacuation procedures and muster points with Site contact.	
2. Traversing the Site		2a. CONTACT: Property damage and personal injury caused by obstructions/vehicles or unauthorized personnel at remote Sites. 2b. FALL: Uneven terrain and weather conditions. Overgrown shrubs and vines. Equipment in the work zone. 2c. OVEREXERTION: Muscle strain while carrying equipment. 2d. EXPOSURE: Biological hazards – ticks; bees/wasps; poison ivy; insects; (Ticks are most active any time the temperature is above freezing, typically from March to November.)		2a. All equipment must be stowed and secured prior to moving. 2a. Maintain speed limit as posted on-site. 2a. When possible drive on established roadways. 2a. Yield to all pedestrians. 2a. Use pull-through spots or back into parking spots. 2a. Don high visibility clothing/safety vest. If working at remote Site, add orange accessories during hunting season. 2b. Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. 2b. When possible, use established pathways and walk on stable, secure ground. 2b. Communicate traversing hazards with others. 2c. When carrying equipment to/from work area, use proper lifting techniques; keep back straight, lift with legs, keep load close to body, never reach with a load. Ensure that loads are balanced to reduce the potential for muscle strain. Use mechanical assistance or make multiple trips to carry equipment. 2d. Inspect area to avoid contact with biological hazards. 2d. Ticks: • Treat outer clothing including pants, shirts, socks, boots and hats the evening before with Permethrin (allowing at least two hours before use). • Apply DEET to exposed skin before travelling to the Site and reapply after two hours. • Check for ticks during and after work. 2d. Bees:	

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	<p>2e. EXPOSURE: Heat Stress & Cold Stress. Personal injury from working in inclement weather conditions.</p>	<ul style="list-style-type: none"> • Use bee spray as appropriate to deter/eliminate bees. • Protect exposed skin with insect repellent. <p>2d. Poison Ivy:</p> <ul style="list-style-type: none"> • Identify areas of poison ivy and spray with weed killer. Don Tyvek and rubber boots while traversing poison ivy areas. • If skin contacts poison ivy, wash skin thoroughly with soap and water. <p>2e. Wear sunscreen with SPF 15 or greater on exposed skin whenever 30 minutes or more of sun exposure is expected.</p> <p>2e. Watch for heat stress symptoms (muscle cramping, exhaustion, dizziness, rapid and shallow breathing). Take breaks as needed.</p> <p>2e. Watch for cold stress symptoms (severe shivering, slowing of body movement, weakness, stumbling or inability to walk, collapse). Take breaks as needed.</p> <p>2e. Wear appropriate rain gear as needed.</p> <p>2e. Take frequent breaks if tired, wet, or cold/hot. Drink water.</p> <p>2e. If lightning is observed, wait 30 minutes after last thunder boom/lightning bolt in a sheltered location (car acceptable) before starting work again.</p>
3. Walking near heavy equipment and machinery.	<p>3a. CONTACT: Personal injury from Site and roadway traffic. Personal injury from flying debris</p> <p>3b. OVEREXERTION: Personal injury from lifting/moving/rotating equipment.</p> <p>3c. EXPOSURE: Hearing damage from noise generating equipment/processes. Inhalation/exposure to hazardous vapors and or dust.</p> <p>3d. EXPOSURE: Working in a remote area.</p>	<p>3a. See 2a.</p> <p>3a. Maintain an exclusion zone of at least 10'-25' feet from all engaged equipment.</p> <p>3a. Keep body parts out of the line of fire of pinch points.</p> <p>3a. Wear appropriate PPE always.</p> <p>3b. See 2c.</p> <p>3c. Wear hearing protection if >85 dBA. (i.e. noise levels which require you to raise your voice to communicate)</p> <p>3c. Always wear leather gloves when handling any tools or equipment.</p> <p>3c. Always wear appropriate PPE based off chemicals present.</p> <p>3d. Use the "buddy system" whenever possible. If working alone, contact PM upon arrival/departure, as well as during work activities prior to commencing work if applicable.</p> <p>3d. Always carry a communication (i.e., cell phone, walkie-talkie) or directional (i.e., map, compass, etc.) device when traversing remote areas.</p>
4. Working in adverse weather conditions.	<p>4a. EXPOSURE: Heat Stress & Cold Stress. Personal injury from working in inclement weather conditions.</p>	<p>4a. Watch for heat stress symptoms (muscle cramping, exhaustion, dizziness, rapid and shallow breathing). Take breaks as needed.</p> <p>4a. Watch for cold stress symptoms (severe shivering, slowing of body movement, weakness, stumbling or inability to walk, collapse). Take breaks as needed.</p> <p>4a. Wear appropriate rain gear as needed.</p> <p>4a. Take frequent breaks if tired, wet, or cold/hot. Drink water.</p> <p>4a. If lightning is observed, wait 30 minutes after last thunder boom/lightning bolt in a sheltered location (car acceptable) before starting work again.</p>
5. Departing Site.	<p>5a. EXPOSURE: Exposure to unnecessary hazards should personnel believe Roux is on-Site during an emergency and conduct a search.</p>	<p>5a. Sign out or notify Site contact and Roux Project Manager of your departure.</p>

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JOB LOSS ANALYSIS		Ctrl. No. GEN-017	DATE: 1/4/2018	<input type="checkbox"/> NEW <input checked="" type="checkbox"/> REVISED	PAGE 1 of 2
JLA TYPE CATEGORY: GENERIC		WORK TYPE: Gauging & Sampling		WORK ACTIVITY (Description): Soil Sampling	
DEVELOPMENT TEAM		POSITION / TITLE		REVIEWED BY:	
MaryBeth Lyons		Project Scientist		Brian Hobbs	
				Joe Gentile	
				Senior Health & Safety Manager	
				Corporate Health and Safety Manager	
REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT					
<input type="checkbox"/> LIFE VEST <input checked="" type="checkbox"/> HARD HAT <input type="checkbox"/> LIFELINE / BODY HARNESS <input checked="" type="checkbox"/> SAFETY GLASSES <input checked="" type="checkbox"/> FLAME RESISTANT CLOTHING (as needed)		<input type="checkbox"/> GOGGLES <input type="checkbox"/> FACE SHIELD: <input checked="" type="checkbox"/> HEARING PROTECTION: (as needed) <input checked="" type="checkbox"/> SAFETY SHOES: Composite-toe or steel toe boots		<input type="checkbox"/> AIR PURIFYING RESPIRATOR <input type="checkbox"/> SUPPLIED RESPIRATOR <input checked="" type="checkbox"/> PPE CLOTHING: Fluorescent reflective vest or high visibility clothing <input checked="" type="checkbox"/> GLOVES: Leather, Nitrile and cut resistant <input checked="" type="checkbox"/> OTHER: Insect repellent, sunscreen (as needed)	
REQUIRED AND / OR RECOMMENDED EQUIPMENT					
Recommended Equipment: 42" traffic cones, caution tape, trowel					
COMMITMENT TO LPS- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LPSAs.					
EXCLUSION ZONE (EZ): A 10-foot exclusion zone will be maintained around moving equipment, if present.					
Assess 1st JOB STEPS		Analyze 2nd POTENTIAL HAZARDS		Act 3rd CRITICAL ACTIONS	
1. Secure location		1a. CONTACT: Personnel and vehicular traffic may enter the work area. 1b. FALL: Tripping/falling due to uneven terrain or entry/exit from excavations. 1c. EXPOSURE: Exposure to sun and excessive heat, possibly causing sunburn, heat exhaustion or heat stroke. Exposure to cold temperatures possibly causing cold stress. Skin burn as a result of fire, if applicable. Exposure to explosive vapors due to tank farm operations. Exposure to airborne dust due to high wind speeds. Biological hazards - ticks, bees/wasps, poison ivy, thorns, insects, etc.		1a. If in an area with foot or vehicle traffic, delineate the work area with 42" traffic cones and/or caution tape to prevent exposure to traffic and inform others of work activity. 1a. Wear reflective vest and/or high visibility clothing. 1a. Face the direction of any vehicular traffic. Position vehicle to protect worker from traffic. 1a. Communicate work activity with adjacent work areas. 1b. Inspect pathways and work area for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions. 1b. Use established pathways and walk on stable, secure ground. 1b. Stage equipment and tools in a convenient, stable, and orderly manner. Store equipment at lowest potential energy. 1b. Roux employees should stay 5 feet from in-progress excavations and trenches. Should entry to an excavation be required (when stabilization is complete), ladders must be employed for steep embankments, excavations, pits, and trenches. 1c. Wear sunscreen with an SPF 15 or greater whenever 30 minutes or more of exposure is expected. 1c. Use a tent to shade the work area from direct sunlight particularly when warm temperatures are expected. 1c. Be aware of the location of all Site personnel. 1c. Watch for heat stress symptoms (muscle cramping, exhaustion, dizziness, rapid and shallow breathing). 1c. Watch for cold stress symptoms (severe shivering, slowing of body movement, weakness, stumbling or inability to walk, collapse). 1c. Take breaks for rest and water as necessary. Move to an area that is well shaded or a climate controlled area (i.e., car, site trailer, etc.). 1c. No open flames/heat sources. 1c. Flame retardant clothing must be worn when specified by Site policy. 1c. Cell phones should be disabled when specified by Site policy. 1c. Pre-treat field clothing with Permethrin prior to site visit to kill ticks and insects. 1c. Wear long sleeved shirts and tuck in (or tape) pant legs into socks or boots to prevent ticks from reaching skin. 1c. Spray insect repellent containing DEET on exposed skin when working in overgrown areas of the Site. 1c. Inspect area to avoid contact with biological hazards. 1c. Wear cut-resistant gloves when handling branches, shrubs, etc. that may lie within the walking path. 1c. Wear spoggles if the average wind speeds are above 15 mph. 1c. Personnel shall examine themselves and co-worker's outer clothing for ticks periodically when onsite. 1c. If skin comes in contact with poison ivy, wash skin thoroughly with soap and water. If rash persists after washing, immediately notify your supervisor, the OM and OHSM for possible consultation with a physician at an approved Occupational Health Clinic.	

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Assess ¹ JOB STEPS	Analyze ² POTENTIAL HAZARDS	Act ³ CRITICAL ACTIONS
2. Collect Soil Sample	<p>2a. CONTACT: Personal injury from pinch points, cuts, and abrasions from sampling equipment tools, and material within soil sample. Personal injury from contact with moving equipment while sampling. Personal injury from contact with glass sample jars.</p> <p>2b. EXPOSURE: Exposure to contamination (impacted soil) and/or lab preservatives.</p> <p>2c. EXERTION: Exertion due to repetitive motion and ergonomics.</p>	<p>2a. Wear cut-resistant (i.e., Kevlar) gloves under chemical-resistant (nitrile) disposable gloves when handling soil samples and sampling jars. 2a. Where possible, use trowel or equivalent tool to avoid contact with soil. 2a. If sampling from bucket of heavy equipment, ensure all equipment is off and operator utilizes the "show me your hands" policy. 2a. See 1a.</p> <p>2b. Wear chemical-resistant (nitrile) disposable gloves over cut resistant gloves to protect hands when handling samples; use containment material or plastic sheeting to protect surrounding areas. 2b. Wear safety glasses to protect eyes from dust or air-borne contaminants that may results from disturbing the soil. 2b. Where possible, remain upgradient from sample location if collecting soil sample from stockpile, drill rig, etc. to avoid breathing contaminant vapors, if they are present. 2b. When collecting soil sample from hand auger, put large zip lock bag over entire auger to prevent spillage of soil on to the ground. 2b. Open sample jars slowly and fill carefully to avoid contact with preservatives.</p> <p>2c. Utilize a table or raised surface for soil sampling if multiple soil samples are going to be taken to minimize repetitive bending motion.</p>
3. Decontaminate equipment	<p>3a. EXPOSURE/CONTACT: Contamination (e.g., Separate Phase Hydrocarbons (SPH), contaminated vapors and/or soil).</p> <p>3b. EXPOSURE: Chemicals in cleaning solution including ammonia.</p>	<p>3a. Wear chemical-resistant (nitrile) disposable gloves and safety glasses. 3a. Use an absorbent pad to clean spills. 3a. Properly dispose of used materials/PPE in provided drums in designated drum storage area. 3a. Remain upwind of sample and avoid breathing contaminant vapors, if they are present.</p> <p>3b. Wear chemical-resistant (nitrile) disposable gloves and safety glasses. 3b. Work on the upwind side of decontamination area. 3b. Use an absorbent pad to clean spills. 3b. Properly dispose of used materials/PPE in provided drums in designated drum storage area. Ensure that all drums are properly labeled and secured.</p>

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JOB LOSS ANALYSIS		Ctrl. No. GEN-018	DATE: 1/4/2018	<input type="checkbox"/> NEW <input checked="" type="checkbox"/> REVISED	PAGE 1 of 2
JLA TYPE CATEGORY: GENERIC		WORK TYPE Gauging and Sampling		WORK ACTIVITY (Description) Soil Vapor Sampling (Permanent Monitoring Points)	
DEVELOPMENT TEAM		POSITION / TITLE		REVIEWED BY:	
Jeff Wills		Project Hydrogeologist		Brian Hobbs	
Julie Moriarity		Project Scientist		Joe Gentile	
				Senior Health & Safety Manager	
				Corporate Health and Safety Manager	
REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT					
<input type="checkbox"/> LIFE VEST <input checked="" type="checkbox"/> HARD HAT <input type="checkbox"/> LIFELINE / BODY HARNESS <input checked="" type="checkbox"/> SAFETY GLASSES		<input type="checkbox"/> GOGGLES <input type="checkbox"/> FACE SHIELD <input type="checkbox"/> HEARING PROTECTION <input checked="" type="checkbox"/> SAFETY SHOES: <u>Steel-toe boots</u>		<input type="checkbox"/> AIR PURIFYING RESPIRATOR <input type="checkbox"/> SUPPLIED RESPIRATOR <input checked="" type="checkbox"/> PPE CLOTHING: <u>Fluorescent reflective vest with long sleeved shirt or long sleeved high visibility clothing</u> <input checked="" type="checkbox"/> GLOVES: <u>Cut-resistant & Nitriles</u> <input checked="" type="checkbox"/> OTHER: <u>Bug Spray, Sun Screen, Knee Pads or kneeling pad</u>	
REQUIRED AND / OR RECOMMENDED EQUIPMENT					
9/16" Socket and Wrench, Non-Toxic Clay, Teflon-Lined Tubing, Masterflex Tubing, Air Pump with Low Flow, Dry Cal, Enclosure (Bucket with 2 holes), Helium Gas Canister, Summa Canisters and Flow Controllers, MultiRae Photo Ionization Detector (PID), Helium Detector, Tubing Cutter, 42-inch Safety Cones, Caution Tape or Retractable Cone Bars					
COMMITMENT TO LPS- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LPSAs.					
EXCLUSION ZONE (EZ): A 5-foot exclusion zone will be maintained for non-essential personnel.					
Assess 1JOB STEPS		Analyze 2POTENTIAL HAZARDS		Act 3CRITICAL ACTIONS	
1. Define and secure work area.		1a. FALL: Potential tripping hazards. 1b. CONTACT: Potential contact with moving vehicles or pedestrians. 1c. EXERTION: Muscle strain while lifting and carrying equipment.		1a. Ensure work area is secure and inform others (third party) of work activity. 1a. Remove tripping hazards and inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. 1b. If working alongside roads, look both ways before entering roadways, face traffic, and utilize work vehicle to protect employees. 1b. Delineate work area (including vehicles) with traffic safety cones and caution tape or retractable cone bars. 1b. Maintain a 5-foot exclusion zone. 1b. Wear high visibility clothing or reflective safety vest. 1c. When carrying equipment to/from work area, keep back straight, lift with legs, keep load close to body, never reach with a load. Ensure that loads are balanced. Use mechanical assistance/make multiple trips to carry equipment.	
2. Remove well cover / close well cover.		2a. CONTACT/CAUGHT: Pinch points and scrapes associated with hand tools and well covers. 2b. FALL: Potential tripping hazards associated with installing bolts. 2c. EXERTION: Physical exertion to remove bolts that were over torqued or stripped.		2a. Keep hands away from pinch points. 2a. Use hand tools with extensions to remove and replace well covers. 2a. Wear cut-resistant gloves. 2a. Use knee pads or kneeling pad when repetitive kneeling on rough ground is anticipated. 2b. Place security bolts in secure location so not to create tripping hazards. Replace security bolts so that they fit flush with monitoring well covers. 2c. Replace any security bolts that show signs of stripping. Do not over tighten. 2c. Use body positioning and bending techniques that minimize muscle strain; keep back straight, bend at the knees. 2c. See 2a.	

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Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source - Electricity, pressure, tension/compression, torque.

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Assess 1JOB STEPS	Analyze 2POTENTIAL HAZARDS	Act 3CRITICAL ACTIONS
3. Screen vapor point with PID.	3a. FALL: Potential tripping hazards associated with equipment. 3b. EXPOSURE: Inhalation of soil vapor	3a. Place equipment in one area close to the sampling location. 3b. Identify area where equipment is to be stored within the work area (away from main walking path). 3a. Don't leave equipment on the ground. Return equipment to storage area between uses. 3b. Replace brass caps immediately upon completion to avoid soil vapors migrating to the surface through sample tubing. 3b. Stand upwind of sample point during screening activities.
4. Remove / replace brass caps at the end of the sample tubing.	4a. CONTACT: Pinch points associated with hand tools and brass caps. 4b. EXPOSURE: Potential pathway for vapors to migrate to land surface.	4a. Use wrench to remove and replace brass caps. 4a. Wear cut-resistant gloves to protect against pinch points and scrapes. 4b. See 3b. 4b. Stand up wind of sample point location.
5. Set up soil vapor sampling equipment and calibration of meters.	5a. FALL: Potential tripping hazards associated with equipment and tubing.5b. 5b. CONTACT: Pinch points associated with handling equipment. 5c. EXPOSURE: Inhalation of calibration gas and helium.	5a. See 3a. 5a. Keep tubing slack to a minimum and locate the summa canister as close to the sampling location as possible. 5a. Avoid stepping over equipment and tubing. 5b. Do not place fingers/hands under sampling equipment. 5b. Make multiple trips when unloading equipment in work area. 5b. Wear cut-resistant gloves to protect against pinch points while handling sampling equipment. 5c. Review SDS for each type of calibration gas used before calibrating. 5c. Calibrate meters in a well-ventilated area and keep air flow regulator away from face. 5c. Close valve on canisters after use to avoid inhalation of excess helium or calibration gas. 5c. Stand up wind of bucket during helium tracer gas test.
6. Cleaning Work Area.	6a. FALL: Potential tripping hazards associated with equipment and tubing. 6b. CONTACT: Storing and transport of equipment in car.	6a. See 3a. 6a. See 3b. 6b. Ensure that equipment is placed securely in the vehicle. Do not stack equipment on top of each other. Secure equipment so that it will not slide while being transported. 6b. Wear cut-resistant gloves while handling/loading equipment.

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JOB LOSS ANALYSIS		Ctrl. No. GEN-020	DATE: 1/4/2019	<input type="checkbox"/> NEW <input checked="" type="checkbox"/> REVISED	PAGE 1 of 2
JLA TYPE CATEGORY Generic	WORK TYPE Construction	WORK ACTIVITY (Description) Spotting Heavy Machinery			
DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE		
Levi Curnutte	Project Scientist	Brian Hobbs	Senior Health & Safety Manager		
		Joe Gentile	Corporate Health & Safety Manager		
REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT					
<input type="checkbox"/> LIFE VEST <input checked="" type="checkbox"/> HARD HAT <input checked="" type="checkbox"/> LONG SLEEVED SHIRT <input type="checkbox"/> LIFELINE / BODY HARNESS <input checked="" type="checkbox"/> SAFETY GLASSES	<input type="checkbox"/> GOGGLES <input type="checkbox"/> FACE SHIELD <input type="checkbox"/> HEARING PROTECTION <input checked="" type="checkbox"/> SAFETY SHOES: <u>Steel-/Composite-toe boots/shoes</u>	<input type="checkbox"/> Particulate Respirator <input type="checkbox"/> SUPPLIED RESPIRATOR <input checked="" type="checkbox"/> PPE CLOTHING: <u>Long sleeved fluorescent reflective clothing or reflective vest with long sleeved shirt</u>	<input checked="" type="checkbox"/> GLOVES: <u>Cut resistant / leather</u> <input type="checkbox"/> OTHER:		
REQUIRED AND / OR RECOMMENDED EQUIPMENT					
Heavy Machinery (i.e. excavator, payload, truck, forklift, etc.)					
COMMITMENT TO LPS- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LPSAs					
EXCLUSION ZONE (EZ): A 10-foot exclusion zone will be maintained around heavy equipment. Larger equipment with an increased operating or tip-over radius may need a larger exclusion zone. This should be defined prior to operating each piece of equipment					
Assess 1JOB STEPS	Analyze 2POTENTIAL HAZARDS	Act 3CRITICAL ACTIONS			
1. Prepare for machine activity.	1a. CONTACT: Obstructions in the work area may create contact hazards from machinery. 1b. Fall : Slip/Trip/Fall	1a. Cordon off the work area with safety barrels/cones and a rigid barrier (snow fence, traffic bar, etc.). Communicate that only necessary personnel should be in the work area. Spotter and equipment operator shall enforce the 10-ft (exclusion zone) EZ . Operator will not operate but shall remain in the hands-off mode while personnel are within the exclusion zone. 1b. Ensure that work area is flat, level and clear of any obstructions or debris before setting up work zone.			
2. Spotting.	2a. CONTACT: Machine or load contact with personnel, property, or machinery.	2a. Discuss the specifics of the work with the operator and be clear about any hand signals that will be used. Clearly discuss the limits of the assigned work area and the machine's Exclusion Zone. Maintain Exclusion Zone. The Exclusion Zone shall be delineated by using 42-inch traffic cones/barrels and a fixed rigid barrier. 2a. The Minimum Heavy Equipment Exclusion zone is 10ft. if it is a larger piece of equipment or has an increased swing or tip-over radius the exclusion zone will need to be increased to accommodate the full range of motion. 2a. Both the spotter and equipment operators shall have 2-way radios/cellular devices on their persons to ensure audible communication in the event any changes or new hazards may arise. 2a. All workers should stay outside of the Exclusion Zone of all equipment unless operator is stopped and in "Hands Off" mode. (This includes the spotter unless an exception has been established in the Site-specific JLA). If the Exclusion Zone must be reduced due to work area restrictions then the spotter and operator shall enforce the reduced Exclusion Zone. 2a. Spotters must make eye contact with the machine operator or all movement ceases until visual contact can be reestablished. 2a. Spotter shall keep an eye out for any issues with the machine the operator may not see and communicate with other work crews and spotters on behalf of the operator. 2a. If the spotter needs to take a break, he must find a replacement before leaving or have the machine stop operations. No heavy equipment shall operate without a spotter under any circumstances. 2a. Wear fluorescent clothing/safety vest.			

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Assess ¹ JOB STEPS	Analyze ² POTENTIAL HAZARDS	Act ³ CRITICAL ACTIONS
	<p>2b. FALL: Slip/Trip/Fall</p> <p>2c. CAUGHT: Caught between machinery and nearby objects.</p> <p>2d. EXPOSURE: Inhalation of exhaust from machinery.</p>	<p>2b. Look where walking to identify and avoid slip/trip/fall hazards. Avoid icy and/or wet surfaces. Remove obstacles if possible. 2b. Use designated walkways during spotting whenever possible.</p> <p>2c. Maintain Exclusion Zone. Do not stand between large, loose or fixed objects or structures and the machinery while it is in motion. Keep in sight of operator at all times while being aware of surrounding structures.</p> <p>2d. The spotter will position him/herself upwind of the working machinery, when possible. Spotter will also inform others working within the vicinity of the EZ of proper positioning, if applicable.</p>

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APPENDIX B

Personal Protective Equipment (PPE) Management Program

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PERSONAL PROTECTIVE EQUIPMENT MANAGEMENT PROGRAM

CORPORATE HEALTH AND SAFETY MANAGER : Brian Hobbs, CIH, CSP
EFFECTIVE DATE : 01/19
REVISION NUMBER : 4

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1. PURPOSE

Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C., and Remedial Engineering (collectively, "Roux") has instituted the following program to establish guidelines for the selection of personal protective equipment (PPE) for use by Roux personnel performing field activities in hazardous environments. PPE is not meant to be a substitute for engineering, work practice, and/or administrative controls, but PPE should be used in conjunction with these controls to protect the employees in the work place. Clothing, body coverings, and other accessories designed to prevent worker exposure to workplace hazards are all types of PPE. To ensure adequate PPE employee-owned PPE is evaluated on a case-by-case basis to insure its adequacy, maintenance and sanitation.

2. SCOPE AND APPLICABILITY

These guidelines apply to all PPE selection decisions to be made in implementing the Roux program. The foundations for this program are the numerous Occupational Health and Safety Administration (OSHA) standards related to PPE cited in 29 CFR 1910 Subpart I, 29 CFR 1926 Subpart E, and the hazardous environment work employee protection requirements under the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) standard at 29 CFR 1910.120 and 1926.65. To ensure hazard assessments are documented the levels of protection, types of protection and tasks requiring protection are covered in site-specific Health and Safety Plans (HASPs) and Job Safety Analyses (JSAs).

3. PROCEDURES

Due to the varied nature of site activities and the different potential hazards associated with different sites, several aspects must be considered when selecting PPE. The following text describes PPE selection logic and provides guidelines and requirements for the appropriate selection and use of PPE.

3.1 Introduction

To harm the body, chemicals must first gain entrance. The intact skin and the respiratory tract are usually the first body tissues attacked by chemical contaminants. These tissues provide barriers to some chemicals but in many cases, are damaged themselves or are highly permeable by certain chemical compounds. Personal protective equipment therefore is used to minimize or eliminate chemical compounds coming into contact with these first barrier tissues.

The proper selection of equipment is important in preventing exposures. The PM making the selection will have to take several factors into consideration. The level of protection, type and kind of equipment selected depends on the hazardous conditions and in some cases cost, availability, compatibility with other equipment, and performance. An accurate assessment of all these factors must be made before work can be safely carried out.

3.2 Types of PPE

The type and selection of PPE must meet certain general criteria and requirements as required under OSHA 29 CFR 1910.132 and 1926.95. In addition to these general requirements, specific requirements and specifications exist for some types of PPE that form the basis of the protective clothing scheme. Following is a list of the common types of specific PPE and the specific requirements for the PPE type, where applicable:

1. Hard Hats - Regulated by 29 CFR 1910.135 and 1926.100; and, specified in ANSI Z89.1.

2. Face Shields and Safety Glasses - Regulated by 29 CFR 1910.133 and 1926.102; and, specified in ANSI Z87.1.
3. Respiratory Protection - Regulated by 29 CFR 1910.134 and 1926.103.
4. Hand Protection - Not specifically regulated.
5. Foot Protection - Regulated by 29 CFR 1910.136 and 1926.96; and, specified in ANSI Z41.1.
6. Protective Clothing (e.g., fully encapsulated suits, aprons) - Not specifically regulated.

3.3 Protective Clothing Selection Criteria

3.3.1 Chemicals Present

The most important factor in selecting PPE is the determination of what chemicals the employee may be exposed to. On field investigations, the number of chemicals may range from a few to several hundred. The exact chemicals or group of chemicals present at the site (certain groups tend to require similar protection) can be determined by collecting and analyzing samples of the air, soil, water, or other site media. When data are lacking, research into the materials used or stored at the site can be used to infer chemicals possibly on the site.

Once the known or suspected chemicals have been identified, and taking into consideration the type of work to be performed, the most appropriate clothing shall be selected.

Protective garments are made of several different substances for protection against specific chemicals. There is no universal protective material. All will decompose, be permeated by, or otherwise fail to protect under given circumstances. Fortunately, most manufacturers make guides to the use of their products (i.e., Dupont's Tyvek™ Permeation Guide). These guides are usually for gloves and coveralls and typically provide information regarding chemical degradation rates (failure of the material to maintain structural integrity when in contact with the chemical), and may provide information on the permeation rate (whether or not the material allows the chemical to pass through). When permeation tables are available, they shall be used in conjunction with degradation tables to determine the most appropriate protective material.

During most site work, chemicals are usually in mixed combinations and the protective materials are not in continuous contact with pure chemicals for long periods of time; therefore, the selected material may be adequate for the particular chemical and type of work being performed, yet not the "best" protecting material for all site chemicals and activities. Selection shall depend upon the most hazardous chemicals based on their hazards and concentrations. Sometimes layering, using several different layers of protective materials, affords the best protection.

3.3.2 Concentration of the Chemical(s)

One of the major criteria for selecting protective material is the concentration of the chemical(s) in air, liquid, and/or solid state. Airborne and liquid chemical concentrations should be compared to the OSHA standards and/or American Conference of Governmental Industrial Hygienists (ACGIH) and National Institute for Occupational Safety and Health (NIOSH) guidelines to determine the level of skin or other absorptive surface (e.g., eyes) protection needed. While these standards are not designed specifically for skin exposed directly to the liquid, they may provide skin designations indicative of chemicals known to have significant skin or dermal absorption effects. For example, airborne levels of PCB on-site may be

low because it is not very volatile, so the inhalation hazard may be minimal; however, PCB-containing liquid coming in direct contact with the skin may cause overexposure. Thus, PCB has been assigned a skin designation in both the OSHA and ACGIH exposure limit tables.

3.3.3 Physical State

The characteristics of a chemical may range from nontoxic to extremely toxic depending on its physical state. Inorganic lead in soil would not be considered toxic to site personnel, unless it became airborne, since it is generally not absorbed through the intact skin. Organic lead in a liquid could be readily absorbed. Soil is frequently contaminated with hazardous materials. Concentrations will vary from a few parts per million to nearly one hundred percent. The degree of hazard is dependent on the type of soil and concentration of the chemical. Generally speaking, "dry" soils do not cause a hazard to site personnel if they take minimal precautions such as wearing some type of lightweight gloves.

3.3.4 Length of Exposure

The length of time a material is exposed to a chemical increases the probability of breakthrough. Determinations of actual breakthrough times for short-term exposures indicate that several different materials can be used which would be considered inadequate under long-term exposures. It should be kept in mind that during testing, a pure (100% composition) liquid is usually placed in direct contact with the material producing a worst-case situation.

3.3.5 Abrasion

When selecting protective clothing, the job the employee is engaged in must be taken into consideration. Persons moving drums or performing other manual tasks may require added protection for their hands, lower chest and thighs. The use of leather gloves and a heavy apron over the other normal protective clothing will help prevent damage to the normal PPE and thus reduce worker exposures.

3.3.6 Dexterity

Although protection from skin and inhalation hazards is the primary concern when selecting PPE, the ability to perform the assigned task must be maintained. For example, personnel cannot be expected to perform work that requires fine dexterity if they must wear a thick glove. Therefore, the PPE selection process must consider the task being performed and provide PPE alternatives or techniques that allow dexterity to be maintained while still protecting the worker (e.g., wearing tight latex gloves over more bulky hand protection to increase dexterity).

3.3.7 Ability to Decontaminate

If disposable clothing cannot be used, the ability to decontaminate the materials selected must be taken into consideration. Once a chemical contacts the material, it must be cleaned before it can be reused. If the chemical has completely permeated the material, it is unlikely that the clothing can be adequately decontaminated and the material should be discarded.

3.3.8 Climactic Conditions

The human body works best with few restraints from clothing. Protective clothing adds a burden by adding weight and restricting movement as well as preventing the natural cooling process. In severe situations, a modified work program must be used.

Some materials act differently when they are very hot and very cold. For example, PVC becomes almost brittle in very cold temperatures. If there are any questions about the stability of the protective materials under different conditions, the manufacturer should be contacted.

3.3.9 Work Load

Like climactic conditions, the type of work activity may affect work duration and the ability of personnel to perform certain tasks. Similarly, the amount of protective materials a person wears will affect their ability to perform certain tasks. For example, a person in a total encapsulating suit, even at 72 °F, cannot work for more than a short period of time without requiring a break.

The work schedule should be adjusted to maintain the health of the employees. Special consideration should be given to the selection of clothing that both protects and adds the least burden when personnel are required to perform strenuous tasks. Excessive bodily stress frequently represents the most significant hazard encountered during field work.

3.4 Types of Protective Materials

1. Cellulose or Paper
2. Natural and Synthetic Fibers
 - a. Tyvek™
 - b. Nomex™
3. Elastomers
 - a. Polyethylene
 - b. Saran
 - c. Polyvinyl Chloride (PVC)
 - d. Neoprene
 - e. Butyl Rubber
 - f. Viton

3.5 Protection Levels

3.5.1 Level A Protection

Level A protection (a fully encapsulated suit) is used when skin hazards exist or when there is no known data that positively rule out skin and other absorption hazards. Since Level A protection is extremely physiologically and psychologically stressful, the decision to use this protection must be carefully considered. At no time will Level A work be performed without the consent of the OM. The following conditions suggest a need for Level A protection:

- confined facilities where probability of skin contact is high;
- sites containing known skin hazards;
- sites with no established history to rule out skin and other absorption hazards;
- atmosphere immediately dangerous to life and health (IDLH) through the skin absorption route;
- site exhibiting signs of acute mammalian toxicity (e.g., dead animals, illnesses associated with past entry into site by humans);

- sites at which sealed drums of unknown materials must be opened;
- total atmospheric readings on the Photoionization Detector (PID), Flame Ionization Detector (FID), and similar instruments indicate 500 to 1,000 ppm of unidentified substances; and
- extremely hazardous substances (e.g., cyanide compounds, concentrated pesticides, Department of Transportation Poison "A" materials, suspected carcinogens and infectious substances) are known or suspected to be present and skin contact is possible.

The following items constitute Level A protection:

- open circuit, pressure-demand self-contained breathing apparatus (SCBA);
- totally encapsulated suit;
- gloves, inner (surgical type);
- gloves, outer;
- chemical protective;
- boots, chemical protective, steel toe and shank;
- radiation detector (if applicable); and
- communications.

3.5.2 Level B Protection

Level B protection is utilized when the highest level of respiratory protection is needed but hazardous material exposure to the few unprotected areas of the body is unlikely.

The following conditions suggest a need for Level B protection:

- the type and atmospheric concentration of toxic substances have been identified and they require the highest level of respiratory protection;
- IDLH atmospheres where the substance or concentration in the air does not present a severe skin hazard;
- the type and concentrations of toxic substances do not meet the selection criteria permitting the use of air purifying respirators; and
- it is highly unlikely that the work being done will generate high concentrations of vapors, gases or particulates, or splashes of materials that will affect the skin of personnel.

Personal protective equipment for Level B includes:

- open circuit, pressure-demand SCBA;
- chemical protective clothing:
- overalls and long-sleeve jacket; or
- coveralls;
- gloves, inner (surgical type); gloves, outer, chemical protective;
- boots, chemical protective, steel toe and shank; and
- communications optional.

3.5.3 Level C Protection

Level C protection is utilized when both skin and respiratory hazards are well defined and the criteria for the use of negative pressure respirators have been fulfilled (i.e., known contaminants and contaminant concentrations, acceptable oxygen levels, approved filter/cartridge available, known cartridge service life, etc.). Level C protection may require carrying an emergency escape respirator during certain initial entry and site reconnaissance situations, or when applicable thereafter.

Personal protective equipment for Level C typically includes:

- full facepiece air-purifying respirator;
- emergency escape respirator (optional);
- chemical protective clothing:
 - overalls and long-sleeved jacket; or
 - coveralls;
- gloves, inner (surgical type);
- gloves, outer, chemical protective; and
- boots, chemical protective, steel toe and shank.

3.5.4 Level D Protection

Level D is the basic work uniform. Personal protective equipment for Level D includes:

- coveralls;
- safety boots/shoes;
- eye protection;
- hand protection;
- reflective traffic safety vest (mandatory for traffic areas or railyard);
- hard hat (with face shield is optional); and
- emergency escape respirator is optional.

3.5.5 Level E Protection

Level E protection is used when radioactivity above 10 mr/hr is detected at the site. Personal protective equipment for Level E includes:

- coveralls;
- air purifying respirator;
- time limits on exposure;
- appropriate dermal protection for the type of radiation present; and
- radiation dosage monitoring.

3.5.6 Additional Considerations

Field work will contain a variety of situations due to chemicals in various concentrations and combinations. These situations may be partially ameliorated by following the work practices listed below:

1. Some sort of foot protection is needed on a site. If the ground to be worked on is contaminated with liquid and it is necessary to walk in the chemicals, some sort of protective "booties" can be worn over the boots. This cuts down on decontamination requirements. They are designed with soles to help prevent them from slipping around. If non-liquids are to be encountered, a Tyvek™ bootie could be used. If the ground contains any sharp objects, the advantage of booties is questionable. Boots should be worn with either cotton or wool socks to help absorb the perspiration.
2. If the site situation requires the use of hard hats, chin straps should be used if a person will be stooping over where his/her hat may fall off. Respirator straps should not be placed over the hard hats. This will affect the fit of the respirator.

Some types of protective materials conduct heat and cold readily. In cold conditions, natural material clothing should be worn under the protective clothing. Protective clothing should be removed prior to allowing a person "to get warm". Applying heat, such as a space heater, to the outside of the protective clothing may drive the contaminants through. In hot weather, under clothing will absorb sweat. It is recommended that workers use all cotton undergarments.

3. Body protection should be worn and taped to prevent anything from running into the top of the boot. Gloves should be worn and taped to prevent substances from entering the top of the glove. Duct tape is preferred, but masking tape can be used. When aprons are used, they should be taped across the back for added protection. However, this should be done in such a way that the person has mobility.
4. Atmospheric conditions such as precipitation, temperature, wind direction, wind velocity, and pressure determine the behavior of contaminants in air or the potential for volatile material getting into the air. These parameters should be considered in determining the need for and the level of protection.
5. A program must be established for periodic monitoring of the air during site operations. Without an air monitoring program, any changes would go undetected and might jeopardize response personnel. Monitoring can be done with various types of air pumps and filtering devices followed by analysis of the filtration media; personnel dosimeters; and periodic walk-throughs by personnel carrying real-time survey instruments.
6. For operations in the exclusion zone, different levels of protection may be selected, and various types of chemical-resistant clothing may be worn. This selection should be based on the job function, reason for being in the area, and the potential for skin contact with, or inhalation of, the chemicals present.
7. Escape masks must be readily available when levels of respiratory protection do not include a SCBA and the possibility of an IDLH atmosphere exists. Their use can be made on a case-by-case basis. Escape masks could be strategically located at the site in areas that have higher possibilities of vapors, gases or particulates.

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APPENDIX C

Community Air Monitoring Program

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APPENDIX C

New York State Department of Health Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. 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.

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. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

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 the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, 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) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should 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.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should 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 should 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 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 $150 \text{ mcg}/\text{m}^3$ above the background level and provided that no visible dust is migrating from the work area. Periodic background readings will be recorded during the day.
2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than $150 \text{ mcg}/\text{m}^3$ above the background 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 $150 \text{ mcg}/\text{m}^3$ of the background 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.

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APPENDIX D

Subsurface Utility Clearance Management Program

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SUBSURFACE UTILITY CLEARANCE MANAGEMENT PROGRAM

CORPORATE HEALTH AND SAFETY MANAGER : Brian Hobbs, CIH, CSP
EFFECTIVE DATE : 01/19
REVISION NUMBER : 2

DRAFT

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APPENDICES

Appendix A – Definitions

Appendix B – Example of Completed One Call

Appendix C – Roux Subsurface Utility Clearance Checklist

Appendix D – Utility Verification/Site Walkthrough Record

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1. PURPOSE

Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C., and Remedial Engineering (collectively, "Roux") has instituted the following program for completing proper utility mark-outs and for conducting subsurface clearance activities. This establishes a method to ensure, to the greatest extent possible, that utilities have been identified and contact and/or damage to underground utilities and other subsurface structures will be avoided.

2. SCOPE AND APPLICABILITY

The Subsurface Utility Clearance Management Program applies to all Roux employees, its contractors and subcontractors. Employees are expected to follow this program for all intrusive work involving Roux or other personnel (e.g., contractors/subcontractors) working for Roux unless the client's requirements are more stringent. Deviation from the program regardless of the specific work activity or work location must be pre-approved based on client's site knowledge, site experience and client's willingness for the use of this program. Any and all exceptions shall be documented and pre-approved by the Project Principal and the Office Manager.

3. PROCEDURES

3.1 Before Intrusive Activities

During the project kick-off meeting for intrusive activities the PM will review the Roux Subsurface Utility Clearance Checklist and Utility Verification (Appendix C) / Site Walkthrough Record (Appendix D) and the below bullet points with the project field team:

(Please note that these are intended as general reminders only and should not be solely relied upon.)

- Ensure the Mark-out / Stake-out Request Information Sheet (or one-call report) is complete and accurate for the site including address and cross streets and review for missing utilities. (Note: utility mark-out organizations do not have contracts with all utilities and it is often necessary to contact certain utilities separately such as the local water and sewer authorities).
- Have written confirmation prior to mobilizing to the site that the firm or Roux personnel performing the intrusive activity has correctly completed the mark-out notification process including requesting mark-outs, waiting for ground surfaces at the site, and receiving written confirmation of findings (via fax or email) from utility operators for all known or suspected utilities in the proposed area of intrusive activity, and provided utility owner written confirmation to Roux personnel for review and project files documentation.
- Do not begin any intrusive activity until all utilities mark-out has been completed (i.e., did all utilities mark-out the site?) and any unresolved mark-out issues are finalized. Perform a site walk to review the existing utilities and determine if said utilities have been located by the utility locators.

(Note: The Tolerance Zone is defined as two feet plus half of the diameter or half of the greatest dimension (for elliptical sewers, duct banks and other non-cylindrical utilities) of a utility and two feet from the outside edge of any subsurface structure.)

- Install Pre-Clearance exploratory test holes (e.g., hand-dug test holes or other soft digging techniques) for the first 5-ft below land surface (BLS) at each location prior to conducting mechanized intrusive activities. The size of the pre-clearance exploratory test hole should be at a minimum twice the diameter of any downhole tool or boring device. (Note: Pre-Clearance exploratory test holes should be defined in the SOW/proposal provided to the client to prevent project delays and to allow adequate time for PM and PP to evaluate alternative approaches for the project. Alternative approaches will need to be pre-approved by the OM.

- For excavations, all utilities need to be marked and then exposed by hand following the protocols in this program. Pre-clearing for excavations may be performed by the “moat” technique (i.e., soft digging around the perimeter). In these cases, dig in small lifts (<12” for first 5 feet) using a dedicated spotter.) For Tolerance Zone work, unless otherwise agreed upon with the Utility Operator, work within the tolerance zone requires verification by means of hand-dug test holes performed to expose the utility. Once structures have been verified a minimum clearance of two feet must be maintained between the utility and any powered equipment.
- In addition, the following activities should be conducted:
 - Review the work scope to be performed with the site owner/tenant to determine if it may impact any utilities;
 - Attempt to procure any utility maps or historic drawings of subsurface conditions of the site;
 - **Determine the need for utility owner companies to be contacted or to have their representatives on site;**
 - Where mark-outs terminate at the property boundary, consider the use of private utility locating / GPR / geophysical-type services which may be helpful in locating utilities. Use of private utility locating firms, however, does not eliminate the legal requirement for the Excavator firm to submit a request for Public Utility Mark-outs. Also, the information provided by the service may be inaccurate and unable to locate subsurface utilities and structures in urban areas, landfills, urban fill areas and below reinforced slabs, etc. They should not be relied upon as the only means of performing utility clearance;
 - Documented description of the dig site which is included in the projects Health and Safety Plan (HASP) and one call report will be maintained in the field and distributed amongst Roux personnel its contractors and subcontractors; and
 - Documentation of the actual placement of mark outs in the field shall be collected using dated pictures, videos and/or sketches with distance from markings to fixed objects. All documentation shall be maintained within the project file.

3.2 During Intrusive Activities

The PM, field team lead or personnel performing oversight is to:

- Ensure the mark-out remains valid. (In certain states there are limits regarding the duration of time after the mark-out was applied to the ground surface work can be started or interrupted.) Additionally, the mark-outs must be maintained, documented, and in many cases refreshed periodically to be considered valid, this will be accomplished through calls to the one call center.
- Ensure intrusive activities are only performed within the safe boundaries of the mark-out as detailed in the One-Call Report.
- Halt all work if intrusive activities have resulted in discovery of an unmarked utility. Roux personnel shall notify the facility owner/operator and the one call center. All incidents such as this will be reported as per Roux Incident Investigation and Reporting Management Program.
- Halt all work if intrusive activities must take place outside of the safe boundaries of a mark-out and only proceed after new mark-outs are performed.
- Halt the intrusive activities and immediately consult with the PP if an unmarked utility is encountered.
- Completing any subsurface utility clearance incident reports that are necessary.

- If a utility cannot be found as marked Roux personnel shall notify the facility owner/operator directly or through the one call center. Following notification, the excavation may continue, unless otherwise specified in state law.
- Contractors/subcontractors must contact the one-call center to refresh the ticket when the excavation continues past the life of the ticket. Ticket life shall be dictated by state law however at a maximum ticket life shall not exceed 20 working days.

3.3 Stop Work Authority

Each Roux employee has Stop Work Authority which he or she will execute upon determination of any imminent safety hazard, emergency situation, or other potentially dangerous situation, such as hazardous weather conditions. This Stop Work Authority includes subsurface clearance issues such as the adequacy of a mark-out or identification during intrusive operations of an unexpected underground utility. Authorization to proceed with work will be issued by the PM/PP after such action is reviewed and resolved. The PM will initiate and execute all management notifications and contact with emergency facilities and personnel when this action is appropriate.

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Appendix A - Definitions

<i>Intrusive Work Activities</i>	All activities such as digging or scraping the surface, including but not limited to, excavation, test pitting or trenching, soil vapor sampling or the installation of soil borings, soil vapor monitoring points and wells, or monitoring wells, and drilling within the basement slab of a recently demolished building.
<i>Mark-out / Stake Out</i>	The process of contracting with a competent and qualified company to confirm the presence or absence of underground utilities and structures. This process will clearly mark-out and delineate utilities that are identified so that intrusive work activities can be performed without causing disturbance or damage to the subsurface utilities and structures. After utility mark-outs are completed the soft digging will be completed prior to intrusive work.
<i>Tolerance Zone</i>	Defined as two feet on either side of the designated centerline of an identified utility, plus half of the diameter or half of the greatest dimension (for elliptical sewers, duct backs and other non-cylindrical utilities) of that utility and two feet from the outside edge of any subsurface structure.
<i>Structure</i>	For the purpose of this program a structure is defined as any underground feature that may a present potential source(s) of energy such as, but not limited to, utility vaults, bunkers, piping, electrical boxes, wires, conduits, culverts, utility lines, underground tanks and ducts.
<i>Soft Digging</i>	The safest way to remove material from unknown obstructions or services is by using tools such as a vactor or air knife, non-mechanical tools, or hand tools. The methods are clean and non-evasive and used for uncovering and exposing buried services, excavating and for providing a quick method of soil removal from sensitive areas.
<i>Verification</i>	Exploratory test-hole dug with hand tools within the Tolerance Zone to expose and verify the location, type, size, direction-of-run and depth of a utility or subsurface structure. Vacuum excavation (soft dig) methods can further facilitate exposure of a subsurface utility and accurately provide its location and identification prior to intrusive work approaching the Tolerance Zone.



Appendix B - Example of Completed One Call Report

Example Completed One-Call Report

New York 811

Send To: C_EMAIL Seq No: 744

Ticket No: 133451007 ROUTINE

Start Date: 12/16/13 Time: 7:00 AM Lead Time: 20

State: NY County: QUEENS Place: QUEENS

Dig Street: 46TH AVE Address:

Nearest Intersecting Street: VERNON BLVD

Second Intersecting Street: 11TH ST

Type of Work: SOIL BORINGS

Type of Equipment: GEOPROBE

Work Being Done For: ROUX

In Street: X On Sidewalk: X Private Property: Other:

On Property Location if Private: Front: Rear: Side:

Location of Work: MARK THE ENTIRE NORTH SIDE OF THE STREET AND SIDEWALK OF:
46TH AVE BETWEEN VERNON BLVD AND 11TH STREET

Remarks:

Nad: Lat: Lon: Zone:

ExCoord NW Lat: 40.7475399 Lon: -73.9534811 SE Lat: 40.7457406 Lon: -73.9493680

Company : ZEBRA ENVIROMENTAL Best Time: 6AM-5PM

Contact Name: DAVID VINES Phone: (516)596-6300

Field Contact: DAVID VINES Phone: (516)596-6300

Caller Address: 30 N PROSPECT AVE Fax Phone: (516)596-4422

LYNBROOK, NY 11563

Email Address: david@zebraenv.com

Additional Operators Notified:

ATTNY01 AT&T CORPORATION (903)753-3145

CEQ CONSOLIDATED EDISON CO. OF N.Y (800)778-9140

MCINY01 MCI (800)289-3427

PANYNJ01 PORT AUTHORITY OF NY & NJ (201)595-4841

VZQ VERIZON COMMUNICATIONS (516)297-1602

Link to Map for C_EMAIL: <http://ny.itic.occinc.com/XGMZ-DF2-L23-YAY>

Original Call Date: 12/11/13 Time: 1:15 PM Op: webusr

IMPORTANT NOTE: YOU MUST CONTACT ANY OTHER UTILITIES DIRECTLY

Appendix C - Roux Subsurface Utility Clearance Checklist

Roux Subsurface Utility Clearance Checklist

Date of Revision –
12/3/14

Work site set-up and work execution

ACTIVITY	Yes	No	N/A	COMMENTS INCLUDING JUSTIFICATION IF RESPONSE IS NO OR NOT APPLICABLE
Daily site safety meeting conducted, SPSAs performed, JSAs reviewed, appropriate work permits obtained.				
HASP is available and reviewed by site workers / visitors.				
Subsurface Utility Clearance Procedure has been reviewed with all site workers.				
Work area secured; traffic control established as needed. Emergency shut-off switch located. Fire extinguishers / other safety equipment available as needed.				
Utility mark-outs (public / private) clear and visible. Provide Excavator's Stake-Out Reference Number / Request Date / Time.				
Tolerance zone work identified.				
Work execution plan reviewed and adhered to (ground disturbance methods, clearance depths, any special utility protection requirements, or any other execution requirements; especially for Tolerance Zone work).				
Verbal endorsement received from Roux PM for any required field deviations to work execution plan.				

Key reminders for execution:

The Subsurface Utility Clearance Protocol should be referenced to determine all requirements while executing subsurface work. The bullet points below are intended as general reminders only and should not be solely relied upon.

- Tolerance zone is defined as two feet plus half of the diameter or half of the greatest dimension (for elliptical sewers, duct banks and other non-cylindrical utilities) of a utility and two feet from the outside of any subsurface structure.
- Install Pre-Clearance exploratory test holes (e.g., hand-dug test holes or vacuum excavation) must be performed for the first five feet below land surface (BLS) at each location prior to conducting mechanized intrusive activities. The size of the pre-clearance exploratory test hole should be at a minimum twice the diameter of any downhole tool or boring device. (Note: Pre-clearance exploratory test holes should be defined in the SOW/proposal provided to the client to prevent project delays and to allow adequate time for PM and PP to evaluate alternative approaches for the project. Alternate approaches will need to be pre-approved by the OM.
- For excavations, all utilities need to be marked and then exposed by hand following the protocols in this program. Pre-clearing for excavations may be performed by the "moat" technique (i.e., soft

digging around the perimeter). In these cases, dig in small lifts (<12" for first five feet) using a dedicated spotter.) For Tolerance Zone work, unless otherwise agreed upon with the Utility Operator, work within the tolerance zone requires verification by means of hand-dug test holes to expose the utility. Once structures have been verified a minimum clearance of two feet must be maintained between the utility and any powered equipment.

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Appendix D - Utility Verification/Site Walkthrough Record

Employee Name: _____

Date: _____

Instructions: For each utility suspected at the job site, indicate location on the job site, approximate burial depth, and means of detecting the utility. Leave blank if that utility is not believed to be present.

Utility	Description of Utility Location Identified Onsite	Approx. Depth (bls)	Method / Instrumentation used to determine Utility Location	Utility Owner Response (Date/Time)	Mark Out Indicates (Clear / Conflict)
Electrical Lines					
Gas Lines					
Pipelines					
Steam Lines					
Water Lines					
Sanitary and Stormwater Sewer lines					
Pressured Air-Lines					
Tank Vent Lines					
Fiber Optic Lines					
Underground Storage Tanks					
Phone Lines/ Other					

* bls - below land surface

Site Sketch Showing Utilities:

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<i>Color Code</i>
ELECTRIC
Gas-oil Steam
Communications CATV
WATER
Reclaimed Water
SEWER
Temp. Survey Markings
Proposed Excavation

Other Comments / Findings:

Completed by: _____

Signature: _____ Date: _____

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Heavy Equipment Exclusion Zone Policy

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**HEAVY EQUIPMENT EXCLUSION ZONE
MANAGEMENT PROGRAM**

CORPORATE HEALTH AND SAFETY MANAGER : Brian Hobbs, CIH, CSP
EFFECTIVE DATE : 01/2019
REVISION NUMBER : 1

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1. PURPOSE

The purpose of the Exclusion Zone Management Program is to establish the minimum clearance distance that must be maintained between workers and heavy equipment while equipment is in operation (i.e., engaged or moving). The intent is to have no personnel or equipment entering the Exclusion Zone while the equipment is in operation or moving to ensure that Roux and Subcontractor employees are not unnecessarily exposed to the hazards of the equipment.

2. SCOPE AND APPLICABILITY

This Management Program applies to all Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C, and Remedial Engineering (collectively, "Roux") employees and their subcontractors who are performing field work and are potentially exposed to heavy equipment. For the purpose of this program, heavy equipment includes, but is not necessarily limited to: excavation equipment, drill rigs, vacuum trucks, forklifts, lull telehandlers, man lifts, bobcats, delivery trucks, etc.

3. PROCEDURES

As specified in the following sections of this Program, an Exclusion Zones must be established and maintained during activities involving the movement/operation of heavy equipment. The Exclusion Zone requirements apply to all personnel on the site but are primarily focused on those personnel who are required to be working in the vicinity of the equipment. The exclusion zone is in effect when heavy equipment is moving or engaged (ex. movement of an arm or bucket of an excavator, rotation of an auger, lifting of a load with a forklift, raising/lowering of a man lift, etc.).

1. The Exclusion Zone must meet the following minimum requirements:

- A minimum distance of 10 feet from all heavy equipment and loads being moved by the equipment;
- Greater than the swing/reach radius of any moving part on the heavy equipment (i.e., for large equipment this may mean an exclusion zone distance larger than 20 feet);
- Greater than the tip-over distance of the heavy equipment; and
- Greater than the radius of blind spots.

The size of the Exclusion Zone will need to be determined on a task-specific basis considering the size of the heavy equipment in use and the task being performed. Prior to all heavy equipment operations, the Exclusion Zone(s) distance must be specifically identified in the Job Safety Analysis (JSA).

2. The spotter (or another individual) should be assigned responsibility for enforcing the Exclusion Zone. The spotter should be positioned immediately outside of the Exclusion Zone within a clear line of sight of the equipment operator. The spotter must signal the operator to stop work if anyone or anything has the potential to enter or compromise the Exclusion Zone. The operator should stop work if the spotter is not within his/her line of sight. If multiple pieces of equipment are being used, each piece of equipment must have its own Exclusion Zone and spotter. For large excavation and demolition projects the spotter should be in constant radio contact (not cell phone) with the machine driver.
3. If an individual must enter the Exclusion Zone, the designated Spotter must signal the Equipment Operator to stop the equipment. Once the equipment is no longer moving (ex. movement of an arm of an excavator is STOPPED, lifting of a load with a forklift STOPPED, raising/lowering of a man lift is

STOPPED, etc.), the operator must DISENGAGE THE CONTROLS and STOP and SIGNAL BY "SHOWING HIS HANDS". This signal will indicate that it is safe for the personnel to enter the limits of the Exclusion Zone to perform the required activity. The equipment must remain completely stopped/disengaged until all personnel have exited the limits of the Exclusion Zone and the designated Spotter has signaled by "SHOWING HIS HANDS" to the Equipment Operator that it is safe to resume operations.

4. When entering the limits of the Exclusion Zone, personnel must at a minimum:
 - Establish eye contact with the operator and approach the heavy equipment in a manner that is in direct line of sight to the Equipment Operator;
 - Never walk under any suspended loads or raised booms/arms of the heavy equipment; and
 - Identify a travel path that is free of Slip/Trip/Fall hazards.
5. The Exclusion Zone should be delineated using cones with orange snow fence or solid poles between the cones, barrels, tape or other measures. For work in rights-of-way rigid barriers, such as Jersey barriers or temporary chain link fence should be used. For certain types of wide-spread or moving/mobile equipment operations, such delineation may not be practicable around pieces of equipment or individual work areas. In such instances, it is expected that the entire operation will be within a larger secure work area or that additional means will be utilized to ensure security of the work zone.

All subcontractors who provide heavy equipment operations to field projects must implement a program that meets or exceeds the expectations described above as well as any additional requirements that may be required on a client or site-specific basis.

3.1 Exceptions

It is recognized that certain heavy equipment activities may require personnel to work within the limits of the Exclusion Zone as specified in this program. Such activities may include certain excavation clearance tasks, drill crew activities or construction tasks. However, any such activity must be pre-planned with emphasis on limiting the amount and potential exposure of any activity required within the zone. The critical safety steps to mitigate the hazards associated with working within the Exclusion Zone must be defined in the JSA and potentially other project-specific plans (i.e., critical lift plans, etc.), and approved by the Roux Project Principal and client representative, if required, prior to implementation.

4. TRAINING

Many Roux projects have different requirements that are client-specific or site-specific in nature. It is the responsibility of the Project Principal (or Project Manager if delegated this responsibility by the Project Principal) to ensure that the workers assigned to his/her projects are provided orientation and training with respect to these client and/or site-specific requirements.

COVID-19 Interim Health and Safety Guidance

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COVID-19 INTERIM HEALTH AND SAFETY GUIDANCE

CORPORATE HEALTH AND SAFETY MANAGER : Brian Hobbs, CIH, CSP
EFFECTIVE DATE : 03/2020
REVISION NUMBER : 1

DRAFT

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APPENDIX

A. HOW TO REMOVE GLOVES POSTER

1. PURPOSE

This guidance has been implemented to establish work practices, administrative procedures, and engineering controls to minimize potential exposure to SARS-CoV-2, the virus that causes COVID-19. The following guidance has been developed based on local, state and federal recommendations regarding COVID-19. The purpose of this document is to supplement existing site-specific Health and Safety Plans (HASP) and provide interim health and safety guidance to minimize potential exposure to SARS-CoV-2. Should additional scientific information or regulatory information change, this document shall be updated accordingly.

2. SCOPE AND APPLICABILITY

This guidance covers all Roux employees and the subcontractors that Roux oversees. Site specific HASPs shall be developed to incorporate elements of mitigative measures against COVID-19 exposure. If work cannot be carried out in compliance with this guidance, the project shall be further evaluated by the Project Principal (PP), Office Manager (OM), and Corporate Health and Safety Manager (CHSM) prior to work authorization.

3. BACKGROUND

What is COVID-19?

COVID-19 is a respiratory illness that can spread from person to person. The virus that causes COVID-19 is a novel coronavirus that was first identified during an investigation into an outbreak in Wuhan, China. There is currently no vaccine to prevent COVID-19.

What are the symptoms of COVID-19?

Reported illnesses have ranged from mild symptoms to severe illness and death for confirmed COVID-19 cases. The following symptoms may appear 2 to 14 days following exposure:

- Fever
- Dry Cough
- Shortness of breath

If someone develops emergency warning signs for COVID-19, they should be instructed to get medical attention immediately. Emergency warning signs can include those listed below; however, this list is not all inclusive. Please consult your medical provider for any other symptoms that are severe or concerning.

- Difficulty breathing or shortness of breath
- Persistent pain or pressure in the chest
- New confusion or inability to arouse
- Bluish lips or face

How does COVID-19 spread?

Person-to-person spread

The virus is thought to spread mainly from person-to-person contact.

- Between people who are in close contact with one another (within about 6 feet).
- Through respiratory droplets produced when an infected person coughs or sneezes.
 - These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs.

Spread from contact with contaminated surfaces or objects

It also may be possible that a person can contract COVID-19 by touching a contaminated surface or object and then touching their mouth, nose, or possibly their eyes. Based on current data, this is not thought to be the main way the virus spreads.

According to the Centers for Disease Control and Prevention (CDC), people are thought to be most contagious when they are most symptomatic; however, there is a possibility for the virus to spread before an individual shows symptoms (asymptomatic).

How easily the virus spreads

How easily a virus spreads from person-to-person can vary. Several viruses, such as measles, are highly contagious while others do not spread as easily. Based on current data, COVID-19 spreads very easily and sustainably between people and suggests the virus is spreading more efficiently compared to influenza, but not as efficiently as measles.

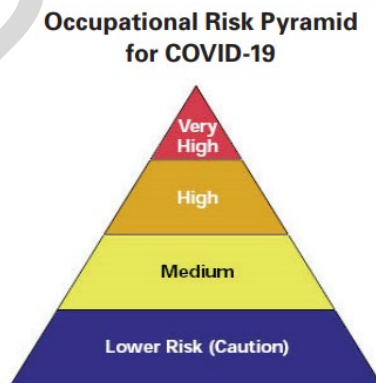
4. TRAINING REQUIREMENTS

All employees with potential exposure to COVID-19 shall be provided training that incorporates COVID-19 exposure mitigation strategies, such as implementation of proper social distancing, personal hygiene (e.g., handwashing), as well as disinfection procedures, as outlined by CDC guidelines.

5. EXPOSURE RISK POTENTIAL

Worker risk of occupational exposure to COVID-19 can vary from very high, high, medium, or lower (caution) risk. This level of exposure is dependent on several factors, which can include industry type; need for contact within 6 feet of people known to be or suspected of being infected with COVID-19; density of work environment; and industrial setting (i.e., healthcare building, occupied interior work area, minimal ventilation).

Provided below is background risk level information taken from the U.S. Department of Labor Occupational Safety and Health Administration Guidance on preparing workplaces for COVID-19. Risk evaluations for each project shall be conducted by the PP and OM in consultation with the CHSM to ensure Roux employees and subcontractors remain within the lower exposure (caution) category. If it is identified there is a medium exposure risk or higher, further evaluation and mitigative measures shall be evaluated to reduce overall exposure risk prior to work authorization.



Very High Exposure Risk (Activities not conducted by Roux)

Very high exposure risk includes occupations/work activities with high potential for exposure to known or suspected sources of COVID-19 during specific medical, postmortem, or laboratory procedures. This can include but is not limited to:

- Healthcare workers (e.g., doctors, nurses, dentists, paramedics, emergency medical technicians) performing aerosol-generating procedures (e.g., intubation, cough induction procedures, bronchoscopies, some dental procedures and exams, or invasive specimen collection) on known or suspected COVID-19 patients.

- Healthcare or laboratory personnel collecting or handling specimens from known or suspected COVID-19 patients (e.g., manipulating cultures from known or suspected COVID-19 patients).
- Morgue workers performing autopsies, which generally involve aerosol-generating procedures on the bodies of people who are known to have, or suspected of having, COVID-19 at the time of their death.

High Exposure Risk (Activities not conducted by Roux)

High exposure risk occupations/work activities include exposure to known or suspected COVID-19 positive individuals. This can include but not limited to:

- Healthcare delivery and support staff (e.g., doctors, nurses, and other hospital staff who must enter patients' rooms) exposed to known or suspected COVID-19 patients. (Note: when such workers perform aerosol-generating procedures, their exposure risk level becomes very high.)
- Medical transport workers (e.g., ambulance vehicle operators) moving known or suspected COVID-19 patients in enclosed vehicles.
- Mortuary workers involved in preparing (e.g., for burial or cremation) the bodies of people who are known to have, or suspected of having, COVID-19 at the time of their death.

Medium Exposure Risk

Medium exposure risk occupations/work activities include those that require frequent and/or close contact with (i.e., within 6 feet of) people who may be infected with COVID-19, but who are not known or suspected to be COVID-19 positive. For most of our worksites, it is assumed there is on-going community transmission for COVID-19. Therefore, workers who work at sites and may have contact with the general public, other contractors, high-population-density work environments (i.e., greater than 10 people) fall within medium exposure risk group category. This can include, but is not limited to, sampling events that require two or more workers to collect and log samples in close contact or work occurring in an interior space with limited ventilation and several workers present.

Lower Exposure Risk (Caution)

Lower exposure risk (caution) occupations/work activities are those that do not require contact with people known to be or suspected of being COVID-19 positive. During these activities, there is limited contact (i.e., within 6 feet of) the general public or other workers. Workers in this category have minimal occupational contact with the public and other coworkers. This can include construction oversight that does not require close contact as well as sampling or gauging events performed by one worker.

6. EXPOSURE/SUSPECTED EXPOSURE***What do I do if I am sick or come into close contact with someone who is sick (e.g. living with/caring for)?***

If you or others you are living with/caring for experience any of the following symptoms, such as acute respiratory illness (i.e., cough, shortness of breath), fatigue, sore throat, muscle aches or fever (100.4 °F [37.8 °C]), we ask you not report to your office/field site and stay home. Employees shall notify the OM immediately so proper notifications can be made.

Additionally, if you have come into close contact (i.e., within about 6 feet) with someone who is experiencing COVID-19-like symptoms, please notify the OM immediately. Information provided shall be used to determine appropriate internal response in consultation with the CHSM and Human Resources Director (HRD).

What if I am asked to self-isolate at home and when can I return from home isolation?

Depending on the situation, if you are COVID-19 positive or suspected to have COVID-19, employees may be required to self-isolate in their homes as per CDC or local health department guidance. As per CDC guidelines, home isolation for those who are sick can stop under the following conditions:

- **If you will not have a test** to determine if you are still potentially contagious, you can leave home after these three things have happened:
 - You have had no fever in the last 72 hours (that is three full days of no fever without the use of medicine that reduces fevers)
 - AND
 - other symptoms have improved (for example, when your cough or shortness of breath have improved)
 - AND
 - at least 7 days have passed since your symptoms first appeared
- **If you will be tested** to determine if you are still potentially contagious, you can leave home after these three things have happened:
 - You no longer have a fever (without the use of medicine that reduces fevers)
 - AND
 - other symptoms have improved (for example, when your cough or shortness of breath have improved)
 - AND
 - you received two negative tests in a row, 24 hours apart. Your doctor shall follow CDC guidelines.

Test-based strategy

Previous recommendations for a test-based strategy remain applicable; however, a test-based strategy is contingent on the availability of ample testing supplies and laboratory capacity as well as convenient access to testing. For jurisdictions that choose to use a test-based strategy, the recommended protocol has been simplified so only one swab is needed at every sampling.

In all cases, follow the guidance of your healthcare provider and local health department. The decision to stop home isolation should be made in consultation with your healthcare provider and state and local health departments. Local decisions depend on local circumstances.

7. WORKPLACE CONTROLS

During the project planning phase, worksite evaluations shall be carried out by the PP and OM in consultation with the CHSM to determine risk exposure levels for work activities. If it is determined there is a medium exposure risk level or higher, additional workplace controls shall be evaluated and implemented as required in addition to the basic infection prevention measures outlined below in Section 8. Additional workplace controls can include engineering controls (i.e., ventilation, physical barriers), administrative controls (i.e., minimizing contact between workers, rotating shifts, site specific training), and additional personal protective equipment (i.e., respiratory protection). If exposure risk cannot be mitigated, potential project postponement may be necessary at the discretion of the OM in consultation with the CHSM.

8. INFECTION PREVENTION MEASURES

The following is basic infection prevention and personal hygiene practices which shall be implemented for all Roux field activities as well as in the office setting.

- **Personal Hygiene**
 - Wash your hands often with soap and water for at least 20 seconds.
 - If soap and water are not available, use an alcohol-based sanitizer that contains at least 60% ethanol or 70% isopropanol.
 - Key times to wash your hands include after blowing your nose, coughing or sneezing, after using the restroom, and before eating or preparing food.
 - Do not touch your eyes, face, nose and mouth with unwashed hands.
 - Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow.

- Throw potentially contaminated items (e.g., used tissues) in the trash.
- ***Avoid Close Contact/Secondary Contact with People and Potentially Contaminated Surfaces***
 - Apply appropriate social distance (6+ feet).
 - Stop handshaking—use and utilize other noncontact methods for greeting.
 - Do not work in areas with limited ventilation with other Site workers (e.g., small work trailer which lacks HVAC system). If working in a trailer, the following conditions must be met: limited to 4 workers, large enough to have the ability to apply social distance, and has open windows and/or operational HVAC to ensure proper ventilation of the workspace.
 - Morning tailgate/safety meetings shall occur outside and not within work trailers.
 - Do not require employees or subcontractors to sign in using the same tailgate form. The Site Supervisor/SHSO should record names of those in attendance on the form.
 - If the Site has more than 10 workers, separate tailgate meetings should be performed in smaller groups.
 - Do not share equipment or other items with co-workers and subcontractors unless wearing appropriate PPE (e.g. nitrile gloves). Assume equipment and other surfaces are potentially contaminated and remove gloves aseptically.
 - If receiving labware or other equipment disinfect to the extent feasible. If there are concerns for contaminating labware please wear appropriate PPE (e.g. gloves) to minimize contact.
 - Contact your lab/equipment vendor to confirm equipment is properly disinfected prior to being shipped.
 - Do not carpool with others (e.g. clients, coworkers).
 - For company owned vehicles limit sharing of vehicles with coworkers. If unable to limit sharing of company owned vehicles, properly disinfect vehicle before driving with a focus on commonly touched surfaces (e.g. steering wheels, shifters, buttons, etc.).
 - Use caution when using public restrooms, portable toilets. Use paper towel as a barrier when touching door handles and faucets.
- ***Cleaning and Disinfecting Surfaces***
 - Clean and disinfect frequently touched surfaces daily. Commonly touched items can include but are not limited to tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, sinks, and field equipment (i.e., photo-ionization detector, field equipment).
 - Surfaces
 - If surfaces are dirty, they should be cleaned with a detergent/soap and water prior to disinfection.
 - Refer to the manufacturer's instructions to ensure safe and effective use of the product and wear appropriate personal protective equipment (e.g., gloves, safety glasses, face shield).
 - Many products recommend:
 - Keeping surface wet for a period of time (see product label)
 - Precautions such as wearing gloves and making sure you have good ventilation during use of the product.
 - Disposable gloves should be removed aseptically and discarded after cleaning. Wash hands immediately following removal of gloves. Refer to Appendix A for how to remove gloves aseptically.
 - For disinfection, diluted household bleach solutions, alcohol solutions with at least 70% alcohol, and most common EPA-registered household disinfectants should be effective.
 - Diluted household bleach solutions can be used if appropriate for the surface. Follow manufacturer's instructions for application and proper ventilation. Check to ensure the product is not past its expiration date. Never mix household bleach with ammonia or any other cleanser.

Unexpired household bleach will be effective against coronaviruses when properly diluted. Leave the solution on the surface for at least 1 minute.

- Prepare a bleach solution by mixing:
 - 5 tablespoons (1/3 cup) bleach per gallon of water or
 - 4 teaspoons bleach per quart of water
- [Products with EPA-approved emerging viral pathogen claims are expected to be effective against COVID-19.](#) Follow the manufacturer's instructions for all cleaning and disinfecting products (e.g., concentration, application method and contact time, etc.).
- If applicable, for soft (porous) surfaces, remove visible contamination if present and clean with appropriate cleaners indicated for use on the surfaces. After cleaning:
 - Launder items as appropriate in accordance with the manufacturer's instructions. If possible, launder using the warmest appropriate water setting for the item and dry items completely; or
 - Use products with the EPA-approved emerging viral pathogens that claim they are suitable for porous surfaces.
- ***Linens, Clothing, and Other Items that Go in the Laundry***
 - Although it is unlikely field clothing would become potentially contaminated with COVID-19, it is recommended that field staff regularly launder field clothing following any field event upon returning home.
 - In order to minimize the possibility of dispersing the virus from potentially contaminated clothing, do not shake dirty laundry.
 - Wash items as appropriate in accordance with the manufacturer's instructions. If possible, launder items using the warmest appropriate water setting for the items and dry items completely.
 - Clean and disinfect hampers or other containers used for transporting laundry according to guidance listed above.

APPENDIX A

How to Remove Gloves

To protect yourself, use the following steps to take off gloves



Grasp the outside of one glove at the wrist.
Do not touch your bare skin.



Peel the glove away from your body,
pulling it inside out.



Hold the glove you just removed in
your gloved hand.



Peel off the second glove by putting your fingers
inside the glove at the top of your wrist.



Turn the second glove inside out while pulling
it away from your body, leaving the first glove
inside the second.



Dispose of the gloves safely. Do not reuse the gloves.



Clean your hands immediately after removing gloves.

Site Management Forms

DRAFT

Summary of Green Remediation Metrics for Site Management

Site Name: Park Lane Senior Code: C203138
 Address: 1940 Turnbull Avenue City: Bronx
 State: New York Zip Code: 10473 County: Bronx

Initial Report Period (Start Date of period covered by the Initial Report submittal)

Start Date: _____

Current Reporting Period

Reporting Period From: _____ To: _____

Contact Information

Preparer's Name: _____ Phone No.: _____

Preparer's Affiliation: _____

I. Energy Usage: Quantify the amount of energy used directly on-site and the portion of that derived from renewable energy sources.

	Current Reporting Period	Total to Date
Fuel Type 1 (e.g. natural gas (cf))		
Fuel Type 2 (e.g. fuel oil, propane (gals))		
Electricity (kWh)		
Of that Electric usage, provide quantity:		
Derived from renewable sources (e.g. solar, wind)		
Other energy sources (e.g. geothermal, solar thermal (Btu))		

Provide a description of all energy usage reduction programs for the site in the space provided on Page 3.

II. Solid Waste Generation: Quantify the management of solid waste generated on-site.

	Current Reporting Period (tons)	Total to Date (tons)
Total waste generated on-site		
OM&M generated waste		
Of that total amount, provide quantity:		
Transported off-site to landfills		
Transported off-site to other disposal facilities		
Transported off-site for recycling/reuse		
Reused on-site		

Provide a description of any implemented waste reduction programs for the site in the space provided on Page 3.

III. Transportation/Shipping: Quantify the distances travelled for delivery of supplies, shipping of laboratory samples, and the removal of waste.

	Current Reporting Period (miles)	Total to Date (miles)
Standby Engineer/Contractor		
Laboratory Courier/Delivery Service		
Waste Removal/Hauling		

Provide a description of all mileage reduction programs for the site in the space provided on Page 3. Include specifically any local vendor/services utilized that are within 50 miles of the site.

IV. Water Usage: Quantify the volume of water used on-site from various sources.

	Current Reporting Period (gallons)	Total to Date (gallons)
Total quantity of water used on-site		
Of that total amount, provide quantity:		
Public potable water supply usage		
Surface water usage		
On-site groundwater usage		
Collected or diverted storm water usage		

Provide a description of any implemented water consumption reduction programs for the site in the space provided on Page 3.

V. Land Use and Ecosystems: Quantify the amount of land and/or ecosystems disturbed and the area of land and/or ecosystems restored to a pre-development condition (i.e. Green Infrastructure).

	Current Reporting Period (acres)	Total to Date (acres)
Land disturbed		
Land restored		

Provide a description of any implemented land restoration/green infrastructure programs for the site in the space provided on Page 3.

Description of green remediation programs reported above (Attach additional sheets if needed)
Energy Usage:
Waste Generation:
Transportation/Shipping:
Water usage:
Land Use and Ecosystems:
Other:

CONTRACTOR CERTIFICATION
<p>I, _____ (Name) do hereby certify that I am _____ (Title) of _____ (Contractor Name), which is responsible for the work documented on this form. According to my knowledge and belief, all of the information provided in this form is accurate and the site management program complies with the DER-10, DER-31, and CP-49 policies.</p>
<div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Date</div> <div>Contractor</div> </div>

Request to Import/Reuse Fill Material Form

DRAFT



**NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION**



Request to Import/Reuse Fill or Soil

This form is based on the information required by DER-10, Section 5.4(e). Use of this form is not a substitute for reading the applicable Technical Guidance document.

SECTION 1 – SITE BACKGROUND

The allowable site use is:

Have Ecological Resources been identified?

Is this soil originating from the site?

How many cubic yards of soil will be imported/reused?

If greater than 1000 cubic yards will be imported, enter volume to be imported:

SECTION 2 – MATERIAL OTHER THAN SOIL

Is the material to be imported gravel, rock or stone?

Does it contain less than 10%, by weight, material that would pass a size 10 sieve?

Does it contain less than 10%, by weight, material that would pass a size 100 sieve?

Is this virgin material from a permitted mine or quarry?

Is this material recycled concrete or brick from a DEC registered processing facility?

SECTION 3 - SAMPLING

Provide a brief description of the number and type of samples collected in the space below:

Example Text: 5 discrete samples were collected and analyzed for VOCs. 2 composite samples were collected and analyzed for SVOCs, Inorganics & PCBs/Pesticides.

If the material meets requirements of DER-10 section 5.4(e)5 (other material), no chemical testing needed.

SECTION 3 CONT'D - SAMPLING

Provide a brief written summary of the sampling results or attach evaluation tables (compare to DER-10, Appendix 5):

Example Text: Arsenic was detected up to 17 ppm in 1 (of 5) samples; the allowable level is 16 ppm.

If Ecological Resources have been identified use the "If Ecological Resources are Present" column in Appendix 5.

SECTION 4 – SOURCE OF FILL

Name of person providing fill and relationship to the source:

Location where fill was obtained:

Identification of any state or local approvals as a fill source:

If no approvals are available, provide a brief history of the use of the property that is the fill source:

Provide a list of supporting documentation included with this request:

The information provided on this form is accurate and complete.

Signature

Date

Print Name

Firm

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Field Sampling Plan

DRAFT



Field Sampling Plan

1940 Turnbull Avenue
Tax Block 3672, Tax Lot 30
Bronx, New York

March 26, 2021

Prepared for:

PL Sara LLC
70 East 55th Street
Bronx, New York 10022

Prepared by:

**Roux Environmental Engineering
and Geology, D.P.C.**
209 Shafter Street
Islandia, New York 11749

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Attachments

- 1. Sampling, Analysis, and Assessment of PFAS under NYSDEC's Part 375 Remedial Programs (January 2021)
- 2. Roux's Standard Operating Procedures
- 3. Chain of Custody Form

1. Introduction

Roux Environmental Engineering and Geology, D.P.C. (Roux), on behalf of PL SARA LLC (Volunteer) has developed this Field Sampling Plan (FSP) to describe in detail the field sampling methods to be used during performance of the Remedial Investigation (RI) at 1940 Turnbull Avenue (Section 2, Block 3672, Lot 30) in the Bronx, New York (Site). The Site is planned to be investigated, remediated, and redeveloped under the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP).

The Volunteer has prepared an application to enter into the Brownfield Cleanup Program (BCP) with New York State Department of Environmental Conservation (NYSDEC) which is currently under review. The FSP was prepared in accordance with directives provided in the DER-10 Technical Guidance for Site Investigation and Remediation (May 2010) issued by the NYSDEC, as well as 6 NYCRR Part 375 and provides guidelines and procedures to be followed by field personnel during performance of the RI. Restricted Residential use as defined in 6 New York Codes, Rules, and Regulations (NYCRR) Part 375-6 Environmental Remediation Programs is proposed for the Site. Currently, the Site is occupied by residential parking lot and located in an area zoned Residential (R8) with a Commercial (C2-4) overlay. When the proposed development is completed, the anticipated Site usage will contain a 14-story senior affordable housing complex. The anticipated excavation depth for the development is 15 feet.

Information contained in this FSP relates to sampling objectives, sampling locations, sampling frequencies, sample designations, sampling equipment, sample handling, sample analysis, and decontamination. Additional details regarding the RI are provided in the associated Remedial Investigation Work Plan (RIWP).

2. Sampling Objectives

The objective of the proposed sampling is to determine the nature and extent of the known contamination on Site, to evaluate any additional areas of concern (AOCs) and to obtain a current representation of the environmental conditions at the Site.

Roux has performed a preliminary Site reconnaissance and has identified AOCs in the RI Work Plan (RIWP). These areas will be targeted during the RI to rule out any impacts. An inspection of the existing Site conditions will be conducted to determine final locations of samples based on actual field conditions.

The sampling procedures associated with characterization of soil, groundwater and soil vapor are discussed in detail in Section 4 of this FSP. A discussion of the data quality objectives (DQOs) is provided in the Quality Assurance Project Plan (QAPP) located in Appendix I of the RIWP.

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3. Sample Media, Locations, Analytical Suites, and Frequency

The media to be sampled during the RI include soil, groundwater and soil vapor. Sampling locations, analytical suites, and frequency vary by sample medium. A discussion of the sampling schedule for each sample medium is provided below, while the assumed number of field samples to be collected for each sample medium, including quality control (QC) samples, is shown in Table F-1. The types of containers, volumes needed, and preservation techniques for the aforementioned testing parameters are presented in Table F-2. Specifics regarding the collection of samples at each location and for each task are provided in Section 4 of this FSP.

3.1 Soil Sampling

A minimum of 29 soil samples will be collected at 10 soil boring locations as shown in Figure 6 of the RIWP.

To characterize the soil conditions in order to fill data gaps for the Site, ten soil borings will be advanced across the Site. The excavation depth for the development is 15 feet, soils will be characterized within the excavation area and vertically delineated beneath the planned excavation pending the results of samples collected from 13-15 ft below land surface (bls). A sample from the 15-17 foot bls interval will also be collected and held at the laboratory pending results from the 13-15 foot bls sample interval. As depicted, four soil borings (RXSB-1, RXSB-8, RXSB-9 and RXSB-10) will be advanced in the northeastern portion of the Site to investigate elevated semi-volatile organic compounds (SVOCs) and lead concentrations previously identified at location SB-1 during Roux's Phase II ESA completed for the Site. More specifically, borings RXSB-1, RXSB-8, RXSB-9, and RXSB-10, will be installed to spatially delineate the impacts previously identified in SB-1. Two borings (RXSB-2 and RXSB-6) will be installed in the northwest area of the site to delineate SVOC and lead impacted soils identified at location SB-3. The remaining three borings (RXSB-3, RXSB-4, and RXSB-7) will be installed throughout the other areas on Site which have been previously uncharacterized. RXSB-5 is proposed to be installed off-Site within the sidewalk to the northeast. The purpose of this boring is to identify if SVOC and metal concentrations identified in this area previously extend off-Site and upgradient to the northeast.

All samples will be analyzed at a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory. The 29 soil samples will be analyzed for Full Target Compound List (TCL) volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) plus the 30 (10 VOCs and 20 SVOCs) highest concentration Tentatively Identified Compounds (TIC); Total Analyte List (TAL) metals; pesticides; herbicides; polychlorinated biphenyls; hexavalent chromium; trivalent chromium; total cyanide; and total mercury. Soil samples will also be analyzed for the emerging contaminants 1,4-Dioxane and Per- and Polyfluoroalkyl Substances (PFAS), which include the 21 compounds listed in the Sampling, Analysis, and Assessment of PFAS under NYSDEC's Part 375 Remedial Programs guidance document (NYSDEC January 2021 PFAS guidance document). If odor/visual evidence of contamination or elevated photoionization detector (PID) readings are noted, additional samples may be collected from the interval that exhibits the highest contamination. The samples collected from the 15-17 foot depth interval may also be analyzed pending the results from the 13-15 foot bls sample interval.

The sampling will be performed in accordance with the NYSDEC January 2021 guidance document to prevent any potential cross contamination (refer to Attachment 1) and the Roux SOPs provided in Attachment 2.

3.2 Groundwater Sampling

To characterize onsite groundwater flow and quality conditions, five new permanent groundwater monitoring wells (MW-1 through MW-5) will be installed using a Geoprobe with augers, developed, and sampled. New monitoring wells will be installed to characterize upgradient and downgradient groundwater quality as no historical groundwater samples have been collected. Monitoring wells will be constructed to straddle the water table to provide approximately three feet of screen above and seven feet of screen below the water table. The proposed groundwater monitoring well locations are shown on Figure 6 of the RIWP.

All monitoring wells will be gauged and sampled to provide additional water-level data for groundwater flow purposes and to monitor onsite upgradient and downgradient groundwater.

All samples will be analyzed at a NYSDOH ELAP-certified laboratory. The seven groundwater samples will be analyzed for Full TCL VOCs and SVOCs plus the 30 (10 VOCs and 20 SVOCs) highest concentration TICs; TAL metals; pesticides; herbicides; PCBs; hexavalent chromium; trivalent chromium; total cyanide; and total mercury. Groundwater samples will be filtered by the laboratory for metals and SVOCs. Groundwater samples will also be analyzed for the emerging contaminants 1,4-Dioxane and PFAS, which include the 21 compounds listed in the NYSDEC January 2021 PFAS guidance document. The sampling will be performed in accordance with the NYSDEC January 2021 PFAS guidance document to prevent any potential cross contamination (refer to Attachment 1).

Although not anticipated, groundwater will not be collected for analysis from a monitoring well if separate-phase petroleum product is observed within that monitoring well; however, the separate phase-petroleum product will be sampled and submitted to the analytical laboratory identification. Monitoring well installation and groundwater sampling procedures are outlined below in Sections 4.1.2 and 4.2.

3.3 Soil Vapor Sampling

Seven new soil vapor samples (SV-1 through SV-7) will be installed and sampled during the RI to evaluate soil vapor conditions at the Site at the locations shown on Figure 6 of the RIWP. The soil vapor samples are located throughout the Site in general locations as no historical soil vapor samples were collected.

All soil vapor samples will be collected in accordance with the October 2006 New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York. Samples will be analyzed at a NYSDOH ELAP-certified laboratory using USEPA Method TO-15 for VOCs. All soil vapor samples will be collected using pre-cleaned summa canisters with regulators calibrated to collect samples over a 2-hour period.

4. Field Sampling Procedures

This section provides a detailed discussion of the field procedures to be used during sampling of the various media being evaluated as part of the RI (i.e., soil, groundwater and soil vapor). The locations are shown on Figure 6 of the RIWP and additional information including intervals to be sampled and sample rationale is provided in Tables F-3, F-4, and F-5 of this FSP. Additional details regarding sampling procedures and protocols are described in the NYSDEC January 2021 PFAS guidance document, provided in FSP Attachment 1 and Roux's relevant Standard Operating Procedures (SOPs), which are provided in FSP Attachment 2.

4.1 Soil Sampling and Monitoring Well Installation

Details for the collection of soil samples and the installation of monitoring wells are provided in the section below. Boreholes will be pre-cleared to five feet below land surface using non-intrusive methods prior to advancement of soil borings and monitoring well pilot-boreholes to verify the absence of utilities. Should a utility or other feature be observed during pre-clearance activities, the sampling location will be relocated to no greater than 10 feet away from the original proposed location. Should the sampling location need to be located at a distance greater than 10 feet from the original proposed location due to access constraints, Roux will contact the NYSDEC case manager to confirm the revised location.

4.1.1 Soil Sampling

Soil borings will be advanced using a Geoprobe direct push rig. As described in the prior sections, a total of 10 soil borings will be advanced during the RI. A summary of the soil borings and samples proposed for collection is provided as Table F-3. The soil boring proposed for collection during the RI are described below:

- Soil borings RXSB-1 will be advanced from land surface to a depth of 20 ft-bls. The samples are planned to be collected from the 5-7 foot, and 13-15 foot intervals. A sample from the 15-17 foot interval will be collected and held at the lab pending results from the 13-15 foot interval. The purpose of this boring is to vertically and horizontally delineate lead contamination identified in previously installed SB-1.
- Soil borings RXSB-8, RXSB-9, and RXSB-10 will be advanced from land surface to a depth of 20 ft-bls. The samples are planned to be collected from the 5-7 foot, 11-13 foot and 13-15 foot intervals. A sample from the 15-17 foot interval will be collected and held at the lab pending results from the 13-15 foot interval. The purpose of these borings is to vertically and horizontally delineate SVOC and lead contamination identified in previously installed SB-1.
- Soil borings RXSB-2 and RXSB-6 will be advanced from land surface to a depth of 20 ft-bls. The samples are planned to be collected from the 0-2 foot, 5-7 foot and 13-15 foot intervals. A sample from the 15-17 foot interval will be collected and held at the lab pending results from the 13-15 foot interval. The purpose of these borings is to vertically and horizontally delineate SVOC and lead contamination identified in previously installed SB-3.
- Soil borings RXSB-3 and RXSB-4 and RXSB-7 will be advanced throughout the remaining portions of the Site which have not yet been characterized. The samples are planned to be collected from the 0-2 foot, 5-7 foot and 13-15 foot intervals. A sample from the 15-17 foot interval will be collected and held at the lab pending results from the 13-15 foot interval.
- Soil boring RXSB-5 will be advanced within the sidewalk northeast of the Site boundary. The purpose of this boring is to identify if the SVOCs and metals previously identified in this area extend off-Site and upgradient of the Site. The samples are planned to be collected from the 0-2 foot, 5-7 foot and 13-15 foot intervals. A sample from the 15-17 foot interval will be collected and held at the lab pending results from the 13-15 foot interval.

For soil borings advanced with the Geoprobe, soil from each continuous five-foot interval will be observed for lithology and evidence of contamination (e.g., staining, odors, and/or visible free product) and placed immediately thereafter into large Ziploc® bags for recording headspace using a PID. After a minimum of 15 minutes for equilibration with the headspace in the Ziploc® bag, each sample will be screened for organic vapors using a PID equipped with a 10.6 eV lamp. Samples for possible VOC analysis will be placed in an encore sampler prior to screening, due to the potential for loss of VOCs through volatilization. Soil samples will be collected according to Table F-3. These samples will be placed in the laboratory-supplied containers and shipped to the laboratory under chain of custody procedures in accordance with Roux's SOPs. Soil lithology will be recorded according to the Unified Soils Classification System (USCS). Geologic logs including lithology and PID measurements will be generated.

In accordance with the NYSDEC January 2021 PFAS guidance document, soil samples will be collected using either a stainless-steel hand auger or trowel and bowl, or acetate liners. Nitrile gloves will be worn while conducting field work and handling sample containers. Decontamination of stainless- steel equipment will be completed using Alconox and clean, PFAS-free water.

Following sample collection, boreholes will be backfilled with soil cuttings with an upper bentonite plug and capped to grade with asphalt or concrete. Soil cuttings from monitoring wells and potentially soils with visual contamination, if encountered, will be placed in sealed and labeled DOT-approved 55-gallon drums pending characterization and off-site disposal at a permitted facility.

4.1.2 Monitoring Well Installation

Groundwater is anticipated to be encountered between 11 and 13 ft bls. Following soil sampling activities, monitoring wells will be installed at five boring locations (RXSB-1/MW-1, RXSB-7/MW-2, RXSB-8/ MW-3, RXSB-9/ MW-4 and RXSB-10/ MW-5), bridging the water table to a maximum depth of approximately 20 ft-bl. Monitoring wells will be constructed of 2-inch-inside-diameter, schedule 40 polyvinyl chloride (PVC) casing and, 0.020-inch slot, machined screen. Well screens will be 10 feet long and will be installed with three feet above and seven feet below the water table. A sand pack will be placed around the well screen, extending two feet above the top of the screened zone. Once the driller confirms the depth of the sand pack, a minimum two-foot-thick bentonite pellet seal will be placed above the sand pack. Once the pellets have been allowed to hydrate, a cement-bentonite grout will be installed in the remaining annular space from the bottom up, to just above the bentonite seal. The wells will be completed using locking well plugs, and flush mounted, bolt down, watertight, manhole covers cemented into place. Additional details regarding monitoring well installation is provided in Table F-4.

Each newly installed monitoring well will be developed to remove any fine-grained material in the vicinity of the well screen and to promote hydraulic connection with the aquifer. The wells will be developed using a submersible pump, which will be surged periodically until well yield is consistent and has a turbidity below 50 Nephelometric turbidity units (NTUs). Following development, monitoring wells will be allowed one-week (five business days) to equilibrate with the surrounding formation prior to sampling.

As described in the RIWP, all monitoring wells will be surveyed by a licensed New York State surveyor to obtain horizontal and vertical survey coordinates.

4.2 Groundwater Sampling

Following development of the monitoring wells, groundwater samples will be collected from the five newly installed monitoring wells. Prior to sampling, depth to water will be measured at each well using an electronic oil/water level meter with an accuracy of +/-0.01 feet. Field parameters will be collected using a water quality

meter during purging and prior to sampling. All wells will then be purged and sampled using a submersible pump, or an alternative method, depending on the observed depth to groundwater and logistical issues.

Field parameters (i.e., pH, dissolved oxygen, ORP, etc. as described in the USEPA low-flow sampling requirements) will be collected using a water quality meter with flow-through cell until parameters stabilized before samples are collected. Following purging, a groundwater sample will be collected from the four newly installed monitoring wells, in addition to groundwater samples from the three previously installed wells on the Site, for a total of seven groundwater samples. Groundwater samples will be collected using the methods described in “Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells” (USEPA, 2010). Additional details regarding sampling procedures and protocols are described in the NYSDEC January 2021 PFAS guidance document provided in FSP Attachment 1 and in the Roux’s SOPs provided in FSP Attachment 2.

In accordance with the NYSDEC January 2021 PFAS guidance document, groundwater samples will be collected using one of the following materials: High-density polyethylene (HDPE), silicone, and/or polypropylene. Dedicated sampling equipment will be used during sample collection. Nitrile gloves will be worn while conducting field work and handling sample containers. Decontamination of the water quality meter will be completed using Alconox and clean, PFAS-free water.

All groundwater samples will be placed in the laboratory-supplied containers and shipped to the laboratory under chain of custody procedures in accordance with Roux’s SOPs. Additional details regarding groundwater sample analyses is provided in Table F-4.

4.3 Soil Vapor Sampling

Seven newly installed soil vapor points will be sampled during the RI to evaluate vapor conditions at the Site. Details for the installation soil vapor points and collection of vapor samples are provided below. Additional details regarding these samples is provided in Table F-5. The locations of the samples are shown on Figure 6 of the RIWP.

Seven soil-vapor point locations will be pre-cleared to five feet below land surface using non-intrusive methods to verify the absence of utilities. Should a utility or other feature be observed during pre-clearance activities, the sampling location will be relocated to no greater than 10 feet away from the original proposed location. Should the sampling location need to be located at a distance greater than 10 feet from the original proposed location due to access constraints, Roux will contact the NYSDEC case manager to confirm. A six-inch long, stainless steel, sample screen attached to Teflon-lined polyethylene sample tubing will be installed approximately 1 foot above the water table, #2 Morie sand will be added to 6-inches above the top of the screen. A one-foot-thick layer of bentonite will also be added to the top of the sand and the remainder of the boring annulus was filled with a cement/bentonite grout. A secure, five-inch diameter, flush-mounted curb box will then set in concrete and be finished to grade.

Prior to sample collection, the Teflon®-lined tubing will be purged of approximately two volumes of the tubing using a vacuum pump set at a rate of 0.2 liters per minute. A tracer gas (i.e., helium) will be used to enrich the atmosphere in the immediate vicinity of the sampling location in order to test the borehole seal and verify that ambient air is not being drawn into the sample in accordance with the procedures outlined in the NYSDOH Guidance. Following purging and verification with the tracer gas, the tubing will be connected to the laboratory supplied six-liter SUMMA canister. All soil vapor samples will be collected using pre-cleaned 6-liter summa canisters with regulators calibrated to collect samples over a 2-hour period and analyzed using USEPA Method TO-15 for VOCs. Additional details for the collection of soil vapor samples are included in the Roux’s SOPs.

5. Sample Handling and Analysis

To ensure quality data acquisition and collection of representative samples, there are selective procedures to minimize sample degradation or contamination. These include procedures for preservation of the samples as well as sample packaging and shipping procedures.

5.1 Field Sample Handling

A detailed discussion of the number and types of samples to be collected during each task, as well as the analyses to be performed can be found in Section 3 of this FSP. The types of containers, volumes needed, and preservation techniques for the aforementioned testing parameters are presented in Table F-2.

5.2 Sample Custody Documentation

The purpose of documenting sample custody is to confirm that the integrity and handling of the samples is not subject to question. Sample custody will be maintained from the point of sampling through the analysis. Specific procedures regarding sample tracking from the field to the laboratory are described in the NYSDEC January 2021 PFAS guidance document (Attachment 1) and Roux's SOP for Sample Handling (Attachment 2).

Each individual collecting samples is personally responsible for the care and custody of the samples. All sample labels will be pre-printed or filled out using waterproof ink. The technical staff will review all field activities with the Field Team Leader to determine whether proper custody procedures were followed during the fieldwork and to decide if additional samples are required.

All samples being shipped off-site for analysis must be accompanied by a properly completed chain of custody form (Attachment 3). The sample numbers will be listed on the chain of custody form. When transferring the possession of samples, individuals relinquishing and receiving will sign, date, and note the time on the record. This record documents transfer of custody of samples from the sampler to another person, to/from a secure storage area, and to the laboratory.

Samples will be packaged for laboratory pick up and/or shipment with a separate signed custody record enclosed in each sample box or cooler. Shipping containers will be locked and/or secured with strapping tape in at least two locations for shipment to the laboratory.

5.3 Sample Shipment

Laboratory courier services may be used for sample transport on this project. However, in the event that samples are shipped to the laboratory the following procedures will apply. Sample packaging and shipping procedures are based upon USEPA specifications, as well as U.S. Department of Transportation (DOT) regulations. The procedures vary according to potential sample analytes, concentration, and matrix, and are designed to provide optimum protection for the samples and the public. Sample packaging and shipment must be performed using the general outline described below. Additional information regarding sample handling is provided in the NYSDEC January 2021 PFAS guidance document (Attachment 1) and Roux's SOP for Sample Handling (Attachment 2).

When possible, a laboratory courier will pick up samples each day for delivery directly to the laboratory. In the event that a laboratory courier is unable to pick up the samples, all samples will be shipped within 12

hours of collection (when possible) and will be preserved appropriately from the time of sample collection. A description of the sample packing and shipping procedures is presented below:

1. Prepare cooler(s) for shipment.
 - tape drain(s) of cooler shut;
 - affix “this side up” arrow labels and “fragile” labels on each cooler; and
 - place mailing label with laboratory address on top of cooler(s).
2. Arrange sample containers in groups by sample number or analyte.
3. Ensure that all bottle labels are completed correctly. Place clear tape over bottle labels to prevent moisture accumulation from causing the label to peel off.
4. Arrange containers in front of assigned coolers.
5. Place packaging material at the bottom of the cooler to act as a cushion for the sample containers.
6. Arrange containers in the cooler so that they are not in contact with the cooler or other samples.
7. Fill remaining spaces with packaging material.
8. Ensure all containers are firmly packed with packaging material.
9. If ice is required to preserve the samples, ice cubes should be repackaged in double Zip-Lock™ bags and placed on top of the packaging material.
10. Sign chain of custody form (or obtain signature) and indicate the time and date it was relinquished to Federal Express or other carrier, as appropriate.
11. Separate chain of custody forms. Seal proper copies within a large Zip-Lock™ bag and tape to cooler. Retain copies of all forms.
12. Close lid and latch.
13. Secure each cooler using custody seals.
14. Tape cooler shut on both ends.
15. Relinquish to Federal Express or other courier service as appropriate. Retain airbill receipt for project records. (Note: All samples will be shipped for “NEXT A.M.” delivery).
16. Telephone laboratory contact and provide him/her with the following shipment information:
 - sampler's name;
 - project name;
 - number of samples sent according to matrix and concentration; and
 - airbill number.

6. Site Control Procedures

Site control procedures, including decontamination and waste handling and disposal, are discussed below.

6.1 Decontamination

In an attempt to avoid the spread of contamination, all drilling and sampling equipment must be decontaminated at a reasonable frequency in a properly designed and located decontamination area. Detailed procedures for the decontamination of field and sampling equipment are included in NYSDEC January 2021 PFAS guidance document (Attachment 1) and Roux's SOPs for the Decontamination of Field Equipment (Attachment 2). The location of the decontamination area will be determined prior to the start of field operations. The decontamination area will be established to ensure that all wash water generated during decontamination can be collected and containerized for proper disposal.

6.2 Waste Handling and Disposal

All waste materials (drill cuttings, decontamination water, etc.) generated during the RI will be consolidated, and stored in appropriate labeled bulk containers (drums, etc.), and temporarily staged at an investigation-derived-waste storage area onsite. Roux will then coordinate waste characterization and disposal by appropriate means.

TABLES

- F-1. Remedial Investigation Field and Quality Control Sampling Summary
- F-2. Preservation, Holding Times, and Sample Containers
- F-3. Proposed Soil Sampling Locations and Rationale
- F-4. Proposed Groundwater Sampling Locations and Rationale
- F-5. Proposed Soil Vapor Sampling Locations and Rationale

Table F-1. Remedial Investigation Field and Quality Control Sampling Summary

Sample Medium	Target Analytes	Field Samples	Replicates ¹	Trip Blanks ²	Field Blanks ¹	Matrix Spikes ¹	Spike Duplicates ¹	Total No. of Samples
Soil	Full TCL VOCs +10	29	2	8	2	2	2	45
	Full TCL SVOCs +20	29	2	NA	2	2	2	37
	TCL Pesticides	29	2	NA	2	2	2	37
	TCL Herbicides	29	2	NA	2	2	2	37
	TCL PCBs	29	2	NA	2	2	2	37
	TAL Metals	29	2	NA	2	2	2	37
	Hexavalent Chromium	29	2	NA	2	2	2	37
	Trivalent Chromium	29	2	NA	2	2	2	37
	Total Cyanide	29	2	NA	2	2	2	37
	Total Mercury	29	2	NA	2	2	2	37
	1,4-Dioxane	29	2	NA	1	1	1	34
	PFAS	29	2	NA	1	1	1	34
Groundwater	Full TCL VOCs +10	5	1	1	1	1	1	10
	Full TCL SVOCs +20*	5	1	NA	1	1	1	9
	TCL Pesticides	5	1	NA	1	1	1	9
	TCL Herbicides	5	1	NA	1	1	1	9
	TCL PCBs	5	1	NA	1	1	1	9
	TAL Metals (Total)	5	1	NA	1	1	1	9
	TAL Metals (Dissolved)	5	1	NA	1	1	1	9
	Hexavalent Chromium	5	1	NA	1	1	1	9
	Trivalent Chromium	5	1	NA	1	1	1	9
	Total Cyanide	5	1	NA	1	1	1	9
	Total Mercury	5	1	NA	1	1	1	9
	1,4-Dioxane	5	1	NA	1	1	1	9
	PFAS	5	1	NA	1	1	1	9
Soil Vapor	TO-15 VOCs	7	1	NA	NA	NA	NA	8

Totals are estimated based on scope of work as written, actual sample quantities may vary based on field conditions. QA/QC sample quantities will be adjusted accordingly.

¹ Based on 1 per 20 samples or 1 per Sample Delivery Group

² Based on 1 cooler per day

TCL - USEPA Contract Laboratory Program Target Compound List

VOCs - Volatile Organic Compounds

SVOCs - Semivolatile Organic Compounds

PCBs - Polychlorinated Biphenyls

TAL - USEPA Contract Laboratory Program Target Analyte List

PFAS - Per- and Polyfluoroalkyl Substances

NA - Not Applicable

*All groundwater samples will be analyzed for both filtered and unfiltered metals and SVOCs.

Table F-2. Preservation, Holding Times and Sample Containers

Analysis	Matrix	Bottle Type	Preservation(a)	Holding Time(b)
TAL Metals (total & dissolved) SW-846 6020B/7471B	Soil Water	8 oz wide mouth glass, teflon lined cap 250 mL plastic, teflon lined cap	Cool to 4°C Nitric acid	180 days, Hg 28 days
Hexavalent Chromium\Trivalent Chromium(calculated) SW-846 7196A\6010C	Soil Water	2 oz wide mouth glass, teflon lined cap 500 mL Plastic	None	30 days to extract, 7 days to analysis 24 hours from sample collection
Total Cyanide SW-846 9012B	Soil Water	4 oz wide mouth glass, teflon lined cap 250 mL Plastic	Cool to 4°C NaOH	14 days from sample collection 14 days from sample collection
1,4-Dioxane SW-846 8270D GS/MS SIM/Isotope Dilution	Soil Water	8 oz wide mouth glass, teflon lined cap 2 x 500 mL amber wide mouth glass	Cool to 4°C Cool to 4°C	14 days from sample collection 7 days from sample collection
Per- and Polyfluoroalkyl Substances (PFAS) EPA 537(Modified)	Soil Water	8 oz plastic container (non teflon lined) 2 - 250 mL plastic	Cool to 4°C Trizma	14 days to extract, 40 days to analysis 14 days to extract, 28 days to analysis
Volatile Organic Compounds (VOCs) TO-15	Air	6 liter Summa Canister for 8-hr sampling period 1 liter Summa Canister for 2-hr sampling period	None None	14 days from sample collection 14 days from sample collection
Target Compound List (TCL)				
TCL Volatile Organic Compounds (VOCs) + 10 TICS SW-846 8260C	Soil Water	Encore 40mL vial, teflon lined cap	Cool to 4°C Hydrochloric Acid	24 hours from sample collection 14 days from sample collection
TCL Semivolatile Organic Compounds (SVOCs) +20 TICS SW-846 8270D	Soil Water	8 oz wide mouth glass, teflon lined cap 1 liter amber glass, teflon lined cap	Cool to 4°C	14 days to extract, 40 days to analysis 7 days to extract, 40 days to analysis
TCL Pesticides SW-846 8081B	Soil Water	8 oz wide mouth glass, teflon lined cap 1 liter amber glass, teflon lined cap	Cool to 4°C	14 days to extract, 40 days to analysis 7 days to extract, 40 days to analysis
TCL Herbicides SW-846 8151A	Soil Water	8 oz wide mouth glass, teflon lined cap 1 liter amber glass, teflon lined cap	Cool to 4°C	14 days to extract, 40 days to analysis 7 days to extract, 40 days to analysis
TCL Polychlorinated biphenyls (PCBs) SW-846 8082A	Soil Water	8 oz wide mouth glass, teflon lined cap 1 liter amber glass, teflon lined cap	Cool to 4°C	14 days to extract, 40 days to analysis 7 days to extract, 40 days to analysis

(a) All soil and groundwater samples to be preserved in ice during collection and transport

(b) Days from date of sample collection.

TAL - Target Analyte List

TCL - USEPA Contract Laboratory Program Target Compound List

Gas chromatography-mass spectrometry (GC/MS) in selected ion monitoring (SIM) mode

Table F3. Proposed Soil Sampling Locations and Rationale

Location	Matrix	Sample Intervals	Maximum Depth	Sample Parameters	Sampling Method	Rationale
RXSB-1	Soil	5-7 foot, 13-15 foot intervals (15-17 foot interval collected and held pending results of 13-15 foot sample)	20 feet below land surface	TCL + 30/TAL	EPA SW-846 8260C, EPA SW-846 8270D, EPA SW-846 8082A, EPA SW-846 8151A, EPA SW-846 8081B, EPA SW-846 6020B, Calculation- EPA SW-846 6010C/7196A, EPA SW-846 7196A, EPA SW-846 9012B, EPA SW-846 7471B and LCMSMS-ID (EPA 537), EPA SW-846 8270D SIM	Reinstall this boring in former location of SB-1 (Roux 2020). High lead concentrations as well as other metals were detected in addition to SVOCs.
RXSB-8 through RXSB-10	Soil	5-7 foot, 11-13 foot and 13-15 foot intervals (15-17 foot interval collected and held pending results of 13-15 foot sample)	20 feet below land surface	TCL + 30/TAL	EPA SW-846 8260C, EPA SW-846 8270D, EPA SW-846 8082A, EPA SW-846 8151A, EPA SW-846 8081B, EPA SW-846 6020B, Calculation- EPA SW-846 6010C/7196A, EPA SW-846 7196A, EPA SW-846 9012B, EPA SW-846 7471B and LCMSMS-ID (EPA 537), EPA SW-846 8270D SIM	Vertically and horizontally delineate SVOC and metals contamination previously identified in SB-1.
RXSB-2 and RXSB-6	Soil	0-2 foot, 5-7 foot and 13-15 foot intervals (15-17 foot interval collected and held pending results of 13-15 foot sample)	20 feet below land surface	TCL + 30/TAL	EPA SW-846 8260C, EPA SW-846 8270D, EPA SW-846 8082A, EPA SW-846 8151A, EPA SW-846 8081B, EPA SW-846 6020B, Calculation- EPA SW-846 6010C/7196A, EPA SW-846 7196A, EPA SW-846 9012B, EPA SW-846 7471B and LCMSMS-ID (EPA 537), EPA SW-846 8270D SIM	Vertically and horizontally delineate SVOC and lead contamination previously identified in SB-3.
RXSB-3, RXSB-4 and RXSB-7	Soil	0-2 foot, 5-7 foot and 13-15 foot intervals (15-17 foot interval collected and held pending results of 13-15 foot sample)	20 feet below land surface	TCL + 30/TAL	EPA SW-846 8260C, EPA SW-846 8270D, EPA SW-846 8082A, EPA SW-846 8151A, EPA SW-846 8081B, EPA SW-846 6020B, Calculation- EPA SW-846 6010C/7196A, EPA SW-846 7196A, EPA SW-846 9012B, EPA SW-846 7471B and LCMSMS-ID (EPA 537), EPA SW-846 8270D SIM	To evaluate current soil quality which included additional analytical parameters in areas previously not investigated or sampled.
RXSB-5	Soil	0-2 foot, 5-7 foot and 13-15 foot intervals (15-17 foot interval collected and held pending results of 13-15 foot sample)	20 feet below land surface	TCL + 30/TAL	EPA SW-846 8260C, EPA SW-846 8270D, EPA SW-846 8082A, EPA SW-846 8151A, EPA SW-846 8081B, EPA SW-846 6020B, Calculation- EPA SW-846 6010C/7196A, EPA SW-846 7196A, EPA SW-846 9012B, EPA SW-846 7471B and LCMSMS-ID (EPA 537), EPA SW-846 8270D SIM	This off-site boring will be installed northeast of the Site boundary to investigate elevated SVOC concentrations identified at depth within the northeast corner of the Site.

Depths are in feet below land surface; Additional intervals may be added based on field observations.

Laboratory will report to their minimum possible standards for each method (QAPP Appendix D)

TCL + 30/TAL - includes TCL VOCs + 10 TICs, TCL SVOCs + 20 TICs, TCL Pest/Herb/PCBs, TAL Metals, Hex/Tri Chromium, Total Cyanide, Total Mercury, Per- and Polyfluoroalkyl Substances (PFAS), 1,4-Dioxane

TCL - USEPA Contract Laboratory Program Target Compound List

TAL - USEPA Contract Laboratory Program Target Analyte List

VOCs - Volatile Organic Compounds

SVOCs - Semivolatile Organic Compounds

PCBs - Polychlorinated Biphenyls

TICs - Tentatively Identified Compounds

TBD - To Be Determined

QA/QC samples will be collected as described in the QAPP Table 2

Table F4. Proposed Groundwater Sampling Locations and Rationale

Location	Matrix	New/Existing	Proposed/Existing Monitoring Well Depth*	Sample Interval	Sample Parameters	Sampling Method	Rationale
MW-1, MW-2, MW-3, MW-4	Groundwater	New	20 feet below land surface	Water Table	TCL + 30/TAL	EPA SW-846 8260C, EPA SW-846 8270D, EPA SW-846 8082A, EPA SW-846 8151A, EPA SW-846 8081B, EPA SW-846 6020B, Calculation- EPA SW-846 6020B/7196A, EPA SW-846 9012B, EPA SW-846 7470A, EPA 537(Modified), EPA SW-846 8270D GS/MS SIM/Isotope Dilution	To evaluate on Site groundwater quality.
MW-5	Groundwater	New	20 feet below land surface	Water Table	TCL + 30/TAL	EPA SW-846 8260C, EPA SW-846 8270D, EPA SW-846 8082A, EPA SW-846 8151A, EPA SW-846 8081B, EPA SW-846 6020B, Calculation- EPA SW-846 6020B/7196A, EPA SW-846 9012B, EPA SW-846 7470A, EPA 537(Modified), EPA SW-846 8270D GS/MS SIM/Isotope Dilution	Off-site, upgradient well to identify any potential upgradient groundwater impacts.

*Proposed monitoring well depth based on previously identified depth to water from prior investigations

Laboratory will report to their minimum possible standards for each method (QAPP Appendix D)

TCL + 30/TAL - includes TCL VOCs + 10 TICs, TCL BNA (SVOCs) + 20 TICs, TCL Pest/PCBs, TAL Metals, Hex/Tri Chromium, Total Cyanide, Total Mercury, Per- and Polyfluoroalkyl Substances (PFAS), 1,4-Dioxane

TCL - USEPA Contract Laboratory Program Target Compound List

TAL - USEPA Contract Laboratory Program Target Analyte List

VOCs - Volatile Organic Compounds

SVOCs - Semivolatile Organic Compounds

TICs - Tentatively Identified Compounds

PCBs - Polychlorinated Biphenyls

QA/QC samples will be collected as described in the QAPP Table 2

All groundwater samples will be analyzed for both filtered and unfiltered metals and SVOCs

ft-bls feet below land surface

Table F5. Proposed Vapor Sampling Locations and Rationale

Location	Matrix	New/Existing	Sample Interval	Sample Parameters	Sampling Method	Rationale
SV-1 through SV-4 and SV-6 and SV-7	Soil Vapor	New	At outdoor locations from approximately 1-foot above the water table.	TCL VOCs	TO-15	Generally characterize the soil vapor quality beneath the Site.
SV-5	Soil Vapor	New	At outdoor locations from approximately 1-foot above the water table.	TCL VOCs	TO-15	Characterize soil vapor upgradient of the Site to the northeast. SV-5 will be installed off-site in the same location as RXSB-5 and MW-5.

Laboratory will report to their minimum possible standards for each method (QAPP Appendix D)

TCL - USEPA Contract Laboratory Program Target Compound List

VOCs - Volatile Organic Compounds

TICs - Tentatively Identified Compounds

QA/QC samples will be collected as described in the QAPP Table 2

All groundwater samples will be analyzed for both filtered and unfiltered metals and SVOCs

ATTACHMENTS

1. NYSDEC Emerging Contaminant Sampling Guidance
2. Roux's Standard Operating Procedures
3. Chain of Custody Form

NYSDEC Emerging Contaminant Sampling Guidance

DRAFT

Collection of Groundwater Samples for Per- and Polyfluoroalkyl Substances (PFAS) from Monitoring Wells Sample Protocol

Samples collected using this protocol are intended to be analyzed for perfluorooctanoic acid (PFOA) and other perfluorinated compounds by Modified (Low Level) Test Method 537.

The sampling procedure used must be consistent with the NYSDEC March 1991 Sampling Guidelines and Protocols http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf with the following materials limitations.

At this time acceptable materials for sampling include: stainless steel, high density polyethylene (HDPE) and polypropylene. Additional materials may be acceptable if proven not to contain PFAS. **NOTE: Grunfos pumps and some bladder pumps are known to contain PFAS materials (e.g. Teflon™ washers for Grunfos pumps and LDPE bladders for bladder pumps).** All sampling equipment components and sample containers should not come in contact with aluminum foil, low density polyethylene (LDPE), glass or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer. Standard two step decontamination using detergent and clean water rinse will be performed for equipment that does come in contact with PFAS materials. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials must be avoided. Many food and drink packaging materials and “plumbers thread seal tape” contain PFAS.

All clothing worn by sampling personnel must have been laundered multiple times. The sampler must wear nitrile gloves while filling and sealing the sample bottles.

Pre-cleaned sample bottles with closures, coolers, ice, sample labels and a chain of custody form will be provided by the laboratory.

1. Fill two pre-cleaned 250 mL HDPE or polypropylene bottle with the sample.
2. Cap the bottles with an acceptable cap and liner closure system.
3. Label the sample bottles.
4. Fill out the chain of custody.
5. Place in a cooler maintained at $4 \pm 2^{\circ}$ Celsius.

Collect one equipment blank for every sample batch, not to exceed 20 samples.

Collect one field duplicate for every sample batch, not to exceed 20 samples.

Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, not to exceed 20 samples.

Request appropriate data deliverable (Category A or B) and an electronic data deliverable.

Groundwater Sampling for Emerging Contaminants

July 2018

Issue: NYSDEC has committed to analyzing representative groundwater samples at remediation sites for emerging contaminants (1,4-dioxane and PFAS) as described in the below guidance.

Implementation

NYSDEC project managers will be contacting site owners to schedule sampling for these chemicals. Only groundwater sampling is required. The number of samples required will be similar to the number of samples where “full TAL/TCL sampling” would typically be required in a remedial investigation. If sampling is not feasible (e.g., the site no longer has any monitoring wells in place), sampling may be waived on a site-specific basis after first considering potential sources of these chemicals and whether there are water supplies nearby.

Upon a new site being brought into any program (i.e., SSF, BCP), PFAS and 1,4-dioxane will be incorporated into the investigation of groundwater as part of the standard “full TAL/TCL” sampling. Until an SCO is established for PFAS, soil samples do not need to be analyzed for PFAS unless groundwater contamination is detected. Separate guidance will be developed to address sites where emerging contaminants are found in the groundwater. The analysis currently performed for SVOCs in soil is adequate for evaluation of 1,4-dioxane, which already has an established SCO.

Analysis and Reporting

Labs should provide a full category B deliverable, and a DUSR should be prepared by an independent 3rd party data validator. QA/QC samples should be collected as required in DER-10, Section 2.3(c). The electronic data submission should meet the requirements provided at: <https://www.dec.ny.gov/chemical/62440.html> ,

The work plan should explicitly describe analysis and reporting requirements.

PFAS sample analysis: Currently, ELAP does not offer certification for PFAS compounds in matrices other than finished drinking water. However, laboratories analyzing environmental samples (ex. soil, sediments, and groundwater) are required, by DER, to hold ELAP certification for PFOA and PFOS in drinking water by EPA Method 537 or ISO 25101.

Modified EPA Method 537 is the preferred method to use for groundwater samples due to the ability to achieve 2 ng/L (ppt) reporting limits. If contract labs or work plans submitted by responsible parties indicate that they are not able to achieve similar reporting limits, the project manager should discuss this with a DER chemist. Note: Reporting limits for PFOA and PFOS should not exceed 2 ng/L.

PFAS sample reporting: DER has developed a PFAS target analyte list (below) with the intent of achieving reporting consistency between labs for commonly reportable analytes. It is expected that reported results for PFAS will include, at a minimum, all the compounds listed. This list may be updated in the future as new information is learned and as labs develop new capabilities. If lab and/or matrix specific issues are encountered for any particular compounds, the NYSDEC project manager will make case-by-case decisions as to whether particular analytes may be temporarily or permanently discontinued from analysis for each site. Any technical lab issues should be brought to the attention of a NYSDEC chemist.

Some sampling using this full PFAS target analyte list is needed to understand the nature of contamination. It may also be critical to differentiate PFAS compounds associated with a site from other sources of these chemicals. Like routine refinements to parameter lists based on investigative findings, the full PFAS target analyte list may not be needed for all sampling intended to define the extent of contamination. Project managers may approve a shorter analyte list (e.g., just the UCMR3 list) for some reporting on a case by case basis.

1,4-Dioxane Analysis and Reporting: The method detection limit (MDL) for 1,4-dioxane should be no higher than 0.35 µg/l (ppb). Although ELAP offers certification for both EPA Method 8260 SIM and EPA Method 8270 SIM, DER is advising the use of method 8270 SIM. EPA Method 8270 SIM provides a more robust extraction procedure, uses a larger sample volume, and is less vulnerable to interference from chlorinated solvents.

Full PFAS Target Analyte List

Group	Chemical Name	Abbreviation	CAS Number
Perfluoroalkyl sulfonates	Perfluorobutanesulfonic acid	PFBS	375-73-5
	Perfluorohexanesulfonic acid	PFHxS	355-46-4
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanessulfonic acid	PFOS	1763-23-1
	Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroalkyl carboxylates	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	PFHpA	375-85-9
	Perfluorooctanoic acid	PFOA	335-67-1
	Perfluorononanoic acid	PFNA	375-95-1
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUA/PFUdA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1
	Perfluorotridecanoic acid	PFTriA/PFTTrDA	72629-94-8
	Perfluorotetradecanoic acid	PFTA/PFTeDA	376-06-7
Fluorinated Telomer Sulfonates	6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
	8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorooctane-sulfonamides	Perfluorooctanesulfonamide	FOSA	754-91-6
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6

Bold entries depict the 6 original UCMR3 chemicals

ATTACHMENT 2

Roux's Standard Operating Procedures

DRAFT

STANDARD OPERATING PROCEDURE 3.2
FOR FIELD RECORD KEEPING AND
QUALITY ASSURANCE/QUALITY CONTROL

Page 1 of 4

Date: May 5, 2000

Revision: April 7, 2015

1.0 PURPOSE

The purpose of this standard operating procedure (SOP) is to provide procedures and standards for record keeping and maintenance, for all field activities conducted by Roux Associates, Inc. (Roux Associates).

Strict quality assurance/quality control (QA/QC) is necessary to properly and accurately document and preserve all project-related information. Quality assurance is implemented to corroborate that quality control procedures are followed. Quality control provides a means to monitor investigation activities (e.g., sampling and laboratory performance) as a check on the quality of the data.

Valid data and information are integral to all aspects of Roux Associates' field activities. These aspects include, but are not necessarily limited to, activities that involve: drilling; sediment, sludge, and soil sampling (lithologic, and soil-quality and analysis); well construction and development; aquifer testing and analysis; water-quality sampling and analysis (surface water and ground water); free-product sampling and analysis; air-quality sampling and analysis; geophysical testing; demolition activities; waste removal operations; engineering installations; etc. The data will be confirmed by QA/QC methods established and set forth in the work plan/scope of work. Without checks on the field and analytical procedures, the potential exists for contradictory results, and associated incomplete or incorrect results from the interpretation of potentially questionable data.

Documentation will be entered in a bound field notebook and must be transcribed with extreme care, in a clear and concise manner, as the information recorded will become part of the permanent legal record. Field notes are considered the legal record of site activities, and as such they must be taken in a standard and consistent manner. If abbreviations are used, then they must first be spelled out for clarity (i.e., to avoid ambiguity and misunderstanding). All entries must be dated and initialed, and the time (military time) of the entry included. Field notebooks and forms must be assigned to an individual project and properly identified (i.e., client name, project number, location and name of site, individual recording information, dates, times, etc.). Change of possession of field notebooks or forms must be documented with the date and time, and initialed by both individuals. Following each day's entries, the field notebook or form must be photocopied in the event that the original documentation is lost or stolen. All field notebooks must have the company name and address legibly printed in indelible ink along with the message "If found, then please forward to Roux Associates, Inc. at the above address - REWARD OFFERED."

Information must be recorded while onsite because it may be difficult to recall details at a later date. Furthermore, information must be documented immediately as it provides unbiased information which will be used for writing the report when the field activities are completed. Project-related documentation is an irreplaceable, important record for

other individuals who may become involved in the project, and provides the project manager with a complete history of project-related activities. Written information must be accompanied by maps, sketches, and photographs where appropriate, especially if these supplemental sources of information assist in the documentation process. A new page must be used in the field notebook for each new day's entries (i.e., unused portions of a previous page must have an "X" placed through it). The end of the day's records must be initialed and dated.

As part of record keeping and QA/QC activities, state and federal regulatory agencies should be contacted to check if special or different protocols are required and/or if particular or unconventional methods are required for the given field activity. Thus, the record keeping and QA/QC activities implemented by Roux Associates are based on technically sound standard practices and incorporate Roux Associates own, extensive experience in conducting environmental field activities.

2.0 MATERIALS

In order to track investigation activities, specific materials are required. These materials include the following:

- a. A bound, waterproof field notebook.
- b. Appropriate Roux Associates' or project-specific forms (e.g., daily log, geologic log, monitoring well construction log, well sampling data form, location sketch, chain of custody, telephone conversation record, meeting notes, etc.).
- c. Appropriate labels (e.g., sample, Roux Associates' Custody Seal, etc.)
- d. Approved work plan/scope of work.
- e. Health and safety plan (HASP).
- f. Appropriate Roux Associates' SOPs.
- g. Black pens, and indelible markers.
- h. Digital camera.

3.0 DOCUMENTATION

- 3.1 Before the Roux Associates personnel leave the field, they must ensure that their field notes include comprehensive descriptions of the hydrogeologic conditions, and all investigation-related activities and results (onsite and offsite). This will safeguard against the inability to reconstruct and comprehend all aspects of the field investigation after its completion, and will serve to facilitate the writing of an accurate report. Properly documented information provides the QA/QC tracking (back-up) required for all Roux Associates' projects. General types of information

that must be recorded (where pertinent to the investigation being conducted) include, but may not necessarily be limited to, the following:

- a. List of Roux Associates personnel on site.
- b. Name, date, and time of arrival on site by Roux Associates personnel, including temporary departures from, and returns to, the site during the work day.
- c. Client and project number.
- d. Name and location of study area.
- e. Date and time of arrival on site by non-Roux Associates personnel (names and affiliation) and equipment (e.g., subcontractors and facility personnel, and drilling equipment, respectively, etc.), including temporary departures from, and returns to, the site during the work day, and departure at the end of the work day.
- f. List of non-Roux Associates personnel (e.g. subcontractors, client representatives) on site.
- g. Weather conditions at the beginning of the day as well as any changes in weather that occur during the working day.
- h. Health and safety procedures including level of protection, monitoring of vital signs, frequency of air monitoring, and any change (i.e., downgrade or upgrade) in the level of protection for Roux Associates and other on-site personnel (e.g., subcontractors, facility personnel, etc.).
- i. Health and safety procedures not in compliance with the HASP (for all on-site personnel).
- j. Site reconnaissance information (e.g., topographic features, geologic features, surface-water bodies, seeps, areas of apparent contamination, facility/plant structures, etc.).
- k. Air monitoring results (i.e., photoionization detector [PID], etc. measurements).
- l. Task designation and work progress.
- m. Work-related and site-related discussions with subcontractors, regulatory agency personnel, facility personnel, the general public, and Roux Associates personnel.
- n. Delays, unusual situations, problems and accidents.

- o. Field work not conducted in accordance with the work plan/scope of work, and rationale and justification for any change(s) in field procedures including discussions with personnel regarding the change(s) and who authorized the change(s).
- p. QA/QC procedures not conducted in accordance with the QA/QC procedures established in the work plan/scope of work and rationale and justification for any change(s) in QA/QC procedures including discussions with personnel regarding the change(s) and who authorized the change(s).
- q. Equipment and instrument calibration information, results and/or problems.
- r. Decontamination and calibration procedures.
- s. Activities in and around the site and work area by any and all on-site personnel which may impact field activities.
- t. Sketches, maps, and/or photographs (with dates and times) of the site, structures, equipment, etc. that would facilitate explanations of site conditions.
- u. Contamination evidenced as a result of work-related activities (e.g., visible contaminants [sheen] in drilling fluids or on drilling equipment; sheen on, or staining of, sediments; color of, or separate [nonaqueous] phase on, water from borehole or well; vapors or odors emanating from a borehole or well; etc.). Logbook entries should be objective, factual, and free of personal feelings or other terminology which might prove inappropriate. Avoid using nontechnical or subjective terms (e.g., , oily, strong-smelling).
- v. Date and time of final departure from the site of all personnel at the end of the work day.

3.2 Pens with permanent ink will be used to record all data. Data or other information that has been entered incorrectly will be corrected by drawing a line through the incorrect entry and **initialing and dating** the linedthrough entry. Under no circumstances should the incorrect material be erased, made illegible or obscured so that it cannot be read.

3.3 In addition to the general types of information that must be recorded (as presented in Section 3.1), task-specific information must also be properly documented. Task-specific information which is required is provided in each respective task-oriented SOP, and the documentation procedures outlined in each SOP must be followed.

END OF PROCEDURE

Date: May 5, 2000

Revision: April 16, 2015

1.0 PURPOSE

The purpose of this standard operating procedure (SOP) is to establish guidelines for sample handling and management which will allow consistent and accurate results. Valid chemistry data are integral to investigations that characterize media-quality conditions. This SOP is designed to ensure that once samples are collected, they are preserved, packed and delivered in a manner which will maintain sample integrity. The procedures outlined are applicable to most sampling events and any required modifications must be clearly described in the work plan.

2.0 CONSIDERATIONS

Sample containers, sampling equipment decontamination, quality assurance/quality control (QA/QC), sample preservation, and sample handling are all components of this SOP.

2.1 Sample Containers

Prior to collection of a sample, considerations must be given to the type of container that will be used to store and transport the sample. The type and number of containers selected is usually based on factors such as sample matrix, potential contaminants to be encountered, analytical methods requested, and the laboratory's internal quality assurance requirements. In most cases, the overriding considerations will be the analytical methodology, or the state or federal regulatory requirements because these regulations generally encompass the other factors. The sample container selected is usually based on some combination of the following criteria:

a. Reactivity of Container Material with Sample

Choosing the proper composition of sample containers will help to ensure that the chemical and physical integrity of the sample is maintained. For sampling potentially hazardous material, glass is the recommended container type because it is chemically inert to most substances. Plastic containers are not recommended for most hazardous wastes because the potential exists for contaminants to adsorb to the surface of the plastic or for the plasticizer to leach into the sample.

In some instances, however, the sample characteristics or analytes of interest may dictate that plastic containers be used instead of glass. Because some metals species will adhere to the sides of the glass containers in an aqueous matrix, plastic bottles (e.g., nalgene) must be used for samples collected for metals analysis. A separate, plastic container should accompany glass containers if metals analysis is to be

performed along with other analyses. Likewise, other sample characteristics may dictate that glass cannot be used. For example, in the case of a strong alkali waste or hydrofluoric solution, plastic containers may be more suitable because glass containers may be etched by these compounds and create adsorptive sites on the container's surface.

b. Volume of the Container

The volume of sample to be collected will be dictated by the analysis being performed and the sample matrix. The laboratory must supply bottles of sufficient volume to perform the required analysis. In most cases, the methodology dictates the volume of sample material required to complete the analysis. However, individual laboratories may provide larger volume containers for various analytes to ensure sufficient quantities for duplicates or other QC checks.

To facilitate transfer of the sample from the sampler into the container and to minimize spillage and sample disturbance, wide-mouth containers are recommended when not precluded by method requirements. Aqueous volatile organic samples must be placed into 40-milliliter (ml) glass vials with polytetrafluoroethylene (PTFE) (e.g., TeflonTM) septums. Non-aqueous volatile organic samples for "low-level" volatile analysis should be collected in the same type of vials or using EnCore samplers provided by the laboratory. Non-aqueous volatile organic samples for "mid or high-level" volatile analysis may be collected in 4-ounce (oz) wide-mouth jars provided by the laboratory. These jars should have PTFE-lined screw caps.

c. Color of Container

Whenever possible, amber glass containers should be used to prevent photodegradation of the sample, except when samples are being collected for metals analysis. If amber containers are not available, then containers holding samples should be protected from light (i.e., place in cooler with ice immediately after filling).

d. Container Closures

Container closures must screw on and off the containers and form a leak-proof seal. Container caps must not be removed until the container is ready to be filled with the sample, and the container cap must be replaced (securely) immediately after filling it. Closures should be constructed of a material which is inert with respect to the sampled material, such as PTFE (e.g., TeflonTM). Alternately, the closure may be separated from the sample by a closure liner that is inert to the sample material such as PTFE sheeting. If soil or sediment samples are being collected, the threads of the

container must be wiped clean with a dedicated paper towel or cloth so the cap can be threaded properly.

e. Decontamination of Sample Containers

Sample containers must be laboratory cleaned by the laboratory performing the analysis. The cleaning procedure is dictated by the specific analysis to be performed on the sample. Sample containers must be carefully examined to ensure that all containers appear clean and in good condition. The vacuum pressure of Summa canisters should match the pressure provided from of laboratory that provided the canisters for each canister. Do not mistake the preservative as unwanted residue. The bottles should not be field cleaned. If there is any question regarding the integrity of the bottle, then the laboratory must be contacted immediately and the bottle(s) replaced.

f. Sample Bottle Storage and Transport

No matter where the sample bottles are, whether at the laboratory waiting to be packed for shipment or in the field waiting to be filled with sample, care must be taken to avoid contamination. Sample shuttles or coolers, and sample bottles must be stored and transported in clean environments. Sample bottles and clean sampling equipment must never be stored near solvents, gasoline, or other equipment that is a potential source of cross-contamination. When under chain of custody, sample bottles must be secured in locked vehicles, and custody sealed in shuttles or in the presence of authorized personnel. Information which documents that proper storage and transport procedures have been followed must be included in the field notebook and on appropriate field forms.

2.2 Decontamination of Sampling Equipment

Proper decontamination of all re-usable sampling equipment is critical for all sampling episodes. The SOP for Decontamination of Field Equipment and SOPs for method-specific or instrument-specific tasks must also be referred to for guidance for decontamination of various types of equipment.

2.3 Quality Assurance/Quality Control Samples

QA/QC samples are intended to provide control over the proper collection and tracking of environmental measurements, and subsequent review, interpretation and validation of generated analytical data. The SOPs for Collection of Quality Control Samples, for Evaluation and Validation of Data, and for Field Record Keeping and Quality Assurance/Quality Control must be referred to for detailed guidance regarding these respective procedures. SOPs for method-specific or instrument-specific tasks must also be referred to for guidance for QA/QC procedures.

2.4 Sample Preservation Requirements

Certain analytical methodologies for specific analytes require chemical additives in order to stabilize and maintain sample integrity. Generally, this is accomplished under the following two scenarios:

- a. Sample bottles are preserved at the laboratory prior to shipment into the field.
- b. Preservatives are added in the field immediately after the samples are collected.

Many laboratories provide pre-preserved bottles as a matter of convenience and to help ensure that samples will be preserved immediately upon collection. A problem associated with this method arises if not enough sample could be collected, resulting in too much preservative in the sample. More commonly encountered problems with this method include the possibility of insufficient preservative provided to achieve the desired pH level or the need for additional preservation due to chemical reactions caused by the addition of sample liquids to pre-preserved bottles. The use of pre-preserved bottles is acceptable; however, field sampling teams must always be prepared to add additional preservatives to samples if the aforementioned situations occur. Furthermore, care must be exercised not to overfill sample bottles containing preservatives to prevent the sample and preservative from spilling and therefore diluting the preservative (i.e., not having enough preservative for the volume of sample).

When samples are preserved after collection, special care must be taken. The transportation and handling of concentrated acids in the field requires additional preparation and adherence to appropriate preservation procedures. All preservation acids used in the field should be trace-metal or higher-grade.

2.5 Sample Handling/Shipping

After the proper sample bottles have been received under chain-of-custody, properly decontaminated equipment has been used to collect the sample, and appropriate preservatives have been added to maintain sample integrity, the final step for the field personnel is checking the sample bottles prior to proper packing and delivery of the samples to the laboratory.

All samples should be organized and the labels checked for accuracy. The caps should be checked for tightness and any 40-ml volatile organic compound (VOC) bottles must be checked for bubbles. This can be achieved by gently tapping the bottom of the voa to dislodge potential air bubbles. Each sample bottle must be placed in an individual "zip-lock" bag to protect the label, and placed on ice. Clear packing tape may also be used to protect the integrity of the sample label. The bottles must be carefully packed to prevent breakage during transport. Use of bubble wrap is recommended. When several bottles have been collected for an

individual sample, they should not be placed adjacent to each other in the cooler to prevent possible breakage of all bottles for a given sample. If there are any samples which are known or suspected to be highly contaminated, these should be placed in an individual cooler under separate chain-of-custody to prevent possible cross contamination. Sufficient ice (wet or blue packs) should be placed in the cooler to maintain the temperature at 4 degrees Celsius (°C) until delivery at the laboratory.

Consult the work plan to determine if a particular ice is specified as the preservation for transportation (e.g., the United States Environmental Protection Agency does not like the use of blue packs because they claim that the samples will not hold at 4°C). If additional coolers are required, then they should be purchased.

The chain-of-custody form should be properly completed, placed in a "zip-lock" bag, and placed in the cooler. One copy must be maintained for the project files. The cooler should be sealed with packing tape and a custody seal. The custody seal number should be noted in the field book. Samples collected from Monday through Friday will be delivered to the laboratory within 24 hours of collection. If Saturday delivery is not available, samples collected on Friday must be delivered by Monday morning. Check the work plan to determine if certain analytes require a shorter delivery time. If overnight mail is utilized, then the shipping bill must be maintained for the files and the laboratory must be called the following day to confirm receipt.

2.6 Chain-of-Custody Procedures

The Field Manager is responsible for the care and custody of the samples until they are transferred or properly dispatched. The Field Manager will complete the CoC form immediately after sample collection in an effort to establish sample custody in the field before sample shipment. The following information will be included on the CoC:

- Sample identification and sample container identification number, if applicable;
- Date and time the samples were collected;
- Matrix of the sample;
- The number of containers for each sample;
- Analysis requested and preservation codes;
- Name of sampler(s) and the person shipping the samples and documentation;

- Name, telephone number and email address of the Project Manager; and
- Signature of the sampler.

Any corrections to the CoC will be made by putting a single strike through the incorrect entry and initialing and dating it. When the shipping container (i.e., cooler) is packed for shipping, personnel relinquishing the container will sign the CoC. The CoC will accompany the samples to the laboratory and a copy of the CoC will be retained by the Field Manager and placed in the project file. The completed CoC will be supplied by the laboratory with the standard data package.

The QA Manager will be responsible for reviewing all sampling activities to verify whether proper custody procedures were followed during the field work. Any deviations in the custody procedures will be noted in the Final Report.

3.0 EQUIPMENT AND MATERIALS

3.1 General equipment and materials may include, but not necessarily be limited to, the following:

- a. Sample bottles of proper size and type with labels.
- b. Cooler with ice (wet or blue pack).
- c. Field notebook, appropriate field form(s), chain-of-custody form(s), custody seals.
- d. Black pen and indelible marker.
- e. Packing tape, "bubble wrap", and "zip-lock" bags.
- f. Overnight (express) mail forms, and laboratory address or courier contact information
- g. Health and safety plan (HASP).
- h. Work plan/scope of work.
- i. Pertinent SOPs for specified tasks and their respective equipment and materials.

3.2 Preservatives for specific samples/analytes as specified by the laboratory. Preservatives must be stored in secure, spillproof glass containers with their content, concentration, and date of preparation and expiration clearly labeled.

3.3 Miscellaneous equipment and materials including, but not necessarily limited to, the following:

- a. Graduated pipettes.
- b. Pipette bulbs.

- c. Litmus paper.
- d. Glass stirring rods.
- e. Protective goggles.
- f. Disposable gloves.
- g. Lab apron.
- h. First aid kit.
- i. Portable eye wash station.
- j. Water supply for immediate flushing of spillage, if appropriate.
- k. Shovel and container for immediate containerization of spillage-impacted soils, if appropriate.

4.0 PROCEDURE

- 4.1 Examine all bottles and verify that they are clean and of the proper type, number, and volume for the sampling to be conducted.
- 4.2 Label bottles carefully and clearly with project name and number, site location, sample identification, date, time, and the sampler's initials using an indelible marker.
- 4.3 Collect samples in the proper manner (refer to specific sampling media SOPs).
- 4.4 Conduct preservation activities as required after each sample has been collected. Field preservation must be done immediately and must not be done later than 30 minutes after sample collection.
- 4.5 Conduct QC sampling, as required.
- 4.6 Seal each container carefully and place in an individual "zip lock" bag.
- 4.7 Organize and carefully pack all samples in the cooler immediately after collection (e.g., bubble wrap). Insulate samples so that breakage will not occur.
- 4.8 Complete and place the chain-of-custody form in the cooler after all samples have been collected. Maintain one copy for the project file. If the cooler is to be transferred several times prior to shipment or delivery to the laboratory, it may be easier to tape the chain-of-custody to the exterior of the sealed cooler. When exceptionally hazardous samples are known or suspected to be present, this should be identified on the chain-of-custody as a courtesy to the laboratory personnel.

- 4.9 Add additional ice as necessary to ensure that it will last until receipt by the laboratory.
- 4.10 Seal the cooler with packing tape and a custody seal. Record the number of the custody seal in the field notebook and on the field form. If there are any exceptionally hazardous samples, then shipping regulations should be examined to ensure that the sample containers and coolers are in compliance and properly labeled.
- 4.11 Samples collected from Monday through Friday will be delivered to the laboratory within 24 hours of collection. If Saturday delivery is not available, samples collected on Friday must be delivered by Monday morning. Check the work plan to determine if certain analytes require a shorter delivery time.
- 4.12 Maintain the shipping bill for the project files if overnight mail is utilized and call the laboratory the following day to confirm receipt.

END OF PROCEDURE

Date: May 5, 2000

1.0 PURPOSE

The purpose of this standard operating procedure (SOP) is to establish the criteria to be followed for the evaluation of data quality and for data validation. Because valid media-quality data are integral to environmental investigations that characterize site conditions, the quality of the data generated by a laboratory is extremely important to the successful completion of a project. The level of data evaluation and validation required is determined by the project data quality objectives and must be outlined in the work plan/scope of work. Data collected to establish qualitative trends, for example, do not require the same level of validation as data generated to support litigation.

The data evaluation procedure described in Section 2.0 of this SOP is designed to provide a measure of comparability regarding quality control (QC) samples, i.e., between duplicate or replicate samples and to detect any contamination or bias in analyses of blanks. They may be used for both intra-laboratory and inter-laboratory comparisons.

The data validation procedure described in Section 3.0 of this SOP is designed to provide a stringent review of analytical chemical data with respect to sample receipt and handling, analytical methods used, and data reporting and deliverables.

Prior to performing any data evaluation or validation, it is crucial that all appropriate regulatory agencies be contacted and their data validation requirements be determined, as these requirements vary from agency to agency and may vary among different Regions of the United States Environmental Protection Agency (USEPA).

2.0 PROCEDURE FOR EVALUATION OF DATA

2.1 Not all analytical data packages will require a full data validation procedure as described in Section 3.0. The procedures described in this section provide an initial screening to help decide if full data validation is warranted. These data evaluation procedures are used as a quality assurance (QA) check for water-quality data, and are not generally applicable to soil-quality data. They are to be used when a full data validation procedure (described in Section 3.0) is not required.

2.2 Primary/Replicate, Primary Split and Primary/Laboratory Duplicate Comparisons

X = primary sample concentration

Y = replicate/split/laboratory duplicate sample concentration

Z = $\{(X-Y)/[(X+Y)/2]\} \times 100$

IDC = initial concentration requiring dilution, if samples have been diluted. If samples did not require dilution, then use the first range (i.e., QL-10[QL]).

QL = Quantitation Limit(1)

Organic Constituents

Range	Quantitative	Qualitative	Unusable
QL - 10(QL)	$Z \leq 60\%$	$100\% > Z > 60\%$	$Z \geq 100\%$
10(QL) - IDC	$Z \leq 40\%$	$100\% > Z > 40\%$	$Z \geq 100\%$
X or Y > IDC	$Z \leq 60\%$	$100\% > Z > 60\%$	$Z \geq 100\%$

Inorganic Constituents

Analytical Method	Quantitative	Qualitative	Unusable
Wet Chemistry testing	$Z \leq 60\%$	$100\% > Z > 60\%$	$Z \geq 100\%$
Atomic Absorption (AA)	$Z \leq 40\%$	$100\% > Z > 40\%$	$Z \geq 100\%$
Inductively Coupled Plasma (ICP)	$Z \leq 40\%$	$100\% > Z > 40\%$	$Z \geq 100\%$

2.3 Comparison of Blanks

X = primary sample concentration(2)
D = highest concentration in associated blank(s)
Y = X/dilution factor

	Quantitative	Qualitative	Unusable
Field Blank	$D \leq 0.1X$	$0.5X > D > 0.1X$	$D \geq 0.5X$
Trip Blank	$D \leq 0.1X$	$0.5X > D > 0.1X$	$D \geq 0.5X$
Lab Blank	$D \leq 0.1Y$	$0.5Y > D > 0.1Y$	$D \geq 0.5Y$

(1)The quantitation limit will be dependent upon the specific methodology and the matrix, and will be either the minimum detection limit (MDL) or the practical quantitation limit (PQL).

(2)Results reported as BDL (below the detection limit) will be considered Quantitative because the primary samples have not been affected by the bias(es) which resulted in concentrations reported in the blank sample(s).

3.0 PROCEDURE FOR DATA VALIDATION

3.1 Determine study-specific data quality needs and pertinent regulatory agency data validation requirements.

- 3.2 Contact the appropriate regulatory agency(ies) to obtain their data validation procedure manual. This manual will indicate acceptable ranges for QC parameters to be investigated and procedures to follow for data which do not meet these requirements.
- 3.3 For inorganic compounds, the requirements that will be examined during the validation process are:
- a. Holding times.
 - b. Instrument calibration, including initial and continuing calibration verification.
 - c. Blank(s).
 - d. Laboratory control sample(s).
 - e. Inductively Coupled Plasma (ICP) interference check samples.
 - f. Duplicate sample(s).
 - g. Matrix spike sample(s).
 - h. Furnace atomic absorption QC.
 - i. ICP serial dilution(s).
 - j. Sample result verifications.
 - k. Field duplicates.
 - l. General data assessment.
- 3.4 For organic compounds, the requirements that will be examined during the validation process are:
- a. Holding times.
 - b. Gas Chromatograph/Mass Spectrometer (GC/MS) tuning.
 - c. GC calibration, initial and continuing.
 - d. Blanks.
 - e. Surrogate recoveries.
 - f. Matrix spike/matrix spike duplicates.
 - g. Internal standards performances.
 - h. Target Compounds List (TCL) compound identifications.
 - i. Reported detection limits.
 - j. Tentatively identified compounds (TICs).
 - k. Overall system performance.
 - l. General data assessment.

- 3.5 The parameters which do not conform to requirements are then listed and the data are qualified according to the guidelines provided in the appropriate regulatory agency's data validation procedure manual. The qualified data package is then reviewed and the project data reviewer, the project geochemist and/or the project manager makes a professional judgement concerning the validity of the data package, and its usability for the project.

END OF PROCEDURE

DRAFT

STANDARD OPERATING PROCEDURE 5.3
FOR CONDUCTING A SOIL GAS SURVEY USING
A PORTABLE PHOTOIONIZATION DETECTOR

Page 1 of 4

Date: May 5, 2000

1.0 PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to establish guidelines for conducting soil gas surveys utilizing a portable photoionization detector (PID).

2.0 CONSIDERATIONS

The specific procedure and equipment selection will be dependent upon the data objectives of the sampling program. For example, the sampling program may range from a preliminary screening utilizing several random locations to an extensive grid system with numerous horizontal and vertical sampling locations. The soil gas survey plan should be carefully designed and fully described in the work plan or proposal.

A soil gas survey is a method to approximate the distribution of volatile organic compounds (VOCs) in soil or ground water based on the concentration of VOCs in the pore space of the vadose zone. The advantage of a soil gas survey is that a broad site assessment can be conducted at a reduced cost with instantaneous qualitative analytical results. The survey can aid in the decision-making process for future soil sampling and well locations in order to optimize the data collected from these locations. Soil gas surveys can also be performed areas such as buildings and basements where access restrictions limit the use of conventional equipment.

Proper design of a soil gas survey requires an understanding of site features, equipment limitations, and hydrogeologic factors. Many site-specific factors, such as geology, depth to water, soil moisture, contaminant concentration and distribution, weather, natural and man-made migration pathways, organic content of soil, contaminant volatility and solubility, etc. will influence the results of a soil gas survey. Additionally, contaminant ionization potentials and response factors should be considered. It is beyond the scope of this SOP to discuss the specific potential impact of each of these factors. Collection and interpretation of soil gas data requires a thorough understanding of the relationships between these factors. As a result, only experienced personnel should design, conduct, and interpret soil gas surveys.

3.0 MATERIALS/EQUIPMENT

- a. A work plan or proposal which outlines soil gas survey requirements.
- b. Field book, field form(s) and maps.
- c. Decontamination supplies (including non-phosphate, laboratory grade detergent, buckets, brushes, distilled water, potable water, regulatory-required reagents, aluminum foil, plastic sheeting, etc.).
- d. Survey stakes or flags.

- e. Device to remove surface material (shovel, jack hammer, concrete core drill, electric drill, etc.).
- f. Magnetometer.
- g. Cable locator.
- h. Hand auger.
- i. Slam bar.
- j. Soil gas probes.
- k. Hand sledge hammer.
- l. Tool box.
- m. Inert tubing of appropriate diameter with screw clamps.
- n. Low volume, calibrated vacuum pump.
- o. Extension cords.
- p. Inorganic clay (modeling).
- q. Photoionization meter and charging unit (two units, if possible).
- r. Calibration gases and regulators.
- s. 100-foot cloth tape measure.
- t. 10-foot steel tape measure.
- u. Disposable sampling gloves.
- v. Backfill and repair materials (clean sand, asphalt patch, concrete patch material, etc.).
- w. Broom.

4.0 CALIBRATION

The photoionization meter must be calibrated according to the manufacturer's specifications at a minimum frequency of once per day prior to collecting photoionization readings. In addition, periodic checks with the standard gas (e.g., every 2 hours or every ten samples) will be conducted to confirm that the calibration has not drifted. The time, date and calibration procedure must be clearly documented in the field book. If at any time the photoionization results appear erratic or inconsistent with field observations, then the unit must be recalibrated. If calibration is difficult to achieve, then the unit's lamp should

be checked for dirt or moisture and cleaned, as necessary. During humid or wet conditions, the unit should be calibrated on a more frequent basis as determined by field personnel.

5.0 DECONTAMINATION

All reusable downhole equipment must be thoroughly cleaned according to regulatory-approved procedures. The soil gas probes should be pre-cleaned, wrapped in aluminum foil, and dedicated to an individual sampling location. Equipment such as drill bits, hand augers, slam bars, etc. must be thoroughly decontaminated between sampling locations to prevent cross-contamination. Procedures for cleaning field equipment can be found in the decontamination SOP. Equipment rinsate blanks should be collected to document proper decontamination.

6.0 PROCEDURE

- 6.1. Utilizing the work plan or proposal, locate soil gas sampling points and mark with a survey flag or nail. Do not use spray paint or solvent-based markers. Verify that the selected locations will achieve the desired data requirements based on the original survey design in the work plan.
- 6.2. Ensure the absence of subsurface utilities using, as necessary, a utility mark-out service, magnetometer, cable locator, and site reconnaissance.
- 6.3. Once all soil gas locations have been established, use a calibrated photoionization meter to determine ambient air concentrations (background). If facility operations will impact background readings, then arrangements should be made to conduct the soil gas survey during non-operational times.
- 6.4. Secure access to the subsurface using shovel, jack hammer, concrete core drill, gas drill, electric drill, etc. Clean surface debris from around the sampling location and utilize plastic sheeting to prevent cross-contamination of equipment.
- 6.5. Depending upon subsurface materials utilize a hand auger, slam bar, electric drill, etc. to advance the small diameter boring to a depth of 0.5 to 1.0 foot less than the desired sampling depth. Do not use a gasoline-powered drill for advancing the boring.
- 6.6. Log all geologic materials (if possible) paying special attention to any horizontal stratification or materials which may have preferential permeability.
- 6.7. Insert a pre-cleaned, stainless steel vapor probe (with perforated end first) into the borehole and drive it 0.5 to 1.0 feet into undisturbed sediments to the desired sampling interval. Refer to the field equipment decontamination SOP for minimum decontamination procedures for all downhole equipment. Pull back on the protective sheath (if present) exposing the perforated portion of the vapor probe.
- 6.8. Seal the annular space at the surface with inorganic clay (modeling clay) to prevent migration of vapors or surface material from entering the borehole.

- 6.9. Connect a section of dedicated and disposable teflon tubing to the soil gas probe and clamp off the tubing to establish an air-tight seal. Commercially available manifolds are permitted if properly decontaminated and constructed of stainless steel and/or teflon.
- 6.10. Connect a vacuum pump to the teflon tubing, release the clamp, and purge the probe to create inflow of potential vapors. Do not allow water to pass through the probe and enter the PID. Reclamp the tubing. The purge volume and rate should be clearly defined in the work plan. The selected rate and volume must remain consistent for all locations for a given survey.
- 6.11. Connect the calibrated photoionization meter to the teflon tubing creating an air-tight seal, release the clamp, and take a reading. The peak and average readings must be recorded.
- 6.12. If necessary, reclamp the tubing and secure the location for collection of a duplicate reading at a later time.
- 6.13. When activities are completed at the location, remove the soil gas probe and thoroughly decontaminate according to regulatory-approved protocols. Backfill the hole using native material or clean fill and restore the surface with appropriate patching material (asphalt, concrete, soil, etc.). Clean the area with a broom and dispose of all non-reusable materials in an appropriate manner.
- 6.14. Completely document all appropriate information in the field notebook including, but not limited to the following: sample location; sample identification; method of advancing boring; geologic material encountered; documentation of calibration; evacuation procedures including time and volume; photoionization readings including peak, average and time collected; duplicate readings, if any; and any difficulties encountered. A site map should be prepared with exact measurements to sampling points in case future investigation is necessary.

END OF PROCEDURE

STANDARD OPERATING PROCEDURE 5.5
FOR SAMPLING AND SCREENING SOIL VAPOR
MONITORING POINTS

Page 1 of 5

Date: January 9, 2011

1.0 PURPOSE

The purpose of this standard operating procedure (SOP) is to establish guidelines for the sampling and screening of soil vapor monitoring points.

As part of the SOP for the sampling of soil vapor monitoring points, sample collection equipment and devices must be considered, and pre and post-sampling procedures (e.g., purging sample tubing prior to sample collection and screening monitoring point after collection) must be implemented.

All soil vapor sampling will be performed in general accordance with the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor in the State of New York dated October 2006.

2.0 EQUIPMENT AND MATERIALS

2.1 In order to sample the soil vapor monitoring points, specific equipment and materials are required. The equipment and materials list may include, but not necessarily be limited to, the following:

- a. Safety first. Obtain the appropriate work permit, Job Safety Analysis (JSA) and personal protection equipment (PPE), as specified in the site Health and Safety Plan (HASP).
- b. Three-way valve.
- c. Teflon-lined polyethylene tubing.
- d. Master-flex tubing.
- e. Tracer gas (i.e., lab grade Helium).
- g. Five gallon plastic bucket.
- h. Vacuum pump with a constant low flow module calibrated to a maximum rate of 0.2 Liters per minute.
- i. Flow meter capable of achieving a flow rate of 0.2 Liters per minute or less.
- j. Watch/Timer.
- k. Appropriate monitoring instruments (e.g., MultiRae, CO₂ and O₂ meters, or equivalent) to measure natural attenuation parameters including volatile organic compounds (VOCs), lower explosive limit (LEL), oxygen, hydrogen sulfide, carbon monoxide and carbon dioxide. LEL will be

measured as a percentage of the lower explosion limit for methane (where 100% LEL equals 50,000 ppm of methane), and the remaining parameters will be measured as percent volume using multi-gas meters calibrated daily with appropriate multi-gas standards.

- l. Calibration gases (isobutylene) and zeroing devices (i.e., air scrubbers)
- m. Roux Associates' soil vapor sampling data form and field notebook.
- n. Plastic sheeting.
- o. Teflon™ tape.
- p. Black pen and water-proof marker.
- q. Tools (e.g., security bolt key, wrenches, screwdrivers, hammer, tubing cutter, etc.) or alternatives recommended in the JSA.
- r. Nitrile and cut-proof gloves.
- s. Laboratory-supplied Summa® canister(s) and flow regulator(s).
- t. Chain-of-custody form(s) and custody seal(s).
- u. Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) or equivalent summary.
- v. Site health and safety plan (HASP).
- w. Overnight (express) mail forms, if courier isn't used.

3.0 DECONTAMINATION

- 3.1 Make sure all equipment is decontaminated and cleaned before use (refer to the SOP for Decontamination of Field Equipment for detailed decontamination methods; a summary for pumps is provided below). Use new, clean materials when decontamination is not appropriate (e.g., disposable gloves, sample tubing). Document, initial and date the decontamination procedures on the appropriate field form and in the field notebook.
 - a. Decontaminate a vacuum pump by: disassembling the vacuum pump and cleaning the internal parts with methanol. *Vacuum pumps should not be cleaned in the field.* Vacuum pumps should be decontaminated/cleaned by the facility that supplied/sold the equipment prior to the sampling event.

4.0 CALIBRATION OF FIELD ANALYSIS EQUIPMENT

Calibrate field analysis equipment according to manufacturer's manual before use (e.g., Photoionization Detector). Document, initial and date the calibration procedures on the appropriate field form, and in the field notebook.

5.0 PROCEDURE FOR SAMPLING/SCREENING/ SOIL VAPOR MONITORING POINTS

5.1 Soil Vapor Sample Collection Procedures - Soil vapor sampling should be performed in a manner consistent with prior investigations utilizing the following procedural steps:

- 5.1.1 Document, initial and date monitoring point identification, pre-sampling information, and problems encountered on the appropriate field form and in the field notebook, as needed.
- 5.1.2 Inspect the protective curb box and the monitoring point sample tubing, and note any items of concern such as missing tubing cap, or bent or damaged tubing and protective curb box.
- 5.1.3 Place a seal (i.e., model clay) surrounding the sample tubing to further minimize the potential for infiltration of the atmospheric air present at land surface directly above the soil vapor monitoring point (ambient air).
- 5.1.4 Connect the sample tubing to a "T" connector three-way assembly, with one end of the "T" connector leading to a vacuum pump and the other end leading to a pre-evacuated Summa canister with a calibrated regulator.
- 5.1.5 Purge the soil vapor sample tubing and the surrounding sand pack of approximately three volumes of air using a vacuum pump set at a rate of approximately but not greater than 0.2 liters per minute.
- 5.1.6 To verify that ambient air is not diluting the soil vapor sample during collection, test monitoring points using a tracer gas (helium), prior to sample collection. Place a plastic container (i.e., bucket) with a seal over the monitoring point, including the "T" connector and inject helium into the bucket to enrich the interior of the bucket with the tracer gas (this should be done while purging the monitoring point). Measure the rate of helium from the sample tubing as well as the helium-enriched area within the bucket using the MGD-2002 Helium Detector (by Dielectric) or equivalent meter. If the screening results show that the rate of helium detected in the sample tubing is greater than 10% of that found in the bucket, reset the seals around the sampling equipment and the sample tubing and purge again. This process of resetting and purging should be continued until the tracer gas is no longer detected at levels greater than 10% of the enriched area.

- 5.1.7 Following the purging and tracer gas verification steps, close the valve leading to the pump, and turn off the pump. Redirect the soil vapor to a 6-liter Summa canister for sample collection. Use a laboratory supplied calibrated flow controller (2 hour flow controllers for sub-slab soil vapor samples and 8 hour controllers for indoor air and ambient air samples) to restrict the sample collection rate to 0.2 liters per minute or less. The flow controller valve should be closed and sample collection completed when the vacuum reading of the Summa canister reaches -4 inches of mercury (shown on the flow controller gauge). If the Summa canister vacuum reaches less than 1 inch of mercury, contact the project manager to determine if sample should be analyzed.
- 5.1.8 Once the sample is collected, the soil vapor monitoring point should be screened, if warranted, with redundant gas meters for the lower explosive limit (LEL), hydrogen sulfide, VOCs, oxygen, carbon monoxide and carbon dioxide. The screening process includes double-checking the screening data through the utilization of separate, redundant gas meters. If there is a discrepancy between the redundant gas meters and the screening parameter mentioned above, the meter should be recalibrated according to manufacturer's manual and the soil vapor point should be rescreened. All screening data should be recorded on the appropriate field screening data form and in the field notebook.
- 5.1.9 Collect quality control (QC) samples as required in the work plan to monitor sampling and laboratory performance. One duplicate sample should be collected for every 20 samples. The duplicate sample should be collected immediately after collecting original sample, before screening with redundant gas meters.
- 5.1.10 Upon completion of sample collection and screening steps, cap the sample tubing below grade within the flush-mount curb box enclosure to allow for subsequent sampling events.
- 5.1.11 Complete all necessary field forms, field notebook entries, and the chain-of-custody form(s). Chain-of-custody form(s) must be signed and dated prior to shipping samples. Retain one copy of each chain-of-custody form. Secure the cooler with sufficient packing tape and a custody seal.
- 5.1.12 Samples collected from Monday through Friday will be delivered within 24 hours of collection. If Saturday delivery is not available, samples collected on Friday must be delivered by Monday morning. Consult the work plan to determine if any of the analytes require a shorter delivery time.

6.0 REFERENCES

New York State Department of Health – Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006

END OF PROCEDURE

DRAFT

STANDARD OPERATING PROCEDURE 6.5
FOR PHOTOGRAPHIC DOCUMENTATION OF FIELD
ACTIVITIES

Page 1 of 3

Date: October 23, 2015

1.0 PURPOSE

The purpose of this standard operating procedure (SOP) is to provide procedures and standards for photographic documentation of project activities conducted by Roux Associates, Inc. (Roux Associates). Field staff are encouraged to use photographic documentation to display site features or ongoing field work. The exact number of still or video images is left to the professional discretion of field staff in consultation with the Project Manager. This instruction addresses how the photographic images will be incorporated into the project file documentation.

All photography collected for project use should be in a digital format and only document the field activities and / or site features associated with the specific project. Digital cameras have become the primary means of gathering evidence and this medium has many advantages. These advantages include enhanced image resolution, the capability to immediately view the image after it is collected, and the ability to collect still images using a single piece of equipment. The digital camera reduces printing time and cost because the digital images do not need to be taken to a photo lab for developing; rather, the digital images can be viewed on the computer and printed as needed.

2.1 MATERIALS

In order to provide photo documentation of field activities and site features, specific materials are required. These materials include the following:

- a. A bound, waterproof field notebook.
- b. Digital camera or camera phone.
- c. A standard reference marker (a ruler or other object with a known length).
- d. Approved work plan/scope of work.
- e. Health and safety plan (HASP).
- f. Appropriate Roux Associates' SOPs.
- g. Black pens, and indelible markers.

3.1 OPERATION

- 3.2 General Photographic Activities in the Field: The following sections provide general guidelines that should be followed to visually document field activities

and site features using digital cameras or cell phone cameras. Listed below are general suggestions that the photographer should consider when performing activities under this SOP:

- a. The photographer should be prepared to take a variety of shots, from close-up to wide-angle. Many shots will be repetitive in nature or format, especially close-up site feature photographs.
- b. The lighting for sample and feature photography should be oriented toward a flat condition with little or no shadow. A flash may be used to adjust low lighting settings or to prevent shadows.
- c. Digital cameras have multiple photographic quality settings. A camera that obtains a higher resolution (quality) has a higher number of pixels and will store less photographs per digital storage medium. When possible, the camera should be set to the highest resolution.
- d. The photograph should include a standard reference marker if scale is difficult to determine in the photograph.
- e. If photographs are being collected in unfamiliar locations or of unknown objects, Roux Associates personnel are encouraged to record the photographic activities in their assigned field notebook. The following information would provide the user reference for post-processing of the photo:
 - Photographer name
 - Date and time the photograph was taken (military time)
 - Description of the location where the photo was taken
 - A brief description of the activity/ item photographed, and other pertinent information about the photograph.

Pens with permanent ink will be used to record all data. Data or other information that has been entered incorrectly will be corrected by drawing a line through the incorrect entry and initialing and dating the lined through entry. Under no circumstances should the incorrect material be erased, made illegible or obscured so that it cannot be read.

4.1 POST-OPERATION (ARCHIVING PHOTO)

- 4.2 At the end of each day's photographic session, the field personnel should ensure that the field logbook is complete. At the conclusion of the field day, the field

STANDARD OPERATING PROCEDURE 6.5
FOR PHOTOGRAPHIC DOCUMENTATION OF FIELD
ACTIVITIES

Page 3 of 3

personnel should follow these procedures to ensure the proper archival of the digital photographs:

- a. Upload the photos to the network drive in a folder that includes the corresponding date of the photographs, located in the proper project folder.
- b. If a large amount a photographs are planned to be collected for the project, a log may be useful in for storing pertinent information about the photos and may facilitate searching the photo database. Information that may be included in the photo log includes photograph date and time, location, photographer, and any other corresponding notes.
- c. Once the above steps are completed, double check to save your edits before deleting the photos off the the camera to ensure storage space for future photo documentation.

END OF PROCEDURE

Date: January 9, 2011
Revision: May 5, 2015

1.0 PURPOSE

The purpose for this standard operating procedure (SOP) is to establish the guidelines for decontamination of all field equipment potentially exposed to contamination during field investigation activities (i.e. drilling, soil and water sampling).

The objective of decontamination is to ensure that all field sampling equipment is decontaminated (free of potential contaminants): 1) prior to being brought onsite to avoid the introduction of potential contaminants to the site; 2) between drilling and sampling events/activities onsite to eliminate the potential for cross-contamination between boreholes and/or wells; and 3) prior to the removal of equipment from the site to prevent the transportation of potentially contaminated equipment offsite.

The decontamination line is setup so that the first station is used to clean the most contaminated item. It progresses to the last station where the least contaminated item is cleaned. A site is typically divided up into the following boundaries: Hot Zone or Exclusion Zone (EZ), the Contamination Reduction Zone (CRZ), and the Support or Safe Zone (SZ). The decontamination line should be setup in the Contamination Reduction Corridor (CRC).

In considering decontamination procedures, state and federal regulatory agency requirements must be considered because of potential variability between state and federal requirements. Decontamination procedures must be in compliance with state and/or federal protocols in order that regulatory agency(ies) scrutiny of the procedures and data collected do not result in non acceptance (invalidation) of the work undertaken and data collected.

The equipment and materials list for decontamination activities may include, but not necessarily be limited to, the following:

- a. A work plan and health and safety plan which outlines decontamination procedures and requirements.
- b. Field notebook and field form(s).
- c. Decontamination solutions, including as necessary: non-phosphate, laboratory-grade detergent; distilled/deionized water; potable water; cleaning solvents if needed [e.g., hexane, acetone, nitric acid].
- d. Long and short handled brushes,
- e. Bottle brushes
- f. Drop cloth/plastic sheeting

- g. Paper towels
- h. Plastic or galvanized tubs or buckets
- i. Pressure washers or steam cleaners
- j. Solvent sprayers
- k. Trash / bilge pumps
- l. Aluminum foil
- m. 55-gallon drums.

2.0 PROCEDURE FOR DRILLING EQUIPMENT

The following is a minimum decontamination procedure for drilling equipment. Drilling equipment decontamination procedures will be documented on an appropriate field form or in the field notebook, especially any variation from the method itemized below:

- 2.1 Safety first. Obtain the appropriate Job Safety Analysis (JSA) and personal protection equipment (PPE), as specified in the site Health and Safety Plan (HASP). Prior to mobilization to a site, the expected types of contamination should be evaluated to determine if the field cleaning and decontamination activities will generate rinsates and other waste waters that might be considered RCRA hazardous waste or may require special handling.
- 2.2 The drill rig and all associated equipment should be properly decontaminated by the contractor before arriving at the site.
- 2.3 The augers, drilling casings, rods, samplers, tools, and any piece of equipment that can come in contact (directly or indirectly) with the soil, requires proper decontamination on-site prior to commencing drilling. The project work plan or HASP, and appropriate regulatory requirements, should be consulted to determine site-specific decontamination requirements.
- 2.4 The same decontamination procedures used prior to drilling will be followed between boreholes (at a fixed on-site location[s], if appropriate) and before leaving the site at the end of the investigation.
- 2.5 All on-site steam cleaning or (decontamination) activities will be monitored and documented by a member(s) of the staff of Roux Associates, Inc. and should be performed on a decontamination pad that meets the following specifications:
 - 1. The pad should be constructed in an area known or believed to be free of surface contamination.

2. A temporary pad should be lined with a water impermeable material with no seams within the pad. This material should be either easily replaced (disposable) or repairable. The pad should be regularly inspected to ensure there are no leaks.

3. Water should be removed from the decontamination pad frequently.

2.6 If drilling activities are conducted in the presence of thick, sticky oils (e.g., PCB oil) which coat drilling equipment, then special decontamination procedures may have to be utilized before steam cleaning (e.g., hexane scrub and wash).

2.7 Containment of decontamination fluids may be necessary (e.g., rinseate from steam cleaning) or will be required (e.g., hexane), and disposal must be in accordance with state and/or federal regulatory requirements.

3.0 PROCEDURE FOR SOIL-SAMPLING EQUIPMENT

The following is a minimum decontamination procedure for soil-sampling equipment (e.g., split spoons, stainless-steel spatulas). Soil-sampling equipment decontamination procedures, especially any variation from the method itemized below, will be documented on an appropriate field form or in the field notebook.

3.1 Safety first. Obtain JSA and PPE, as specified in the site HASP.

3.2 Wear disposable gloves while cleaning equipment to avoid cross-contamination and change gloves as needed.

3.3 Steam clean the sampler or rinse with potable water. If soil-sampling activities are conducted in the presence of thick, sticky oils (e.g., PCB oil) which coat sampling equipment, then special decontamination procedures may have to be utilized before steam cleaning and washing in detergent solution (e.g., hexane scrub and wash).

3.4 Prepare a non-phosphate, laboratory-grade detergent solution and distilled or potable water in a clean bucket.

3.5 Disassemble the sampler, as necessary and immerse all parts and other sampling equipment in the solution.

3.6 Scrub all equipment in the bucket with a brush to remove any adhering particles.

3.7 Rinse all equipment with copious amounts of potable water followed by distilled or deionized water.

3.8 Place clean equipment on a clean plastic sheet (e.g., polyethylene)

3.9 Reassemble the cleaned sampler, as necessary.

- 3.10 After equipment has been cleaned, all individuals involved in equipment handling should don clean gloves, or wrap the equipment with a suitable material (e.g., plastic bag, aluminum foil).

As part of the decontamination procedure for soil-sampling equipment, state and/or federal protocols must be considered. These may require procedures above those specified as minimum for Roux Associates, Inc., such as the use of nitric acid, acetone, etc. Furthermore, the containment and proper disposal of decontamination fluids must be considered with respect to regulatory agency(ies) requirements.

4.0 PROCEDURE FOR WATER-SAMPLING EQUIPMENT

The following is a decontamination procedure for water-sampling equipment (e.g., bailers, pumps). Water-sampling equipment decontamination procedures, especially any variation from the method itemized below, will be documented on an appropriate field form or in the field notebook.

- 4.1 Safety first. Obtain the JSAs and PPE, as specified in the site HASP.

- 4.2 Decontamination procedures for bailers follow:

- a. Wear disposable gloves while cleaning bailer to avoid cross-contamination and change gloves as needed.
- b. Prepare a non-phosphate, laboratory-grade detergent solution and potable water in a bucket.
- c. Disassemble sampling equipment. Discard all used sampling tubes and cords in an appropriate manner. Disconnect all power sources from electrical equipment (i.e. pumps). Scrub each piece of equipment with a brush and solution.
- d. Rinse all sampling equipment with copious amounts of potable, distilled or deionized water, Reassemble equipment as per the manufacturer's instructions.
- f. Air dry.
- g. Wrap equipment with a suitable material (e.g., clean plastic bag, aluminum foil).

- 4.3 Decontamination procedures for pumps follow:

- a. Wear disposable gloves while cleaning pump to avoid cross-contamination and change gloves as needed.
- b. Prepare a non-phosphate, laboratory-grade detergent solution and potable water in a clean bucket, clean garbage can, or clean 55-gallon drum.

- c. Flush the pump and discharge hose (if not disposable) with the detergent solution, and discard disposable tubing and/or cord in an appropriate manner.
- d. Flush the pump and discharge hose (if not disposable) with potable water.
- e. Place the pump on clear plastic sheeting.
- f. Wipe any pump-related equipment (e.g., electrical lines, cables, discharge hose) that entered the well with a clean cloth and detergent solution, and rinse or wipe with a clean cloth and potable water.
- g. Air dry.
- h. Wrap equipment with a suitable material (e.g., clean plastic bag).


As part of the decontamination procedure for water-sampling equipment, state and/or federal protocols must be considered. These may require procedures above those specified as minimum for Roux Associates, Inc., such as the use of nitric acid, acetone, etc. Furthermore, the containment and proper disposal of decontamination fluids must be considered with respect to regulatory agency(ies) requirements.

END OF PROCEDURE


ATTACHMENT 3

Chain of Custody Form

DRAFT


 NEW YORK CHAIN OF CUSTODY Westborough, MA 01581 8 Walkup Dr. TEL: 508-898-9220 FAX: 508-898-9193 Mansfield, MA 02048 320 Forbes Blvd TEL: 508-822-9300 FAX: 508-822-3288		Service Centers Mahwah, NJ 07430: 35 Whitney Rd, Suite 5 Albany, NY 12205: 14 Walker Way Tonawanda, NY 14150: 275 Cooper Ave, Suite 105		Page 1 of		Date Rec'd in Lab		ALPHA Job #					
		Project Information Project Name: _____ Project Location: _____ Project # _____ (Use Project name as Project #) <input checked="" type="checkbox"/>				Deliverables <input type="checkbox"/> ASP-A <input checked="" type="checkbox"/> ASP-B <input type="checkbox"/> EQuIS (1 File) <input type="checkbox"/> EQuIS (4 File) <input type="checkbox"/> Other				Billing Information <input checked="" type="checkbox"/> Same as Client Info PO # _____			
		Client Information Client: Roux Assocaites Address: 209 Shafter Street Islandia New York 11749 Phone: 631-232-2600 Fax: _____ Email: _____				Regulatory Requirement <input type="checkbox"/> NY TOGS <input type="checkbox"/> NY Part 375 <input type="checkbox"/> AWQ Standards <input type="checkbox"/> NY CP-51 <input type="checkbox"/> NY Restricted Use <input type="checkbox"/> Other <input type="checkbox"/> NY Unrestricted Use <input type="checkbox"/> NYC Sewer Discharge				Disposal Site Information Please identify below location of applicable disposal facilities. Disposal Facility: _____ <input type="checkbox"/> NJ <input type="checkbox"/> NY <input type="checkbox"/> Other:			
Turn-Around Time Standard <input checked="" type="checkbox"/> Due Date: _____ Rush (only if pre approved) <input type="checkbox"/> # of Days: _____		ANALYSIS		Sample Filtration <input type="checkbox"/> Done <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please Specify below)		Total Bottles							
Other project specific requirements/comments: All samples kept on ice Please specify Metals or TAL.		Full TCL VOCs + 10 TICs Full TCL SVOCs + 20 TICs TAL Pest / Herbicides TAL PCBs TAL Total Metals + Hg Hex Chrom / Tri Chrom Total Cyanide Total Solids		Sample Specific Comments									
ALPHA Lab ID (Lab Use Only)		Sample ID		Collection Date Time		Sample Matrix		Sampler's Initials					
Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O ₃ K/E = Zn Ac/NaOH O = Other		Container Code P = Plastic A = Amber Glass V = Vial G = Glass B = Bacteria Cup C = Cube O = Other E = Encore D = BOD Bottle		Westboro: Certification No: MA935 Mansfield: Certification No: MA015		Container Type Preservative		E G G G G G G P A A A A A A A A		Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS .			
Form No: 01-25 (rev. 30-Sept-2013)		Relinquished By:		Date/Time		Received By:		Date/Time					

GROUNDWATER COC

 NEW YORK CHAIN OF CUSTODY Westborough, MA 01581 8 Walkup Dr. TEL: 508-898-9220 FAX: 508-898-9193 Mansfield, MA 02048 320 Forbes Blvd TEL: 508-822-9300 FAX: 508-822-3288		Service Centers Mahwah, NJ 07430: 35 Whitney Rd, Suite 5 Albany, NY 12205: 14 Walker Way Tonawanda, NY 14150: 275 Cooper Ave, Suite 105		Page 1 of		Date Rec'd in Lab		ALPHA Job #			
		Project Information Project Name: _____ Project Location: _____ Project # _____ (Use Project name as Project #) <input checked="" type="checkbox"/>				Deliverables <input type="checkbox"/> ASP-A <input checked="" type="checkbox"/> ASP-B <input type="checkbox"/> EQuIS (1 File) <input type="checkbox"/> EQuIS (4 File) <input type="checkbox"/> Other				Billing Information <input checked="" type="checkbox"/> Same as Client Info PO # _____	
		Client Information Client: Roux Assocaites Address: 209 Shafter Street Islandia New York 11749 Phone: 631-232-2600 Fax: _____ Email: _____				Regulatory Requirement <input type="checkbox"/> NY TOGS <input type="checkbox"/> NY Part 375 <input type="checkbox"/> AWQ Standards <input type="checkbox"/> NY CP-51 <input type="checkbox"/> NY Restricted Use <input type="checkbox"/> Other <input type="checkbox"/> NY Unrestricted Use <input type="checkbox"/> NYC Sewer Discharge				Disposal Site Information Please identify below location of applicable disposal facilities. Disposal Facility: _____ <input type="checkbox"/> NJ <input type="checkbox"/> NY <input type="checkbox"/> Other:	
Turn-Around Time Standard <input checked="" type="checkbox"/> Due Date: _____ Rush (only if pre approved) <input type="checkbox"/> # of Days: _____		ANALYSIS Full TCL VOCs + 10 TICs Full TCL SVOCs + 20 TICs TAL Pest TAL PCBs / Herbicides TAL Total Metals + Hg TAL Dissolved Metals + H Hex Chrom / Tri Chrom Total Cyanide		Sample Filtration <input type="checkbox"/> Done <input checked="" type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please Specify below)		Sample Specific Comments		Total Bottles			
Other project specific requirements/comments: All samples kept on ice											
Please specify Metals or TAL.											
Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O ₃ K/E = Zn Ac/NaOH O = Other		Container Code P = Plastic A = Amber Glass V = Vial G = Glass B = Bacteria Cup C = Cube O = Other E = Encore D = BOD Bottle		Westboro: Certification No: MA935 Mansfield: Certification No: MA015		Container Type Preservative		V A A A P P P P B A A A C A A E		Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS .	
Relinquished By:		Date/Time		Received By:		Date/Time					
Form No: 01-25 (rev. 30-Sept-2013)											

Please print clearly & legibly and completely. Samples cannot be logged in and turn around time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms

WASTE CHAR COC

 NEW YORK CHAIN OF CUSTODY Westborough, MA 01581 8 Walkup Dr. TEL: 508-898-9220 FAX: 508-898-9193 Mansfield, MA 02048 320 Forbes Blvd TEL: 508-822-9300 FAX: 508-822-3288		Service Centers Mahwah, NJ 07430: 35 Whitney Rd, Suite 5 Albany, NY 12205: 14 Walker Way Tonawanda, NY 14150: 275 Cooper Ave, Suite 105		Page 1 of 1		Date Rec'd in Lab		ALPHA Job #					
		Project Information Project Name: _____ Project Location: _____ Project # _____ (Use Project name as Project #) <input checked="" type="checkbox"/>				Deliverables <input checked="" type="checkbox"/> ASP-A <input type="checkbox"/> ASP-B <input type="checkbox"/> EQuIS (1 File) <input type="checkbox"/> EQuIS (4 File) <input type="checkbox"/> Other				Billing Information <input checked="" type="checkbox"/> Same as Client Info PO # _____			
		Client Information Client: Roux Assocaites Address: 209 Shafter Street Islandia New York 11749 Phone: 631-232-2600 Fax: _____ Email: _____				Regulatory Requirement <input type="checkbox"/> NY TOGS <input type="checkbox"/> NY Part 375 <input type="checkbox"/> AWQ Standards <input type="checkbox"/> NY CP-51 <input type="checkbox"/> NY Restricted Use <input type="checkbox"/> Other <input type="checkbox"/> NY Unrestricted Use <input type="checkbox"/> NYC Sewer Discharge				Disposal Site Information Please identify below location of applicable disposal facilities. Disposal Facility: _____ <input type="checkbox"/> NJ <input type="checkbox"/> NY <input type="checkbox"/> Other: _____			
Turn-Around Time Standard <input checked="" type="checkbox"/> Due Date: _____ Rush (only if pre approved) <input type="checkbox"/> # of Days: _____		ANALYSIS		Sample Filtration <input type="checkbox"/> Done <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please Specify below)		Other project specific requirements/comments: _____ _____ Please specify Metals or TAL.		Sample Specific Comments					
ALPHA Lab ID (Lab Use Only)		Sample ID		Collection Date Time		Sample Matrix		Sampler's Initials		Part 375 VOCs Part 375 SVOCs/PCBs Part 375 Pest / Herbicides Total EPH / Paint Filter Part 375 Total Metals + Hg Hex Chrom / Tri Chrom Total Cyanide/Total Solids **RCRA Char / Full TCLP		Total Bottles	
Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O ₃ K/E = Zn Ac/NaOH O = Other		Container Code: P = Plastic A = Amber Glass V = Vial G = Glass B = Bacteria Cup C = Cube O = Other E = Encore D = BOD Bottle		Westboro: Certification No: MA935 Mansfield: Certification No: MA015		Container Type		Preservative		Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____		Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS .	
Form No: 01-25 (rev. 30-Sept-2013)													

Quality Assurance Project Plan

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Quality Assurance Project Plan

Park Lane Senior
NYSDEC BCP Site No. C203138

1940 Turnbull Avenue
Bronx, New York
Tax Block 3672, Tax Lot 30

February 10, 2021

Prepared for:

PL Sara LLC
70 East 55th Street
Bronx, New York 10022

Prepared by:

**Roux Environmental Engineering
and Geology, D.P.C.**
209 Shafter Street
Islandia, New York 11749

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3. Preservation, Holding Times and Sample Containers

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- B. Data Usability Report Preparer Profile
- C. Sampling, Analysis, and Assessment of Per-And Polyfluoroalkyl Substances (PFAS) under NYSDEC's Part 375 Remedial Programs (January 2021)
- D. Laboratory Reporting Limits for Soil, Water and Air Samples
- E. Quality Assurance Glossary

1. Introduction

This Quality Assurance Project Plan (QAPP) has been prepared on behalf of PL SARA LLC (Volunteer) to describe the measures that will be taken to ensure that the data generated during performance of the PL Senior project Remedial Investigation Work Plan (RIWP) at 1940 Turnbull Avenue (Section 2, Block 3672, Lot 30), in the borough of the Bronx, New York (Site) are of quality sufficient to meet project-specific data quality objectives (DQOs).

Due to the presence of contaminated media at the Site, the Volunteer has submitted a Brownfields Cleanup Program Application (BCP) and plans to enter into a Brownfield Cleanup Agreement (BCA) with NYSDEC, to investigate and remediate the 0.30-acre Site. Restricted Residential use as defined in 6 New York Codes, Rules, and Regulations (NYCRR) Part 375-6 Environmental Remediation Programs is proposed for the Site. Currently, the Site is occupied by a parking lot and is located in an area zoned as a residential with a commercial overlay (R8/ C2-4). When the proposed development is completed, the Site usage will contain affordable senior housing. The current development plan includes pile construction with a basement.

The QAPP was prepared in accordance with the guidance provided in NYSDEC Technical Guidance DER-10 (Technical Guidance for Site Investigation and Remediation), the Brownfield Cleanup Program Guide, the Sampling, Analysis, and Assessment of PFAS under NYSDEC's Part 375 Remedial Programs guidance document (NYSDEC January 2021 PFAS guidance document) and the United States Environmental Protection Agency's (USEPA's) Guidance for the Data Quality Objectives Process (EPA QA/G-4).

2. Background, Objectives and Scope

In order to achieve project objectives, Roux has developed a scope of work that includes sampling of soil, groundwater and soil vapor. A brief overview of each element of the RI Scope of Work is provided below. RI sampling locations are shown in Figure 6 of the RIWP.

2.1 Soil

An estimated total of 29 soil samples will be collected and analyzed at a minimum of 10 locations for Full Target Compound List (TCL) volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) plus the 30 (10 VOCs and 20 SVOCs) highest concentration Tentatively Identified Compounds (TIC); Total Analyte List (TAL) metals; pesticides; herbicides; Polychlorinated biphenyls (PCBs); hexavalent chromium; trivalent chromium; total cyanide; total mercury, Per- and Polyfluoroalkyl Substances (PFAS) compounds and 1,4-Dioxane. PFAS will be analyzed by LC-MS/MS for PFAS using methodologies based on EPA Method 537.1. If odor/ visual evidence of contamination or elevated photoionization detector (PID) readings are noted, additional samples will be collected from the interval that exhibits the highest contamination.

2.2 Groundwater

An estimated total of five groundwater samples will be collected from new monitoring wells installed by Roux during the RI. After gauging with an electronic interface probe, each well will be sampled for Full Target TCL VOCs and SVOCs plus the 30 (10 VOCs and 20 SVOCs) highest concentration TIC; TAL metals (total and dissolved); pesticides; herbicides; PCBs; hexavalent chromium; trivalent chromium; total cyanide; total mercury; 1,4-Dioxane; and PFAS compounds. PFAS will be analyzed by EPA Method 537.1. Groundwater samples will be filtered by the laboratory for metals and SVOCs. Field parameters, including temperature, pH, conductivity, redox potential, dissolved oxygen, and turbidity will also be measured.

2.3 Soil Vapor Samples

An estimated total of seven soil vapor samples will be collected from new soil vapor points during the RI to evaluate soil vapor conditions at the Site. All soil vapor samples will be collected in accordance with the October 2006 New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH Guidance) and analyzed using USEPA Method TO-15 for VOCs.

3. Project Organization

A general and generic summary of the overall management structure and responsibilities of project team members are presented below. Professional profiles are presented in Appendix A.

Project Principal

Frank Cherena, P.G., of Roux will serve as Project Principal. The Project Principal is responsible for defining project objectives and bears ultimate responsibility for the successful completion of the investigation.

Project Manager

Kathryn Sommo of Roux will serve as Project Manager. The Project Manager is responsible for defining project objectives and ensures the successful completion of the work. This individual will provide overall management for the implementation of the scope of work, will coordinate all field activities. The Project Manager is also responsible for data review/interpretation and report preparation.

Field Team Leader

The Field Team Leader will be determined prior to the start of the Work. The Field Team Leader bears the responsibility for the successful execution of the field program and following the standard operating procedures for sample collection and field data reporting. The Field Team Leader will direct the activities of the technical staff in the field, as well as all subcontractors. The Field Team Leader will also assist in the interpretation of data and in report preparation. The Field Team Leader reports to the Project Manager.

Laboratory Project Manager

The Laboratory Project Manager will be Lidya Gulizia of York Analytical Laboratories, Inc. The Laboratory Project Manager is responsible for sample container preparation, sample custody in the laboratory, and completion of the required analysis through oversight of the laboratory staff. The Laboratory Project Manager will ensure that quality assurance procedures are followed and that an acceptable laboratory report is prepared and submitted. The Laboratory Project Manager reports to the Field Team Leader.

Quality Assurance Officer

Brandon Vella of Roux will serve as the Quality Assurance Officer (QAO) for this project. The QAO is responsible for conducting reviews, inspections, and audits to ensure that the data collection is conducted in accordance with the FSP and QAPP. The QAO's responsibilities range from ensuring effective field equipment decontamination procedures and proper sample collection to the review of all laboratory analytical data for completeness and usefulness. The QAO reports to the Project Manager and makes independent recommendations to the Field Team Leader.

Data Usability Report Preparer

The data usability report preparer will be Joshua Cope, a Roux-employed experienced environmental scientist, that is independent from the PL Senior project team. The data usability report preparer is from a separate office and will provide the data validation as a "blind" assessment. The Data Usability Report Preparer will review all RI data to determine if the data packages received meet the requirements in Section 2.2(a)1.ii and Appendix 2B of DER-10. The qualifications of the data usability report preparer, Joshua Cope, are provided in Appendix B.

4. Sampling Procedures

Detailed discussions of sampling, decontamination, and sample handling procedures are provided in the FSP (Appendix F of the RIWP) and in the NYSDEC January 2021 PFAS guidance document provided in QAPP Appendix C.

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5. Quality Assurance/Quality Control

The primary intended use for the RI data is to characterize Site conditions and determine if remediation needs to be undertaken at the Site. The primary DQO of the soil, groundwater and soil vapor sampling programs, therefore, is that data be accurate and precise, and hence representative of the actual Site conditions. Accuracy refers to the ability of the laboratory to obtain a true value (i.e., compared to a standard) and is assessed through the use of laboratory quality control (QC) samples, including laboratory control samples and matrix spike samples, as well as through the use of surrogates, which are compounds not typically found in the environment that are injected into the samples prior to analysis. Precision refers to the ability to replicate a value and is assessed through both field and laboratory duplicate samples.

Sensitivity is also a critical issue in generating representative data. Laboratory equipment must be of sufficient sensitivity to detect target compounds and analytes at levels below NYSDEC standards and guidelines whenever possible. Equipment sensitivity can be decreased by field or laboratory contamination of samples, and by sample matrix effects. Assessment of instrument sensitivity is performed through the analysis of reagent blanks, near-detection-limit standards, and response factors. Potential field and/or laboratory contamination is assessed through use of trip blanks, method blanks, and equipment rinse blanks (also called “field blanks”).

Table 1 lists the field and laboratory QC samples that will be analyzed to assess data accuracy and precision, as well as to determine if equipment sensitivity has been compromised. Table 2 lists the RI field and quality control sampling summary. Table 3 lists the preservation, holding times and sample container information. Appendix D provides the reporting limits and minimum detection limits achievable by the laboratory. QA/QC protocols will also be followed as described in the NYSDEC January 2021 PFAS guidance document provided in QAPP Appendix C.

All RI “assessment” analyses (i.e., TCL VOCs, SVOCs, pesticides/herbicides/PCBs, TAL metals [including hexavalent and trivalent chromium, and cyanide], 1,4-Dioxane, PFAS) and TO-15 will be performed in accordance with the NYSDEC Analytical Services Protocol (ASP), using USEPA SW-846 methods. York Analytical Laboratories, Inc shall maintain a NYSDOH Environmental Laboratory Approval Program (ELAP) Contract Laboratory Protocol (CLP) certification for each of the “assessment” analyses listed in Section 2.

All laboratory data are to be reported in NYSDEC ASP Category B deliverables and will be delivered to NYSDEC in electronic data deliverable (EDD) format as described on NYSDEC’s website (<http://www.dec.ny.gov/chemical/62440.html>). A Data Usability Report will be prepared meeting the requirements in Section 2.2(a)1.ii and Appendix 2B of DER-10 for all data packages generated for the RI.

A Quality Assurance Glossary is presented in Appendix E.

TABLES

1. Field and Laboratory QC Summary
2. Field and Quality Control Sampling Summary
3. Preservation, Holding Times and Sample Containers

Table 1. Field and Laboratory QC Summary

QC Check Type	Minimum Frequency	Use
<u>Field QC</u>		
Duplicate	per matrix per 20 samples or SDC	Precision
Trip Blank	1 per VOC cooler	Sensitivity
Field Blank	1 per matrix per 20 samples	Sensitivity
<u>Laboratory QC</u>		
Laboratory Control Sample	1 per matrix per SDG	Accuracy
Matrix Spike/Matrix Spike Duplicate/Matrix Duplicat	1 per matrix per SDG	Accuracy/Precision
Surrogate Spike	All organics samples	Accuracy
Laboratory Duplicate	1 per matrix per SDG	Precision
Method Blank	1 per matrix per SDG	Sensitivity

Notes:

* SDG - Sample Delivery Group - Assumes a single extraction or preparation

** Provided to lab by field sampling personnel

Table 2. Remedial Investigation Field and Quality Control Sampling Summary

Sample Medium	Target Analytes	Field Samples	Replicates ¹	Trip Blanks ²	Field Blanks ¹	Matrix Spikes ¹	Spike Duplicates ¹	Total No. of Samples
Soil	Full TCL VOCs +10	29	2	3	2	2	2	40
	Full TCL SVOCs +20	29	2	NA	2	2	2	37
	TCL Pesticides	29	2	NA	2	2	2	37
	TCL Herbicides	29	2	NA	2	2	2	37
	TCL PCBs	29	2	NA	2	2	2	37
	TAL Metals	29	2	NA	2	2	2	37
	Hexavalent Chromium	29	2	NA	2	2	2	37
	Trivalent Chromium	29	2	NA	2	2	2	37
	Total Cyanide	29	2	NA	2	2	2	37
	Total Mercury	29	2	NA	2	2	2	37
	1,4-Dioxane	29	2	NA	1	1	1	34
	PFAS	29	2	NA	1	1	1	34
Groundwater	Full TCL VOCs +10	5	1	1	1	1	1	10
	Full TCL SVOCs +20*	5	1	NA	1	1	1	9
	TCL Pesticides	5	1	NA	1	1	1	9
	TCL Herbicides	5	1	NA	1	1	1	9
	TCL PCBs	5	1	NA	1	1	1	9
	TAL Metals (Total)	5	1	NA	1	1	1	9
	TAL Metals (Dissolved)	5	1	NA	1	1	1	9
	Hexavalent Chromium	5	1	NA	1	1	1	9
	Trivalent Chromium	5	1	NA	1	1	1	9
	Total Cyanide	5	1	NA	1	1	1	9
	Total Mercury	5	1	NA	1	1	1	9
	1,4-Dioxane	5	1	NA	1	1	1	9
	PFAS	5	1	NA	1	1	1	9
Soil Vapor	TO-15 VOCs	7	1	NA	NA	NA	NA	8

Totals are estimated based on scope of work as written, actual sample quantities may vary based on field conditions. QA/QC sample quantities will be adjusted accordingly.

¹ Based on 1 per 20 samples or 1 per Sample Delivery Group

² Based on 1 cooler per day

TCL - USEPA Contract Laboratory Program Target Compound List

VOCs - Volatile Organic Compounds

SVOCs - Semivolatile Organic Compounds

PCBs - Polychlorinated Biphenyls

TAL - USEPA Contract Laboratory Program Target Analyte List

PFAS - Per- and Polyfluoroalkyl Substances

NA - Not Applicable

*All groundwater samples will be analyzed for both filtered and unfiltered metals and SVOCs.

Table 3. Preservation, Holding Times and Sample Containers

Analysis	Matrix	Bottle Type	Preservation(a)	Holding Time(b)
TAL Metals (total & dissolved) SW-846 6020B/7471B	Soil Water	8 oz wide mouth glass, teflon lined cap 250 mL plastic, teflon lined cap	Cool to 4°C Nitric acid	180 days, Hg 28 days
Hexavalent Chromium\Trivalent Chromium(calculated) SW-846 7196A\6010C	Soil Water	2 oz wide mouth glass, teflon lined cap 500 mL Plastic	None	28 days 24 hours from sample collection
Total Cyanide SW-846 9012B	Soil Water	4 oz wide mouth glass, teflon lined cap 250 mL Plastic	Cool to 4°C NaOH	14 days from sample collection 14 days from sample collection
1,4-Dioxane SW-846 8270D GS/MS SIM/Isotope Dilution	Soil Water	8 oz wide mouth glass, teflon lined cap 2 x 500 mL amber wide mouth glass	Cool to 4°C Cool to 4°C	14 days from sample collection 7 days from sample collection
Per- and Polyfluoroalkyl Substances (PFAS) EPA 537(Modified)	Soil Water	8 oz plastic container (non teflon lined) 2 - 250 mL HDPE plastic	Cool to 4°C Trizma	14 days from sample collection 14 days to extraction and 28 days to analysis
Volatile Organic Compounds (VOCs) TO-15	Air	6 liter Summa Canister for 8-hr sampling period 1 liter Summa Canister for 2-hr sampling period	None None	14 days from sample collection 14 days from sample collection
Target Compound List (TCL)				
TCL Volatile Organic Compounds (VOCs) + 10 TICS SW-846 8260C	Soil Water	Encore 40mL voa vial, teflon lined cap	Cool to 4°C Hydrochloric Acid	24 hours from sample collection 14 days from sample collection
TCL Semivolatile Organic Compounds (SVOCs) +20 TICS SW-846 8270D	Soil Water	8 oz wide mouth glass, teflon lined cap 1 liter amber glass, teflon lined cap	Cool to 4°C	14 days to extract, 40 days to analysis 7 days to extract, 40 days to analysis
TCL Pesticides SW-846 8081B	Soil Water	8 oz wide mouth glass, teflon lined cap 1 liter amber glass, teflon lined cap	Cool to 4°C	14 days to extract, 40 days to analysis 7 days to extract, 40 days to analysis
TCL Herbicides SW-846 8151A	Soil Water	8 oz wide mouth glass, teflon lined cap 1 liter amber glass, teflon lined cap	Cool to 4°C	14 days to extract, 40 days to analysis 7 days to extract, 40 days to analysis
TCL Polychlorinated biphenyls (PCBs) SW-846 8082A	Soil Water	8 oz wide mouth glass, teflon lined cap 1 liter amber glass, teflon lined cap	Cool to 4°C	14 days to extract, 40 days to analysis 7 days to extract, 40 days to analysis

^(a) All soil and groundwater samples to be preserved in ice during collection and transport

^(b) Days from date of sample collection.

TAL - Target Analyte List

TCL - USEPA Contract Laboratory Program Target Compound List

Gas chromatography-mass spectrometry (GC/MS) in selected ion monitoring (SIM) mode

APPENDICES

- A. Professional Profiles
- B. Data Usability Report Preparer Profile
- C. Sampling, Analysis, and Assessment of Per-And Polyfluoroalkyl Substances (PFAS) under NYSDEC's Part 375 Remedial Programs (January 2021)
- D. Laboratory Reporting Limits for Soil, Water and Air Samples
- E. Quality Assurance Glossary

APPENDIX A

Professional Profiles

DRAFT

TECHNICAL SPECIALTIES

Project Management and Field Management of Phase I and Phase II Environmental site assessments. GIS data analysis and mapping. Project Management and oversight of remediation and construction activities. Additional experience includes the performance of investigation design and agency correspondence for petroleum and chlorinated solvent remediation projects.

EXPERIENCE SUMMARY

Fifteen years of experience: Principal Geologist with Roux Associates, Inc., Islandia, New York; Staff Geologist with RTP Environmental Associates, Inc., Green Brook, New Jersey.

CREDENTIALS

B.A., Geology, Colgate University, 2003

OSHA 40-Hour Hazardous Materials Training, 2003

OSHA 8-Hour Supervisor Training, 2004

Accredited AHERA Inspector, 2004

State of New York Asbestos Inspector Certificate, 2004

NJ UST Subsurface Evaluator Certification# 491925, 2009

New York State Licensed Professional Geologist, 2018

KEY PROJECTS

- Principal in charge of large university tech development project in New York City. The project consists of the demolition and decommissioning of a former hospital building, and excavation for redevelopment of four separate buildings for the first phase of campus construction. Environmental considerations on the project included site assessment, remediation design and oversight, SDPES permitting (construction dewatering and geothermal well discharge), soil characterization for reuse and capping of soils. Coordinated with NYCDEP, and other project stakeholders concerning community protection and monitoring concerns.
- Principal in charge of redevelopment of shopping mall in Staten Island, New York. The Site will consist of the construction of two commercial out parcel buildings, a new parking deck, and an expansion of the existing mall building. Areas of concern include historical fill, site-wide soil contamination (arsenic and pesticides). In addition, also responsible for agency coordination with FDNY, NYSDEC, and NYCOER for mitigation of methane and chlorinated volatile organic compounds vapor issues.
- Principal in charge for new development of a large regional mall in Norwalk, Connecticut with underground parking. The proposed redevelopment will result in the construction of a retail shops, restaurants, hotel, and entertainment. Previous usage of the property included over 30 different parcels including three establishments, gasoline filling stations,

fuel oil terminal storage, hazardous waste disposal areas. The project includes investigation and subsequent remediation of petroleum and hazardous waste releases, filing of the Environmental Conditions Assessment Form (ECAAF) associated with the three transfer act parcels

- Project Manager for the largest redevelopment project in New York City (over \$4.5 billion). Project includes Phase I and Phase II ESAs (investigation of soil, groundwater, and soil vapor) at over 75 properties; Construction support for excavation of one million cubic yards of soil including implementing an in situ waste characterization program; Environmental support for demolition, asbestos and lead abatement, site remediation using In Situ Chemical Oxidation, and relocating of an active 9-acre 100-year old railyard; Property acquisition support throughout the project (7 city blocks); and Agency support for NYSDEC, NYCDEP, MTA (LIRR/NYCT), and ESDC. The environmental data was used as an integral component of the New York State Environmental Quality Review Act (SEQRA) final Environmental Impact Statement (EIS). The project will encompass 336,000 sq ft of office space, 6.4 million sq ft of residential space, an 18,000 seat sports and entertainment venue - the Barclays Center (home of the Nets professional basketball team) - 247,000 sq ft of retail space, a 165,000 square-foot hotel, and over 8 acres of intricately designed publicly accessible open space.
- Principal in Charge of numerous due diligence projects for owners, developers, managers, municipalities, and lenders at commercial and industrial properties throughout the Northeast. Activities included performance of UST evaluations and closures, hot spot remediations, Phase I and Phase II Site Assessments, vapor intrusion studies and mitigation, lead based paint, asbestos and hazardous materials surveys, interaction with regulatory agencies on behalf of clients and development of remedial cost estimates for planning and negotiation.
- Principal in Charge for investigation and review of a former electroplating facility in Bay Shore, New York with chlorinated solvent DNAPL. Activities included historical document review, subsurface investigation, and coordination with outside legal counsel and NYSDEC.
- Implemented GIS analysis and mapping for a remedial study and alternative analysis report (AAR) for an active petroleum storage terminal in Buffalo, New York under jurisdiction of the NYSDEC. The AAR required spatial analyses in order to categorize and analyze contaminant data from multiple investigations, investigate remedial alternatives, and to help focus ongoing additional investigations.

- Project manager for a property transfer support project at a heavily contaminated state-of-the-art distribution facility in the Bronx, New York. The site was a former MGP being handled under the VCP in central office, the site had an open spill under the regional spills group and the site was attempting to apply to the BCP through the regional office. Roux performed a Phase I for the buyer, a Phase II and remedial cost estimate for the owner and negotiated with the buyer's consultant and NYSDEC to limit the scope of the investigation and cleanup.

- Served as Environmental Professional on hundreds of Phase I Environmental Site Assessments according to ASTM E1527-00, ASTM E1527-05, and ASTM E1527-13 for due diligence of large retail shopping centers, industrial facilities, and office buildings. Associated activities included agency contact, database management and interpretation, report preparation, and recommendations for additional work.

DRAFT

TECHNICAL SPECIALTIES

Wetland Delineation, Wetland and SPDES Permitting, Constructed Treatment Wetland (CTW) System Design Management, Wetland Assessments, Habitat Evaluations, Rare, Threatened & Endangered (RTE) Species Surveys, Soil and Sediment Characterization, Wetland Mitigation/Restoration, Hydrologic Monitoring, Litigation Support and Phytoremediation.

EXPERIENCE SUMMARY

Seventeen years of experience with Roux Associates.

Five years' experience as Biologist with U.S. Forest Service, Colorado Division of Wildlife, and Colorado Natural Heritage Program.

CREDENTIALS

B.S. Fishery Biology, Colorado State University, 1998

Wetland Delineation Certification, Richard Chinn Environmental Training, 2000

Winter Plant Identification Certification, Rutgers University, 2011.

Rare, Threatened, Endangered Species of NJ, Rutgers University, 2012

International Society of Arboriculture (ISA) Certified Arborist

Certified Professional in Erosion and Sediment Control (CPESC)

OSHA 40-Hour Health and Safety Course

PROFESSIONAL AFFILIATIONS

Society of Wetland Scientists, Society for Ecological Restoration, Xerces Society for Invertebrate Conservation, ISA New York Chapter.

KEY PROJECTS

Environmental Services

- Project Manager for benthic community evaluation for waterfront redevelopment site located within an inlet of the East River and greater NYC harbor area. Completed benthic, sediment and surface water sampling to evaluate the effects of the contaminated sediment on the benthic community. Work performed in support of the creation of tidal marshes, provision of benthic habitat structures, and the partial removal of a bulkhead to provide public access to the created water feature.
- Project Management for groundwater monitoring for several major railroad transportation companies and bus transportation terminals located throughout New Jersey. Completed quarterly and annual reporting for groundwater compliance monitoring programs.
- Project Manager for remedial investigation at a former aerospace manufacturing facility located in Wallingford, CT. Site contamination included chlorinated hydrocarbons petroleum related VOCs

and metals in soils and groundwater. An air/sparge soil vapor extraction (AS/SVE) system was installed to address soil and groundwater contamination from the flow meter testing area. Work activities have included: quarterly groundwater monitoring, writing and implementation of subsurface investigation Work Plans, review and analysis of laboratory analytical data, and reporting of investigation results, completion of a Sensitive Receptor Survey, Water Supply Well Survey, Ecological Scoping Checklist, RCRA Corrective Action Forms (Current Human Exposures Under Control -CA-725 & Migration of Contaminated Groundwater Under Control - CA750) and the Conceptual Site Model.

- Project Manager for wetland delineation, sediment sampling and characterization, and assessment of wetland vegetative communities present within a two mile stretch of the Peconic River in Brookhaven, New York. The project included sediment removal and wetland restoration for the remediation of metal contaminated sediments in the emergent marsh and forested riparian wetland system. Project manager for the restoration monitoring, supplemental planting, and invasive species control activities.
- Field Manager for landfill leachate investigation in Holtsville, New York. Downgradient pond and surface water tributary impacted from landfill leachate. Investigation activities included oversight of well installation, well development, the collection of groundwater, surface water and sediment samples, staff gauge installation piezometer installation and stream flow readings. Completed inventory of soils and vegetation within the landfill. Designed planting plan for pond restoration and completed permit application for restoration of the pond and surrounding uplands.
- Field Manager for sediment investigation and wetland vegetation encroachment control at a former petroleum bulk storage facility in Staten Island, New York. Wetland investigation, remediation and restoration project for a 440-acre former Major Oil Storage Facility containing approximately 95 acres of tidal and freshwater wetlands. As part of a Consent Order between the client and the NYSDEC, Roux developed and implemented a remedial design that minimized impacts to the wetlands while ensuring the protection of human health, wildlife and the surrounding environment. The remedial design included excavation and offsite disposal of 21,000 CY of sediment over 10 acres of wetlands. Achieved regulatory closure of the wetland restoration within two years of monitoring.
- Field Manager for landfill leachate investigation in Holtsville, New York. Downgradient pond and surface water tributary impacted from landfill leachate.

Investigation activities included oversight of well installation, well development, the collection of groundwater, surface water and sediment samples, staff gauge installation piezometer installation and stream flow readings. Completed inventory of soils and vegetation within the landfill. Designed planting plan for pond restoration and completed permit application for restoration of the pond and surrounding uplands.

- Project Manager for post-remediation documentation for a former colorants facility in Rensselaer, New York. Ongoing work activities include, updates to the Site Management Plan for OU-1 and OU-2, Periodic Review Reporting for the groundwater monitoring, groundwater treatment system, soil vapor barrier and landfill cap.
- Field Manager for sediment investigation and wetland vegetation encroachment control at a former petroleum bulk storage facility in Staten Island, New York. Wetland investigation, remediation and restoration project for a 440-acre former Major Oil Storage Facility containing approximately 95 acres of tidal and freshwater wetlands. As part of a Consent Order between the client and the NYSDEC, Roux developed and implemented a remedial design that minimized impacts to the wetlands while ensuring the protection of human health, wildlife and the surrounding environment. The remedial design included excavation and offsite disposal of 21,000 CY of sediment over 10 acres of wetlands. Achieved regulatory closure of the wetland restoration within two years of monitoring.
- Field manager for a former petroleum bulk storage facility in Greenport, New York. Work activities included soil and groundwater sampling, creation of groundwater flow maps, soil and monitoring well profiles.

Green Technologies: Living Shoreline Stabilization/Constructed Treatment Wetlands/Phytotechnology

- Field Manager for coastal shoreline stabilization and grassland mitigation of an 80 acre island located off the coast of Brooklyn, NY. The island formally served as a municipal landfill and due to erosion forces the landfill waste became exposed. The design provided slope stabilization improvements and the creation of warm season maritime grasslands to provide foraging, cover and nesting habitat for birds. An inventory of the island vegetation was completed as well as soil, sediment and surface water samples to fully characterize the nature and depth to the landfill waste. Wetland permitting was completed to mitigate for the impacts to the wetland and adjacent areas.
- Project Manager for feasibility study and engineering design to reroute additional stormwater to constructed treatment wetland (CTW) system in Portsmouth,

Virginia. Zinc and copper were the primary constituents targeted for treatment in the CTW system. Components of the work included, stormwater runoff modeling analysis, mass loading calculations, constructed treatment wetland performance and life expectancy calculations and alternatives analysis. NPDES reporting and permitting renewal.

- Project Manager for City of Glen Cove, Mill Pond rehabilitation project. Design objectives were to restore improve the functionality of Mill Pond to treat stormwater runoff and baseflow from Cedar Swamp Creek and the surrounding watershed, improve solids removal, surface water flow and access for maintenance activities. Elements of the design included: reestablishment of forebay for sediment removal, excavation of sediment deposition areas, concrete revetment berm/ access road and removable weir plate for forebay maintenance, wooden headwall replacement, improve surface water flow deflection, and floatables collection system to prevent debris from entering Hempstead Harbor. Completed all wetland permitting for USACE, NYSDEC and NYSDOS. Negotiated sediment disposal facilities options with NYSDEC.
- Wetland Specialist for Subsurface Stormwater Treatment Wetlands (SSTW) systems being installed to capture and treat stormwater runoff from the MassDOT Longfellow bridge rehabilitation project. The SSTWs will be installed in both Cambridge and Boston Massachusetts. The project components include SSTW design review, planting recommendations, construction oversight and documentation and vegetation monitoring.
- Project Manager for wetland delineation, RTE survey and wetlands permitting at an active metals smelting facility in Sayerville, NJ. The project design elements included the design and construction of an engineered Constructed Treatment Wetland system that will provide treatment of stormwater run-off from the facility prior to discharge from the site. RTE surveys of the wetlands and wetland buffer areas were required for the potential presence of threatened and endangered species.
- Wetland Specialist for Subsurface Stormwater Treatment Wetlands (SSTW) systems being installed to capture and treat stormwater runoff from the MassDOT Longfellow bridge rehabilitation project. The SSTWs will be installed in both Cambridge and Boston Massachusetts. The project components include SSTW design review, planting recommendations, construction oversight and documentation and vegetation monitoring.
- Completed a phytoremediation feasibility study for a Site in Ogdensburg, New York. The project encompassed creating an aesthetically pleasing landscape planting plan, which would be comprised of native flora with deep

rooting potential capable of hydraulically containing the containment plume

Ecological Services

- Project Manager for former fibers facility in Williamsburg, VA; project components include land management for wildlife enhancement projects, Phytotechnology monitoring, and permitting. Baseline vegetation survey completed including mapping of all habitat types present. Wildlife monitoring surveys for bats, birds, amphibians, reptiles, mammals and insects. Wildlife projects implemented include creation of pollinator meadow areas, warm season grasslands, sustainable forestry management, purple martin colony, blue bird trail, bat housing, native bee housing, and vernal pool monitoring. Wildlife Habitat Council Wildlife at Work certification earned for wildlife projects. Other project work consisted of phytoremediation tree plot monitoring, evaluation and recommendation for fertilization and maintenance; Virginia Pollutant Discharge Elimination System (VPDES) permit renewal.
- Project Manager for benthic community evaluation for waterfront redevelopment site located within an inlet of the East River and greater NYC harbor area. Completed benthic, sediment and surface water sampling to evaluate the effects of the contaminated sediment on the benthic community. Work performed in support of the creation of tidal marshes, provision of benthic habitat structures, and the partial removal of a bulkhead to provide public access to the created water feature.
- Project Manager and Field Manager for the delineation and assessment of a shrub forested freshwater riparian wetland located along the Branch Brook Nature Preserve in Smithtown, NY. A hydrologic monitoring well network and vegetation monitoring plots established within the recovery system potential downgradient area. Water level monitoring conducted to pre and post recovery system startup to determine any effects to wetland resources. Prevalence Index (PI) scores used to evaluate shifts in vegetation composition within monitoring plots overtime. Designed planting plan for restoration of the disturbed upland adjacent well installation areas.
- Expert biologist project support provided for evaluation of natural resource damage (NRD) claims and determination of monetary compensation for damages. Sites for NRD claims located throughout the northeast, southeast and Midwest. Mitigation banks consulted throughout these areas for potential available credits and the unique requirements per area for mitigation banking reviewed. Wetland status and potential damages assumed for Site and value of the land determined based upon various mitigation evaluation methods. Habitat Equivalency Analysis (HEA) software utilized to evaluate timeline of impacted Sites and time required for complete Site restoration as applicable.

- Project Manager for litigation support provided to Southampton community members. Services included review of Town of Southampton wetland delineation of proposed project Site, expert review and commentary provided on Towns redevelopment plans and provision of verbal support at several town hearings regarding potential impacts to the Site and permitting requirements.
- Wetland specialist for restoration monitoring within restored emergent marsh and forested wetlands at former Chemical manufacturing facility located in Middleborough, Massachusetts. The 59-acre site was formerly used to manufacture chlorinated solvents remediation was required under an Administrative Consent Order issued by Massachusetts Department of Environmental Protection (MADEP). The swale and former lagoon area were filled and re-graded to remove ecological exposure pathways. Approximately one acre of wet meadow, shrub swamp and forested wetlands were restored.
- Wetland Permitting Specialist for redevelopment project located within wetland adjacent area in New York City. Development plans included multi-building, mixed-use development for affordable housing and commercial space. The project components included jurisdictional negotiation with NYSDEC, completion of restoration design plans, and sediment and erosion control plans and submittal of wetland permitting package.
- Field Manager of remediation activities for impacted wetland and transition areas. Prepared the wetland permit application, and provided regulatory support to obtain the required state approvals to perform regulated activities within and adjacent to the delineated wetlands located on an active bulk storage, receiving and transfer facility for petroleum and chemical products in Carteret, New Jersey.
- Field manager for a 3.2 acre pond remediation and restoration located in Massapequa Preserve on Long Island, New York. Wetland delineation verification. Inventory of open water and wetland vegetation completed and a delineation of the sediment depth. Assisted in development of design and restoration planting plan for permitting to remove impacted sediments and restore the pond and associated wetlands with native emergent wetland plants surrounded by shrub forest.
- Project Manager for the habitat inventory, rare, threatened and endangered (RTE) species survey, and wetland delineation of 110 acres of NYC parkland in Staten Island, NY. Completion of an EAS, Consistency Assessment, and wetland permitting for the redevelopment of the Site into multi-use parkland and constructed stormwater wetlands.

- Designed planting plan for shoreline restoration of wetland mitigation areas at a former telephone manufacturing facility in Staten Island, New York. Restoration elements included tidal marsh, brackish marsh, forest riparian and forested upland plantings. Project manager for wetlands restoration monitoring. Successful reestablishment of oyster population within tidal mudflats.
- Field manager for a 3.2 acre pond remediation and restoration located in Massapequa Preserve on Long Island, New York. Wetland delineation verification. Inventory of open water and wetland vegetation completed and a delineation of the sediment depth. Assisted in development of design and restoration planting plan for permitting to remove impacted sediments and restore the pond and associated wetlands with native emergent wetland plants surrounded by shrub forest.
- Project Manager for wetland delineation, sediment sampling and characterization, and assessment of wetland vegetative communities present within a two mile stretch of the Peconic River in Brookhaven, New York. The project included sediment removal and wetland restoration for the remediation of metal contaminated sediments in the emergent marsh and forested riparian wetland system. Project manager for the restoration monitoring, supplemental planting, and invasive species control activities.

Publications

- Peconic River Wetland Remediation. 2006. Huhn-Sommo, Kathryn, A. Ludlow, W. Medeiros, and T. Green. New York State Wetlands Forum, Inc. 2006 Annual Conference and Meeting, Syracuse, New York.
- Maritime Grassland Creation and Sustainable Bioengineered Shoreline Stabilization (poster). 2014. Sommo, Kathryn, A. Ludlow, D. Flynn. Society for Ecological Restoration, Mid-Atlantic 2014 Annual Conference, Ambler, Pennsylvania, March 25, 2014
- Maritime Grassland Creation and Sustainable Bioengineered Shoreline Stabilization (poster). 2014. Sommo, Kathryn, A. Ludlow, D. Flynn. The Waters We Share, Restoring the NY-NJ Harbor & Estuary: Ensuring Ecosystem Resilience and Sustainability in a Changing Future, Conference June 3, 2014.
- Maritime Grassland Creation and Shoreline Stabilization. 2014. Sommo, Kathryn, A. Ludlow, D. Flynn. Conference on Ecological and Ecosystem Restoration, New Orleans, Louisiana, July 30, 2014.
- Incorporating Wildlife Habitat into Water Treatment Areas. 2014. Sommo, Kathryn. Webinar for Wildlife Habitat Council Conservation Academy, August 20, 2014.
- Integrating Ecological Elements into Remedial Designs, 2014. Sommo, Kathryn, V. Burrows. 26th Annual Wildlife Habitat Council Symposium, November 11, 2014.
- Habitat Enhancement Project Connections along the Atlantic Coastal Flyway 2016. Sommo, Kathryn, Nathan Epler1, J. Douglas Reid-Green. Society of Ecological Restoration, Mid-Atlantic 2016 Annual Conference, March 13, 2016.

TECHNICAL EXPERIENCE

Phase I and Phase II Environmental Site Assessments (ESAs) conducted in accordance with American Society for Testing and Materials International (ASTM) E1527-13, E2600-15, and E1903-11; management and closure of New York State Department of Environmental Conservation (NYSDEC) spill sites; underground storage tank (UST) investigations and closure; Exposure Assessments (EAs) and Spill Closure Requests; conceptual site model (CSM) development; Environmental Quality Information Systems (EQuIS) database management; Mann-Kendall statistical trend analysis; constituent of concern (COC) migration modeling using Groundwater Spatiotemporal Data Analysis Tool (GWSDAT); investigation and remediation of underground injection control (UIC) structures including stormwater systems, sanitary systems, and grease traps; New York State Pollutant Discharge Elimination System (SPDES) monitoring and Stormwater Pollution Prevention Plan (SWPPP) compliance; installation of soil borings and groundwater monitoring wells; soil vapor intrusion (SVI) investigations; remedial construction oversight; regulatory coordination; development of site-specific health and safety plans (HASPs); Request for Proposal (RFP) development; subcontractor bid evaluation; management of subcontractors and third-party personnel.

EXPERIENCE SUMMARY

Over one year of experience: Project Scientist at Roux Environmental Engineering and Geology, D.P.C., Islandia, New York
Two and a half years of experience: Associate Environmental Scientist and Case Manager at Groundwater & Environmental Services, Inc., Hauppauge, New York
One and a half years of experience: Environmental Scientist at Envirosience Consultants, Inc., Ronkonkoma, New York

CREDENTIALS

B.S. Biochemistry & Minor Environmental Studies, SUNY Binghamton 2014
OSHA 40-Hour HAZWOPER and 8-Hour Annual Refreshers
OSHA 30-Hour Construction Safety
OSHA Site Supervisor
RCRA and DOT Hazardous Materials Transport
Loss Prevention System (LPS) Manager and Supervisor
ExxonMobil Permit Issuer and Recipient
American Red Cross First Aid and CPR
Smith Safe Driver Trained

PUBLICATIONS

Vella, B.D. & Schertzer, J.W. "Understanding and Exploring Bacterial Outer Membrane Vesicles." *Pseudomonas: Volume 7: New Aspects of Pseudomonas Biology*. Edited by J.-L. Ramos, J.B. Goldberg, & A. Filloux, Dordrecht: Springer Netherlands, 2015, pp. 217-250.

KEY PROJECTS

- Case Manager for a legacy portfolio of active retail gasoline and automotive service stations throughout Nassau, Suffolk, Westchester, and Rockland Counties in New York. The portfolio sites were associated with

multiple open NYSDEC spills, numerous historic releases of petroleum product including comingled petroleum hydrocarbon volatile organic compound (VOC) plumes, and multiple historic remediation attempts. Assisted Senior Project Managers by drafting work plans, RFPs, and summary investigation reports. Coordinated and conducted field activities including management and oversight of subcontractor personnel in accordance with site-specific HASPs. Interpreted laboratory analytical data and conducted statistical trend analyses. Drafted technical figures and models such as contour maps, soil data maps, hydrographs, hydrogeologic cross-sections, and soil boring/well logs. Reviewed over three decades worth of historic soil, groundwater, and remediation data in order to refine CSMs. Authored EAs and Spill Closure Requests that were submitted to NYSDEC regulators in support of spill closure.

- Prepared between 50 and 100 Phase I ESAs for properties in the greater New York City and Long Island areas, New Jersey, Connecticut, Rhode Island, Massachusetts, and New Hampshire. These assessments ranged from small residential properties to large scale industrial, commercial, and manufacturing businesses. Responsible for maintaining report integrity and compliance with ASTM E1527-13 and E2600-15 standards. Maintained client expectations and delivered accurate results in a timely manner to satisfy tight due diligence deadlines. Provided recommendations to clients if Phase II ESA investigations were warranted. All Phase I inspections and reports were completed safely, on-time, and within the allotted budgets.
- Case Manager and Field Lead for over one year during the large-scale collection of over 2,000 soil samples from wetland creek areas and adjoining residential properties in order to delineate historic releases of cadmium and hexavalent chromium at a NYSDEC Superfund Site in West Islip, New York. Sample locations were located and logged using global positioning system (GPS) navigation. Provided project quality assurance and quality control (QA/QC) for field activities including management of multiple sampling teams each comprised of three to four samplers. Ensured that all field work adhered to the sampling specifications as directed by the NYSDEC-approved Remedial Investigation Work Plan (RIWP) and Quality Assurance Project Plan (QAPP). Routinely coordinated with both NYSDEC regulators, third-party engineering firm personnel, and residential homeowners in order to achieve sampling objectives.
- Case Manager and Field Lead for light non-aqueous phase liquid (LNAPL) delineation activities at an active retail gasoline and automotive service station in Glen Head, New York, associated with one open NYSDEC spill and multiple historic releases of petroleum product. Coordinated and provided oversight of subcontractor personnel during the advancement of numerous soil borings using sonic drilling technology. Soils were field screened via visual inspection, photoionization detector

(PID) headspace measurements, qualitative fluorescent dye assays, and subsequent subsequently submitted for laboratory analysis of VOCs. Prepared a summary report of the investigative activities that was submitted to NYSDEC and the client. Results of the delineation investigation were used to further refine the CSM in preparation for a remedial engineering alternatives analysis.

- Case Manager and Field Lead for the investigation and remediation of numerous stormwater drywells, sanitary systems, and grease traps for a variety of clients throughout Nassau and Suffolk Counties in Long Island, New York. The impacted underground injection control (UIC) structures, septic tanks, and grease traps were located on properties ranging from small single-family residences to large commercial properties, some of which were historically associated with the use and unauthorized release of hazardous materials and petroleum products. Structures were gauged, measured, and inventoried prior to sampling. Bottom sediment, and standing liquids in some cases, were sampled in accordance with Suffolk County Department of Health Services (SCDHS) Sanitary Code Article XII. Laboratory analytical results were compared to SCDHS Action Levels in order to determine if remediation was warranted. Coordinated remediation strategies under SCDHS oversight which included the removal of liquids and sediment using vacuum trucks, solid and liquid waste disposal, endpoint sampling, and backfilling of the structures with virgin sand. Results of investigative and remedial activities were reported to clients and SCHDS in order to document proper remediation and/or closure of the structures.
- Case Manager and Field Staff for the installation of remedial system wells at an active retail gasoline and automotive service station in Roslyn, New York. Provided field oversight of subcontractors during well installation activities utilizing sonic drilling technologies in order to upgrade an existing air sparge (AS)/soil vapor extraction (SVE) treatment system targeting residual dissolved-phase and adsorbed-phase hydrocarbons associated with an open NYSDEC petroleum hydrocarbon and methyl-*tertiary*-butyl ether (MTBE) spill.
- Field Staff during Phase I and II ESA divestment activities for a portfolio of various gasoline stations and convenience stores throughout Jefferson County in New York. Conducted site reconnaissance inspections and relayed field findings to office support staff using a mobile reporting platform in order to facilitate expedited reporting requirements. Subsequently oversaw subcontractor personnel during subsurface clearance activities in preparation for the advancement of soil borings and the installation of groundwater monitoring wells. All Phase I and Phase II divestment field activities were completed safely, on-time, and within the allotted budgets.

- Field Lead for one month during stream tributary sediment sampling activities conducted in order to delineate impacts resulting from historic releases of polychlorinated biphenyls (PCBs), VOCs, semi-volatile organic compounds (SVOCs), and heavy metals at a NYSDEC Superfund Site in Dunkirk, New York. Stringent sampling equipment decontamination protocols were adhered to throughout the entire duration of the project. Sample locations with relative measured distances between stream transects, field sketches of wetland terrain, and a comprehensive photographic log were submitted to NYSDEC engineers for review in preparation for land clearing and remedial dredging activities.
- Field Staff during emergency response operations related to a per- and polyfluoroalkyl substances (PFAS) release in New Windsor, New York. Interfaced with Senior Project Managers, airport personnel, NYSDEC regulators, third-party subcontractors, media reporters, and local residents during emergency response operations. Compiled comprehensive photographic and written daily logs over the course of one month documenting the presence and abatement of aqueous film-forming foam (AFFF) found in the on-site network of stormwater drains and off-site stream tributaries throughout the surrounding town. Directed subcontractor personnel to initiate recovery of AFFF using vacuum trucks equipped with skimmers. Monitored stream tributaries for the presence of accumulated AFFF on floating absorbent booms and directed subcontractor personnel to conduct periodic boom change-outs prior to precipitation events. Maintained an inventory of on-site subcontractor resources including the number of vacuum trucks, the number of frac tanks, and accumulated water volume/available capacity of the frac tanks.
- Field Staff for routine wastewater discharge sampling at various industrial sites operated by public transportation agencies and freight carrier corporations throughout the Greater New York City metropolitan area. Collected monthly wastewater samples and recorded influent/effluent flow rates. Conducted monthly site inspections and reported potentially hazardous conditions such as failing safety devices or security controls. Prepared and submitted routine SPDES reports to regulators in accordance with SWPPPs.
- Field Staff for site characterization and remedial excavation activities at an urban housing development in Brooklyn, New York. Delineated zone of hazardous and non-hazardous impacted soils within an area approximately equivalent to one city block. Collected and submitted subsurface soils samples for analysis of VOCs, SVOCs, metals, pesticides, herbicides, and PCBs. Developed the site-specific HASP and oversaw subcontractor personnel including those responsible for operating direct-push drilling equipment, excavators, and ground-penetrating radar.

APPENDIX B

Data Usability Report Preparer Profile

DRAFT

TECHNICAL SPECIALTIES

Fuel oil forensics and age dating, USEPA Superfund, OPA, and NJDEP environmental regulations, Site Assessment and Contractor Oversight, GC/MS Operator, Data Validation, Technical Report preparation and review, Field Chemistry: field screening, HAZCATTING, groundwater and soil sampling, Hazardous Waste Transportation and Disposal

EXPERIENCE SUMMARY

Over 27 years of experience; Senior Scientist with Roux Associates, Inc.; Senior Chemist, Project Manager with Tetra Tech, Inc.; Owner of Geodyne Engineering Consultants, Inc.; Quality Assurance Officer, GC/MS Operator, Twenty First Century Environmental, Inc.; Project Manager, Field Technician, Resource Applications, Inc.

CREDENTIALS

B.A., 1991, Chemistry, Haverford College
OSHA 40-Hour Health and Safety Training
New Jersey Transit (NJT) – Roadway Worker / On Track Protection

FEDERAL PROGRAMS – CLIENT: USEPA

KEY PROJECTS

- Provide technical and project management support to USEPA Removal and Remedial Branches in Regions 2, 3, 4 on Superfund and OPA projects.
- Manage and perform phase I and II site assessments, remedial investigations, removal action oversight, prepare health and safety plans, monitor site health and safety, support USEPA enforcement actions, implementation of Facility Response Plan (FRP) program, emergency response, biowatch exercises, criminal investigation support, contractor oversight, cost tracking, documentation, daily reporting, prepare after action reports, data validation, waste management, and attend public meetings
- Sites include: UST, AST, and pipeline leaks, lead smelter sites, wood treatment facilities, coal to gas plants, dry cleaners, junk yards, federal facilities, unpermitted landfills, drum burial, flood and hurricane clean up, oil refinery inspections, farmland, and historic industrial sites.
- Contaminants include: TCE, PCE, MTBE, BTEX, oil, gasoline, PCP, PAHs, mercury, lead, arsenic, ammonia, acids, bases, pesticides, PCBs, asbestos, and unknowns.
- Participated in the largest USEPA sponsored interagency response emergency response exercise, Liberty Radex, in Philadelphia. Acted as planner prior to the exercise and master controller during the exercise.
- Interface with state and local regulators on sites in Pennsylvania, Delaware, New Jersey, Maryland, Virginia, West Virginia, and Mississippi.

STATE PROGRAMS – CLIENTS: BUSINESSES AND INDIVIDUALS IN NEW JERSEY

- Provide a wide array of environmental services to homeowners, land developers, insurance companies, gas stations, and small industrial companies in New Jersey.
- Manage and/or perform ISRA reporting, phase I and II site assessments, third party investigations, subsurface evaluation, UST removal, air emissions permitting preparation, soil, groundwater, and vapor intrusion investigations, NPDES compliance.
- Manage remedial investigation, design, and execution for LUSTs, and farmland development.
- Manage reporting, deed restriction preparation, CEAs, remedial action permits, and response action outcome preparation (RAO).
- Evaluate environmental costs for insurance claims and litigation cases.
- Prepare and present justification for fine reduction to state regulators for private client.
- Meet with clients, prepare proposals, and negotiate contracts.

DATA VALIDATION/LABORATORY EXPERIENCE

- Perform level 3 and 4 data validation of analytical data packages in accordance with USEPA National Functional Guidelines.
- Data validation in accordance with NJDEP DKQP and NYS DUSR guidance.
- Quality assurance officer and GC/MS operator for New Jersey certified laboratory.
- Performed analysis of volatile and semi-volatile organics.
- Performed maintenance and repair of analytical instruments.
- Performed method development and troubleshooting of analytical issues.
- Set up and operated mobile laboratory for organic and inorganic analyses on Superfund site assessments.
- Performed field screening of contaminants using test kits, XRF, radiation meters, and various types of air monitoring equipment.

WASTE MANAGEMENT

- Waste Management Specialist for oil pipeline client in Michigan for largest inland oil spill in United States during August 2010 through October 2011.
- Responsible for compliance, cost tracking, cost estimation, waste tracking and reporting, oil recovery calculation and reporting, contractor oversight.

- Prepared Waste Transportation and Disposal Plans and responses to regulator comments.
- Prepared waste profiles, negotiated waste removal protocols with USEPA and MDEQ to streamline process of waste handling to realize savings through greater efficiency and lowering sampling requirements.
- Located disposal facilities, negotiated disposal rates.
- Performed cost benefit analysis of various soil dewatering agents and procedures and proposed methods and protocols to client, USEPA, and MDEQ.
- Performed some oversight of removal actions along river.
- Supported submerged oil assessment of river.

DRAFT

APPENDIX C

Sampling, Analysis, and Assessment of Per-And Polyfluoroalkyl
Substances (PFAS) under NYSDEC's Part 375 Remedial Programs
(January 2021)

DRAFT



Department of
Environmental
Conservation

SAMPLING, ANALYSIS, AND ASSESSMENT OF PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

Under NYSDEC's Part 375 Remedial Programs

January 2021



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ERRATA SHEET for

**SAMPLING, ANALYSIS, AND ASSESSMENT OF PER- AND POLYFLUOROALKYL SUBSTANCES
(PFAS) Under NYSDEC's Part 375 Remedial Programs Issued January 17, 2020**

Citation and Page Number	Current Text	Corrected Text	Date
Title of Appendix I, page 32	Appendix H	Appendix I	2/25/2020
Document Cover, page 1	Guidelines for Sampling and Analysis of PFAS	Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs	9/15/2020
Routine Analysis, page 9	"However, laboratories analyzing environmental samples...PFOA and PFOS in drinking water by EPA Method 537, 537.1 or ISO 25101."	"However, laboratories analyzing environmental samples...PFOA and PFOS in drinking water by EPA Method 537, 537.1, ISO 25101, or Method 533."	9/15/2020
Additional Analysis, page 9, new paragraph regarding soil parameters	None	"In cases where site-specific cleanup objectives for PFOA and PFOS are to be assessed, soil parameters, such as Total Organic Carbon (EPA Method 9060), soil pH (EPA Method 9045), clay content (percent), and cation exchange capacity (EPA Method 9081), should be included in the analysis to help evaluate factors affecting the leachability of PFAS in site soils."	9/15/2020
Data Assessment and Application to Site Cleanup Page 10	Until such time as Ambient Water Quality Standards (AWQS) and Soil Cleanup Objectives (SCOs) for PFAS are published, the extent of contaminated media potentially subject to remediation should be determined on a case-by-case basis using the procedures discussed below and the criteria in DER-10. Target levels for cleanup of PFAS in other media, including biota and sediment, have not yet been established by the DEC.	Until such time as Ambient Water Quality Standards (AWQS) and Soil Cleanup Objectives (SCOs) for PFOA and PFOS are published, the extent of contaminated media potentially subject to remediation should be determined on a case-by-case basis using the procedures discussed below and the criteria in DER-10. Preliminary target levels for cleanup of PFOA and PFOS in other media, including biota and sediment, have not yet been established by the DEC.	9/15/2020

Citation and Page Number	Current Text	Corrected Text	Date
Water Sample Results Page 10	<p>PFAS should be further assessed and considered as a potential contaminant of concern in groundwater or surface water (...)</p> <p>If PFAS are identified as a contaminant of concern for a site, they should be assessed as part of the remedy selection process in accordance with Part 375 and DER-10.</p>	<p>PFOA and PFOS should be further assessed and considered as potential contaminants of concern in groundwater or surface water (...)</p> <p>If PFOA and/or PFOS are identified as contaminants of concern for a site, they should be assessed as part of the remedy selection process in accordance with Part 375 and DER-10.</p>	9/15/2020
Soil Sample Results, page 10	<p>“The extent of soil contamination for purposes of delineation and remedy selection should be determined by having certain soil samples tested by Synthetic Precipitation Leaching Procedure (SPLP) and the leachate analyzed for PFAS. Soil exhibiting SPLP results above 70 ppt for either PFOA or PFOS (individually or combined) are to be evaluated during the cleanup phase.”</p>	<p>“Soil cleanup objectives for PFOA and PFOS will be proposed in an upcoming revision to 6 NYCRR Part 375-6. Until SCOs are in effect, the following are to be used as guidance values. “</p> <p>[Interim SCO Table]</p> <p>“PFOA and PFOS results for soil are to be compared against the guidance values listed above. These guidance values are to be used in determining whether PFOA and PFOS are contaminants of concern for the site and for determining remedial action objectives and cleanup requirements. Site-specific remedial objectives for protection of groundwater can also be presented for evaluation by DEC. Development of site-specific remedial objectives for protection of groundwater will require analysis of additional soil parameters relating to leachability. These additional analyses can include any or all the parameters listed above (soil pH, cation exchange capacity, etc.) and/or use of SPLP.</p> <p>As the understanding of PFAS transport improves, DEC welcomes proposals for site-specific remedial objectives for protection of groundwater. DEC will expect that those may be dependent on additional factors including soil pH, aqueous pH, % organic carbon, % Sand/Silt/Clay, soil cations: K, Ca, Mg, Na, Fe, Al, cation exchange capacity, and anion exchange capacity. Site-specific remedial objectives should also consider the dilution attenuation factor (DAF). The NJDEP publication on DAF can be used as a reference:</p> <p>https://www.nj.gov/dep/srp/guidance/rs/daf.pdf. ”</p>	9/15/2020

Citation and Page Number	Current Text	Corrected Text	Date
Testing for Imported Soil Page 11	<p>Soil imported to a site for use in a soil cap, soil cover, or as backfill is to be tested for PFAS in general conformance with DER-10, Section 5.4(e) for the PFAS Analyte List (Appendix F) using the analytical procedures discussed below and the criteria in DER-10 associated with SVOCs.</p> <p>If PFOA or PFOS is detected in any sample at or above 1 µg/kg, then soil should be tested by SPLP and the leachate analyzed for PFAS. If the SPLP results exceed 10 ppt for either PFOA or PFOS (individually) then the source of backfill should be rejected, unless a site-specific exemption is provided by DER. SPLP leachate criteria is based on the Maximum Contaminant Levels proposed for drinking water by New York State's Department of Health, this value may be updated based on future Federal or State promulgated regulatory standards. Remedial parties have the option of analyzing samples concurrently for both PFAS in soil and in the SPLP leachate to minimize project delays. Category B deliverables should be submitted for backfill samples, though a DUSR is not required.</p>	<p>Testing for PFAS should be included any time a full TAL/TCL analyte list is required. Results for PFOA and PFOS should be compared to the applicable guidance values. If PFOA or PFOS is detected in any sample at or above the guidance values then the source of backfill should be rejected, unless a site-specific exemption is provided by DER based on SPLP testing, for example. If the concentrations of PFOA and PFOS in leachate are at or above 10 ppt (the Maximum Contaminant Levels established for drinking water by the New York State Department of Health), then the soil is not acceptable.</p> <p>PFOA, PFOS and 1,4-dioxane are all considered semi-volatile compounds, so composite samples are appropriate for these compounds when sampling in accordance with DER-10, Table 5.4(e)10. Category B deliverables should be submitted for backfill samples, though a DUSR is not required.</p>	9/15/2020

Citation and Page Number	Current Text	Corrected Text	Date
Footnotes	None	¹ TOP Assay analysis of highly contaminated samples, such as those from an AFFF (aqueous film-forming foam) site, can result in incomplete oxidation of the samples and an underestimation of the total perfluoroalkyl substances. ² The movement of PFAS in the environment is being aggressively researched at this time; that research will eventually result in more accurate models for the behaviors of these chemicals. In the meantime, DEC has calculated the soil cleanup objective for the protection of groundwater using the same procedure used for all other chemicals, as described in Section 7.7 of the Technical Support Document (http://www.dec.ny.gov/docs/remediation_hudson_pdf/techsuppdoc.pdf).	9/15/2020
Additional Analysis, page 9	In cases... soil parameters, such as Total Organic Carbon (EPA Method 9060), soil...	In cases... soil parameters, such as Total Organic Carbon (Lloyd Kahn), soil...	1/8/2021
Appendix A, General Guidelines, fourth bullet	List the ELAP-approved lab(s) to be used for analysis of samples	List the ELAP- certified lab(s) to be used for analysis of samples	1/8/2021
Appendix E, Laboratory Analysis and Containers	Drinking water samples collected using this protocol are intended to be analyzed for PFAS by ISO Method 25101.	Drinking water samples collected using this protocol are intended to be analyzed for PFAS by EPA Method 537, 537.1, 533, or ISO Method 25101	1/8/2021

Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs

Objective

New York State Department of Environmental Conservation's Division of Environmental Remediation (DER) performs or oversees sampling of environmental media and subsequent analysis of PFAS as part of remedial programs implemented under 6 NYCRR Part 375. To ensure consistency in sampling, analysis, reporting, and assessment of PFAS, DER has developed this document which summarizes currently accepted procedures and updates previous DER technical guidance pertaining to PFAS.

Applicability

All work plans submitted to DEC pursuant to one of the remedial programs under Part 375 shall include PFAS sampling and analysis procedures that conform to the guidelines provided herein.

As part of a site investigation or remedial action compliance program, whenever samples of potentially affected media are collected and analyzed for the standard Target Analyte List/Target Compound List (TAL/TCL), PFAS analysis should also be performed. Potentially affected media can include soil, groundwater, surface water, and sediment. Based upon the potential for biota to be affected, biota sampling and analysis for PFAS may also be warranted as determined pursuant to a Fish and Wildlife Impact Analysis. Soil vapor sampling for PFAS is not required.

Field Sampling Procedures

DER-10 specifies technical guidance applicable to DER's remedial programs. Given the prevalence and use of PFAS, DER has developed "best management practices" specific to sampling for PFAS. As specified in DER-10 Chapter 2, quality assurance procedures are to be submitted with investigation work plans. Typically, these procedures are incorporated into a work plan, or submitted as a stand-alone document (e.g., a Quality Assurance Project Plan). Quality assurance guidelines for PFAS are listed in Appendix A - Quality Assurance Project Plan (QAPP) Guidelines for PFAS.

Field sampling for PFAS performed under DER remedial programs should follow the appropriate procedures outlined for soils, sediments or other solids (Appendix B), non-potable groundwater (Appendix C), surface water (Appendix D), public or private water supply wells (Appendix E), and fish tissue (Appendix F).

QA/QC samples (e.g. duplicates, MS/MSD) should be collected as specified in DER-10, Section 2.3(c). For sampling equipment coming in contact with aqueous samples only, rinsate or equipment blanks should be collected. Equipment blanks should be collected at a minimum frequency of one per day per site or one per twenty samples, whichever is more frequent.

Analysis and Reporting

As of October 2020, the United States Environmental Protection Agency (EPA) does not have a validated method for analysis of PFAS for media commonly analyzed under DER remedial programs (non-potable waters, solids). DER has developed the following guidelines to ensure consistency in analysis and reporting of PFAS.

The investigation work plan should describe analysis and reporting procedures, including laboratory analytical procedures for the methods discussed below. As specified in DER-10 Section 2.2, laboratories should provide a full Category B deliverable. In addition, a Data Usability Summary Report (DUSR) should be prepared by an independent, third party data validator. Electronic data submissions should meet the requirements provided at: <https://www.dec.ny.gov/chemical/62440.html>.

DER has developed a *PFAS Analyte List* (Appendix F) for remedial programs to understand the nature of contamination at sites. It is expected that reported results for PFAS will include, at a minimum, all the compounds listed. If lab and/or matrix specific issues are encountered for any analytes, the DER project manager, in consultation with the DER chemist, will make case-by-case decisions as to whether certain analytes may be temporarily or permanently discontinued from analysis at each site. As with other contaminants that are analyzed for at a site, the *PFAS Analyte List* may be refined for future sampling events based on investigative findings.

Routine Analysis

Currently, New York State Department of Health's Environmental Laboratory Approval Program (ELAP) does not offer certification for PFAS in matrices other than finished drinking water. However, laboratories analyzing environmental samples for PFAS (e.g., soil, sediments, and groundwater) under DER's Part 375 remedial programs need to hold ELAP certification for PFOA and PFOS in drinking water by EPA Method 537, 537.1, ISO 25101, or Method 533. Laboratories should adhere to the guidelines and criteria set forth in the DER's laboratory guidelines for PFAS in non-potable water and solids (Appendix H - Laboratory Guidelines for Analysis of PFAS in Non-Potable Water and Solids). Data review guidelines were developed by DER to ensure data comparability and usability (Appendix H - Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids).

LC-MS/MS analysis for PFAS using methodologies based on EPA Method 537.1 is the procedure to use for environmental samples. Isotope dilution techniques should be utilized for the analysis of PFAS in all media. Reporting limits for PFOA and PFOS in aqueous samples should not exceed 2 ng/L. Reporting limits for PFOA and PFOS in solid samples should not exceed 0.5 µg/kg. Reporting limits for all other PFAS in aqueous and solid media should be as close to these limits as possible. If laboratories indicate that they are not able to achieve these reporting limits for the entire *PFAS Analyte List*, site-specific decisions regarding acceptance of elevated reporting limits for specific PFAS can be made by the DER project manager in consultation with the DER chemist.

Additional Analysis

Additional laboratory methods for analysis of PFAS may be warranted at a site, such as the Synthetic Precipitation Leaching Procedure (SPLP) and Total Oxidizable Precursor Assay (TOP Assay).

In cases where site-specific cleanup objectives for PFOA and PFOS are to be assessed, soil parameters, such as Total Organic Carbon (Lloyd Kahn), soil pH (EPA Method 9045), clay content (percent), and cation exchange capacity (EPA Method 9081), should be included in the analysis to help evaluate factors affecting the leachability of PFAS in site soils.

SPLP is a technique used to determine the mobility of chemicals in liquids, soils and wastes, and may be useful in determining the need for addressing PFAS-containing material as part of the remedy. SPLP by EPA Method 1312 should be used unless otherwise specified by the DER project manager in consultation with the DER chemist.

Impacted materials can be made up of PFAS that are not analyzable by routine analytical methodology. A TOP Assay can be utilized to conceptualize the amount and type of oxidizable PFAS which could be liberated in the environment, which approximates the maximum concentration of perfluoroalkyl substances that could be generated

if all polyfluoroalkyl substances were oxidized. For example, some polyfluoroalkyl substances may degrade or transform to form perfluoroalkyl substances (such as PFOA or PFOS), resulting in an increase in perfluoroalkyl substance concentrations as contaminated groundwater moves away from a source. The TOP Assay converts, through oxidation, polyfluoroalkyl substances (precursors) into perfluoroalkyl substances that can be detected by routine analytical methodology.¹

Commercial laboratories have adopted methods which allow for the quantification of targeted PFAS in air and biota. The EPA's Office of Research and Development (ORD) is currently developing methods which allow for air emissions characterization of PFAS, including both targeted and non-targeted analysis of PFAS. Consult with the DER project manager and the DER chemist for assistance on analyzing biota/tissue and air samples.

Data Assessment and Application to Site Cleanup

Until such time as Ambient Water Quality Standards (AWQS) and Soil Cleanup Objectives (SCOs) for PFOA and PFOS are published, the extent of contaminated media potentially subject to remediation should be determined on a case-by-case basis using the procedures discussed below and the criteria in DER-10. Preliminary target levels for cleanup of PFOA and PFOS in other media, including biota and sediment, have not yet been established by the DEC.

Water Sample Results

PFOA and PFOS should be further assessed and considered as potential contaminants of concern in groundwater or surface water if PFOA or PFOS is detected in any water sample at or above 10 ng/L (ppt) and is determined to be attributable to the site, either by a comparison of upgradient and downgradient levels, or the presence of soil source areas, as defined below. In addition, further assessment of water may be warranted if either of the following screening levels are met:

- a. any other individual PFAS (not PFOA or PFOS) is detected in water at or above 100 ng/L; or
- b. total concentration of PFAS (including PFOA and PFOS) is detected in water at or above 500 ng/L

If PFOA and/or PFOS are identified as contaminants of concern for a site, they should be assessed as part of the remedy selection process in accordance with Part 375 and DER-10.

Soil Sample Results

Soil cleanup objectives for PFOA and PFOS will be proposed in an upcoming revision to 6 NYCRR Part 375-6. Until SCOs are in effect, the following are to be used as guidance values.

Guidance Values for Anticipated Site Use	PFOA (ppb)	PFOS (ppb)
Unrestricted	0.66	0.88
Residential	6.6	8.8
Restricted Residential	33	44
Commercial	500	440
Industrial	600	440
Protection of Groundwater ²	1.1	3.7

¹ TOP Assay analysis of highly contaminated samples, such as those from an AFFF (aqueous film-forming foam) site, can result in incomplete oxidation of the samples and an underestimation of the total perfluoroalkyl substances.

² The movement of PFAS in the environment is being aggressively researched at this time; that research will eventually result in more accurate models for the behaviors of these chemicals. In the meantime, DEC has calculated the guidance value for the protection of groundwater using the same procedure used for all other chemicals, as described in Section 7.7 of the Technical Support Document (http://www.dec.ny.gov/docs/remediation_hudson_pdf/techsuppdoc.pdf).

PFOA and PFOS results for soil are to be compared against the guidance values listed above. These guidance values are to be used in determining whether PFOA and PFOS are contaminants of concern for the site and for determining remedial action objectives and cleanup requirements. Site-specific remedial objectives for protection of groundwater can also be presented for evaluation by DEC. Development of site-specific remedial objectives for protection of groundwater will require analysis of additional soil parameters relating to leachability. These additional analyses can include any or all the parameters listed above (soil pH, cation exchange capacity, etc.) and/or use of SPLP.

As the understanding of PFAS transport improves, DEC welcomes proposals for site-specific remedial objectives for protection of groundwater. DEC will expect that those may be dependent on additional factors including soil pH, aqueous pH, % organic carbon, % Sand/Silt/Clay, soil cations: K, Ca, Mg, Na, Fe, Al, cation exchange capacity, and anion exchange capacity. Site-specific remedial objectives should also consider the dilution attenuation factor (DAF). The NJDEP publication on DAF can be used as a reference:

<https://www.nj.gov/dep/srp/guidance/rs/daf.pdf>.

Testing for Imported Soil

Testing for PFAS should be included any time a full TAL/TCL analyte list is required. Results for PFOA and PFOS should be compared to the applicable guidance values. If PFOA or PFOS is detected in any sample at or above the guidance values then the source of backfill should be rejected, unless a site-specific exemption is provided by DER based on SPLP testing, for example. If the concentrations of PFOA and PFOS in leachate are at or above 10 ppt (the Maximum Contaminant Levels established for drinking water by the New York State Department of Health), then the soil is not acceptable.

PFOA, PFOS and 1,4-dioxane are all considered semi-volatile compounds, so composite samples are appropriate for these compounds when sampling in accordance with DER-10, Table 5.4(e)10. Category B deliverables should be submitted for backfill samples, though a DUSR is not required.

Appendix A - Quality Assurance Project Plan (QAPP) Guidelines for PFAS

The following guidelines (general and PFAS-specific) can be used to assist with the development of a QAPP for projects within DER involving sampling and analysis of PFAS.

General Guidelines in Accordance with DER-10

- Document/work plan section title – Quality Assurance Project Plan
- Summarize project scope, goals, and objectives
- Provide project organization including names and resumes of the project manager, Quality Assurance Officer (QAO), field staff, and Data Validator
 - The QAO should not have another position on the project, such as project or task manager, that involves project productivity or profitability as a job performance criterion
- List the ELAP certified lab(s) to be used for analysis of samples
- Include a site map showing sample locations
- Provide detailed sampling procedures for each matrix
- Include Data Quality Usability Objectives
- List equipment decontamination procedures
- Include an “Analytical Methods/Quality Assurance Summary Table” specifying:
 - Matrix type
 - Number or frequency of samples to be collected per matrix
 - Number of field and trip blanks per matrix
 - Analytical parameters to be measured per matrix
 - Analytical methods to be used per matrix with minimum reporting limits
 - Number and type of matrix spike and matrix spike duplicate samples to be collected
 - Number and type of duplicate samples to be collected
 - Sample preservation to be used per analytical method and sample matrix
 - Sample container volume and type to be used per analytical method and sample matrix
 - Sample holding time to be used per analytical method and sample matrix
- Specify Category B laboratory data deliverables and preparation of a DUSR

Specific Guidelines for PFAS

- Include in the text that sampling for PFAS will take place
- Include in the text that PFAS will be analyzed by LC-MS/MS for PFAS using methodologies based on EPA Method 537.1
- Include the list of PFAS compounds to be analyzed (*PFAS Analyte List*)
- Include the laboratory SOP for PFAS analysis
- List the minimum method-achievable Reporting Limits for PFAS
 - Reporting Limits should be less than or equal to:
 - Aqueous – 2 ng/L (ppt)
 - Solids – 0.5 µg/kg (ppb)
- Include the laboratory Method Detection Limits for the PFAS compounds to be analyzed
- Laboratory should have ELAP certification for PFOA and PFOS in drinking water by EPA Method 537, 537.1, EPA Method 533, or ISO 25101
- Include detailed sampling procedures
 - Precautions to be taken
 - Pump and equipment types
 - Decontamination procedures
 - Approved materials only to be used
- Specify that regular ice only will be used for sample shipment
- Specify that equipment blanks should be collected at a minimum frequency of 1 per day per site for each matrix

Appendix B - Sampling Protocols for PFAS in Soils, Sediments and Solids

General

The objective of this protocol is to give general guidelines for the collection of soil, sediment and other solid samples for PFAS analysis. The sampling procedure used should be consistent with Sampling Guidelines and Protocols – Technological Background and Quality Control/Quality Assurance for NYS DEC Spill Response Program – March 1991 (http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf), with the following limitations.

Laboratory Analysis and Containers

Samples collected using this protocol are intended to be analyzed for PFAS using methodologies based on EPA Method 537.1.

The preferred material for containers is high density polyethylene (HDPE). Pre-cleaned sample containers, coolers, sample labels, and a chain of custody form will be provided by the laboratory.

Equipment

Acceptable materials for sampling include stainless steel, HDPE, PVC, silicone, acetate, and polypropylene. Additional materials may be acceptable if pre-approved by New York State Department of Environmental Conservation's Division of Environmental Remediation.

No sampling equipment components or sample containers should come in to contact with aluminum foil, low density polyethylene, glass, or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer.

A list of acceptable equipment is provided below, but other equipment may be considered appropriate based on sampling conditions.

- stainless steel spoon
- stainless steel bowl
- steel hand auger or shovel without any coatings

Equipment Decontamination

Standard two step decontamination using detergent (Alconox is acceptable) and clean, PFAS-free water will be performed for sampling equipment. All sources of water used for equipment decontamination should be verified in advance to be PFAS-free through laboratory analysis or certification.

Sampling Techniques

Sampling is often conducted in areas where a vegetative turf has been established. In these cases, a pre-cleaned trowel or shovel should be used to carefully remove the turf so that it may be replaced at the conclusion of sampling. Surface soil samples (e.g. 0 to 6 inches below surface) should then be collected using a pre-cleaned, stainless steel spoon. Shallow subsurface soil samples (e.g. 6 to ~36 inches below surface) may be collected by digging a hole using a pre-cleaned hand auger or shovel. When the desired subsurface depth is reached, a pre-cleaned hand auger or spoon shall be used to obtain the sample.

When the sample is obtained, it should be deposited into a stainless steel bowl for mixing prior to filling the sample containers. The soil should be placed directly into the bowl and mixed thoroughly by rolling the material into the middle until the material is homogenized. At this point the material within the bowl can be placed into the laboratory provided container.

Sample Identification and Logging

A label shall be attached to each sample container with a unique identification. Each sample shall be included on the chain of custody (COC).

Quality Assurance/Quality Control

- Immediately place samples in a cooler maintained at $4 \pm 2^\circ$ Celsius using ice
- Collect one field duplicate for every sample batch, minimum 1 duplicate per 20 samples. The duplicate shall consist of an additional sample at a given location
- Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, minimum 1 MS/MSD per 20 samples. The MS/MSD shall consist of an additional two samples at a given location and identified on the COC
- Request appropriate data deliverable (Category B) and an electronic data deliverable

Documentation

A soil log or sample log shall document the location of the sample/borehole, depth of the sample, sampling equipment, duplicate sample, visual description of the material, and any other observations or notes determined to be appropriate. Additionally, care should be performed to limit contact with PFAS containing materials (e.g. waterproof field books, food packaging) during the sampling process.

Personal Protection Equipment (PPE)

For most sampling Level D PPE is anticipated to be appropriate. The sampler should wear nitrile gloves while conducting field work and handling sample containers.

Field staff shall consider the clothing to be worn during sampling activities. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials should be avoided. All clothing worn by sampling personnel should have been laundered multiple times.

Appropriate rain gear (PVC, polyurethane, or rubber rain gear are acceptable), bug spray, and sunscreen should be used that does not contain PFAS. Well washed cotton coveralls may be used as an alternative to bug spray and/or sunscreen.

PPE that contains PFAS is acceptable when site conditions warrant additional protection for the samplers and no other materials can be used to be protective. Documentation of such use should be provided in the field notes.

Appendix C - Sampling Protocols for PFAS in Monitoring Wells

General

The objective of this protocol is to give general guidelines for the collection of groundwater samples for PFAS analysis. The sampling procedure used should be consistent with Sampling Guidelines and Protocols – Technological Background and Quality Control/Quality Assurance for NYS DEC Spill Response Program – March 1991 (http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf), with the following limitations.

Laboratory Analysis and Container

Samples collected using this protocol are intended to be analyzed for PFAS using methodologies based on EPA Method 537.1.

The preferred material for containers is high density polyethylene (HDPE). Pre-cleaned sample containers, coolers, sample labels, and a chain of custody form will be provided by the laboratory.

Equipment

Acceptable materials for sampling include: stainless steel, HDPE, PVC, silicone, acetate, and polypropylene. Additional materials may be acceptable if pre-approved by New York State Department of Environmental Conservation's Division of Environmental Remediation.

No sampling equipment components or sample containers should come in contact with aluminum foil, low density polyethylene, glass, or polytetrafluoroethylene (PTFE, Teflon™) materials including plumbers tape and sample bottle cap liners with a PTFE layer.

A list of acceptable equipment is provided below, but other equipment may be considered appropriate based on sampling conditions.

- stainless steel inertia pump with HDPE tubing
- peristaltic pump equipped with HDPE tubing and silicone tubing
- stainless steel bailer with stainless steel ball
- bladder pump (identified as PFAS-free) with HDPE tubing

Equipment Decontamination

Standard two step decontamination using detergent (Alconox is acceptable) and clean, PFAS-free water will be performed for sampling equipment. All sources of water used for equipment decontamination should be verified in advance to be PFAS-free through laboratory analysis or certification.

Sampling Techniques

Monitoring wells should be purged in accordance with the sampling procedure (standard/volume purge or low flow purge) identified in the site work plan, which will determine the appropriate time to collect the sample. If sampling using standard purge techniques, additional purging may be needed to reduce turbidity levels, so samples contain a limited amount of sediment within the sample containers. Sample containers that contain sediment may cause issues at the laboratory, which may result in elevated reporting limits and other issues during the sample preparation that can compromise data usability. Sampling personnel should don new nitrile gloves prior to sample collection due to the potential to contact PFAS containing items (not related to the sampling equipment) during the purging activities.

Sample Identification and Logging

A label shall be attached to each sample container with a unique identification. Each sample shall be included on the chain of custody (COC).

Quality Assurance/Quality Control

- Immediately place samples in a cooler maintained at $4 \pm 2^\circ$ Celsius using ice
- Collect one field duplicate for every sample batch, minimum 1 duplicate per 20 samples. The duplicate shall consist of an additional sample at a given location
- Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, minimum 1 MS/MSD per 20 samples. The MS/MSD shall consist of an additional two samples at a given location and identified on the COC
- Collect one equipment blank per day per site and minimum 1 equipment blank per 20 samples. The equipment blank shall test the new and decontaminated sampling equipment utilized to obtain a sample for residual PFAS contamination. This sample is obtained by using laboratory provided PFAS-free water and passing the water over or through the sampling device and into laboratory provided sample containers
- Additional equipment blank samples may be collected to assess other equipment that is utilized at the monitoring well
- Request appropriate data deliverable (Category B) and an electronic data deliverable

Documentation

A purge log shall document the location of the sample, sampling equipment, groundwater parameters, duplicate sample, visual description of the material, and any other observations or notes determined to be appropriate. Additionally, care should be performed to limit contact with PFAS containing materials (e.g. waterproof field books, food packaging) during the sampling process.

Personal Protection Equipment (PPE)

For most sampling Level D PPE is anticipated to be appropriate. The sampler should wear nitrile gloves while conducting field work and handling sample containers.

Field staff shall consider the clothing to be worn during sampling activities. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials should be avoided. All clothing worn by sampling personnel should have been laundered multiple times.

Appropriate rain gear (PVC, polyurethane, or rubber rain gear are acceptable), bug spray, and sunscreen should be used that does not contain PFAS. Well washed cotton coveralls may be used as an alternative to bug spray and/or sunscreen.

PPE that contains PFAS is acceptable when site conditions warrant additional protection for the samplers and no other materials can be used to be protective. Documentation of such use should be provided in the field notes.

Appendix D - Sampling Protocols for PFAS in Surface Water

General

The objective of this protocol is to give general guidelines for the collection of surface water samples for PFAS analysis. The sampling procedure used should be consistent with Sampling Guidelines and Protocols – Technological Background and Quality Control/Quality Assurance for NYS DEC Spill Response Program – March 1991 (http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf), with the following limitations.

Laboratory Analysis and Container

Samples collected using this protocol are intended to be analyzed for PFAS using methodologies based on EPA Method 537.1.

The preferred material for containers is high density polyethylene (HDPE). Pre-cleaned sample containers, coolers, sample labels, and a chain of custody form will be provided by the laboratory.

Equipment

Acceptable materials for sampling include: stainless steel, HDPE, PVC, silicone, acetate, and polypropylene. Additional materials may be acceptable if pre-approved by New York State Department of Environmental Conservation's Division of Environmental Remediation.

No sampling equipment components or sample containers should come in contact with aluminum foil, low density polyethylene, glass, or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer.

A list of acceptable equipment is provided below, but other equipment may be considered appropriate based on sampling conditions.

- stainless steel cup

Equipment Decontamination

Standard two step decontamination using detergent (Alconox is acceptable) and clean, PFAS-free water will be performed for sampling equipment. All sources of water used for equipment decontamination should be verified in advance to be PFAS-free through laboratory analysis or certification.

Sampling Techniques

Where conditions permit, (e.g. creek or pond) sampling devices (e.g. stainless steel cup) should be rinsed with site medium to be sampled prior to collection of the sample. At this point the sample can be collected and poured into the sample container.

If site conditions permit, samples can be collected directly into the laboratory container.

Sample Identification and Logging

A label shall be attached to each sample container with a unique identification. Each sample shall be included on the chain of custody (COC).

Quality Assurance/Quality Control

- Immediately place samples in a cooler maintained at $4 \pm 2^\circ$ Celsius using ice
- Collect one field duplicate for every sample batch, minimum 1 duplicate per 20 samples. The duplicate shall consist of an additional sample at a given location
- Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, minimum 1 MS/MSD per 20 samples. The MS/MSD shall consist of an additional two samples at a given location and identified on the COC
- Collect one equipment blank per day per site and minimum 1 equipment blank per 20 samples. The equipment blank shall test the new and decontaminated sampling equipment utilized to obtain a sample for residual PFAS contamination. This sample is obtained by using laboratory provided PFAS-free water and passing the water over or through the sampling device and into laboratory provided sample containers
- Request appropriate data deliverable (Category B) and an electronic data deliverable

Documentation

A sample log shall document the location of the sample, sampling equipment, duplicate sample, visual description of the material, and any other observations or notes determined to be appropriate. Additionally, care should be performed to limit contact with PFAS containing materials (e.g. waterproof field books, food packaging) during the sampling process.

Personal Protection Equipment (PPE)

For most sampling Level D PPE is anticipated to be appropriate. The sampler should wear nitrile gloves while conducting field work and handling sample containers.

Field staff shall consider the clothing to be worn during sampling activities. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials should be avoided. All clothing worn by sampling personnel should have been laundered multiple times.

Appropriate rain gear (PVC, polyurethane, or rubber rain gear are acceptable), bug spray, and sunscreen should be used that does not contain PFAS. Well washed cotton coveralls may be used as an alternative to bug spray and/or sunscreen.

PPE that contains PFAS is acceptable when site conditions warrant additional protection for the samplers and no other materials can be used to be protective. Documentation of such use should be provided in the field notes.

Appendix E - Sampling Protocols for PFAS in Private Water Supply Wells

General

The objective of this protocol is to give general guidelines for the collection of water samples from private water supply wells (with a functioning pump) for PFAS analysis. The sampling procedure used should be consistent with Sampling Guidelines and Protocols – Technological Background and Quality Control/Quality Assurance for NYS DEC Spill Response Program – March 1991 (http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf), with the following limitations.

Laboratory Analysis and Container

Drinking water samples collected using this protocol are intended to be analyzed for PFAS by EPA Method 537, 537.1, 533, or ISO Method 25101. The preferred material for containers is high density polyethylene (HDPE). Pre-cleaned sample containers, coolers, sample labels, and a chain of custody form will be provided by the laboratory.

Equipment

Acceptable materials for sampling include stainless steel, HDPE, PVC, silicone, acetate, and polypropylene. Additional materials may be acceptable if pre-approved by New York State Department of Environmental Conservation's Division of Environmental Remediation.

No sampling equipment components or sample containers should come in contact with aluminum foil, low density polyethylene, glass, or polytetrafluoroethylene (PTFE, Teflon™) materials (e.g. plumbers tape), including sample bottle cap liners with a PTFE layer.

Equipment Decontamination

Standard two step decontamination using detergent (Alconox is acceptable) and clean, PFAS-free water will be performed for sampling equipment. All sources of water used for equipment decontamination should be verified in advance to be PFAS-free through laboratory analysis or certification.

Sampling Techniques

Locate and assess the pressure tank and determine if any filter units are present within the building. Establish the sample location as close to the well pump as possible, which is typically the spigot at the pressure tank. Ensure sampling equipment is kept clean during sampling as access to the pressure tank spigot, which is likely located close to the ground, may be obstructed and may hinder sample collection.

Prior to sampling, a faucet downstream of the pressure tank (e.g., washroom sink) should be run until the well pump comes on and a decrease in water temperature is noted which indicates that the water is coming from the well. If the homeowner is amenable, staff should run the water longer to purge the well (15+ minutes) to provide a sample representative of the water in the formation rather than standing water in the well and piping system including the pressure tank. At this point a new pair of nitrile gloves should be donned and the sample can be collected from the sample point at the pressure tank.

Sample Identification and Logging

A label shall be attached to each sample container with a unique identification. Each sample shall be included on the chain of custody (COC).

Quality Assurance/Quality Control

- Immediately place samples in a cooler maintained at $4 \pm 2^{\circ}$ Celsius using ice
- Collect one field duplicate for every sample batch, minimum 1 duplicate per 20 samples. The duplicate shall consist of an additional sample at a given location
- Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, minimum 1 MS/MSD per 20 samples. The MS/MSD shall consist of an additional two samples at a given location and identified on the COC
- If equipment was used, collect one equipment blank per day per site and a minimum 1 equipment blank per 20 samples. The equipment blank shall test the new and decontaminated sampling equipment utilized to obtain a sample for residual PFAS contamination. This sample is obtained by using laboratory provided PFAS-free water and passing the water over or through the sampling device and into laboratory provided sample containers.
- A field reagent blank (FRB) should be collected at a rate of one per 20 samples. The lab will provide a FRB bottle containing PFAS free water and one empty FRB bottle. In the field, pour the water from the one bottle into the empty FRB bottle and label appropriately.
- Request appropriate data deliverable (Category B) and an electronic data deliverable
- For sampling events where multiple private wells (homes or sites) are to be sampled per day, it is acceptable to collect QC samples at a rate of one per 20 across multiple sites or days.

Documentation

A sample log shall document the location of the private well, sample point location, owner contact information, sampling equipment, purge duration, duplicate sample, visual description of the material, and any other observations or notes determined to be appropriate and available (e.g. well construction, pump type and location, yield, installation date). Additionally, care should be performed to limit contact with PFAS containing materials (e.g. waterproof field books, food packaging) during the sampling process.

Personal Protection Equipment (PPE)

For most sampling Level D PPE is anticipated to be appropriate. The sampler should wear nitrile gloves while conducting field work and handling sample containers.

Field staff shall consider the clothing to be worn during sampling activities. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials should be avoided. All clothing worn by sampling personnel should have been laundered multiple times.

Appendix F - Sampling Protocols for PFAS in Fish

This appendix contains a copy of the latest guidelines developed by the Division of Fish and Wildlife (DFW) entitled “General Fish Handling Procedures for Contaminant Analysis” (Ver. 8).

Procedure Name: General Fish Handling Procedures for Contaminant Analysis

Number: FW-005

Purpose: This procedure describes data collection, fish processing and delivery of fish collected for contaminant monitoring. It contains the chain of custody and collection record forms that should be used for the collections.

Organization: Environmental Monitoring Section
Bureau of Ecosystem Health
Division of Fish and Wildlife (DFW)
New York State Department of Environmental Conservation (NYSDEC)
625 Broadway
Albany, New York 12233-4756

Version: 8

Previous Version Date: 21 March 2018

Summary of Changes to this Version: Updated bureau name to Bureau of Ecosystem Health. Added direction to list the names of all field crew on the collection record. Minor formatting changes on chain of custody and collection records.

Originator or Revised by: Wayne Richter, Jesse Becker

Date: 26 April 2019

Quality Assurance Officer and Approval Date: Jesse Becker, 26 April 2019

**NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

GENERAL FISH HANDLING PROCEDURES FOR CONTAMINANT ANALYSES

- A. Original copies of all continuity of evidence (i.e., Chain of Custody) and collection record forms must accompany delivery of fish to the lab. A copy shall be directed to the Project Leader or as appropriate, Wayne Richter. All necessary forms will be supplied by the Bureau of Ecosystem Health. Because some samples may be used in legal cases, it is critical that each section is filled out completely. Each Chain of Custody form has three main sections:
1. The top box is to be filled out **and signed** by the person responsible for the fish collection (e.g., crew leader, field biologist, researcher). This person is responsible for delivery of the samples to DEC facilities or personnel (e.g., regional office or biologist).
 2. The second section is to be filled out **and signed** by the person responsible for the collections while being stored at DEC, before delivery to the analytical lab. This may be the same person as in (1), but it is still required that they complete the section. Also important is the **range of identification numbers** (i.e., tag numbers) included in the sample batch.
 3. Finally, the bottom box is to record any transfers between DEC personnel and facilities. Each subsequent transfer should be **identified, signed, and dated**, until laboratory personnel take possession of the fish.
- B. The following data are required on each **Fish Collection Record** form:
1. Project and Site Name.
 2. DEC Region.
 3. All personnel (and affiliation) involved in the collection.
 4. Method of collection (gill net, hook and line, etc.)
 5. Preservation Method.
- C. The following data are to be taken on each fish collected and recorded on the **Fish Collection Record** form:
1. Tag number - Each specimen is to be individually jaw tagged at time of collection with a unique number. Make sure the tag is turned out so that the number can be read without opening the bag. Use tags in sequential order. For small fish or composite samples place the tag inside the bag with the samples. The Bureau of Ecosystem Health can supply the tags.
 2. Species identification (please be explicit enough to enable assigning genus and species). Group fish by species when processing.
 3. Date collected.
 4. Sample location (waterway and nearest prominent identifiable landmark).
 5. Total length (nearest mm or smallest sub-unit on measuring instrument) and weight (nearest g or

smallest sub-unit of weight on weighing instrument). Take all measures as soon as possible with calibrated, protected instruments (e.g. from wind and upsets) and prior to freezing.

6. Sex - fish may be cut enough to allow sexing or other internal investigation, but do not eviscerate. Make any incision on the right side of the belly flap or exactly down the midline so that a left-side fillet can be removed.

D. General data collection recommendations:

1. It is helpful to use an ID or tag number that will be unique. It is best to use metal striped bass or other uniquely numbered metal tags. If uniquely numbered tags are unavailable, values based on the region, water body and year are likely to be unique: for example, R7CAY11001 for Region 7, Cayuga Lake, 2011, fish 1. If the fish are just numbered 1 through 20, we have to give them new numbers for our database, making it more difficult to trace your fish to their analytical results and creating an additional possibility for errors.
 2. Process and record fish of the same species sequentially. Recording mistakes are less likely when all fish from a species are processed together. Starting with the bigger fish species helps avoid missing an individual.
 3. If using Bureau of Ecosystem Health supplied tags or other numbered tags, use tags in sequence so that fish are recorded with sequential Tag Numbers. This makes data entry and login at the lab and use of the data in the future easier and reduces keypunch errors.
 4. Record length and weight as soon as possible after collection and before freezing. Other data are recorded in the field upon collection. An age determination of each fish is optional, but if done, it is recorded in the appropriate "Age" column.
 5. For composite samples of small fish, record the number of fish in the composite in the Remarks column. Record the length and weight of each individual in a composite. All fish in a composite sample should be of the same species and members of a composite should be visually matched for size.
 6. Please submit photocopies of topographic maps or good quality navigation charts indicating sampling locations. GPS coordinates can be entered in the Location column of the collection record form in addition to or instead for providing a map. These records are of immense help to us (and hopefully you) in providing documented location records which are not dependent on memory and/or the same collection crew. In addition, they may be helpful for contaminant source trackdown and remediation/control efforts of the Department.
 7. When recording data on fish measurements, it will help to ensure correct data recording for the data recorder to call back the numbers to the person making the measurements.
- E. Each fish is to be placed in its own individual plastic bag. For small fish to be analyzed as a composite, put all of the fish for one composite in the same bag but use a separate bag for each composite. It is important to individually bag the fish to avoid difficulties or cross contamination when processing the fish for chemical analysis. Be sure to include the fish's tag number inside the bag, preferably attached to the fish with the tag number turned out so it can be read. Tie or otherwise secure the bag closed. **The Bureau of Ecosystem Health will supply the bags.** If necessary, food grade bags may be procured from a suitable vendor (e.g., grocery store). It is preferable to redundantly label each bag with a manila tag tied between the knot and the body of the bag. This tag should be labeled with the project name, collection location, tag number, collection date, and fish species. If scales are collected, the scale envelope should be labeled with

the same information.

- F. Groups of fish, by species, are to be placed in one large plastic bag per sampling location. **The Bureau of Ecosystem Health will supply the larger bags.** Tie or otherwise secure the bag closed. Label the site bag with a manila tag tied between the knot and the body of the bag. The tag should contain: project, collection location, collection date, species and **tag number ranges**. Having this information on the manila tag enables lab staff to know what is in the bag without opening it.
- G. Do not eviscerate, fillet or otherwise dissect the fish unless specifically asked to. If evisceration or dissection is specified, the fish must be cut along the exact midline or on the right side so that the left side fillet can be removed intact at the laboratory. If filleting is specified, the procedure for taking a standard fillet (SOP PREPLAB 4) must be followed, including removing scales.
- H. Special procedures for PFAS: Unlike legacy contaminants such as PCBs, which are rarely found in day to day life, PFAS are widely used and frequently encountered. Practices that avoid sample contamination are therefore necessary. While no standard practices have been established for fish, procedures for water quality sampling can provide guidance. The following practices should be used for collections when fish are to be analyzed for PFAS:
 - No materials containing Teflon.
 - No Post-it notes.
 - No ice packs; only water ice or dry ice.
 - Any gloves worn must be powder free nitrile.
 - No Gore-Tex or similar materials (Gore-Tex is a PFC with PFOA used in its manufacture).
 - No stain repellent or waterproof treated clothing; these are likely to contain PFCs.
 - Avoid plastic materials, other than HDPE, including clipboards and waterproof notebooks.
 - Wash hands after handling any food containers or packages as these may contain PFCs.
 - Keep pre-wrapped food containers and wrappers isolated from fish handling.
 - Wear clothing washed at least six times since purchase.
 - Wear clothing washed without fabric softener.
 - Staff should avoid cosmetics, moisturizers, hand creams and similar products on the day of sampling as many of these products contain PFCs (Fujii et al. 2013). Sunscreen or insect repellent should not contain ingredients with “fluor” in their name. Apply any sunscreen or insect repellent well downwind from all materials. Hands must be washed after touching any of these products.
- I. All fish must be kept at a temperature $<45^{\circ}\text{F}$ ($<8^{\circ}\text{C}$) immediately following data processing. As soon as possible, freeze at $-20^{\circ}\text{C} \pm 5^{\circ}\text{C}$. Due to occasional freezer failures, daily freezer temperature logs are required. The freezer should be locked or otherwise secured to maintain chain of custody.
- J. In most cases, samples should be delivered to the Analytical Services Unit at the Hale Creek field station. Coordinate delivery with field station staff and send copies of the collection records, continuity of evidence forms and freezer temperature logs to the field station. For samples to be analyzed elsewhere, non-routine collections or other questions, contact Wayne Richter, Bureau of Ecosystem Health, NYSDEC, 625 Broadway, Albany, New York 12233-4756, 518-402-8974, or the project leader about sample transfer. Samples will then be directed to the analytical facility and personnel noted on specific project descriptions.
- K. A recommended equipment list is at the end of this document.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF FISH AND WILDLIFE
FISH COLLECTION RECORD

page _____ of _____

Project and Site Name _____ DEC Region _____

Collections made by (include all crew) _____

Sampling Method: ☐Electrofishing ☐Gill netting ☐Trap netting ☐Trawling ☐Seining ☐Angling ☐Other _____

Preservation Method: ☐Freezing ☐Other _____ Notes (SWFDB survey number): _____

FOR LAB USE ONLY- LAB ENTRY NO.	COLLECTION OR TAG NO.	SPECIES	DATE TAKEN	LOCATION	AGE	SEX &/OR REPROD. CONDIT	LENGTH ()	WEIGHT ()	REMARKS

richter: revised 2011, 5/7/15, 10/4/16, 3/20/17; becker: 3/23/17, 4/26/19

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION CHAIN OF CUSTODY

I, _____, of _____ collected the
(Print Name) (Print Business Address)

following on _____, 20____ from _____
(Date) (Water Body)

in the vicinity of _____
(Landmark, Village, Road, etc.)

Town of _____, in _____ County.

Item(s) _____

Said sample(s) were in my possession and handled according to standard procedures provided to me prior to collection. The sample(s) were placed in the custody of a representative of the New York State Department of Environmental Conservation on _____, 20____.

Signature Date

I, _____, received the above mentioned sample(s) on the date specified and assigned identification number(s) _____ to the sample(s). I have recorded pertinent data for the sample(s) on the attached collection records. The sample(s) remained in my custody until subsequently transferred, prepared or shipped at times and on dates as attested to below.

Signature Date

SECOND RECIPIENT (Print Name)	TIME & DATE	PURPOSE OF TRANSFER
SIGNATURE	UNIT	
THIRD RECIPIENT (Print Name)	TIME & DATE	PURPOSE OF TRANSFER
SIGNATURE	UNIT	
FOURTH RECIPIENT (Print Name)	TIME & DATE	PURPOSE OF TRANSFER
SIGNATURE	UNIT	
RECEIVED IN LABORATORY BY (Print Name)	TIME & DATE	REMARKS
SIGNATURE	UNIT	
LOGGED IN BY (Print Name)	TIME & DATE	ACCESSION NUMBERS
SIGNATURE	UNIT	

NOTICE OF WARRANTY

By signature to the chain of custody (reverse), the signatory warrants that the information provided is truthful and accurate to the best of his/her ability. The signatory affirms that he/she is willing to testify to those facts provided and the circumstances surrounding the same. Nothing in this warranty or chain of custody negates responsibility nor liability of the signatories for the truthfulness and accuracy of the statements provided.

HANDLING INSTRUCTIONS

On day of collection, collector(s) name(s), address(es), date, geographic location of capture (attach a copy of topographic map or navigation chart), species, number kept of each species, and description of capture vicinity (proper noun, if possible) along with name of Town and County must be indicated on reverse.

Retain organisms in manila tagged plastic bags to avoid mixing capture locations. Note appropriate information on each bag tag.

Keep samples as cool as possible. Put on ice if fish cannot be frozen within 12 hours. If fish are held more than 24 hours without freezing, they will not be retained or analyzed.

Initial recipient (either DEC or designated agent) of samples from collector(s) is responsible for obtaining and recording information on the collection record forms which will accompany the chain of custody. This person will seal the container using packing tape and writing his signature, the time and the date across the tape onto the container with indelible marker. Any time a seal is broken, for whatever purpose, the incident must be recorded on the Chain of Custody (reason, time, and date) in the purpose of transfer block. Container then is resealed using new tape and rewriting signature, with time and date.

EQUIPMENT LIST

Scale or balance of appropriate capacity for the fish to be collected.

Fish measuring board.

Plastic bags of an appropriate size for the fish to be collected and for site bags.

Individually numbered metal tags for fish.

Manila tags to label bags.

Small envelopes, approximately 2" x 3.5", if fish scales are to be collected.

Knife for removing scales.

Chain of custody and fish collection forms.

Clipboard.

Pens or markers.

Paper towels.

Dish soap and brush.

Bucket.

Cooler.

Ice.

Duct tape.

Appendix G – PFAS Analyte List

Group	Chemical Name	Abbreviation	CAS Number
Perfluoroalkyl sulfonates	Perfluorobutanesulfonic acid	PFBS	375-73-5
	Perfluorohexanesulfonic acid	PFHxS	355-46-4
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanesulfonic acid	PFOS	1763-23-1
	Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroalkyl carboxylates	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	PFHpA	375-85-9
	Perfluorooctanoic acid	PFOA	335-67-1
	Perfluorononanoic acid	PFNA	375-95-1
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUA/PFUdA	2058-94-8
	Perfluorododecanoic acid	PFDaA	307-55-1
	Perfluorotridecanoic acid	PFTriA/PFTTrDA	72629-94-8
	Perfluorotetradecanoic acid	PFTA/PFTeDA	376-06-7
Fluorinated Telomer Sulfonates	6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
	8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorooctane-sulfonamides	Perfluorooctanesulfonamide	FOSA	754-91-6
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6

Appendix H - Laboratory Guidelines for Analysis of PFAS in Non-Potable Water and Solids

General

New York State Department of Environmental Conservation's Division of Environmental Remediation (DER) developed the following guidelines for laboratories analyzing environmental samples for PFAS under DER programs. If laboratories cannot adhere to the following guidelines, they should contact DER's Quality Assurance Officer, Dana Barbarossa, at dana.barbarossa@dec.ny.gov prior to analysis of samples.

Isotope Dilution

Isotope dilution techniques should be utilized for the analysis of PFAS in all media.

Extraction

For water samples, the entire sample bottle should be extracted, and the sample bottle rinsed with appropriate solvent to remove any residual PFAS.

For samples with high particulates, the samples should be handled in one of the following ways:

1. Spike the entire sample bottle with isotope dilution analytes (IDAs) prior to any sample manipulation. The sample can be passed through the SPE and if it clogs, record the volume that passed through.
2. If the sample contains too much sediment to attempt passing it through the SPE cartridge, the sample should be spiked with isotope dilution analytes, centrifuged and decanted.
3. If higher reporting limits are acceptable for the project, the sample can be diluted by taking a representative aliquot of the sample. If isotope dilution analytes will be diluted out of the sample, they can be added after the dilution. The sample should be homogenized prior to taking an aliquot.

If alternate sample extraction procedures are used, please contact the DER remedial program chemist prior to employing. Any deviations in sample preparation procedures should be clearly noted in the case narrative.

Signal to Noise Ratio

For all target analyte ions used for quantification, signal to noise ratio should be 3:1 or greater.

Blanks

There should be no detections in the method blanks above the reporting limits.

Ion Transitions

The ion transitions listed below should be used for the following PFAS:

PFOA	413 > 369
PFOS	499 > 80
PFHxS	399 > 80
PFBS	299 > 80
6:2 FTS	427 > 407
8:2 FTS	527 > 507
N-EtFOSAA	584 > 419
N-MeFOSAA	570 > 419

Branched and Linear Isomers

Standards containing both branched and linear isomers should be used when standards are commercially available. Currently, quantitative standards are available for PFHxS, PFOS, NMeFOSAA, and NEtFOSAA. As more standards become available, they should be incorporated in to the method. All isomer peaks present in the standard should be integrated and the areas summed. Samples should be integrated in the same manner as the standards.

Since a quantitative standard does not exist for branched isomers of PFOA, the instrument should be calibrated using just the linear isomer and a technical (qualitative) PFOA standard should be used to identify the retention time of the branched PFOA isomers in the sample. The total response of PFOA branched and linear isomers should be integrated in the samples and quantitated using the calibration curve of the linear standard.

Secondary Ion Transition Monitoring

Quantifier and qualifier ions should be monitored for all target analytes (PFBA and PFPeA are exceptions). The ratio of quantifier ion response to qualifier ion response should be calculated for each target analyte and the ratio compared to standards. Lab derived criteria should be used to determine if the ratios are acceptable.

Reporting

Detections below the reporting limit should be reported and qualified with a J qualifier.

The acid form of PFAS analytes should be reported. If the salt form of the PFAS was used as a stock standard, the measured mass should be corrected to report the acid form of the analyte.

DRAFT

Appendix I - Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids

General

These guidelines are intended to be used for the validation of PFAS analytical results for projects within the Division of Environmental Remediation (DER) as well as aid in the preparation of a data usability summary report. Data reviewers should understand the methodology and techniques utilized in the analysis. Consultation with the end user of the data may be necessary to assist in determining data usability based on the data quality objectives in the Quality Assurance Project Plan. A familiarity with the laboratory's Standard Operating Procedure may also be needed to fully evaluate the data. If you have any questions, please contact DER's Quality Assurance Officer, Dana Barbarossa, at dana.barbarossa@dec.ny.gov.

Preservation and Holding Time

Samples should be preserved with ice to a temperature of less than 6°C upon arrival at the lab. The holding time is 14 days to extraction for aqueous and solid samples. The time from extraction to analysis for aqueous samples is 28 days and 40 days for solids.

Temperature greatly exceeds 6°C upon arrival at the lab*	Use professional judgement to qualify detects and non-detects as estimated or rejected
Holding time exceeding 28 days to extraction	Use professional judgement to qualify detects and non-detects as estimated or rejected if holding time is grossly exceeded

*Samples that are delivered to the lab immediately after sampling may not meet the thermal preservation guidelines. Samples are considered acceptable if they arrive on ice or an attempt to chill the samples is observed.

Initial Calibration

The initial calibration should contain a minimum of five standards for linear fit and six standards for a quadratic fit. The relative standard deviation (RSD) for a quadratic fit calibration should be less than 20%. Linear fit calibration curves should have an R^2 value greater than 0.990.

The low-level calibration standard should be within 50% - 150% of the true value, and the mid-level calibration standard within 70% - 130% of the true value.

%RSD >20%	J flag detects and UJ non detects
R^2 >0.990	J flag detects and UJ non detects
Low-level calibration check <50% or >150%	J flag detects and UJ non detects
Mid-level calibration check <70% or >130%	J flag detects and UJ non detects

Initial Calibration Verification

An initial calibration verification (ICV) standard should be from a second source (if available). The ICV should be at the same concentration as the mid-level standard of the calibration curve.

ICV recovery <70% or >130%	J flag detects and non-detects
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Continuing Calibration Verification

Continuing calibration verification (CCV) checks should be analyzed at a frequency of one per ten field samples. If CCV recovery is very low, where detection of the analyte could be in question, ensure a low level CCV was analyzed and use to determine data quality.

CCV recovery <70 or >130%	J flag results
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Blanks

There should be no detections in the method blanks above the reporting limits. Equipment blanks, field blanks, rinse blanks etc. should be evaluated in the same manner as method blanks. Use the most contaminated blank to evaluate the sample results.

Blank Result	Sample Result	Qualification
Any detection	<Reporting limit	Qualify as ND at reporting limit
Any detection	>Reporting Limit and >10x the blank result	No qualification
>Reporting limit	>Reporting limit and <10x blank result	J+ biased high

Field Duplicates

A blind field duplicate should be collected at rate of one per twenty samples. The relative percent difference (RPD) should be less than 30% for analyte concentrations greater than two times the reporting limit. Use the higher result for final reporting.

RPD >30%	Apply J qualifier to parent sample
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Lab Control Spike

Lab control spikes should be analyzed with each extraction batch or one for every twenty samples. In the absence of lab derived criteria, use 70% - 130% recovery criteria to evaluate the data.

Recovery <70% or >130% (lab derived criteria can also be used)	Apply J qualifier to detects and UJ qualifier to non detects
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Matrix Spike/Matrix Spike Duplicate

One matrix spike and matrix spike duplicate should be collected at a rate of one per twenty samples. Use professional judgement to reject results based on out of control MS/MSD recoveries.

Recovery <70% or >130% (lab derived criteria can also be used)	Apply J qualifier to detects and UJ qualifier to non detects of parent sample only
RPD >30%	Apply J qualifier to detects and UJ qualifier to non detects of parent sample only

Extracted Internal Standards (Isotope Dilution Analytes)

Problematic analytes (e.g. PFBA, PFPeA, fluorotelomer sulfonates) can have wider recoveries without qualification. Qualify corresponding native compounds with a J flag if outside of the range.

Recovery <50% or >150%	Apply J qualifier
Recovery <25% or >150% for poor responding analytes	Apply J qualifier
Isotope Dilution Analyte (IDA) Recovery <10%	Reject results

Secondary Ion Transition Monitoring

Quantifier and qualifier ions should be monitored for all target analytes (PFBA and PFPeA are exceptions). The ratio of quantifier ion response to qualifier ion response should be calculated from the standards for each target analyte. Lab derived criteria should be used to determine if the ratios are acceptable. If the ratios fall outside of the laboratory criteria, qualify results as an estimated maximum concentration.

Signal to Noise Ratio

The signal to noise ratio for the quantifier ion should be at least 3:1. If the ratio is less than 3:1, the peak is discernable from the baseline noise and symmetrical, the result can be reported. If the peak appears to be baseline noise and/or the shape is irregular, qualify the result as tentatively identified.

Branched and Linear Isomers

Observed branched isomers in the sample that do not have a qualitative or quantitative standard should be noted and the analyte should be qualified as biased low in the final data review summary report. Note: The branched isomer peak should also be present in the secondary ion transition.

Reporting Limits

If project-specific reporting limits were not met, please indicate that in the report along with the reason (e.g. over dilution, dilution for non-target analytes, high sediment in aqueous samples).

Peak Integrations

Target analyte peaks should be integrated properly and consistently when compared to standards. Ensure branched isomer peaks are included for PFAS where standards are available. Inconsistencies should be brought to the attention of the laboratory or identified in the data review summary report.

APPENDIX D

Laboratory Reporting Limits for Soil, Water and Air Samples

DRAFT



MDL/RL LIST - AIR

DRAFT

Analytical Method Information

Printed: 02/03/2021 3:01 pm

Volatile Organics, EPA TO15 Full List in Air (EPA TO-15)

Preservation: None Required

Container: 12_Summa Canister, 6 Liter

Amount Required: 6 L

Hold Time: 30 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
1,1,1,2-Tetrachloroethane	0.059	0.10 ppbv		25		70-130
1,1,1-Trichloroethane	0.084	0.10 ppbv		25		70-130
1,1,2,2-Tetrachloroethane	0.048	0.10 ppbv		25		70-130
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.096	0.10 ppbv		25		70-130
1,1,2-Trichloroethane	0.043	0.10 ppbv		25		70-130
1,1-Dichloroethane	0.083	0.10 ppbv		25		70-130
1,1-Dichloroethylene	0.025	0.025 ppbv		25		70-130
1,2,4-Trichlorobenzene	0.079	0.10 ppbv		25		70-130
1,2,4-Trimethylbenzene	0.060	0.10 ppbv		25		70-130
1,2-Dibromoethane	0.040	0.10 ppbv		25		70-130
1,2-Dichlorobenzene	0.065	0.10 ppbv		25		70-130
1,2-Dichloroethane	0.062	0.10 ppbv		25		70-130
1,2-Dichloropropane	0.051	0.10 ppbv		25		70-130
1,2-Dichlorotetrafluoroethane	0.098	0.10 ppbv		25		70-130
1,3,5-Trimethylbenzene	0.054	0.10 ppbv		25		70-130
1,3-Butadiene	0.038	0.30 ppbv		25		70-130
1,3-Dichlorobenzene	0.067	0.10 ppbv		25		70-130
1,3-Dichloropropane	0.031	0.10 ppbv		25		70-130
1,4-Dichlorobenzene	0.060	0.10 ppbv		25		70-130
1,4-Dioxane	0.083	0.20 ppbv		25		70-130
2-Butanone	0.059	0.10 ppbv		25		70-130
2-Hexanone	0.041	0.20 ppbv		25		70-130
3-Chloropropene	0.076	0.50 ppbv		25		70-130
4-Methyl-2-pentanone	0.085	0.10 ppbv		25		70-130
Acetone	0.098	0.20 ppbv		25		70-130
Acrolein	0.097	0.10 ppbv		25		70-130
Acrylonitrile	0.079	0.10 ppbv		25		70-130
Benzene	0.099	0.10 ppbv		25		70-130
Benzyl chloride	0.054	0.10 ppbv		25		70-130
Bromodichloromethane	0.034	0.10 ppbv		25		70-130
Bromoform	0.049	0.10 ppbv		25		70-130
Bromomethane	0.098	0.10 ppbv		25		70-130
Carbon disulfide	0.094	0.10 ppbv		25		70-130
Carbon tetrachloride	0.025	0.025 ppbv		25		70-130
Chlorobenzene	0.056	0.10 ppbv		25		70-130
Chloroethane	0.064	0.10 ppbv		25		70-130
Chloroform	0.092	0.10 ppbv		25		70-130
Chloromethane	0.049	0.10 ppbv		25		70-130
cis-1,2-Dichloroethylene	0.025	0.025 ppbv		25		70-130
cis-1,3-Dichloropropylene	0.041	0.10 ppbv		25		70-130
Cyclohexane	0.086	0.10 ppbv		25		70-130
Dibromochloromethane	0.049	0.10 ppbv		25		70-130
Dichlorodifluoromethane	0.090	0.10 ppbv		25		70-130
Ethanol	0.10	0.10 ppbv		25		70-130
Ethyl acetate	0.068	0.20 ppbv		25		70-130
Ethyl Benzene	0.069	0.10 ppbv		25		70-130
Hexachlorobutadiene	0.085	0.10 ppbv		25		70-130
Isopropanol	0.096	0.20 ppbv		25		70-130
Isopropylbenzene	0.059	0.10 ppbv		25		70-130
Methyl Methacrylate	0.031	0.10 ppbv		25		70-130
Methyl tert-butyl ether (MTBE)	0.097	0.10 ppbv		25		70-130
Methylene chloride	0.070	0.20 ppbv		25		70-130
Naphthalene	0.097	0.20 ppbv		25		70-130

(Continued)

Volatile Organics, EPA TO15 Full List in Air (EPA TO-15) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike----		--Blank Spike / LCS--	
					%Rec	RPD	%Rec	RPD
n-Butylbenzene	0.054	0.10 ppbv		25				70-130
n-Heptane	0.043	0.10 ppbv		25				70-130
n-Hexane	0.080	0.10 ppbv		25				70-130
n-Propylbenzene	0.093	0.10 ppbv		25				70-130
o-Xylene	0.024	0.10 ppbv		25				70-130
p- & m- Xylenes	0.14	0.20 ppbv		25				70-130
p-Ethyltoluene	0.076	0.10 ppbv		25				70-130
p-Isopropyltoluene	0.030	0.10 ppbv		25				70-130
Propylene	0.042	0.10 ppbv		25				70-130
sec-Butylbenzene	0.056	0.10 ppbv		25				70-130
Styrene	0.059	0.10 ppbv		25				70-130
tert-Butylbenzene	0.051	0.10 ppbv		25				70-130
Tetrachloroethylene	0.049	0.10 ppbv		25				70-130
Tetrahydrofuran	0.053	0.20 ppbv		25				70-130
Toluene	0.059	0.10 ppbv		25				70-130
trans-1,2-Dichloroethylene	0.079	0.10 ppbv		25				70-130
trans-1,3-Dichloropropylene	0.092	0.10 ppbv		25				70-130
Trichloroethylene	0.025	0.025 ppbv		25				70-130
Trichlorofluoromethane (Freon 11)	0.076	0.10 ppbv		25				70-130
Vinyl acetate	0.062	0.10 ppbv		25				70-130
Vinyl bromide	0.096	0.10 ppbv		25				70-130
Vinyl Chloride	0.044	0.050 ppbv		25				70-130
Xylenes, Total	0.17	0.30 ppbv						
Tentatively Identified Compounds								
SURR: p-Bromofluorobenzene								
Bromochloromethane								
ISTD: 1,4-Difluorobenzene								
ISTD: d5-Chlorobenzene								



MDL/RL LIST - SW

DRAFT

Analytical Method Information

Printed: 02/03/2021 1:37 pm

Chromium, Hexavalent in Soil (EPA 7196A)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C

Amount Required: 25 g,

Hold Time: 30 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
Chromium, Hexavalent	0.350	0.500 mg/kg		35	75-125	18.8-206

DRAFT

Analytical Method Information

Printed: 02/03/2021 1:40 pm

Cyanide, Total in Soil (EPA 9014/9010C)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C

Amount Required: 10 g.

Hold Time: 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
Cyanide, total	0.500	0.500 mg/kg		15	79.6-107	72.9-112

DRAFT

Analytical Method Information

Printed: 02/03/2021 1:44 pm

Herbicides, Target List in Soil (EPA 8151A)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C

Amount Required: 100 g.

Hold Time: 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
2,4,5-T	20.0	20.0 ug/kg			10-120 35	10-120 30
2,4,5-T [2C]	20.0	20.0 ug/kg			10-120 35	10-120 30
2,4,5-TP (Silvex)	20.0	20.0 ug/kg			10-120 35	10-120 30
2,4,5-TP (Silvex) [2C]	20.0	20.0 ug/kg			10-120 35	10-120 30
2,4-D	20.0	20.0 ug/kg			10-118 35	10-118 30
2,4-D [2C]	20.0	20.0 ug/kg			10-118 35	10-118 30
2,4-DB	20.0	20.0 ug/kg			10-128 35	10-128 30
2,4-DB [2C]	20.0	20.0 ug/kg			10-128 35	10-128 30
Dalapon	20.0	20.0 ug/kg			30-150 35	40-140 30
Dalapon [2C]	20.0	20.0 ug/kg			30-150 35	40-140 30
Dicamba	20.0	20.0 ug/kg			12-117 35	12-117 30
Dicamba [2C]	20.0	20.0 ug/kg			12-117 35	12-117 30
Surr: 2,4-Dichlorophenylacetic acid (DCAA)			21-150			
Surr: 2,4-Dichlorophenylacetic acid (DCAA) [2C]			21-150			

Analytical Method Information

Printed: 02/03/2021 2:26 pm

Mercury by 7473 in Soil (EPA 7473)

Preservation: Cool 4°C

Container: 06_8 oz. WM Clear Glass Cool to 4° C

Amount Required: 10 g.

Hold Time: 28 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
Mercury	0.0300	0.0300 mg/kg		35	75-125	67.6-131

Metals, Target Analyte in Soil (EPA 6010D)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C

Amount Required: 50

Hold Time: 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
Aluminum	5.00	5.00 mg/kg		35	75-125	35 80-120
Antimony	2.50	2.50 mg/kg		35	75-125	35 80-120
Arsenic	1.50	1.50 mg/kg		35	75-125	35 80-120
Barium	2.50	2.50 mg/kg		35	75-125	35 80-120
Beryllium	0.0500	0.0500 mg/kg		35	75-125	35 80-120
Cadmium	0.300	0.300 mg/kg		35	75-125	35 80-120
Calcium	0.500	5.00 mg/kg		35	75-125	35 80-120
Chromium	0.500	0.500 mg/kg		35	75-125	35 80-120
Cobalt	0.400	0.400 mg/kg		35	75-125	35 80-120
Copper	2.00	2.00 mg/kg		35	75-125	35 80-120
Iron	25.0	25.0 mg/kg		35	75-125	35 80-120
Lead	0.500	0.500 mg/kg		35	75-125	35 80-120
Magnesium	5.00	5.00 mg/kg		35	75-125	35 80-120
Manganese	0.500	0.500 mg/kg		35	75-125	35 80-120
Nickel	1.00	1.00 mg/kg		35	75-125	35 80-120
Potassium	5.00	5.00 mg/kg		35	75-125	35 80-120
Selenium	2.50	2.50 mg/kg		35	75-125	35 80-120
Silver	0.500	0.500 mg/kg		35	75-125	35 80-120
Sodium	50.0	50.0 mg/kg		35	75-125	35 80-120
Thallium	2.50	2.50 mg/kg		35	75-125	35 80-120
Vanadium	1.00	1.00 mg/kg		35	75-125	35 80-120
Zinc	2.50	2.50 mg/kg		35	75-125	35 80-120
Yttrium 371.029						35

Metals, Target Analyte List in Soil (varies)

Preservation: [Group Analysis]

Container:

Amount Required:

Hold Time: 5 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
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No Analytes listed

Analytical Method Information

Printed: 02/03/2021 2:00 pm

Pesticides, 8081 target list in Soil (EPA 8081B)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C

Amount Required: 100 g

Hold Time: 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
4,4'-DDD	0.330	0.330 ug/kg			30-150 30	40-140 30
4,4'-DDD [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
4,4'-DDE	0.330	0.330 ug/kg			30-150 30	40-140 30
4,4'-DDE [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
4,4'-DDT	0.330	0.330 ug/kg			30-150 30	40-140 30
4,4'-DDT [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
Aldrin	0.330	0.330 ug/kg			30-150 30	40-140 30
Aldrin [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
alpha-BHC	0.330	0.330 ug/kg			30-150 30	40-140 30
alpha-BHC [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
alpha-Chlordane	0.330	0.330 ug/kg			30-150 30	40-140 30
alpha-Chlordane [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
beta-BHC	0.330	0.330 ug/kg			30-150 30	40-140 30
beta-BHC [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
Chlordane, total	6.60	6.60 ug/kg				30
Chlordane, total [2C]	6.60	6.60 ug/kg				30
delta-BHC	0.330	0.330 ug/kg			30-150 30	40-140 30
delta-BHC [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
Dieldrin	0.330	0.330 ug/kg			30-150 30	40-140 30
Dieldrin [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
Endosulfan I	0.330	0.330 ug/kg			30-150 30	40-140 30
Endosulfan I [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
Endosulfan II	0.330	0.330 ug/kg			30-150 30	40-140 30
Endosulfan II [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
Endosulfan sulfate	0.330	0.330 ug/kg			30-150 30	40-140 30
Endosulfan sulfate [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
Endrin	0.330	0.330 ug/kg			30-150 30	40-140 30
Endrin [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
Endrin aldehyde	0.330	0.330 ug/kg			30-150 30	40-140 30
Endrin aldehyde [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
Endrin ketone	0.330	0.330 ug/kg			30-150 30	40-140 30
Endrin ketone [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
gamma-BHC (Lindane)	0.330	0.330 ug/kg			30-150 30	40-140 30
gamma-BHC (Lindane) [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
gamma-Chlordane	0.330	0.330 ug/kg			30-150 30	40-140 30
gamma-Chlordane [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
Heptachlor	0.330	0.330 ug/kg			30-150 30	40-140 30
Heptachlor [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
Heptachlor epoxide	0.330	0.330 ug/kg			30-150 30	40-140 30
Heptachlor epoxide [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
Methoxychlor	1.65	1.65 ug/kg			30-150 30	40-140 30
Methoxychlor [2C]	0.330	0.330 ug/kg			30-150 30	40-140 30
Toxaphene	16.7	16.7 ug/kg				30
Toxaphene [2C]	33.0	33.0 ug/kg				30
Mirex	0.330	0.330 ug/kg			30-150 30	40-140 30
Surr: Decachlorobiphenyl				30-150		
Surr: Decachlorobiphenyl [2C]				30-150		
Surr: Tetrachloro-m-xylene				30-150		
Surr: Tetrachloro-m-xylene [2C]				30-150		

Analytical Method Information

Printed: 02/03/2021 2:02 pm

Polychlorinated Biphenyls (PCB) in Soil (EPA 8082A)

Preservation: Cool 4°C

Container: 06_8 oz. WM Clear Glass Cool to 4° C

Amount Required: 100g

Hold Time: 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
Aroclor 1016	0.0167	0.0167 mg/kg			40-140 50	40-130 25
Aroclor 1016 (1)						
Aroclor 1016 (2)						
Aroclor 1016 (3)						
Aroclor 1016 (4)						
Aroclor 1016 (5)						
Aroclor 1016 [2C]	0.0167	0.0167 mg/kg			40-140 50	40-130 25
Aroclor 1016 (1) [2C]						
Aroclor 1016 (2) [2C]						
Aroclor 1016 (3) [2C]						
Aroclor 1016 (4) [2C]						
Aroclor 1016 (5) [2C]						
Aroclor 1221	0.0167	0.0167 mg/kg				
Aroclor 1221 (1)						
Aroclor 1221 (2)						
Aroclor 1221 (3)						
Aroclor 1221 [2C]	0.0167	0.0167 mg/kg				
Aroclor 1221 (1) [2C]						
Aroclor 1221 (2) [2C]						
Aroclor 1221 (3) [2C]						
Aroclor 1232	0.0167	0.0167 mg/kg				
Aroclor 1232 (1)						
Aroclor 1232 (2)						
Aroclor 1232 (3)						
Aroclor 1232 (4)						
Aroclor 1232 (5)						
Aroclor 1232 [2C]	0.0167	0.0167 mg/kg				
Aroclor 1232 (1) [2C]						
Aroclor 1232 (2) [2C]						
Aroclor 1232 (3) [2C]						
Aroclor 1232 (4) [2C]						
Aroclor 1232 (5) [2C]						
Aroclor 1242	0.0167	0.0167 mg/kg				
Aroclor 1242 (1)						
Aroclor 1242 (2)						
Aroclor 1242 (3)						
Aroclor 1242 (4)						
Aroclor 1242 (5)						
Aroclor 1242 [2C]	0.0167	0.0167 mg/kg				
Aroclor 1242 (1) [2C]						
Aroclor 1242 (2) [2C]						
Aroclor 1242 (3) [2C]						
Aroclor 1242 (4) [2C]						
Aroclor 1242 (5) [2C]						
Aroclor 1248	0.0167	0.0167 mg/kg				
Aroclor 1248 (1)						
Aroclor 1248 (2)						
Aroclor 1248 (3)						
Aroclor 1248 (4)						
Aroclor 1248 (5)						
Aroclor 1248 [2C]	0.0167	0.0167 mg/kg				
Aroclor 1248 (1) [2C]						
Aroclor 1248 (2) [2C]						
Aroclor 1248 (3) [2C]						

Analytical Method Information

Printed: 02/03/2021 2:02 pm

(Continued)

Polychlorinated Biphenyls (PCB) in Soil (EPA 8082A) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
Aroclor 1248 (4) [2C]						
Aroclor 1248 (5) [2C]						
Aroclor 1254	0.0167	0.0167 mg/kg			50	25
Aroclor 1254 (1)						
Aroclor 1254 (2)						
Aroclor 1254 (3)						
Aroclor 1254 (4)						
Aroclor 1254 (5)						
Aroclor 1254 [2C]	0.0167	0.0167 mg/kg				
Aroclor 1254 (1) [2C]						
Aroclor 1254 (2) [2C]						
Aroclor 1254 (3) [2C]						
Aroclor 1254 (4) [2C]						
Aroclor 1254 (5) [2C]						
Aroclor 1260	0.0167	0.0167 mg/kg			40-140	50 40-130 25
Aroclor 1260 (1)						
Aroclor 1260 (2)						
Aroclor 1260 (3)						
Aroclor 1260 (4)						
Aroclor 1260 (5)						
Aroclor 1260 [2C]	0.0167	0.0167 mg/kg			40-140	50 40-150 25
Aroclor 1260 (1) [2C]						
Aroclor 1260 (2) [2C]						
Aroclor 1260 (3) [2C]						
Aroclor 1260 (4) [2C]						
Aroclor 1260 (5) [2C]						
Aroclor 1262	0.0167	0.0167 mg/kg				
Aroclor 1262 (1)						
Aroclor 1262 (2)						
Aroclor 1262 (3)						
Aroclor 1262 (4)						
Aroclor 1262 (5)						
Aroclor 1262 [2C]	0.0167	0.0167 mg/kg				
Aroclor 1262 (1) [2C]						
Aroclor 1262 (2) [2C]						
Aroclor 1262 (3) [2C]						
Aroclor 1262 (4) [2C]						
Aroclor 1262 (5) [2C]						
Aroclor 1268	0.0167	0.0167 mg/kg				
Aroclor 1268 (1)						
Aroclor 1268 (2)						
Aroclor 1268 (3)						
Aroclor 1268 (4)						
Aroclor 1268 (5)						
Aroclor 1268 [2C]	0.0167	0.0167 mg/kg				
Aroclor 1268 (1) [2C]						
Aroclor 1268 (2) [2C]						
Aroclor 1268 (3) [2C]						
Aroclor 1268 (4) [2C]						
Aroclor 1268 (5) [2C]						
Total PCBs	0.0167	0.0167 mg/kg				
Total PCBs [2C]	0.0167	0.0167 mg/kg				
Surr: Tetrachloro-m-xylene				30-140		
Surr: Tetrachloro-m-xylene [2C]				30-140		
Surr: Decachlorobiphenyl				30-140		
Surr: Decachlorobiphenyl [2C]				30-140		

Analytical Method Information

Printed: 02/02/2021 9:37 am

PFAS, NYSDEC Target List in Soil (EPA 537m)

Preservation: Cool 4°C

Container: 10_250mL Plastic Cool to 4° C

Amount Required: 250 mL

Hold Time: 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
Perfluorobutanesulfonic acid (PFBS)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluorohexanoic acid (PFHxA)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluoroheptanoic acid (PFHpA)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluorohexanesulfonic acid (PFHxS)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluorooctanoic acid (PFOA)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluorooctanesulfonic acid (PFOS)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluorononanoic acid (PFNA)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluorodecanoic acid (PFDA)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluoroundecanoic acid (PFUnA)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluorododecanoic acid (PFDoA)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluorotridecanoic acid (PFTrDA)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluorotetradecanoic acid (PFTA)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
N-MeFOSAA	0.500	0.500 ug/kg		30	25-150 35	50-130 30
N-EtFOSAA	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluoropentanoic acid (PFPeA)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluoro-1-octanesulfonamide (FOSA)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluoro-1-heptanesulfonic acid (PFHpS)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluoro-1-decanesulfonic acid (PFDS)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Perfluoro-n-butanoic acid (PFBA)	0.500	0.500 ug/kg		30	25-150 35	50-130 30
Surr: M3PFBS			25-150			
Surr: M5PFHxA			25-150			
Surr: M4PFHpA			25-150			
Surr: M3PFHxS			25-150			
Surr: Perfluoro-n-[13C8]octanoic acid (M8PFOA)			25-150			
Surr: M6PFDA			25-150			
Surr: M7PFUDa			25-150			
Surr: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)			25-150			
Surr: M2PFTeDA			10-150			
Surr: Perfluoro-n-[13C4]butanoic acid (MPFBA)			25-150			
Surr: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)			25-150			
Surr: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)			25-150			
Surr: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)			10-150			
Surr: d3-N-MeFOSAA			25-150			
Surr: d5-N-EtFOSAA			25-150			
Surr: M2-6:2 FTS			25-150			
Surr: M2-8:2 FTS			25-150			
Surr: M9PFNA			25-150			
MPFOA						

Analytical Method Information

Printed: 02/03/2021 2:04 pm

Semi-Volatiles, 1,4-Dioxane 8270 SIM-Soil in Soil (EPA 8270D SIM)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C

Amount Required: 250 mL

Hold Time: 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
1,4-Dioxane		10.0 ug/kg		30	40-130	30	40-130	30
Surr: 1,4-Dioxane-d8			39-127.5					
1,2-Dichlorobenzene-d4								

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Analytical Method Information

Printed: 02/03/2021 2:11 pm

Semi-Volatiles, NJDEP/TCL/Part 375 List in Soil (EPA 8270D)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C

Amount Required: 100 g

Hold Time: 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
1,1-Biphenyl	20.9	41.7 ug/kg			24-112 30	22-103 30
1,2,4,5-Tetrachlorobenzene	41.7	83.3 ug/kg			18-152 30	10-144 30
1,2,4-Trichlorobenzene	20.9	41.7 ug/kg			15-139 30	23-130 30
1,2-Dichlorobenzene	20.9	41.7 ug/kg			29-106 30	26-113 30
1,2-Diphenylhydrazine (as Azobenzene)	20.9	41.7 ug/kg			10-135 30	10-140 30
1,3-Dichlorobenzene	20.9	41.7 ug/kg			34-100 30	32-113 30
1,4-Dichlorobenzene	20.9	41.7 ug/kg			26-107 30	28-111 30
2,3,4,6-Tetrachlorophenol	41.7	83.3 ug/kg			30-130 30	30-130 30
2,4,5-Trichlorophenol	20.9	41.7 ug/kg			10-148 30	14-138 30
2,4,6-Trichlorophenol	20.9	41.7 ug/kg			12-138 30	27-122 30
2,4-Dichlorophenol	20.9	41.7 ug/kg			16-144 30	23-133 30
2,4-Dimethylphenol	20.9	41.7 ug/kg			11-133 30	15-131 30
2,4-Dinitrophenol	41.7	83.3 ug/kg			10-132 30	10-149 30
2,4-Dinitrotoluene	20.9	41.7 ug/kg			42-113 30	30-123 30
2,6-Dinitrotoluene	20.9	41.7 ug/kg			36-124 30	30-125 30
2-Chloronaphthalene	20.9	41.7 ug/kg			31-116 30	22-115 30
2-Chlorophenol	20.9	41.7 ug/kg			28-114 30	25-121 30
2-Methylnaphthalene	20.9	41.7 ug/kg			10-143 30	16-127 30
2-Methylphenol	20.9	41.7 ug/kg			10-160 30	10-146 30
2-Nitroaniline	41.7	83.3 ug/kg			33-122 30	24-126 30
2-Nitrophenol	20.9	41.7 ug/kg			12-127 30	17-129 30
3- & 4-Methylphenols	20.9	41.7 ug/kg			16-115 30	20-109 30
3,3-Dichlorobenzidine	20.9	41.7 ug/kg			10-134 30	10-147 30
3-Nitroaniline	41.7	83.3 ug/kg			24-128 30	23-123 30
4,6-Dinitro-2-methylphenol	41.7	83.3 ug/kg			10-149 30	10-149 30
4-Bromophenyl phenyl ether	20.9	41.7 ug/kg			32-148 30	30-138 30
4-Chloro-3-methylphenol	20.9	41.7 ug/kg			14-138 30	16-138 30
4-Chloroaniline	20.9	41.7 ug/kg			10-124 30	10-117 30
4-Chlorophenyl phenyl ether	20.9	41.7 ug/kg			10-153 30	18-132 30
4-Nitroaniline	41.7	83.3 ug/kg			10-151 30	14-125 30
4-Nitrophenol	41.7	83.3 ug/kg			10-141 30	10-136 30
Acenaphthene	20.9	41.7 ug/kg			13-133 30	17-124 30
Acenaphthylene	20.9	41.7 ug/kg			25-125 30	16-124 30
Acetophenone	20.9	41.7 ug/kg			25-105 30	28-105 30
Aniline	83.5	167 ug/kg			10-112 30	10-111 30
Anthracene	20.9	41.7 ug/kg			27-128 30	24-124 30
Atrazine	20.9	41.7 ug/kg			10-139 30	22-120 30
Benzaldehyde	20.9	41.7 ug/kg			24-96 30	21-100 30
Benzidine	83.5	167 ug/kg			30	30
Benzo(a)anthracene	20.9	41.7 ug/kg			20-147 30	25-134 30
Benzo(a)pyrene	20.9	41.7 ug/kg			18-153 30	29-144 30
Benzo(b)fluoranthene	20.9	41.7 ug/kg			10-163 30	20-151 30
Benzo(g,h,i)perylene	20.9	41.7 ug/kg			10-157 30	10-153 30
Benzo(k)fluoranthene	20.9	41.7 ug/kg			10-157 30	10-148 30
Benzoic acid	20.9	41.7 ug/kg			10-130 30	10-116 30
Benzyl alcohol	20.9	41.7 ug/kg			20-122 30	17-128 30
Benzyl butyl phthalate	20.9	41.7 ug/kg			10-129 30	10-132 30
Bis(2-chloroethoxy)methane	20.9	41.7 ug/kg			12-128 30	10-129 30
Bis(2-chloroethyl)ether	20.9	41.7 ug/kg			18-113 30	14-125 30
Bis(2-chloroisopropyl)ether	20.9	41.7 ug/kg			10-130 30	14-122 30
Bis(2-ethylhexyl)phthalate	20.9	41.7 ug/kg			10-138 30	10-141 30
Caprolactam	41.7	83.3 ug/kg			10-100 30	10-123 30
Carbazole	20.9	41.7 ug/kg			24-139 30	31-120 30

Analytical Method Information

Printed: 02/03/2021 2:11 pm

(Continued)

Semi-Volatiles, NJDEP/TCL/Part 375 List in Soil (EPA 8270D) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
Chrysene	20.9	41.7 ug/kg			18-133 30	24-116 30
Dibenzo(a,h)anthracene	20.9	41.7 ug/kg			10-146 30	17-147 30
Dibenzofuran	20.9	41.7 ug/kg			26-134 30	23-123 30
Diethyl phthalate	20.9	41.7 ug/kg			30-119 30	23-122 30
Dimethyl phthalate	20.9	41.7 ug/kg			34-120 30	28-127 30
Di-n-butyl phthalate	20.9	41.7 ug/kg			20-128 30	19-123 30
Di-n-octyl phthalate	20.9	41.7 ug/kg			10-133 30	10-132 30
Fluoranthene	20.9	41.7 ug/kg			10-155 30	36-125 30
Fluorene	20.9	41.7 ug/kg			12-150 30	16-130 30
Hexachlorobenzene	20.9	41.7 ug/kg			16-142 30	10-129 30
Hexachlorobutadiene	20.9	41.7 ug/kg			11-150 30	22-153 30
Hexachlorocyclopentadiene	20.9	41.7 ug/kg			10-115 30	10-134 30
Hexachloroethane	20.9	41.7 ug/kg			14-106 30	20-112 30
Indeno(1,2,3-cd)pyrene	20.9	41.7 ug/kg			10-155 30	10-155 30
Isophorone	20.9	41.7 ug/kg			14-127 30	14-131 30
Naphthalene	20.9	41.7 ug/kg			15-132 30	20-121 30
Nitrobenzene	20.9	41.7 ug/kg			18-125 30	20-121 30
N-Nitrosodimethylamine	20.9	41.7 ug/kg			10-123 30	10-124 30
N-nitroso-di-n-propylamine	20.9	41.7 ug/kg			23-115 30	21-119 30
N-Nitrosodiphenylamine	20.9	41.7 ug/kg			16-166 30	10-163 30
Pentachlorophenol	20.9	41.7 ug/kg			10-160 30	10-143 30
Phenanthrene	20.9	41.7 ug/kg			10-151 30	24-123 30
Phenol	20.9	41.7 ug/kg			11-124 30	15-123 30
Pyrene	20.9	41.7 ug/kg			13-148 30	24-132 30
Pyridine	83.5	167 ug/kg			10-125 30	10-92 30
Benzo(a)pyrene (BAP)						
Equivalent-BAPE						
Surr: SURR: 2-Fluorophenol				20-108		
Surr: SURR: Phenol-d5				23-114		
Surr: SURR: Nitrobenzene-d5				22-108		
Surr: SURR: 2-Fluorobiphenyl				21-113		
Surr: SURR: 2,4,6-Tribromophenol				19-110		
Surr: SURR: Terphenyl-d14				24-116		
ISTD: 1,4-Dichlorobenzene-d4						
ISTD: Naphthalene-d8						
ISTD: Acenaphthene-d10						
ISTD: Phenanthrene-d10						
ISTD: Chrysene-d12						
ISTD: Perylene-d12						

Analytical Method Information

Printed: 02/03/2021 2:13 pm

Volatile Organics, NJDEP/TCL/Part 375 List in Soil (EPA 8260C)

Preservation: Cool 4°C

Container: 03_5035 Vial Set

Amount Required: 20 g.

Hold Time: 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
1,1,1,2-Tetrachloroethane	2.5	5.0 ug/kg			15-161 33	75-129 30
1,1,1-Trichloroethane	2.5	5.0 ug/kg			42-145 30	71-137 30
1,1,2,2-Tetrachloroethane	2.5	5.0 ug/kg			16-167 56	79-129 30
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	2.5	5.0 ug/kg			11-160 31	58-146 30
1,1,2-Trichloroethane	2.5	5.0 ug/kg			44-145 40	83-123 30
1,1-Dichloroethane	2.5	5.0 ug/kg			46-142 36	75-130 30
1,1-Dichloroethylene	2.5	5.0 ug/kg			30-153 31	64-137 30
1,1-Dichloropropylene	2.5	5.0 ug/kg			40-133 28	77-127 30
1,2,3-Trichlorobenzene	2.5	5.0 ug/kg			10-157 47	81-140 30
1,2,3-Trichloropropane	2.5	5.0 ug/kg			38-155 48	81-126 30
1,2,4-Trichlorobenzene	2.5	5.0 ug/kg			10-151 52	80-141 30
1,2,4-Trimethylbenzene	2.5	5.0 ug/kg			10-170 242	84-125 30
1,2-Dibromo-3-chloropropane	2.5	5.0 ug/kg			36-138 54	74-142 30
1,2-Dibromoethane	2.5	5.0 ug/kg			40-142 39	86-123 30
1,2-Dichlorobenzene	2.5	5.0 ug/kg			10-147 52	85-122 30
1,2-Dichloroethane	2.5	5.0 ug/kg			48-133 32	71-133 30
1,2-Dichloropropane	2.5	5.0 ug/kg			47-141 37	81-122 30
1,3,5-Trimethylbenzene	2.5	5.0 ug/kg			10-150 62	82-126 30
1,3-Dichlorobenzene	2.5	5.0 ug/kg			10-144 51	84-124 30
1,3-Dichloropropane	2.5	5.0 ug/kg			43-142 36	83-123 30
1,4-Dichlorobenzene	2.5	5.0 ug/kg			10-160 52	84-124 30
1,4-Dioxane	50	100 ug/kg			10-191 196	10-228 30
2,2-Dichloropropane	2.5	5.0 ug/kg			38-130 31	67-136 30
2-Butanone	2.5	5.0 ug/kg			10-189 67	58-147 30
2-Chlorotoluene	2.5	5.0 ug/kg			14-144 49	78-127 30
2-Hexanone	2.5	5.0 ug/kg			10-181 60	70-139 30
4-Chlorotoluene	2.5	5.0 ug/kg			15-138 39	79-125 30
4-Methyl-2-pentanone	2.5	5.0 ug/kg			10-166 47	72-132 30
Acetone	5.0	10 ug/kg			10-196 150	36-155 30
Acrolein	5.0	10 ug/kg			10-192 128	10-238 30
Acrylonitrile	2.5	5.0 ug/kg			13-161 48	66-141 30
Benzene	2.5	5.0 ug/kg			43-139 64	77-127 30
Bromobenzene	2.5	5.0 ug/kg			23-142 44	77-129 30
Bromochloromethane	2.5	5.0 ug/kg			38-145 30	74-129 30
Bromodichloromethane	2.5	5.0 ug/kg			38-147 37	81-124 30
Bromoform	2.5	5.0 ug/kg			29-156 51	80-136 30
Bromomethane	2.5	5.0 ug/kg			10-166 42	32-177 30
Carbon disulfide	2.5	5.0 ug/kg			10-131 36	10-136 30
Carbon tetrachloride	2.5	5.0 ug/kg			35-145 31	66-143 30
Chlorobenzene	2.5	5.0 ug/kg			21-154 32	86-120 30
Chloroethane	2.5	5.0 ug/kg			15-160 40	51-142 30
Chloroform	2.5	5.0 ug/kg			47-142 29	76-131 30
Chloromethane	2.5	5.0 ug/kg			10-159 31	49-132 30
cis-1,2-Dichloroethylene	2.5	5.0 ug/kg			42-144 30	74-132 30
cis-1,3-Dichloropropylene	2.5	5.0 ug/kg			18-159 39	81-129 30
Cyclohexane	2.5	5.0 ug/kg			70-130 30	70-130 30
Dibromochloromethane	2.5	5.0 ug/kg			10-179 41	10-200 30
Dibromomethane	2.5	5.0 ug/kg			47-143 41	83-124 30
Dichlorodifluoromethane	2.5	5.0 ug/kg			10-145 34	28-158 30
Ethyl Benzene	2.5	5.0 ug/kg			11-158 42	84-125 30
Hexachlorobutadiene	2.5	5.0 ug/kg			10-158 45	83-133 30
Isopropylbenzene	2.5	5.0 ug/kg			10-162 57	81-127 30
Methyl acetate	2.5	5.0 ug/kg			10-149 64	41-143 30

Analytical Method Information

(Continued)

Printed: 02/03/2021 2:13 pm

Volatile Organics, NJDEP/TCL/Part 375 List in Soil (EPA 8260C) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
Methyl tert-butyl ether (MTBE)	2.5	5.0 ug/kg			42-152 47	74-131 30
Methylcyclohexane	2.5	5.0 ug/kg			70-130 30	70-130 30
Methylene chloride	5.0	10 ug/kg			28-151 49	57-141 30
Naphthalene	2.5	10 ug/kg			10-158 95	86-141 30
n-Butylbenzene	2.5	5.0 ug/kg			10-162 96	80-130 30
n-Propylbenzene	2.5	5.0 ug/kg			10-155 56	74-136 30
o-Xylene	2.5	5.0 ug/kg			10-158 51	83-123 30
p- & m- Xylenes	5.0	10 ug/kg			10-156 47	82-128 30
p-Isopropyltoluene	2.5	5.0 ug/kg			10-147 60	85-125 30
sec-Butylbenzene	2.5	5.0 ug/kg			10-157 56	83-125 30
Styrene	2.5	5.0 ug/kg			13-171 39	86-126 30
tert-Butyl alcohol (TBA)	2.5	5.0 ug/kg			34-179 35	70-130 30
tert-Butylbenzene	2.5	5.0 ug/kg			10-160 79	80-127 30
Tetrachloroethylene	2.5	5.0 ug/kg			30-167 33	80-129 30
Toluene	2.5	5.0 ug/kg			21-160 50	85-121 30
trans-1,2-Dichloroethylene	2.5	5.0 ug/kg			29-153 30	72-132 30
trans-1,3-Dichloropropylene	2.5	5.0 ug/kg			18-155 30	78-132 30
Trichloroethylene	2.5	5.0 ug/kg			24-169 30	84-123 30
Trichlorofluoromethane	2.5	5.0 ug/kg			35-142 30	62-140 30
Vinyl acetate	2.5	5.0 ug/kg			10-119 82	67-136 30
Vinyl Chloride	2.5	5.0 ug/kg			12-160 35	52-130 30
Xylenes, Total	7.5	15 ug/kg				
Surr: Surr: 1,2-Dichloroethane-d4			77-125			
Surr: Surr: Toluene-d8			85-120			
Surr: Surr: p-Bromofluorobenzene			76-130		30	
ISTD: Fluorobenzene					30	30
ISTD: Chlorobenzene-d5						
ISTD: 1,2-Dichlorobenzene-d4						



MDL/RL LIST - NPW

DRAFT

Analytical Method Information

Printed: 02/03/2021 1:38 pm

Chromium, Hexavalent in Water (EPA 7196A)

Preservation: Cool 4°C

Container: 10_250mL Plastic Cool to 4° C

Amount Required: 100 mL

Hold Time: 1 day

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
Chromium, Hexavalent	0.0100	0.0100 mg/L		20	75-125	80-120 20

DRAFT

Analytical Method Information

Printed: 02/03/2021 1:40 pm

Cyanide, Total in Water (SM 4500 CN C/E)

Preservation: Dechlorinate; NaOH to pH>10

Container: 10_250 mL Plastic NAOH pH>10 Cool 4° C

Amount Required: 100

Hold Time: 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike----		--Blank Spike / LCS--	
					%Rec	RPD	%Rec	RPD
Cyanide, total	0.0100	0.0100 mg/L		15	79-105		76.2-107	

DRAFT

Analytical Method Information

Printed: 02/03/2021 1:45 pm

Herbicides, Target List in Water (EPA 8151A)

Preservation: Cool 4°C

Container: 07_1000mL Amber Glass Cool to 4° C

Amount Required: 100 mL

Hold Time: 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
2,4,5-T	5.00	5.00 ug/L			30-150 30	10-140 30
2,4,5-T [2C]	5.00	5.00 ug/L			30-150 30	10-140 30
2,4,5-TP (Silvex)	5.00	5.00 ug/L			30-150 30	10-139 30
2,4,5-TP (Silvex) [2C]	5.00	5.00 ug/L			30-150 30	10-139 30
2,4-D	5.00	5.00 ug/L			30-150 30	10-140 30
2,4-D [2C]	5.00	5.00 ug/L			30-150 30	10-140 30
2,4-DB	5.00	5.00 ug/L			30-150 30	10-137 30
2,4-DB [2C]	5.00	5.00 ug/L			30-150 30	10-137 30
Dalapon	5.00	5.00 ug/L			30-150 30	40-140 30
Dalapon [2C]	5.00	5.00 ug/L			30-150 30	40-140 30
Dicamba	5.00	5.00 ug/L			30-150 30	10-124 30
Dicamba [2C]	5.00	5.00 ug/L			30-150 30	10-124 30
Surr: 2,4-Dichlorophenylacetic acid (DCAA)			30-150			
Surr: 2,4-Dichlorophenylacetic acid (DCAA) [2C]			30-150			

Analytical Method Information

Printed: 02/03/2021 2:59 pm

Mercury by 7473, Dissolved in Water (EPA 7473)

Preservation: Add HNO₃ to pH<2, Cool 4°C

Container: 10_250mL Plastic pH <2 w/ HNO₃

Amount Required: 100 mL

Hold Time: 28 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Mercury	0.0002000	0.0002000 mg/L		20	75-125		80-120	

Metals, Target Analyte, ICP Dissolved in Water (EPA 6010D)

Preservation: Add HNO₃ to pH<2, Cool 4°C

Container: 10_250mL Plastic pH <2 w/ HNO₃

Amount Required: 250

Hold Time: 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aluminum	0.0500	0.0500 mg/L		20		20	80-120	
Barium	0.0250	0.0250 mg/L		20	75-125	20	80-120	
Beryllium	0.000500	0.000500 mg/L		25	75-125	25	80-120	
Calcium	0.0500	0.0500 mg/L		20		20	80-120	
Chromium	0.00500	0.00500 mg/L		20	75-125	20	80-120	
Cobalt	0.00400	0.00400 mg/L		20	75-125	25	80-120	
Copper	0.0200	0.0200 mg/L		20	75-125	20	80-120	
Iron	0.250	0.250 mg/L		20	75-125	20	80-120	
Lead	0.00500	0.00500 mg/L		20	75-125	20	80-120	
Magnesium	0.0500	0.0500 mg/L		20		20	80-120	
Manganese	0.00500	0.00500 mg/L		20	75-125	20	80-120	
Nickel	0.0100	0.0100 mg/L		20	75-125	20	80-120	
Potassium	0.0500	0.0500 mg/L		20		20	80-120	
Selenium	0.0250	0.0250 mg/L		20	75-125	20	80-120	
Silver	0.00500	0.00500 mg/L		20	75-125	20	80-120	
Sodium	0.500	0.500 mg/L		20		20	80-120	
Vanadium	0.0100	0.0100 mg/L		20	75-125	20	80-120	
Zinc	0.0250	0.0250 mg/L		20	75-125	20	80-120	

Metals, Target Analyte, ICPMS Dissolved in Water (EPA 6020B)

Preservation: Add HNO₃ to pH<2, Cool 4°C

Container: 10_250mL Plastic pH <2 w/ HNO₃

Amount Required: 200

Hold Time: 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Antimony	1.00	1.00 ug/L		20	75-125	20	80-120	
Arsenic	1.00	1.00 ug/L		20	75-125	20	80-120	
Beryllium	0.300	0.300 ug/L		20	75-125	20	80-120	
Cadmium	0.500	0.500 ug/L		20	75-125	20	80-120	
Molybdenum	1.00	1.00 ug/L		20	75-125	20	80-120	
Selenium	1.00	1.00 ug/L		20	75-125	20	80-120	
Thallium	1.00	1.00 ug/L		20	75-125	20	80-120	

Metals, Target Analyte, ICPMS Dissolved List in Water (varies)

Preservation: [Group Analysis]

Container:

Amount Required:

Hold Time: 5 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
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No Analytes listed

Analytical Method Information

Printed: 02/03/2021 3:00 pm

Mercury by 7473 in Water (EPA 7473)

Preservation: Add HNO3 to pH<2, Cool 4°C

Container: 10_250mL Plastic pH <2 w/ HNO3

Amount Required: 100 mL

Hold Time: 28 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Mercury	0.000200	0.000200 mg/L		20	75-125		80-120	

Metals, Target Analyte, ICP in Water (EPA 6010D)

Preservation: Add HNO3 to pH<2, Cool 4°C

Container: 10_250mL Plastic pH <2 w/ HNO3

Amount Required: 250

Hold Time: 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aluminum	0.0500	0.0500 mg/L		20	75-125	20	80-120	
Barium	0.0250	0.0250 mg/L		20	75-125	20	80-120	
Beryllium	0.000500	0.000500 mg/L		25	75-125	25	80-120	
Calcium	0.0500	0.0500 mg/L		20	75-125	20	80-120	
Chromium	0.00500	0.00500 mg/L		20	75-125	20	80-120	
Cobalt	0.00400	0.00400 mg/L		20	75-125	25	80-120	
Copper	0.0200	0.0200 mg/L		20	75-125	20	80-120	
Iron	0.250	0.250 mg/L		20	75-125	20	80-120	
Lead	0.00500	0.00500 mg/L		20	75-125	20	80-120	
Magnesium	0.0500	0.0500 mg/L		20	75-125	20	80-120	
Manganese	0.00500	0.00500 mg/L		20	75-125	20	80-120	
Nickel	0.0100	0.0100 mg/L		20	75-125	20	80-120	
Potassium	0.0500	0.0500 mg/L		20	75-125	20	80-120	
Selenium	0.0250	0.0250 mg/L		20	75-125	20	80-120	
Silver	0.00500	0.00500 mg/L		20	75-125	20	80-120	
Sodium	0.500	0.500 mg/L		20	75-125	20	80-120	
Vanadium	0.0100	0.0100 mg/L		20	75-125	20	80-120	
Zinc	0.0250	0.0250 mg/L		20	75-125	20	80-120	

Metals, Target Analyte, ICPMS in Water (EPA 6020B)

Preservation: Add HNO3 to pH<2, Cool 4°C

Container: 10_250mL Plastic pH <2 w/ HNO3

Amount Required: 200

Hold Time: 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Antimony	1.00	1.00 ug/L		20	75-125	20	80-120	
Arsenic	1.00	1.00 ug/L		20	75-125	20	80-120	
Beryllium	0.300	0.300 ug/L		20	75-125	20	80-120	
Cadmium	0.500	0.500 ug/L		20	75-125	20	80-120	
Molybdenum	1.00	1.00 ug/L		20	75-125	20	80-120	
Selenium	1.00	1.00 ug/L		20	75-125	20	80-120	
Thallium	1.00	1.00 ug/L		20	75-125	20	80-120	

Metals, Target Analyte, ICPMS List in Water (varies)

Preservation: [Group Analysis]

Container:

Amount Required:

Hold Time: 5 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
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No Analytes listed

Analytical Method Information

Printed: 02/03/2021 2:00 pm

Pesticides, 8081 target list in Water (EPA 8081B)

Preservation: Cool 4°C

Container: 07_1000mL Amber Glass Cool to 4° C

Amount Required: 1000 mL

Hold Time: 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
4,4'-DDD	0.00400	0.00400 ug/L			30-150 20	40-140 20
4,4'-DDD [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
4,4'-DDE	0.00400	0.00400 ug/L			30-150 20	40-140 20
4,4'-DDE [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
4,4'-DDT	0.00400	0.00400 ug/L			30-150 20	40-140 20
4,4'-DDT [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
Aldrin	0.00400	0.00400 ug/L			30-150 20	40-140 20
Aldrin [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
alpha-BHC	0.00400	0.00400 ug/L			30-150 20	40-140 20
alpha-BHC [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
alpha-Chlordane	0.00400	0.00400 ug/L			30-150 20	40-140 20
alpha-Chlordane [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
beta-BHC	0.00400	0.00400 ug/L			30-150 20	40-140 20
beta-BHC [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
Chlordane, total	0.0200	0.0200 ug/L			20	20
Chlordane, total [2C]	0.0200	0.0200 ug/L			20	20
delta-BHC	0.00400	0.00400 ug/L			30-150 20	40-140 20
delta-BHC [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
Dieldrin	0.00200	0.00200 ug/L			30-150 20	40-140 20
Dieldrin [2C]	0.00200	0.00200 ug/L			30-150 20	40-140 20
Endosulfan I	0.00400	0.00400 ug/L			30-150 20	40-140 20
Endosulfan I [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
Endosulfan II	0.00400	0.00400 ug/L			30-150 20	40-140 20
Endosulfan II [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
Endosulfan sulfate	0.00400	0.00400 ug/L			30-150 20	40-140 20
Endosulfan sulfate [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
Endrin	0.00400	0.00400 ug/L			30-150 20	40-140 20
Endrin aldehyde	0.0100	0.0100 ug/L			30-150 20	40-140 20
Endrin [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
Endrin aldehyde [2C]	0.0100	0.0100 ug/L			30-150 20	40-140 20
Endrin ketone	0.0100	0.0100 ug/L			30-150 20	40-140 20
Endrin ketone [2C]	0.0100	0.0100 ug/L			30-150 20	40-140 20
gamma-BHC (Lindane)	0.00400	0.00400 ug/L			30-150 20	40-140 20
gamma-BHC (Lindane) [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
gamma-Chlordane	0.0100	0.0100 ug/L			30-150 20	40-140 20
gamma-Chlordane [2C]	0.0100	0.0100 ug/L			30-150 20	40-140 20
Heptachlor	0.00400	0.00400 ug/L			30-150 20	40-140 20
Heptachlor [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
Heptachlor epoxide	0.00400	0.00400 ug/L			30-150 20	40-140 20
Heptachlor epoxide [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
Methoxychlor	0.00400	0.00400 ug/L			30-150 20	40-140 20
Methoxychlor [2C]	0.00400	0.00400 ug/L			30-150 20	40-140 20
Toxaphene	0.100	0.100 ug/L			20	20
Toxaphene [2C]	0.100	0.100 ug/L			20	20
Mirex	0.00400	0.00400 ug/L			30-150 20	40-140 20
Surr: Decachlorobiphenyl				30-150		
Surr: Decachlorobiphenyl [2C]				30-150		
Surr: Tetrachloro-m-xylene				30-150		
Surr: Tetrachloro-m-xylene [2C]				30-150		

Analytical Method Information

Printed: 02/03/2021 2:02 pm

Polychlorinated Biphenyls (PCB) in Water (EPA 8082A)

Preservation: Cool 4°C

Container: 07_1000mL Amber Glass Cool to 4° C

Amount Required: 1000 mL

Hold Time: 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
Aroclor 1016	0.0500	0.0500 ug/L		50	40-140	40-120
Aroclor 1016 (1)						
Aroclor 1016 (2)						
Aroclor 1016 (3)						
Aroclor 1016 (4)						
Aroclor 1016 (5)						
Aroclor 1016 [2C]	0.0500	0.0500 ug/L		50	40-140	40-120
Aroclor 1016 (1) [2C]						
Aroclor 1016 (2) [2C]						
Aroclor 1016 (3) [2C]						
Aroclor 1016 (4) [2C]						
Aroclor 1016 (5) [2C]						
Aroclor 1221	0.0500	0.0500 ug/L				
Aroclor 1221 (1)						
Aroclor 1221 (2)						
Aroclor 1221 (3)						
Aroclor 1221 [2C]	0.0500	0.0500 ug/L				
Aroclor 1221 (1) [2C]						
Aroclor 1221 (2) [2C]						
Aroclor 1221 (3) [2C]						
Aroclor 1232	0.0500	0.0500 ug/L				
Aroclor 1232 (1)						
Aroclor 1232 (2)						
Aroclor 1232 (3)						
Aroclor 1232 (4)						
Aroclor 1232 (5)						
Aroclor 1232 [2C]	0.0500	0.0500 ug/L				
Aroclor 1232 (1) [2C]						
Aroclor 1232 (2) [2C]						
Aroclor 1232 (3) [2C]						
Aroclor 1232 (4) [2C]						
Aroclor 1232 (5) [2C]						
Aroclor 1242	0.0500	0.0500 ug/L				
Aroclor 1242 (1)						
Aroclor 1242 (2)						
Aroclor 1242 (3)						
Aroclor 1242 (4)						
Aroclor 1242 (5)						
Aroclor 1242 [2C]	0.0500	0.0500 ug/L				
Aroclor 1242 (1) [2C]						
Aroclor 1242 (2) [2C]						
Aroclor 1242 (3) [2C]						
Aroclor 1242 (4) [2C]						
Aroclor 1242 (5) [2C]						
Aroclor 1248	0.0500	0.0500 ug/L				
Aroclor 1248 (1)						
Aroclor 1248 (2)						
Aroclor 1248 (3)						
Aroclor 1248 (4)						
Aroclor 1248 (5)						
Aroclor 1248 [2C]	0.0500	0.0500 ug/L				
Aroclor 1248 (1) [2C]						
Aroclor 1248 (2) [2C]						
Aroclor 1248 (3) [2C]						

Analytical Method Information

Printed: 02/03/2021 2:02 pm

(Continued)

Polychlorinated Biphenyls (PCB) in Water (EPA 8082A) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor 1248 (4) [2C]								
Aroclor 1248 (5) [2C]								
Aroclor 1254	0.0500	0.0500 ug/L		50		50		30
Aroclor 1254 (1)								
Aroclor 1254 (2)								
Aroclor 1254 (3)								
Aroclor 1254 (4)								
Aroclor 1254 (5)								
Aroclor 1254 [2C]	0.0500	0.0500 ug/L						
Aroclor 1254 (1) [2C]								
Aroclor 1254 (2) [2C]								
Aroclor 1254 (3) [2C]								
Aroclor 1254 (4) [2C]								
Aroclor 1254 (5) [2C]								
Aroclor 1260	0.0500	0.0500 ug/L		50	40-140	50	40-120	30
Aroclor 1260 (1)								
Aroclor 1260 (2)								
Aroclor 1260 (3)								
Aroclor 1260 (4)								
Aroclor 1260 (5)								
Aroclor 1260 [2C]	0.0500	0.0500 ug/L		50	40-140	50	40-120	30
Aroclor 1260 (1) [2C]								
Aroclor 1260 (2) [2C]								
Aroclor 1260 (3) [2C]								
Aroclor 1260 (4) [2C]								
Aroclor 1260 (5) [2C]								
Aroclor 1262	0.0500	0.0500 ug/L						
Aroclor 1262 (1)								
Aroclor 1262 (2)								
Aroclor 1262 (3)								
Aroclor 1262 (4)								
Aroclor 1262 (5)								
Aroclor 1262 [2C]	0.0500	0.0500 ug/L						
Aroclor 1262 (1) [2C]								
Aroclor 1262 (2) [2C]								
Aroclor 1262 (3) [2C]								
Aroclor 1262 (4) [2C]								
Aroclor 1262 (5) [2C]								
Aroclor 1268	0.0500	0.0500 ug/L						
Aroclor 1268 (1)								
Aroclor 1268 (2)								
Aroclor 1268 (3)								
Aroclor 1268 (4)								
Aroclor 1268 (5)								
Aroclor 1268 [2C]	0.0500	0.0500 ug/L						
Aroclor 1268 (1) [2C]								
Aroclor 1268 (2) [2C]								
Aroclor 1268 (3) [2C]								
Aroclor 1268 (4) [2C]								
Aroclor 1268 (5) [2C]								
Total PCBs	0.0500	0.0500 ug/L						
Total PCBs [2C]	0.0500	0.0500 ug/L						
Surr: Tetrachloro-m-xylene				30-120				
Surr: Tetrachloro-m-xylene [2C]				30-120				
Surr: Decachlorobiphenyl				30-120				
Surr: Decachlorobiphenyl [2C]				30-120				

Analytical Method Information

Printed: 02/02/2021 9:40 am

PFAS, NYSDEC Target List in Water (EPA 537m)

Preservation: Cool 4°C

Container: 10_250mL Plastic Cool to 4° C

Amount Required: 250 mL

Hold Time: 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Perfluorobutanesulfonic acid (PFBS)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluorohexanoic acid (PFHxA)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluoroheptanoic acid (PFHpA)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluorooctanoic acid (PFOA)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluorooctanesulfonic acid (PFOS)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluorononanoic acid (PFNA)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluorodecanoic acid (PFDA)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluoroundecanoic acid (PFUnA)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluorododecanoic acid (PFDoA)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluorotridecanoic acid (PFTrDA)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluorotetradecanoic acid (PFTA)	2.00	2.00 ng/L		30	25-150	35	50-130	30
N-MeFOSAA	2.00	2.00 ng/L		30	25-150	35	50-130	30
N-EtFOSAA	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluoropentanoic acid (PFPeA)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluoro-1-octanesulfonamide (FOSA)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluoro-1-heptanesulfonic acid (PFHpS)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluoro-1-decanesulfonic acid (PFDS)	2.00	2.00 ng/L		30	25-150	35	50-130	30
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	5.00	5.00 ng/L		30	25-150	35	50-130	30
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Perfluoro-n-butanoic acid (PFBA)	2.00	2.00 ng/L		30	25-150	35	50-130	30
Surr: M3PFBS			25-150					
Surr: M5PFHxA			25-150					
Surr: M4PFHpA			25-150					
Surr: M3PFHxS			25-150					
Surr: Perfluoro-n-[13C8]octanoic acid (M8PFOA)			25-150					
Surr: M6PFDA			25-150					
Surr: M7PFUDa			25-150					
Surr: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)			25-150					
Surr: M2PFTeDA			10-150					
Surr: Perfluoro-n-[13C4]butanoic acid (MPFBA)			25-150					
Surr: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)			25-150					
Surr: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)			25-150					
Surr: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)			10-150					
Surr: d3-N-MeFOSAA			25-150					
Surr: d5-N-EtFOSAA			25-150					
Surr: M2-6:2 FTS			25-150					
Surr: M2-8:2 FTS			25-150					
Surr: M9PFNA			25-150					
MPFOA		0.100 ng/L						

Analytical Method Information

Printed: 02/03/2021 2:04 pm

Semi-Volatiles, 1,4-Dioxane 8270 SIM-Aqueous in Water (EPA 8270D SIM)

Preservation: Cool 4°C

Container: 09_500 mL Glass Amber

Amount Required: 500 mL

Hold Time: 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
1,4-Dioxane	0.200	0.300 ug/L		30	50-130	30	50-130	30
Surr: 1,4-Dioxane-d8	0.200		36.6-118					
1,2-Dichlorobenzene-d4								

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Analytical Method Information

Printed: 02/03/2021 2:12 pm

Semi-Volatiles, NJDEP/TCL/Part 375 List in Water (EPA 8270D)

Preservation: Cool 4°C

Container: 07_1000mL Amber Glass Cool to 4° C

Amount Required: 1000 mL

Hold Time: 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
1,1-Biphenyl	2.50	5.00 ug/L			40-140 20	21-102 20
1,2,4,5-Tetrachlorobenzene	2.50	5.00 ug/L			40-140 20	28-105 20
1,2,4-Trichlorobenzene	2.50	5.00 ug/L			31-92 20	35-91 20
1,2-Dichlorobenzene	2.50	5.00 ug/L			31-91 20	42-85 20
1,2-Diphenylhydrazine (as Azobenzene)	2.50	5.00 ug/L			40-140 20	16-137 20
1,3-Dichlorobenzene	2.50	5.00 ug/L			24-93 20	45-80 20
1,4-Dichlorobenzene	2.50	5.00 ug/L			26-95 20	42-82 20
2,3,4,6-Tetrachlorophenol	2.50	5.00 ug/L			30-130 20	30-130 20
2,4,5-Trichlorophenol	2.50	5.00 ug/L			44-96 20	36-112 20
2,4,6-Trichlorophenol	2.50	5.00 ug/L			39-107 20	41-107 20
2,4-Dichlorophenol	2.50	5.00 ug/L			38-99 20	43-92 20
2,4-Dimethylphenol	2.50	5.00 ug/L			10-116 20	25-92 20
2,4-Dinitrophenol	2.50	5.00 ug/L			10-168 20	10-149 20
2,4-Dinitrotoluene	2.50	5.00 ug/L			26-120 20	41-114 20
2,6-Dinitrotoluene	2.50	5.00 ug/L			28-118 20	49-106 20
2-Chloronaphthalene	2.50	5.00 ug/L			33-99 20	40-96 20
2-Chlorophenol	2.50	5.00 ug/L			25-106 20	35-84 20
2-Methylnaphthalene	2.50	5.00 ug/L			29-102 20	33-101 20
2-Methylphenol	2.50	5.00 ug/L			10-118 20	10-90 20
2-Nitroaniline	2.50	5.00 ug/L			48-99 20	31-122 20
2-Nitrophenol	2.50	5.00 ug/L			36-103 20	37-97 20
3- & 4-Methylphenols	2.50	5.00 ug/L			10-102 20	10-101 20
3,3-Dichlorobenzidine	2.50	5.00 ug/L			10-140 20	25-155 20
3-Nitroaniline	2.50	5.00 ug/L			10-169 20	29-128 20
4,6-Dinitro-2-methylphenol	2.50	5.00 ug/L			10-142 20	10-135 20
4-Bromophenyl phenyl ether	2.50	5.00 ug/L			35-109 20	38-116 20
4-Chloro-3-methylphenol	2.50	5.00 ug/L			20-117 20	28-101 20
4-Chloroaniline	2.50	5.00 ug/L			24-116 20	10-154 20
4-Chlorophenyl phenyl ether	2.50	5.00 ug/L			31-112 20	34-112 20
4-Nitroaniline	2.50	5.00 ug/L			24-143 20	15-143 20
4-Nitrophenol	2.50	5.00 ug/L			10-119 20	10-112 20
Acenaphthene	0.0500	0.0500 ug/L			17-132 20	24-114 20
Acenaphthylene	0.0500	0.0500 ug/L			13-124 20	26-112 20
Acetophenone	2.50	5.00 ug/L			40-140 20	47-92 20
Aniline	2.50	5.00 ug/L			10-133 20	10-107 20
Anthracene	0.0500	0.0500 ug/L			40-105 20	35-114 20
Atrazine	0.500	0.500 ug/L			40-140 20	43-101 20
Benzaldehyde	2.50	5.00 ug/L			40-140 20	17-117 20
Benzidine	10.0	20.0 ug/L				
Benzo(a)anthracene	0.0500	0.0500 ug/L			23-141 20	38-127 20
Benzo(a)pyrene	0.0500	0.0500 ug/L			46-118 20	30-146 20
Benzo(b)fluoranthene	0.0500	0.0500 ug/L			22-133 20	36-145 20
Benzo(g,h,i)perylene	0.0500	0.0500 ug/L			10-126 20	10-163 20
Benzo(k)fluoranthene	0.0500	0.0500 ug/L			18-152 20	16-149 20
Benzoic acid	25.0	50.0 ug/L			10-162 20	30-130 20
Benzyl alcohol	2.50	5.00 ug/L			10-114 20	18-75 20
Benzyl butyl phthalate	2.50	5.00 ug/L			31-121 20	28-129 20
Bis(2-chloroethoxy)methane	2.50	5.00 ug/L			23-110 20	27-112 20
Bis(2-chloroethyl)ether	2.50	5.00 ug/L			10-132 20	24-114 20
Bis(2-chloroisopropyl)ether	2.50	5.00 ug/L			12-132 20	21-124 20
Bis(2-ethylhexyl)phthalate	0.500	0.500 ug/L			14-131 20	10-171 20
Caprolactam	2.50	5.00 ug/L			40-140 20	10-29 20
Carbazole	2.50	5.00 ug/L			10-169 20	49-116 20

Analytical Method Information

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(Continued)

Semi-Volatiles, NJDEP/TCL/Part 375 List in Water (EPA 8270D) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
Chrysene	0.0500	0.0500 ug/L			30-127 20	33-120 20
Dibenzo(a,h)anthracene	0.0500	0.0500 ug/L			10-131 20	10-149 20
Dibenzofuran	2.50	5.00 ug/L			37-103 20	42-105 20
Diethyl phthalate	2.50	5.00 ug/L			41-106 20	38-112 20
Dimethyl phthalate	2.50	5.00 ug/L			38-105 20	49-106 20
Di-n-butyl phthalate	2.50	5.00 ug/L			24-121 20	36-110 20
Di-n-octyl phthalate	2.50	5.00 ug/L			25-141 20	12-149 20
Fluoranthene	0.0500	0.0500 ug/L			29-123 20	33-126 20
Fluorene	0.0500	0.0500 ug/L			20-133 20	28-117 20
Hexachlorobenzene	0.0200	0.0200 ug/L			24-120 20	27-120 20
Hexachlorobutadiene	0.500	0.500 ug/L			26-98 20	25-106 20
Hexachlorocyclopentadiene	2.50	5.00 ug/L			10-103 20	10-99 20
Hexachloroethane	0.500	0.500 ug/L			11-102 20	33-84 20
Indeno(1,2,3-cd)pyrene	0.0500	0.0500 ug/L			10-130 20	10-150 20
Isophorone	2.50	5.00 ug/L			19-113 20	29-115 20
Naphthalene	0.0500	0.0500 ug/L			26-104 20	30-99 20
Nitrobenzene	0.250	0.250 ug/L			25-107 20	32-113 20
N-Nitrosodimethylamine	0.500	0.500 ug/L			10-110 20	10-63 20
N-nitroso-di-n-propylamine	2.50	5.00 ug/L			16-127 20	36-118 20
N-Nitrosodiphenylamine	2.50	5.00 ug/L			46-116 20	27-145 20
Pentachlorophenol	0.250	0.250 ug/L			10-181 20	19-127 20
Phenanthrene	0.0500	0.0500 ug/L			29-121 20	31-112 20
Phenol	2.50	5.00 ug/L			10-107 20	10-37 20
Pyrene	0.0500	0.0500 ug/L			34-129 20	42-125 20
Pyridine	2.50	5.00 ug/L			10-73 20	10-46 20
Surr: SURR: 2-Fluorophenol			19.7-63.1			
Surr: SURR: Phenol-d5			10.1-41.7			
Surr: SURR: Nitrobenzene-d5			50.2-113			
Surr: SURR: 2-Fluorobiphenyl			39.9-105			
Surr: SURR: 2,4,6-Tribromophenol			39.3-151			
Surr: SURR: Terphenyl-d14			30.7-106			
ISTD: 1,4-Dichlorobenzene-d4						
ISTD: Naphthalene-d8						
ISTD: Acenaphthene-d10						
ISTD: Phenanthrene-d10						
ISTD: Chrysene-d12						
ISTD: Perylene-d12						

Analytical Method Information

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Volatile Organics, NJDEP/TCL/Part 375 List in Soil (EPA 8260C)

Preservation: Cool 4°C

Container: 03_5035 Vial Set

Amount Required: 20 g.

Hold Time: 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
1,1,1,2-Tetrachloroethane	2.5	5.0 ug/kg			15-161 33	75-129 30
1,1,1-Trichloroethane	2.5	5.0 ug/kg			42-145 30	71-137 30
1,1,2,2-Tetrachloroethane	2.5	5.0 ug/kg			16-167 56	79-129 30
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	2.5	5.0 ug/kg			11-160 31	58-146 30
1,1,2-Trichloroethane	2.5	5.0 ug/kg			44-145 40	83-123 30
1,1-Dichloroethane	2.5	5.0 ug/kg			46-142 36	75-130 30
1,1-Dichloroethylene	2.5	5.0 ug/kg			30-153 31	64-137 30
1,1-Dichloropropylene	2.5	5.0 ug/kg			40-133 28	77-127 30
1,2,3-Trichlorobenzene	2.5	5.0 ug/kg			10-157 47	81-140 30
1,2,3-Trichloropropane	2.5	5.0 ug/kg			38-155 48	81-126 30
1,2,4-Trichlorobenzene	2.5	5.0 ug/kg			10-151 52	80-141 30
1,2,4-Trimethylbenzene	2.5	5.0 ug/kg			10-170 242	84-125 30
1,2-Dibromo-3-chloropropane	2.5	5.0 ug/kg			36-138 54	74-142 30
1,2-Dibromoethane	2.5	5.0 ug/kg			40-142 39	86-123 30
1,2-Dichlorobenzene	2.5	5.0 ug/kg			10-147 52	85-122 30
1,2-Dichloroethane	2.5	5.0 ug/kg			48-133 32	71-133 30
1,2-Dichloropropane	2.5	5.0 ug/kg			47-141 37	81-122 30
1,3,5-Trimethylbenzene	2.5	5.0 ug/kg			10-150 62	82-126 30
1,3-Dichlorobenzene	2.5	5.0 ug/kg			10-144 51	84-124 30
1,3-Dichloropropane	2.5	5.0 ug/kg			43-142 36	83-123 30
1,4-Dichlorobenzene	2.5	5.0 ug/kg			10-160 52	84-124 30
1,4-Dioxane	50	100 ug/kg			10-191 196	10-228 30
2,2-Dichloropropane	2.5	5.0 ug/kg			38-130 31	67-136 30
2-Butanone	2.5	5.0 ug/kg			10-189 67	58-147 30
2-Chlorotoluene	2.5	5.0 ug/kg			14-144 49	78-127 30
2-Hexanone	2.5	5.0 ug/kg			10-181 60	70-139 30
4-Chlorotoluene	2.5	5.0 ug/kg			15-138 39	79-125 30
4-Methyl-2-pentanone	2.5	5.0 ug/kg			10-166 47	72-132 30
Acetone	5.0	10 ug/kg			10-196 150	36-155 30
Acrolein	5.0	10 ug/kg			10-192 128	10-238 30
Acrylonitrile	2.5	5.0 ug/kg			13-161 48	66-141 30
Benzene	2.5	5.0 ug/kg			43-139 64	77-127 30
Bromobenzene	2.5	5.0 ug/kg			23-142 44	77-129 30
Bromochloromethane	2.5	5.0 ug/kg			38-145 30	74-129 30
Bromodichloromethane	2.5	5.0 ug/kg			38-147 37	81-124 30
Bromoform	2.5	5.0 ug/kg			29-156 51	80-136 30
Bromomethane	2.5	5.0 ug/kg			10-166 42	32-177 30
Carbon disulfide	2.5	5.0 ug/kg			10-131 36	10-136 30
Carbon tetrachloride	2.5	5.0 ug/kg			35-145 31	66-143 30
Chlorobenzene	2.5	5.0 ug/kg			21-154 32	86-120 30
Chloroethane	2.5	5.0 ug/kg			15-160 40	51-142 30
Chloroform	2.5	5.0 ug/kg			47-142 29	76-131 30
Chloromethane	2.5	5.0 ug/kg			10-159 31	49-132 30
cis-1,2-Dichloroethylene	2.5	5.0 ug/kg			42-144 30	74-132 30
cis-1,3-Dichloropropylene	2.5	5.0 ug/kg			18-159 39	81-129 30
Cyclohexane	2.5	5.0 ug/kg			70-130 30	70-130 30
Dibromochloromethane	2.5	5.0 ug/kg			10-179 41	10-200 30
Dibromomethane	2.5	5.0 ug/kg			47-143 41	83-124 30
Dichlorodifluoromethane	2.5	5.0 ug/kg			10-145 34	28-158 30
Ethyl Benzene	2.5	5.0 ug/kg			11-158 42	84-125 30
Hexachlorobutadiene	2.5	5.0 ug/kg			10-158 45	83-133 30
Isopropylbenzene	2.5	5.0 ug/kg			10-162 57	81-127 30
Methyl acetate	2.5	5.0 ug/kg			10-149 64	41-143 30

Analytical Method Information

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(Continued)

Volatile Organics, NJDEP/TCL/Part 375 List in Soil (EPA 8260C) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec RPD	--Blank Spike / LCS-- %Rec RPD
Methyl tert-butyl ether (MTBE)	2.5	5.0 ug/kg			42-152 47	74-131 30
Methylcyclohexane	2.5	5.0 ug/kg			70-130 30	70-130 30
Methylene chloride	5.0	10 ug/kg			28-151 49	57-141 30
Naphthalene	2.5	10 ug/kg			10-158 95	86-141 30
n-Butylbenzene	2.5	5.0 ug/kg			10-162 96	80-130 30
n-Propylbenzene	2.5	5.0 ug/kg			10-155 56	74-136 30
o-Xylene	2.5	5.0 ug/kg			10-158 51	83-123 30
p- & m- Xylenes	5.0	10 ug/kg			10-156 47	82-128 30
p-Isopropyltoluene	2.5	5.0 ug/kg			10-147 60	85-125 30
sec-Butylbenzene	2.5	5.0 ug/kg			10-157 56	83-125 30
Styrene	2.5	5.0 ug/kg			13-171 39	86-126 30
tert-Butyl alcohol (TBA)	2.5	5.0 ug/kg			34-179 35	70-130 30
tert-Butylbenzene	2.5	5.0 ug/kg			10-160 79	80-127 30
Tetrachloroethylene	2.5	5.0 ug/kg			30-167 33	80-129 30
Toluene	2.5	5.0 ug/kg			21-160 50	85-121 30
trans-1,2-Dichloroethylene	2.5	5.0 ug/kg			29-153 30	72-132 30
trans-1,3-Dichloropropylene	2.5	5.0 ug/kg			18-155 30	78-132 30
Trichloroethylene	2.5	5.0 ug/kg			24-169 30	84-123 30
Trichlorofluoromethane	2.5	5.0 ug/kg			35-142 30	62-140 30
Vinyl acetate	2.5	5.0 ug/kg			10-119 82	67-136 30
Vinyl Chloride	2.5	5.0 ug/kg			12-160 35	52-130 30
Xylenes, Total	7.5	15 ug/kg				
Surr: Surr: 1,2-Dichloroethane-d4			77-125			
Surr: Surr: Toluene-d8			85-120			
Surr: Surr: p-Bromofluorobenzene			76-130		30	
ISTD: Fluorobenzene					30	30
ISTD: Chlorobenzene-d5						
ISTD: 1,2-Dichlorobenzene-d4						

Quality Assurance Glossary

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APPENDIX E

QUALITY ASSURANCE GLOSSARY

"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.

"Analytical Services Protocol" or "ASP" means DEC's compilation of approved EPA laboratory methods for sample preparation, analysis and data handling procedures.

"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.

"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.

"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.

"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.

"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.

"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.

"Method detection limit" or "MDL" means the minimum concentration of a substance 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).

"Nephelometric Turbidity Unit" or "NTU" is the unit by which turbidity in a sample is measured.

"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.

"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. For the purpose of this chapter, a Target Analyte List scan means the analysis of a sample for Target Analyte List compounds/elements.

"Targeted compound" means a contaminant for which a specific analytical method is designed to detect that potential contaminant both qualitatively and quantitatively.

"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.

"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.

"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.